A risk perception model of alliance structuring

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\textbf{Abstract}

The literature on the strategic alliance structuring process does not provide an adequate view of the role of decision-makers in that process, especially about how alliance partners form their structural preferences. Given the critical role of structure in alliance management, the decision-making process regarding the choice of an appropriate alliance structure deserves particular research attention. We propose a model of strategic alliance structuring that has managerial risk perception as its core. Our model consists of the following parts: the antecedents of risk perception, relational risk and performance risk, risk perception and structural preference, and the resolution of preferences. We suggest that the structural preferences of partners are based on their perceptions of relational risk and performance risk, and the overall objective is to minimize the total risk. We also develop a number of propositions as elaboration of the model to facilitate empirical research and the effective management of the structuring process. © 2001 Elsevier Science Inc. All rights reserved.

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\section{1. Introduction}

The rapid pace of technological development and increased globalization of the marketplace are creating a new competitive environment in which competing only with one’s own resources has come to mean abandoning opportunities and resources available...
from others. As a result, the formation of strategic alliances, defined as voluntary interfirm co-operative arrangements, has become a noteworthy trend in recent years. In search of the so-called "collaborative advantage," many firms are finding their performance and survival increasingly dependent on their collective activities with other firms.

A large number of scholars have attempted to understand the rationale, process, and implications of strategic alliances (e.g., Alter and Hage, 1993; Das and Teng, 2000a,b; Doz, 1996; Ring and Van de Ven, 1992, 1994; Yoshino and Rangan, 1995). One distinctive characteristic of strategic alliances is the remarkable variety in their governance structures, which include joint ventures, direct equity investment, joint R&D, joint manufacturing and marketing, shared distribution, research consortia, licensing, and others.

The vital importance of alliance structures is evident in the finding of a recent study conducted by Yoshino and Rangan (1995, p. 79): "Virtually every manager interviewed in our study believed that the success or failure of alliances hinged on their structures." In recent years, researchers have shown an interest in the following critical question: "Why is a particular governance structure preferred over others?" Relevant studies have drawn their inspiration from a variety of theoretical perspectives, such as transaction cost economics, social exchange, resource dependence, strategic behavior, bargaining theory, and the resource-based view.

Despite these efforts, none of these theoretical perspectives place the strategy-makers and their decision-making processes at the central core. Based on an empirical study of senior business executives, Das (1986) contends that the role of individual strategic decision-makers constitutes a significant factor in strategy-making, because no appreciation of strategic outcomes can be achieved without understanding the nature and impact of this role. As Anderson and Paine (1975, p. 812) note, "strategy formulation is subject to many subjective (behavioral, political, emotional) forces which influence its ultimate form." While some researchers have examined decision-making in strategic alliances, alliance structural decisions have not been studied in a decision process perspective. In this sense, it would seem that the extant literature may have missed important explanatory variables for alliance structural choice.

In this article, we highlight the crucial role played by managerial perceptions in alliance structuring. Specifically, we propose a risk perception model of strategic alliance structuring that seeks to explain the choice of alliance structure as the outcome of a decision-making process. Our research question here is two-fold: how do the partner firms develop their structural preferences in alliances, and how are these different preferences reconciled? We believe risk perceptions of the strategy-makers serve as the heuristic that helps form their respective structural preferences, which are then resolved on the basis of bargaining power. Thus, we have a process-oriented model of strategic alliance-making that has been called for by various scholars.

We divide the article into three parts. First, we critically review the studies on decision-making in strategic alliances. Second, we present our risk perception model comprising four components: antecedents of risk perception, relational risk and performance risk, structural preferences and risk perceptions, and preference resolution. We also derive a number of propositions from the model to facilitate empirical research. Lastly, we discuss the contributions and implications of our model for research and practice of strategic alliance structuring.
2. Decision-making in strategic alliances

The growing interest in strategic alliances has begun to provide us with significant research insights. However, most major perspectives — e.g., transaction cost, social exchange, and strategic behavior — attempt to answer the question “Why strategic alliances?” instead of the question “How to structure strategic alliances?”. Clearly, none of these perspectives approach the issue with due regard for the strategic decision-making processes. Indeed, existing approaches have been criticized for lacking a process orientation (Ring and Van de Ven, 1994).

A fair number of scholars have studied strategic decision-making in alliances, typically aiming at understanding the perceptions and decision contexts that form the basis of the partners’ decisions. The essence of this approach lies in the prominent role assigned to decision-makers in the alliance-making process. Alliance decision-makers are no longer assumed as completely rational — rather, they are believed to have limitations in reasoning capacity.

Two principal research streams may be identified. The first stream is concerned with the decision-makers’ perceptions regarding alliances. Ring and Van de Ven (1992) suggest that a perception of high-risk/high-trust prompts companies to prefer relational contracts — that is, strategic alliances. Geringer (1988), while studying the process of partner selection in joint ventures, examined executives’ perceptions of task-related and partner-related criteria. Anderson et al. (1994) propose that firms’ perceptions of interdependencies greatly affect their need for co-operation. Also, Cullen et al. (1995) found that perceptions of satisfactory joint venture performance enhanced the partners’ commitment to the alliance.

The second stream of research pertains to the heuristics or decision rules that the partners rely on in the decision process. According to Ring and Van de Ven (1994), partners use heuristics such as risk vs. trust and efficiency vs. equity in the process of developing strategic alliances. Koot (1988) suggests that strategy-makers should consider several dilemmas in a strategic alliance, such as exploitation vs. investment and fight vs. co-operation. Others argue that decision-making in strategic alliances is akin to the so-called “prisoner’s dilemma” situation, in which the partners depend on but are not sure about the partner’s co-operative behavior. It has also been suggested that the need to mimic other firms facilitates the decision to participate in joint ventures (Kogut, 1988; Venkatraman et al., 1994).

A void in the literature is that, with a few exceptions (e.g., Ring and Van de Ven, 1992, 1994), most studies do not coherently comprehend both aspects of alliance decision-making — namely, perceptions and heuristics. While perception of the alliance represents a firm’s assessment of the situation, heuristics provide a means toward simplifying and making sense of the situation and then reaching decisions. Particularly in terms of the structuring process, we still know little about how partners decide upon their preferred alliance structure. We thus need to understand the specific linkages between partners’ decision-making processes and their structural preferences. Also, since partner firms are likely to have different structural preferences, we need to explore how their preferences are reconciled through a negotiation process.

In sum, we believe that a process model of strategic alliance structuring should address both of the following two questions: how do the partners come to form their own structural...
preferences, and how are these different preferences reconciled? We propose a model that includes risk perception and bargaining power. The risk perception view deals with the first question by describing a decision process that results in a firm’s structural preference. The bargaining power perspective addresses the second question and explains preference resolution and structural outcomes. We should mention, though, that the model we propose focuses on the structuring of strategic alliances — it does not attempt to explain why decision-makers prefer strategic alliances over other strategies.

3. The risk perception model

In this section, we present a risk perception model of the strategic alliance structuring process. The model includes managerial risk perceptions and various antecedents to the perceptions. The dependent variable is the governance structure of strategic alliances. Fig. 1 presents the risk perception model.

Managerial perceptions are considered a key ingredient in strategic decision-making. Decision-makers have been found to react to a situation based on their perceptions of the environment. Although there are few empirical studies exclusively with top managers, Das (1986) has demonstrated, based on a survey of a large sample of senior business executives, how managerial perceptions of the task environment are critical in understanding their strategic intentions. His assumption was that the perception of the strategy environment was the first step in the strategy-making process — followed by environmental evaluation, strategy delineation, and strategy implementation. Many theorists suggest that managerial perceptions mediate the objective environment and strategic decisions (Das, 1986; Thomas et al., 1993).

