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Constrained choices in alliance formations: Cupids and organizational marriages

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ABSTRACT

This article develops a constrained choice model of strategic decision-making for 'cupid' alliances. Unlike voluntary alliances, cupid alliances are forged between 'target' organizations at the behest of a third 'cupid' organization that stands to benefit from creation of the alliance. Three key alliance decisions – whether to partner, with whom, and governance – are substantially curtailed by the cupid's requirements, producing a severely constrained set of strategic decisions. The conceptual model is supplemented with a case study which relies on qualitative interviews, observations and communication network data collected from principals negotiating a cupid alliance. A finding which may be unique to cupid alliances was the decline in trust over the course of the negotiation between those representatives whose organizations had no past alliance relationships. This finding is especially interesting given the fact that despite the decreased propensity for representatives to trust, an agreement was still reached.

KEYWORDS

alliances ▪ communication ▪ networks ▪ resource dependence ▪ trust

Organizations have established strategic alliances with other organizations for almost as long as organizations have existed (Aldrich & Ruef, 2006). In recent decades, however, the rate at which organizations have entered into

alliances has substantially increased because of globalization (Castells, 2000), expanding technological capabilities (Hagedoorn, 1993), and other industry changes affecting the basis of competition (Madhavan et al., 1998). Alliances are referred to in this article as linkages between organizations that involve exchange, sharing, or co-development (Gulati, 1995b). Despite the potential benefits of allying with other organizations, such as knowledge or resource sharing (Khanna et al., 1998), this process can also be risky and uncertain, given the necessity of forsaking a certain degree of independence.

Das and Teng (1996, 1998a, 1998b, 1999) consolidated the burgeoning literature on risk and uncertainty in the areas of alliances (e.g. Ring & Van de Ven, 1994), strategic management (e.g. Miller, 1992), and classical decision theory (e.g. Arrow, 1965) to propose that risks associated with alliance ties fall into two major categories. First, relational risk is the concern that the partner is untrustworthy and may act opportunistically to the detriment of the partnership. Second, performance risk refers to the concern that even a trustworthy partner may not be able to deliver on commitments. Ring and Van de Ven (1994: 93) describe the full range of such risk as 'confidence in the predictability of one's expectations (Luhmann, 1979; Zucker, 1986)', whereas Das and Teng capture the 'downside' portion of potential overall variation in potential outcomes (Miller & Leiblein, 1996; Miller & Reuer, 1996; Reuer & Leiblein, 2000). Das and Teng (1998b) consider relational and performance risks to be independent of each other.

One of the ways that organizations reduce these risks is to draw on the repositories of knowledge and trust found in their interorganizational networks (Zaheer & Venkatraman, 1995). An alliance network comprises relatively enduring sets of interorganizational ties involving multiple organizations, a 'social network of cumulated alliances' (Das & Teng, 2002; Gomes-Casseres, 1996; Gulati, 1998: 297). Such networks offer a variety of strategic benefits, such as broader monitoring and governance, improved access to information, informal reputation and referral systems, barriers to imitation by competitors, and reduced coordination costs (Gulati et al., 2000).

Current research on interorganizational alliances recognizes three main choices that organizations make in regard to alliances and alliance networks: a) whether they should enter into alliances (Gulati, 1995a; Khanna et al., 1998; Kogut, 1988), b) how they should choose their alliance partners (Geringer, 1988; Podolny, 1994), and c) how they should behave during the formation and execution of an alliance, sometimes called the governance issue (Barney & Hansen, 1994; Zaheer et al., 1998). Most of this research is focused on voluntary alliances, those relationships that are mutually acceptable to all organizational parties.

Some alliances are non-voluntary, however; rather they are forged on the basis of coercion