Compared to the traditional industrial organization economics approach to strategy formulation — which relies exclusively on the objective environment — the managerial perceptions view helps capture the essence of the decision process. Although a relatively low correlation between the “objective” and the “perceived” environment has been reported (e.g., Downey and Slocum, 1982), theorists tend to agree that it is the “perceived” environment that is most relevant to the process of making strategic decisions. Probably owing to such a belief, many studies on managerial perceptions show a tendency of not accounting for the objective environment (Bateman and Zeithaml, 1989). Few studies have paid sufficient attention to the connection between the objective environment and managerial perceptions.

In the area of strategic alliances, in order that we relate managerial perceptions with the objective environment, we will examine various antecedents of managerial perceptions, including the objective factors of the competitive environment. Researchers have found that the personal characteristics of key decision-makers, such as CEOs, significantly affect the strategic choices of firms (Chaganti and Sambharya, 1987). Hence, we examine here certain personal traits of key managers formulating alliance strategy that we believe contribute to their risk perceptions.

Scholars suggest that, within the broad topic of managerial perceptions, we need to give special attention to uncertainty and risk perception (March and Shapira, 1987). Anderson and
Fig. 1. Risk perception model of strategic alliance structuring.
Paine (1975) argue that there are two key sets of managerial perceptions: the perception of environmental uncertainty and the perception of the need for strategic action. The importance of uncertainty and risk perception is also implied in Thompson’s (1967) observation that, at the organizational level, firms seek to control the uncertainties in their competitive environment. An emerging view suggests that most managers understand risk as the possibility of unfavorable performance, or downside risk. Here, following this view, we define risk in terms of negative outcome variances.

3.1. Two types of risk: relational risk and performance risk

Risk perception provides a particularly revealing perspective for studying strategic alliances. We use the term “risk perception” to refer to those ambiguities, as perceived by prospective alliance partners, about the future events that may negatively impact on the performance of the alliance. Alliance performance refers to the degree to which partner firms’ objectives are achieved in an alliance. While the success of all other strategic maneuvers depends solely on the firm’s actions vis-a-vis the general and competitive environment, the success of strategic alliances is contingent additionally on the effective co-operation between the partners. Hence, strategic alliances are not only constrained by the objective business environment, but also by the conduct of each partner. Besides the usual “business” risk, strategic alliances attract the additional dimension of risk to prospective partners in terms of the level of mutual co-operation. Ring and Van de Ven (1992, pp. 92–93) identify two distinct sets of uncertainty in strategic alliances: “uncertainty regarding future states of nature” and “uncertainty whether the parties will be able to rely on trust.” Proceeding along similar lines, we differentiate between relational risk and performance risk in strategic alliances (Das and Teng, 1996, 2001, in press a). Recently, these risk types have been used in empirical research on how executives perceive the potentials of prospective technological alliances (Tyler and Steensma, 1998).

Relational risk is concerned with the probability and consequences that a partner firm does not commit itself to the alliance in the desired manner. In other words, it encompasses those relational problems that may hinder the achievement of strategic objectives, such as the partner’s opportunistic behavior. On the other hand, performance risk refers to those factors that may jeopardize the achievement of strategic objectives, given that the partners co-operate fully. To strategy-makers, relational risk and performance risk represent two independent types of risk — the former is internally oriented and the latter more externally oriented. While relational risk is concerned with the relationship between the partners, performance risk refers to the relationship between the partnership and the environment. Performance risk is common to all strategic decisions, but relational risk is unique to strategic alliances.

Traditionally, risk has been defined as outcome variances with known probability, while outcome variances with unknown probability have mostly been referred to as uncertainty. However, since in the area of strategy such probabilities are hardly known, risk tends to be broadly used for variances with unknown as well as known probabilities. As a result, “there remains considerable overlap within strategy literature in the usage of the terms ‘risk’ and ‘uncertainty’” (Baird and Thomas, 1985, p. 231).
3.1.1. Relational risk

Relational risk reflects decision-makers’ concerns about the level of co-operation between the partners. One source of relational risk is the concern about the partner’s opportunistic behavior — that is, “self-interest seeking with guile” (Williamson, 1975, p. 9). Examples of opportunistic behavior include “withholding or distorting information, shirking or failing to fulfill promises or obligations, appropriation of the partner firm’s technology or key personnel, late payments, and delivery of substandard products” (Parkhe, 1993, p. 828). In fact, transaction cost theory assumes that some economic actors are opportunistic, so that they will exploit unilateral benefits whenever possible.

Opportunistic behavior is a widely observed phenomenon — some firms and people pursue their own interests at the expense of others. Thus, to perceive relational risk on account of opportunistic behavior is also legitimate. In order to control the partners’ opportunistic behavior, detailed contracts containing explicit deterrents to opportunistic behavior will need to be written, involving considerable writing and monitoring expenses. In international alliances, a perception of opportunism may be attributed to a lack of cultural understanding and responsiveness (Lane and Beamish, 1990). That is, cultural differences in dealing with business partners may sometimes be interpreted as opportunistic behavior (Horng, 1993).

Another source of perceived relational risk may arise from expected inequities regarding payoffs in alliances. The necessary condition for co-operation is a distribution mechanism that is perceived as equitable. Equity refers to a proportionate payoff based on one’s input, i.e., the more inputs the more payoffs. Therefore, the need for equity, or the need to be treated fairly, can seriously affect the relationship between the partners.

According to the equity theory of motivation, those who perceive themselves as being treated unfairly will be motivated to restore a sense of equity. Similarly, a partner firm, which foresees an inequitable pattern of payoffs, may expect itself or its partners to behave discordantly in the future. If one partner feels that the other partner gains too much from the alliance as compared to its own gain, it may begin to commit itself less, notwithstanding its own stake. In fact, Ring and Van de Ven (1994, p. 94) note that the partners in strategic alliances may “rely more heavily on equity than efficiency in assessing their relationship.” Nevertheless, some may argue that payoff inequities occur only after an alliance has been initiated and, thus, cannot affect risk perception prior to the alliance formation. In fact, we believe that many factors can lead the partners to expect inequitable payoffs, even before the alliance is forged. Such factors may include partner asymmetry, a lack of alternatives for one partner, adverse legal environment, and so on. Although expected inequity may discourage alliance formation, it does not necessarily rule out a prospective alliance.

Scholars also observe that alliances between direct competitors are not likely to be successful (Bleeke and Ernst, 1995; Park and Russo, 1996). One explanation is that in the case of direct competitors, the payoff from an alliance is likely to be perceived as inequitable, because a gain for one partner often means a loss for the other partners. Therefore, expected inequity will lead the partners to worry about adequate co-operation, and thus perceive high relational risk.

The perception of relational risk can be closely related to trust between the partners. Trust is often defined as “a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action” (Gambetta,
1988, p. 217). Some scholars have noted that a sense of trust can lessen the level of risk perceived in co-operation.

The role of interfirm trust in strategic alliances is also receiving increasing attention (see, for example, the 1998 special research forum on trust appearing in the *Academy of Management Review*). A certain minimum level of trust is believed to be an essential element in structuring interfirm alliances (Axelrod, 1984). Bradach and Eccles (1989) suggest that there are two mechanisms to stabilize partner relationship: formal (written contracts) and informal mechanisms (trust). Clearly, since interfirm trust eases the concern about opportunistic behavior, detailed written contracts may be less warranted. Detailed contracts and interfirm trust are the two ways to make the behavior of partners predictable. Of course, detailed contracts cannot ensure predictability if they are not abided by in practice.

Researchers have long examined the various dimensions of trust. One popular view is that trust has two main dimensions: (1) one’s ability (competence trust), and (2) one’s intentions (goodwill trust) to act in a desirable manner (Nootenboom, 1996). Ganesan (1994) has called the two dimensions “credibility” and “benevolence.” It seems that goodwill trust (or benevolence) would reduce the perception of relational risk, simply because a positive assessment of one’s intentions would lead to a belief that opportunistic behavior is less likely (Das and Teng, 1998c). Similarly, it can be argued that competence trust would reduce perceived performance risk because of a positive belief in one’s ability.

### 3.1.2. Performance risk

Generally, performance risk is the probability and consequences that a firm’s strategic objectives are not achieved, despite full co-operation. Thus, performance risk is a type of risk that exists when the relational risk is assumed to be nonexistent (that is, assuming full partner co-operation). Accordingly, the two types of risk have a supplementary relationship with each other when considering the total risk in an alliance. Performance risk arises from factors such as the volatility of the market and a lack of competence on the firm’s part. Specifically, in strategic alliances, performance risk refers to the hazards that an alliance may fail, despite the efforts and co-operation of the partners.

Furthermore, the measurement of alliance success can be complicated because it may be based on differing criteria, such as long-term profitability and short-term profit. The key lies in the attainment of partners’ objectives in the alliance, such as setting technological standards, new market entry, and so on. Glaister and Buckley (1996) found that various objectives of alliances can be clustered into five groups: technology development, market power, market development, resource specialization, and large projects. Since partner firms often have different objectives in an alliance, alliance performance may vary significantly among them. As such, partner firms tend to have different risk perceptions and alliance structural preferences, which need to be reconciled (a topic we will discuss later). Also, the achievement of alliance objectives depends on a number of factors, including the general environment (e.g., government regulations and political risks), the competitive environment (e.g., business decisions of major rivals), and the internal environment (e.g., a lack of core competence and the ability to work together).

A variety of terms describe the different kinds of performance risk in a strategic choice, such as commercial and technological risks, R&D risk, international risk, corporate risk, and
strategic risk. These can be viewed as different components of performance risk, their roles varying according to alliance types. For example, R&D risk is by far the most important risk component in R&D alliances. Partner firms are exposed to international risk when the alliance straddles country borders. These risks are not related to relational risk, because no matter how satisfactory the level of co-operation between the partners, these risks will always be present.

Single-firm efforts and interfirm co-operation are alternative ways to carry out a project. For example, new market entry can be achieved either through greenfield development by the foreign company itself or through a joint venture with a local partner. The foreign company can either bear the performance risk of the project by itself, or it can share the alliance’s performance risk. Plainly, a shared performance risk via an alliance will usually be lower than the performance risk of a project carried out by one firm. Inasmuch as the partners have to contend with performance risk of a project, strategic alliances constitute an effective way to control that performance risk.

According to the resource-dependence model, strategic alliances are adopted to control the uncertainties and risks in the environment. By pooling the resources of several firms, the likelihood of success is enhanced. Researchers identify risk sharing as a key motive for forming strategic alliances, including R&D risk and marketing risk. Strategic alliances also allow the firms to undertake those ventures that are considered too risky for a single firm — such as expensive basic research. In fact, Brouthers (1995) reports that the perception of high risks prompts strategies which shift risks and control to other firms.

By definition, the total risk in an alliance is made up of the two mutually independent types of risk, relational risk and performance risk. We should note here that the two types of risk can have no direct effect on each other, so that there is no complementary relationship. A change in one type of risk will not have any direct impact on the other on account of their mutually exclusive risk domains in an alliance. The difference between relational risk and performance risk can also be considered in the following way: whereas relational risk is created when forming a strategic alliance, performance risk of a project can be shared and mitigated by the alliance. While there are factors that may affect both relational risk and performance risk, the two remain conceptually independent because they deal with separate aspects of alliances (Das and Teng, 1998a). Decision-makers who examine the feasibility of strategic alliances and the choice of an appropriate governance structure should keep in mind the distinct connotations of these two types of risk (Das and Teng, 1999). Accordingly, in selecting alliance partners, alliance managers need to consider two separate questions about the partner firm: (1) will the partner collaborate in good faith (relational risk)? and (2) does the partner have adequate resources and capabilities to carry out its responsibilities in the alliance (performance risk)? These two questions should help managers in focusing on two distinctive yet equally critical aspects of partners.

3.2. Antecedents of risk perception: psychological traits

Perceptions of relational risk and performance risk in an alliance can be attributed to various factors. In this article, we examine two groups of factors that have a direct impact on the risk perceptions in strategic alliances: the psychological characteristics of strategy-makers and the situational characteristics. We adopt the view that the characteristics of the
strategy-makers will strongly influence strategic choices (Bateman and Zeithaml, 1989; Dickson and Weaver, 1997). Researchers argue that strategic decision-making can be partly explained in terms of certain characteristics of the top management team (TMT) or CEO, such as their psychological and background characteristics. Although some may argue that a TMT is often not homogeneous in terms of personal characteristics, the overall tendency of the team can be viewed as an aggregation of the tendencies of the individual members. Wiersema and Bantel (1992) found that group heterogeneity in a TMT's demographic characteristics is less important in predicting strategic choices than the team's average characteristics. Thus, here we assume that the overall tendency of a TMT is the aggregated level of relevant TMT member attributes. In empirical terms, the aggregation may be weighted according to the corporate positions of the individual respondents in the firm to reflect the fact that a CEO carries more weight than a Senior Vice President. Following Aiken and Hage (1968), we may also obtain an average score for each position level — e.g., Senior VP and VP — and then compute an overall mean of the scores. While there are potentially a host of psychological and situational characteristics that are relevant, we suggest that some factors have a clear linkage with our two risk constructs. In fact, we do not intend to be exhaustive in the selection of the following few factors. Rather, we mean to show that strategists' risk perceptions can be strongly influenced by some psychological factors as well as by some situational ones. Here we discuss only three psychological characteristics: trust propensity, locus of control, and future orientations of strategy-makers. Later, we will discuss four situational characteristics.

3.2.1. Trust propensity

The perception of risk can be closely related to trust between the partners (Mayer et al., 1995). Scholars argue that perceived risk in co-operation is mitigated by a sense of trust (Das and Teng, 1998b, in press a). By definition, interfirm trust refers to a belief in the partner’s goodwill — that is, the confidence that the partner will not act opportunistically. According to Rotter (1967) interpersonal trust is an individual personality trait — that is, a predisposition to believe in others’ goodwill. Individuals have a general belief about the goodness and trustworthiness of people and they act according to this belief. Decision-makers can thus be differentiated as being either “high” or “low” on trust propensity. The idea is that while another party’s trustworthiness can be the same, individuals high on trust propensity will be more likely to be trusting, as compared to those low on trust propensity (Rotter, 1967). Applying this view to alliance-making, we argue that a TMT that is high on trust propensity will tend to believe in the goodwill of the partners, and therefore perceive relatively low relational risk. Therefore:

Proposition 1: A top management team with high trust propensity will tend to perceive low relational risk in an alliance.

3.2.2. Locus of control

Locus of control refers to the degree to which individuals believe that their fate is determined by their own abilities, or otherwise by external factors such as luck (Rotter, 1966).
People with an internal locus of control ("internals") strongly believe in their self-efficacy, tending to be proactive, whereas "externals" are more likely to be doubtful and restrained. Scholars have found that locus of control is closely related to a decision-maker’s risk perception and risk taking (Bonoma and Johnston, 1979). Researchers have also identified a close relationship between a strategy-maker’s locus of control and strategy-making (Miller et al., 1982). The perception of self-efficacy leads the internals to believe that if they do their part of the job, things will be fine. Since internals are confident about their planning of the alliance, they will perceive relatively low performance risk. In essence, we suggest a tight relationship between internal locus of control, perceived self-efficacy, and perceived low performance risk. Hence:

**Proposition 2:** A top management team with an internal locus of control will tend to perceive low performance risk in an alliance.

### 3.2.3. Future orientation

The temporal aspects of management and organizational activities are being increasingly recognized as deserving of critical study (Das, 1986, 1993). Individuals have distinctive conceptions about the passage of time, and this psychological attribute influences their planning activities. People differ on the extent to which they are able to project their view of time-flow into the future. Future orientation refers to “the psychological conceptions of the future” (Das, 1991, p. 51). In a study with a large sample of senior business executives, Das (1987) found that those who have a distant-future orientation are more inclined toward planning for longer horizons. In contrast, executives who are only comfortable with a future close to the present, or are near-future-oriented, tended to plan for a relatively short period.

The future orientations of individual executives were found to have a significant role in strategy-making and strategic planning. Individual future orientations have also been conceptually integrated with the notion of risk horizons in strategic risk behavior (Das and Teng, 1997, in press b).

In the case of strategic alliances, the length of the future that the strategists pay attention to can influence their risk perceptions. Researchers emphasize the effect of “the shadow of the future” in structuring alliances (Axelrod, 1984). According to some studies, the longer the partners’ time perspective — that is, the longer the shadow of the future — the less likely the partners would behave opportunistically. Conversely, Joskow (1987) found that more relationship-specific investments call for longer duration contracts — which presumably controls uncertainty in relationship. Obviously, foreseeable future interactions reduce the partners’ incentive to cheat, not only because opportunistic behavior is more likely to be found out over the long haul, but also because an ongoing project can be jeopardized out of an impulse to seek revenge. In view of this, we hypothesize that strategy-makers with a distant-future orientation will be more able to foresee these future interactions and therefore perceive more clearly the shadow of the future. Strategy-makers who are near-future-oriented, in contrast, will not be able to envision these effects. Thus, a TMT comprised of members with a distant-future orientation will tend to be preoccupied with longer term co-operation. As a result, such a team will tend to be more optimistic
about interfirm co-operation and, hence, will tend to perceive a relatively low level of relational risk. Therefore:

**Proposition 3:** A TMT with a distant-future orientation will tend to perceive low relational risk in an alliance.

Propositions 1, 2, and 3 have clear implications for selecting and training managers for alliances. For example, managers with low trust propensity and a near-future orientation would tend to be more conscious about relational risk. These managers should be assigned to alliances that are expected to involve problems in partner co-operation. However, given the tendency of these individuals to perceive high relational risk, it is necessary to train them against being overly suspicious and preoccupied with short-term problems in co-operation.

### 3.3. Antecedents of risk perception: situational factors

Besides psychological factors, the other antecedents of risk perception are situational factors. As we noted earlier, research has thus far been inadequate in linking managerial perceptions with objective factors in the external environment. Here we link strategists’ risk perceptions in strategic alliances with four situational factors: alliance history, partner asymmetries, shared R&D efforts, and industry R&D intensity.

#### 3.3.1. Alliance history

A prior history of co-operation between the partners is a valuable asset in strategic alliances. Researchers suggest that repeated alliances between the same partners breed a sense of trust (Gulati, 1995). Not only do the prior alliances serve as hostages deterring opportunistic behavior on the part of either partner, but they also facilitate closer interactions between them. The partners come to know each other better and their interdependence deepens. Under such circumstances, firms find reason as well as emotion to believe in the goodwill of the other partners. As compared to a first-time alliance, repeated alliances between known partners are much safer psychologically in regard to potentially opportunistic behavior. Although the potential for opportunism may indeed increase if too much trust is granted, at least the trustor will have the benefit of basing that trust on a relatively long history of satisfactory co-operation, so that a perception of low relational risk will not be entirely unrealistic. Thus, we can expect strategy-makers in repeated alliances to perceive a low relational risk. Hence:

**Proposition 4:** The greater the number of previous alliances between the same partners, the lower will be the perceived relational risk.

#### 3.3.2. Partner asymmetries

The relative size, resources, and market power of the partners can affect the risk perceptions of strategy-makers. Alliances between equally strong, equally weak, or unequal partners can be dramatically different in their alliance motives and structuring process. Oliver (1990) observes that partner asymmetry — which allows one partner to exercise power and
control over another partner — is one of the key alliance motives. Along similar lines, Bleeke and Ernst (1995) suggest that many stronger partners enter into an alliance with the hidden agenda of “capturing” the weaker one. They also contend that alliances between unequal partners are unlikely to be successful. In line with Osborn and Baughn’s (1990) argument that small firms are more vulnerable to their partners’ opportunistic behavior, we reason that a small partner firm will be even more vulnerable to a larger firm. Therefore, we propose that partner asymmetries will lead the weak party to perceive relatively high relational risk.

A similar conclusion may be reached from a different perspective — the partners’ expectations about equitable treatment. We noted that the need to be treated fairly is an important motive in any co-operative arrangement. Thus, a fair reward system is essential in successful interorganizational relationships. We submit that, when partner asymmetries are considerable, it will be especially difficult to construct a reward system that is perceived as fair. The weaker party — that is, the party contributing less — will tend to perceive that it is being exploited. In a sense, it seems that a 50–50 joint venture from which each parent firm takes half of the rewards is more likely to be perceived as equitable. In this sense, we further argue that, since trust is reciprocal, the weaker party’s lack of confidence in co-operation may trigger the stronger one to doubt the prospect of co-operation too. Thus, we suggest that partner asymmetries contribute to a perception of high relational risk. Hence:

Proposition 5: The greater the asymmetries between the partners, the higher will be the perceived relational risk.

3.3.3. Shared R&D efforts

Technological innovation represents the single most influential factor in forming strategic alliances. Thus, many alliances are formed to conduct R&D jointly — generally referred to as R&D alliances. However, the potentially most damaging problem in R&D alliances is that shared R&D efforts provide a fertile ground for opportunistic behavior. The ambiguities inherent in R&D activities make it difficult to assess the contributions of each partner — so that shirking becomes commonplace. In fact, the ambiguities inherent in interfirm exchange and transfer of any intangible resources (such as knowledge and capabilities) suggest higher relational risk. Moreover, Hamel (1991) observes that R&D alliances may be a cover for secretly capturing other partners’ superior technology. This risk of unintentional loss of control of the technology through a poorly constructed agreement is easily appreciated. Thus, the partners about to join R&D alliances are likely to be concerned about opportunistic behavior, and therefore perceive high relational risk. Hence:

Proposition 6: Strategy-makers are likely to perceive high relational risk in an alliance if the partners share R&D efforts.

3.3.4. Industry R&D intensity

R&D intensity in an industry represents an important factor in understanding the industry as well as the strategies adopted by the players. Researchers report that alliances in high-tech
industries are more likely to be nonequity contract-based, because strategic flexibility is especially important in these industries (Hagedoorn and Narula, 1996; Osborn and Baughn, 1990). It follows that high-tech industries connotes higher performance risk for firms. On the one hand, R&D activities are known to be risky because they involve developing new approaches that are exploratory in nature. On the other hand, because intense R&D activities lead to expedited technological changes in an industry, industries with high R&D intensity are more turbulent and therefore more risky compared to other industries. In R&D-intensive industries, the rules of the competitive game may not be well-developed, as firms try to be innovative and develop new ways of doing business. Uncertainties and risks in industries like telecommunications and biotechnology are usually greater than those industries with more mature technologies, such as the steel industry. Thus, we argue that in R&D-intensive industries, performance risk is likely to be perceived as high. Hence:

Proposition 7: In industries with high R&D intensity, the performance risk of an alliance will tend to be perceived as high.

Because relational risk and performance risk are affected by various situational factors, partner firms may control the level of risk by selecting and altering the alliance context. For example, a firm may reduce relational risk by selecting those partners that are of similar size and market power, and those that it knew through previous alliances. It may also reduce shared R&D efforts in the alliance. In addition to psychological and situational factors, an important mechanism to control risks in alliances is alliance structure. In the following sections, we discuss the role of alliance structure in controlling risks in alliances.

3.4. Types of alliance structures

We mentioned earlier that strategic alliances can take a variety of forms — including, but not limited to, joint ventures, minority equity alliances, R&D contracts, joint R&D, joint production, joint marketing and promotion, enhanced supplier partnership, distribution agreements, and licensing agreements. We list in Table 1 brief descriptions of the most typical alliance types.

For the purpose of better organizing such a large collection of alliance forms, theorists have proposed several typologies of strategic alliances (e.g., Oliver, 1990). Both Killing (1988) and Yoshino and Rangan (1995) identify three major types of alliances: nontraditional contracts (nonequity-based), minority equity alliances, and joint ventures. Lorange and Roos (1990) differentiate four archetypes of alliances — ad hoc pool, consortium, project-based joint venture, and full-blown joint venture. In addition, Ring and Van de Ven (1992) distinguish recurrent contracting and relational contracting. Dussauge and Garrette (1995) propose four types of alliances along a continuum from market to hierarchy: R&D agreement, unstructured co-production projects, semistructured projects, and business-based joint ventures. Yet another typology consists of the following four: contractual without shared risk/reward, contractual with shared risk/reward, minority equity, and joint ventures.

None of these typologies have been widely accepted in the literature. On the one hand, some of them do not exhaust all possible alliance forms. For example, Dussauge and Garrette’s
list leaves out quite a few types of alliances. On the other hand, some typologies do not offer clear linkages with common types of alliance forms, such as the typology suggested by Lorange and Roos (1990). As a result, most studies on alliance structural choice have thus far been based on the dichotomy of equity alliances vs. nonequity alliances. Whereas equity alliances include joint ventures and minority equity alliances, nonequity alliances refer to all other cooperative arrangements that do not involve equity exchange.

We believe that the attempt to explain alliance structural choices should reflect the complexities and variations of alliance structures beyond the equity–nonequity dichotomy. To that end, we suggest equity and nonequity alliances should both be examined for further refinements. For equity alliances, clearly, the two substantive components are joint ventures and minority equity alliances. For nonequity alliances, we may differentiate between unilateral contract-based alliances and bilateral contract-based alliances.

Table 1

<table>
<thead>
<tr>
<th>Alliance type</th>
<th>Description</th>
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<tr>
<td>(1) Joint venture</td>
<td>A separately incorporated entity jointly owned by the partners.</td>
</tr>
<tr>
<td>(2) Minority equity alliance</td>
<td>The terms of the alliance include an acquisition of equity shares, by either one or more partners.</td>
</tr>
<tr>
<td>(3a) Joint production</td>
<td>The partners share manufacturing responsibilities and supply each other with products that are marketed by the partners under their own brand names (Yoshino and Rangan, 1995, p. 135).</td>
</tr>
<tr>
<td>(3b) Joint marketing and promotion</td>
<td>The partners market the same product under the same or different brand names.</td>
</tr>
<tr>
<td>(3c) Joint R&amp;D</td>
<td>The partners combine their R&amp;D efforts and share the rights to the product/service.</td>
</tr>
<tr>
<td>(3d) Enhanced supplier partnership</td>
<td>The supplier not only provides a particular type or line of goods/services, but also becomes an integral part of buyer’s operation through extensive cooperation. A higher level of reciprocal interdependence than the traditional buyer-supplier relationship (Borys and Jemison, 1989, p. 246).</td>
</tr>
<tr>
<td>(4a) R&amp;D contract</td>
<td>One partner provides funds to another partner for specified R&amp;D activities, and in return receives or shares market rights to the resulting product/service.</td>
</tr>
<tr>
<td>(4b) Licensing agreement</td>
<td>An agreement “by which one firm buys the right to use an asset for a period of time . . . , typically involve a narrow purpose and limited time frame, . . .” (Borys and Jemison, 1989, p. 245).</td>
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</table>

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Alliances are unilateral contract-based when there are well-defined transfer of property rights, such as in licensing agreements. Licensing, distribution agreements, and R&D contracts are the main forms of unilateral contract-based alliances. The key feature of these alliances is that individual firms carry out their obligations independently of each other. Such contracts tend to be complete and specific, and partners are expected to perform on their own accordingly — without much coordination or collaboration. Thus, the level of integration is relatively low in unilateral contract-based alliances.

Bilateral contract-based alliances involve the sustained joint creation of property and knowledge for the partners, requiring them to bring in resources and work together on a
constant basis. Some examples of bilateral contract-based alliances include joint R&D, joint marketing and promotion, enhanced supplier partnership, and joint production. These alliances require partners to put in resources and work together constantly, so that partners are integrated in a fairly tight manner. As compared to unilateral contracts, bilateral contracts are usually incomplete and more open-ended. To some extent, partners of bilateral contract-based alliances have to let the cooperative relationship unfold itself.

We propose a new and comprehensive typology of alliance structures consisting of four kinds of alliances: unilateral contract-based alliances, bilateral contract-based alliances, minority equity alliances, and joint ventures. This typology is preferred over others for two reasons. First, these four types exhaust all possible forms of alliance structures, because the first two cover all nonequity alliances and the latter two include all equity alliances. Second, these four types are unambiguously defined, so that any particular alliance can be clearly identified as belonging to one of the four. We list the key distinguishing characteristics of the four alliance structures in Table 2.

Based on the logic of transaction cost economics, the four types fall along the continuum from market to hierarchy. It is apparent that unilateral contract-based alliances are the closest to market transactions, while joint ventures are akin to hierarchical governance. Here we adopt the four-part alliance structural typology and explain the choices among the four types of structures in terms of risk perceptions.

3.5. Alliance structural preferences and risk perceptions

The risk perception model essentially suggests that the structural choice among the four types can be explained in terms of (1) each partner’s perceptions of relational risk and performance risk about a prospective strategic alliance as they engage in (2) bargaining with their other partners about the desirable structure on the basis of these initial risk perceptions. Some may, however, argue that under certain circumstances, the alliance structure is not a choice but a mandate. For example, countries sometimes specify the kind of alliances that will be allowed (such as a minority position in joint ventures for multinational firms). We submit that such situations are becoming less common, and certainly not the trend in today’s globalizing economy. Some may also argue that the structure of an alliance is largely determined by the purposes of the partners — e.g., market entry or joint research — so that the structure is not a real choice available to the partners. In our view, the choice among various governance structures is real, since alternative alliance structures can be used to achieve the same strategic objectives. Although strategic motivation is important, its importance can vary with the contractual form of the alliance. Thus, as Yoshino and Rangan (1995, p. 81) observe: “We want to know why different partners in the same industry, engaged in essentially the same type of activities, choose different alliance structures.” For example, in the case of new product development, one firm can either fund its partner to conduct research or invest through equity acquisition. The British entertainment company Thorn-EMI formed an alliance with L.M. Ericksson (a Swedish telecommunications company) with the objective of exploring the British telecommunications market (Lewis, 1992). Given this objective, there was concern about the relational risk of the deal — that is, Ericksson may well decide to enter the market later on its own. As such, Thorn-EMI insisted
<table>
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<tr>
<th>Distinguishing characteristics</th>
<th>Alliance structures</th>
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<tr>
<td></td>
<td>Equity joint ventures</td>
<td>Minority equity alliances</td>
<td>Bilateral contract-based alliances</td>
<td>Unilateral contract-based alliances</td>
</tr>
<tr>
<td>(1) Ownership structure</td>
<td>Joint equity</td>
<td>One-way or cross-equity ownership</td>
<td>No shared ownership involved</td>
<td>No shared ownership involved</td>
</tr>
<tr>
<td>(2) Degree of interfirm integration</td>
<td>High: working in one entity</td>
<td>Substantial: equity participation</td>
<td>Moderate: working jointly for a common goal</td>
<td>Light: working separately according to contracts</td>
</tr>
<tr>
<td>(3) Control mechanism</td>
<td>Hierarchical</td>
<td>Interest alignment through equity stake</td>
<td>Reciprocity</td>
<td>Contract law</td>
</tr>
<tr>
<td>(4) Duration of alliance</td>
<td>Medium- to long-term</td>
<td>Medium- to long-term</td>
<td>Short- to medium-term</td>
<td>Short- to medium-term</td>
</tr>
<tr>
<td>(5) Unplanned alliance termination</td>
<td>Very difficult: joint venture to be taken over by one partner or third parties</td>
<td>Difficult: selling equity stake to the partner or third parties</td>
<td>Fairly difficult: organizational rearrangement (e.g., of alliance personnel)</td>
<td>Fairly easy: end the contract</td>
</tr>
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</table>
on having a 51–49 joint venture, in addition to having a veto power on major decisions of the alliance. As this case shows, the structural choice of an alliance is not predetermined by the purpose of the alliance. Given certain objectives in the alliance, managers will still be in a position to choose from alternative structures.

We now turn to a discussion highlighting the distinction among the four structural options by examining relational risk and performance risk inherent in a prospective strategic alliance. The basic assumption is that firms will want to control the level of total risk they are exposed to. Yates and Stone (1992) suggest that the total risk is the sum of various risk elements. In strategic alliances, that means that partners will attempt to control the level of total risk (relational risk + performance risk) of an alliance. One mechanism for such control is the choice of alliance structure, which may either mitigate or add to the risk level. Thus, the rational choice of an alliance structure should keep the total risk level of the alliance from being inordinately high. We should note here that no particular alliance structure is necessarily better than other alliance structures — the key lies in the match between the specific risk conditions and the structural choice. Risk conditions refer to the perceived risk levels (relational and performance) of a cooperative deal before any negotiated decisions are made about the mutually acceptable alliance structure. For example, if the initial performance risk level of a projected joint effort is believed by a prospective partner to be high, then a structure that can effectively control that high performance risk will be the desired by that partner while going into the negotiation phase with the other partners. We use this logic as the foundation for the discussion of the preference for each alliance structure (see Fig. 2).

3.5.1. Joint ventures

Joint ventures are separately incorporated entities created and shared by the partners. Thus, in the continuum of alliance forms, they are the closest to hierarchical organizations. We suggest that they will be preferred when both relational risk and performance risk are perceived to be low. The logic is that joint ventures as a structural choice are ineffective in dealing with relational risk and performance risk. Thus, the choice of joint ventures among the four structural alternatives is appropriate when relational risk and performance risk are both low.

Regarding relational risk, joint ventures are recognized as fertile grounds for unintended knowledge transfers. One of the motives in entering into an alliance is the capture of other partners’ superior knowledge and technology. However, unlike a technology transfer

<table>
<thead>
<tr>
<th>Relational Risk</th>
<th>Performance Risk</th>
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<tbody>
<tr>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Unilateral Contract-Based Alliances</td>
<td>Minority Equity Alliances</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Bilateral Contract-Based Alliances</td>
<td>Equity Joint Ventures</td>
</tr>
</tbody>
</table>

Fig. 2. Relational risk, performance risk, and structural preference.
agreement (e.g., licensing), firms work closely with each other in joint ventures, and the ventures can easily become a cover for secretly capturing other partners’ technology. When partners cooperate in a joint venture, they are significantly exposed to each other in terms of their tacit knowledge, technology, and other valuable resources. Thus, some partners may unintendedly lose control of their core competence through ineffectively designed joint ventures. Many alliances eventually suffer an unplanned termination after one partner acquires its needed knowledge from the other partners. In addition, joint ventures sometimes serve as a stepping stone for those who intend to take over the partner. In this sense, having an equity joint venture with others imposes significant relational risk for the firm itself. Also, the more difficult it is to protect one’s proprietary know-how, the more risk is involved in an equity joint venture.

Furthermore, choosing joint ventures usually means adding significantly to performance risk, which refers to the hazards (both the probability and the severity of consequences) of an alliance failure. First, joint ventures require investing in the creation of a separate entity. Some additional investments are necessary to get it started. A separate organization has to be set up, including constituting a board of directors, staffing senior level managers, securing office space, and so on. These costs may not be needed if the alliance is formed through other forms — e.g., joint production — in which case each party can utilize what they already have to the maximum. Because of these additional investments needed to create new entities, joint ventures are often exposed to higher performance risk as compared to other forms of strategic alliances.

Second, joint ventures are separately created entities based on shared equity ownership, so that possible losses from a failing joint venture tend to be high. On the one hand, much of the investments in joint ventures cannot be easily recovered for other uses in the event the alliance has to be terminated. On the other hand, since partners are more deeply embedded in joint ventures, it will be a rather prolonged and difficult process to separate or exit. Should an alliance fail, it would be much more costly to end an equity joint venture than a licensing agreement. Clearly, joint ventures by their very nature imply very high exit costs.

Finally, high performance risk for joint ventures also comes from their high governance costs. Not only does shared ownership sacrifice strategic flexibility of the firm, organizational cultural differences also make joint decision-making and implementation even more difficult. In other alliance types, by comparison, less joint decision-making is necessary because each party is supposed to behave in accordance with the contractual agreements.

In sum, as compared to other alliance forms, joint ventures cannot effectively deal with relational risk and performance risk. Therefore, they will be preferred only if both the relational risk and the performance risk of a prospective alliance are low. Hence:

**Proposition 8:** Partner firms that perceive low relational risk and low performance risk in a prospective alliance will prefer an equity joint venture.

### 3.5.2. Minority equity alliances

This type of alliance means taking equity positions in one or more partners, without creating a new legal entity. For instance, firms may enter into a licensing agreement and also have an equity acquisition. Minority equity alliances are considered effective in dealing with
opportunistic behavior, or controlling relational risk. Two arguments can be advanced for this position. First, shared ownership aligns the interests and incentives of parent firms. As long as each parent firm has its own stake — or “mutual hostage” in the venture — the incentive to behave opportunistically will be restrained.

The second argument is that opportunistic behavior stems mainly from performance ambiguity. To that end, minority equity alliances seem to “provide a mechanism for distributing residuals when ex ante contractual agreements cannot be written to specify or enforce a division of returns” (Teece, 1992, p. 20). Thus, opportunistic behavior will be discouraged. Of course, equity investments do not always determine one’s share of alliance payoff. Partner firms may use agreements such as buy-back arrangements to modify the distribution of payoffs. The utility of equity investments, however, is in providing a basic structure when other distribution mechanisms are not clearly available. In sum, a minority equity governance structure is useful in controlling relational risk inherent in an alliance, and therefore, should be preferred when relational risk is perceived as high. It seems that joint ventures would also have the two mechanisms that lower relational risk: incentive alignment based on shared ownership, and a payoff distribution structure. The difference lies in the additional relational risk introduced by joint ventures: possible opportunism facilitated by partners working together under the same roof. It is this extra relational risk that renders minority equity alliances more acceptable than joint ventures in high relational risk situations.

On the other hand, minority equity alliances are not effective in controlling performance risk. In fact, they often add to the level of performance risk. First, ending an alliance when firms have equity stakes in their partners is a fairly complicated task. Partners have to decide on procedures for equity ownership to be withdrawn — which often prolongs the termination of the alliance. Because of these additional costs involved in ending alliances when things go sour, performance risk can be high.

Secondly, minority equity alliances also tend to incur high governance costs. Shared ownership implies shared decision-making and split control — which complicates the process and reduces strategic flexibility of the firm (Harrigan, 1988; Killing, 1988). In nonequity alliances, by comparison, there is less need for joint decision-making because each party is expected to behave in accordance with contractual agreements. As a result, minority equity alliances are feasible only when performance risk is perceived as low.

Minority equity alliances can effectively control the total risk level when relational risk is perceived as high and performance risk as low. Parkhe (1993) found some support for the hypothesis that a perceived fear of increased opportunistic behavior leads to more nonrecoverable, or equity, investments. Shan (1991) found that foreign companies were less willing to invest equity when country-specific risk, or performance risk, was perceived as high. Thus:

Proposition 9: Partner firms that perceive high relational risk and low performance risk in a prospective alliance will prefer a minority equity alliance.

3.5.3. Bilateral contract-based alliances

Unlike minority equity alliances, contract-based alliances do not involve any equity and ownership transfer. Some specific forms of bilateral contract-based alliances include joint
production, joint marketing and promotion, and joint R&D. These arrangements can be combined with ownership exchange and thus become “minority equity alliances.” Since the two options differ in terms of equity ownership, the decision will be based on the question of the kind of risk that needs to be controlled — relational risk or performance risk.

We argued earlier that minority equity alliances are effective in controlling relational risk, but not performance risk. In contrast, bilateral contract-based alliances are more effective in dealing with performance risk, but not with relational risk. First, because shared ownership helps limit opportunistic behavior, a lack of shared ownership will make it difficult to restrain such behavior. Partner firms may rely on contractual agreements and institutional mechanisms to encourage responsible behavior. For example, reciprocal agreements may specify that further collaboration is contingent upon satisfactory initial co-operation. Nevertheless, the point is that it is simply more difficult to align partner’s interests and to distribute residual benefits of the alliance without shared ownership. Beyond areas clearly specified by the contracts, contract-based alliances rely heavily on the goodwill, reputation, and voluntary cooperation from independent firms. Nevertheless, such trust is not easy to come by and is associated with a number of conditions — such as a history of successful engagements. Contractual safeguards, moreover, are both costly to prepare and implement and also potentially detrimental to the spirit of co-operation.

Secondly, bilateral contract-based alliances can be useful in better coping with high performance risk situations. As compared to joint ventures and minority equity alliances, bilateral contract-based alliances are much more flexible, which means they are easier to restructure, modify, or terminate. Because there is no transfer of equity or ownership, partners in such an alliance can easily withdraw from it. Explaining their choice of alliance structure, one manager noted that “why should we lock ourselves into an equity-based alliance when we can retain the strategic flexibility of moving to a different structure as the technology and our strategy evolve?” (Yoshino and Rangan, 1995, p. 81). Since equity investments would make partners more deeply embedded in the alliance, the performance risk of the alliance will increase in consequence.

In sum, bilateral contract-based alliances are appropriate for reducing performance risk, but not relational risk. Thus, they are most preferred when performance risk is perceived as high and relational risk is perceived as low. Hence:

**Proposition 10:** Partner firms that perceive low relational risk and high performance risk in a prospective alliance will prefer it to be bilateral contract-based.

### 3.5.4. Unilateral contract-based alliances

Unilateral contract-based alliances include licensing, subcontracting, distribution agreements, and other cooperative contracts that involve clear exchange of property rights. R&D contracts in which one partner performs R&D activities specified and funded by another partner are a good example of this type of alliance. As compared to bilateral contract-based alliances, the key characteristic of unilateral contract-based alliances is partners’ limited engagement. In licensing, subcontracting, and R&D contracts, partners are independent entities, which implement their part of the contractual agreement. For example, in licensing
agreements, the licensee essentially purchases the right to use the licensor’s property rights on a limited basis, so that the level of interdependence is relatively low. As a result, strategic flexibility is their distinct advantage. However, this flexibility maybe limited if partner firms emphasize exclusivity in licensing.

Since partners are minimally engaged in unilateral contract-based alliances, they would be preferred by partners when both relational risk and performance risk of a prospective alliance are high. First, a high level of relational risk indicates the potential for opportunistic behavior and other factors that may jeopardize satisfactory co-operation. Thus, a high level of interfirm engagement — as in an equity joint venture — is not advisable in such situations. Apparently, unintended technology dissemination, shirking, and culture clash become severe problems when partners are engaged at more substantial levels — such as in the case of joint R&D and joint production (bilateral contract-based). By comparison, in alliances such as those involving R&D contracts partners do not work closely with each other, so that a high relational risk seems somewhat less threatening. Nevertheless, this does not imply that such alliances are immune from relational risk. For example, firms involved in licensing agreements may still face problems such as misappropriation of licensed intellectual properties.

Second, when the performance risk of an alliance is perceived as high, the potential for failing in the enterprise can be considerable. In this case, unilateral contract-based alliances are to be preferred because of the ease with which it can be terminated. Licensing, subcontracting, and R&D contracts represent a flexible approach because these can be easily halted if things go sour. As such, the potential consequences of high performance risk can be deliberately circumscribed. By comparison, minority equity alliances are more costly to negotiate a termination. It is also possible that one firm may take advantage of its partner in such equity buyouts. In sum, unilateral contract-based alliances form the most flexible structure, and they will be preferred when the relational risk and the performance risk are too high for forging more embedded forms of alliances. Thus:

Proposition 11: Partner firms that perceive high relational risk and high performance risk in a prospective alliance will prefer it to be unilateral contract-based.

The basic idea undergirding the risk perception model is that various alliance structures have very different effects on relational risk and performance risk of the alliance. Thus, structural choices of alliances should allow partners to better control the total level of the two types of risk. Joint ventures add much relational risk and performance risk to the alliance, so that they will be preferred only if both types of risk are perceived as low. Minority equity alliances are effective in controlling relational risk but not performance risk, so that they are most feasible in situations with high relational risk and low performance risk. Contrariwise, bilateral contract-based alliances lack adequate control over relational risk but involve less performance risk, so that they are preferred when relational risk is low and performance risk is high. Finally, unilateral contract-based alliances allow partners to assume minimal relational risk and performance risk. As a result, they are the optimal structural choice when the risk levels are too high for other alliance forms. When managers follow the normative
approach delineated in Propositions 8–11, the effectiveness of risk control in alliances will be enhanced. The risk perception model offers a systematic and yet simple way to make sound structural decisions in alliances.

It needs to be noted that there are other fine-grained components in alliance structural arrangements, including mechanisms such as veto rights, exit clauses, lawsuit clauses, arbitration clauses, and accounting and monitoring measures. Although these components do not change alliance types, they offer important means to fine-tune the alliance structure. For example, partner firms may use veto rights and exit clauses in joint ventures to further reduce relational risk and performance risk. When exit procedures and terms are negotiated up front, the possible termination of joint ventures can become less costly and smoother. Besides, partner firms may install strict control and monitoring measures to further reduce the risks. Performance risk can be reduced when firms develop detailed procedures to improve coordination and control outputs. Relational risk can be reduced when measures are developed to prevent shirking, cheating, appropriating resources, and other opportunistic behavior. In sum, these additional structural arrangements can be used to supplement or modify the basic governance structure of an alliance.

So far we have discussed alliance structural preferences based on a risk perception model. However, the partners’ preferences of governance structure is only the first step toward actually reaching an alliance arrangement, because the partners are likely to develop differing perceptions of the two kinds of risk. Therefore, in reference to Fig. 1, divergent structural preferences would need to be resolved.

3.6. Structural preference resolution

In strategic alliances, the partners often have different kinds of risk perceptions and thus prefer different governance structures. Osborn and Baughn (1990, p. 509) suggest that “the governance form of a co-operative alliance needs to satisfy both parties involved.” However, should prospective partners differ in their preferences as between equity and nonequity alliance, they have only two options. In the first option, no prospective partner is willing to compromise — in which event there would be no alliance. In the second, one firm backs off and accepts the partner’s choice. In this second option, partners’ preferences are likely to be resolved as one party eventually exercises its power and determines the choice. Researchers generally agree that bargaining and negotiation are essential elements in the formation of strategic alliances. Of course, not all partners have to go through the same explicit bargaining process. For instance, when firms are embedded in a network or in an ongoing partnership, the need to negotiate each time may not be as great, and the firms may well be willing to rely on mutual forbearance and even to sacrifice some short-term interests in the process. Nevertheless, resolution will still take place, although probably in a more subtle and principled way, because there will almost always be some differences to be resolved. The way firms resolve their differences may vary greatly from case to case, but the essence would remain the same — to get what you want without giving in too much.

Gomes-Casseres (1990, p. 2; emphases in original) notes that we need not only to know “what ownership structure does the firm want,” but also “what ownership structure can the firm get.” To view the formation of strategic alliances as a bargaining process, researchers...
have developed the negotiations model, which uses the term “bargaining power” as a key predictive concept. Bargaining power here is a subjective notion because it has to do with the perceptions of the parties about the various sources — such as stake, alternatives, and committed resources.

Preference resolution can be viewed as a process in which negotiators’ bargaining power is wielded and manipulated to achieve a favorable agreement. By definition, bargaining power refers to “the extent to which one partner can favorably change the bargaining set . . . and can win accommodations from the other” (Gray and Yan, 1992, p. 49). The resolution outcomes, naturally, are dependent on the contrast between the parties’ respective bargaining power. The more bargaining power one possesses, the more likely one’s opinion will be accepted.

In this article, we integrate the bargaining power concept into our risk perception model. In the area of strategic alliances, studies — mostly from the resource-dependence perspective — indicate that the exercise of power (or bargaining power in our terminology) is a key aspect of strategic alliances (Provan and Gassenheimer, 1994). Moreover, scholars have successfully employed the concept of bargaining power in predicting the parent firms’ ownership structure in joint ventures (Blodgett, 1991; Gomes-Casseres, 1990). Lecraw (1984), for example, found that the more bargaining power the transnational corporations have, the higher the equity ownership they managed to get. Thus, we suggest that the structural preference of the party with relatively more bargaining power will prevail, assuming the alliance is actually formed. Hence:

**Proposition 12:** The more relative bargaining power a partner firm possesses, the more likely that its own preference will determine the governance structure of the alliance.

Although using bargaining power to predict structural agreements in alliances is not a new idea, our intent here is to apply its logic to alliance structural choice making. As a result, we have a process model of alliance structuring — which helps us in understanding the process by which individual firms’ evaluation of alliances eventually leads to their agreed structural outcome. The bargaining process delineated here may seem somewhat positional — that is, negotiators insisting on bargaining relative to their original positions without being creative or flexible. However, we are not ruling out the so-called principled approach — in which negotiators may trade their positions for other interests. While it is certainly possible that some firms may sacrifice their structural preference for other kinds of gains, we argue in our proposition that on the whole, partners with more bargaining power will tend to prevail on this point of structural choice. Ring and Van de Ven (1994) note that a congruence of expectations and assumptions emerge as a result of repeated interactions in the negotiation process — and our model highlights the reconciliation aspect of such negotiations. Indeed, our model encompasses those situations in which the partners are unable to develop a congruent structural preference through informal sensemaking. Of course, if the preferences among the parties happen to be more or less congruent, the formal bargaining encounters would be relatively routine.

For alliance managers, our model suggests that they should be very conscious about their respective bargaining power in the entire alliance formation process. Managers should realize
that in alliances, one cannot always have one’s way. In particular, firms with low bargaining power should know that they need to be flexible and creative in the negotiation process. Therefore, more contingent approaches should be formulated in designing the alliance.

4. Concluding remarks

In discussing strategic alliances, we began by noting that we need to understand both the structural preferences of the partners and the resolution of those preferences. We attempted in this article to proceed along these two fronts by presenting a risk perception model with a bargaining component. Following the tradition of strategy process studies, we described in our model the process of strategic alliance structuring that assigns a significant role for decision-makers in terms of their perceptions. After all, if managerial perceptions function like a filter on the objective environment, then to a large extent the nature of the subsequent organizational processes and the eventual decision outcomes will be influenced by the nature of that filter. The role of managerial risk perceptions in our model brings us closer to the actual process of strategic decision-making. We thus provided a more realistic perspective on the strategic alliance structuring process. In brief, the first contribution of this model is an elaboration of the ways in which the partners come to form their structural preferences.

The second contribution of the model is in making the resolution of structural preferences an essential part of the alliance-making process and suggesting specific linkages between bargaining power and structural outcomes. In this way, our model recognizes the interplay between prospective partners. Most studies treat the two or more partners in an alliance as a single unit for purposes of analysis. As a result, the differences among the partners have not received due recognition in the major perspectives on strategic alliances. In contrast, we stressed the nature of the alliance-making process in terms of interfim interactions. The reconciliation of different opinions and objectives is an indispensable component of a process-oriented model of strategic alliance-making. By integrating the bargaining power perspective, the model takes into account the initial divergence of structural preferences among prospective alliance partners.

Third, our risk perception model also highlighted the distinction between strategic alliance-making and other strategic maneuvers. The perception of relational risk among the partners is a unique characteristic of strategic alliances, and deserves further exploration. While the risk perception model sets alliances apart from all single-firm strategies, most theories of alliances (e.g., strategic behavior and resource-dependence) regard alliances as merely one more strategic option, whether it is for gaining an advantageous competitive position or for managing dependence relationships. Thus, the uniqueness of alliances is not adequately recognized. Also, whereas the transaction cost economics does emphasize the difference between hierarchies and alliances, our risk perception model differs significantly in that it has a process orientation and is focused on risk rather than cost. Accordingly, our model may suggest different or even competing predictions from those generated by other theories. For example, the transaction cost perspective suggests that shared R&D activities increase transaction costs so that the alliances will tend to be equity-based. In contrast, the risk model views shared R&D activities as a high relational risk situation, and thus, alliances can
be formed as either unilateral contract-based (when the performance risk is considered relatively high, such as in R&D contracts) or with minority equity investment (when the performance risk is considered relatively low, such as in joint R&D with equity participation).

Fourth, certain troublesome issues in strategic alliances can be more easily comprehended with this risk model. We demonstrated how the structural choice of alliances can be explained by adopting the risk perception perspective. We also commented on several issues — such as alliance history, partner asymmetries, and industry R&D intensity — that previous scholars attempted to deal with from other perspectives. In our model, the relationships between these variables and alliance structural preferences are more straightforward and parsimonious. The risk perception perspective also allows us to explore several psychological aspects of alliance-making that have not been touched upon thus far. These relationships — as delineated in our propositions — should also help us appreciate more fully the subjective side of strategymaking as it pertains to strategic alliances. Having relational risk and performance risk as the core concepts, various elements in the competitive environment now find their due place in the process of alliance structuring.

Of course, there are also other issues that are not covered in the current framework, such as various types of resource needs and the fit between the partners. Another limitation of the risk perception model is that our discussion of the risk perception antecedents is not exhaustive. We selected some of the more significant psychological and situational factors and discussed them in terms of their impact on risk perception. A more comprehensive list of antecedents is perhaps warranted. Third, risk perception is but one perspective in understanding alliance structuring. It would be desirable to integrate other theoretical perspectives as well. For instance, an integration of the risk perspective and the cost perspective could lead to interesting insights.

The risk perception model has several implications for future research. First, empirical testing can be carried out to compare the explanatory power of this process model vis-a-vis other content-based models. Second, since our model has incorporated an additional decision-making element in the logic of structural determination — which is proposed mainly by transaction cost economics — we expect empirical results to show that more variance in structural outcomes can be explained by risk perceptions than by factors like alliance history. Third, because the value of differentiating relational risk and performance risk in strategic alliances may go well beyond structural choice, future research could also look into other applications such as the rationale for alliance formation, alliance performance, and the evolving alliance process.

Finally, from the perspective of managers, the model proposed here explicitly recognizes that the perceptions of strategy-makers substantively influence strategic decisions. To be more specific, we suggested that executives, consciously or unconsciously, tend to make decisions based on their evaluation of two distinct types of risk in alliances: relational risk and performance risk. Our earlier discussion indicated that this approach is a fairly rational one for the decision-maker. Therefore, our model is not merely descriptive in nature — it also has clear normative implications. Strategy-makers will benefit by consciously analyzing relational risk and performance risk in each situation. The key difference between the two kinds of risk lies in the nature of the problem — namely, whether it is about intentions or capabilities. If a potential problem can be attributed to a lack of goodwill and commitment, it
will be related to relational risk. In contrast, if poor alliance performance can be ascribed to a
lack of competence to succeed in the competitive environment, it will be related to
performance risk. These two concepts should facilitate marshaling the thinking processes
of executives in complex alliance-making situations. Strategy-makers need also to be aware
of the biases in their perceptions of the alliance-making environment. The three cognitive
characteristics that have been identified as the antecedents of risk perception indicate that
personal attributes are salient in decision-making concerning alliance structuring. Obviously,
different decision-makers will have different perceptions of the environment. Thus, the model
also serves to underscore the fact that placing a particular decision-maker in charge of a
strategic alliance-making project will condition the kind of risk assessment that will be made
about that alliance.

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References


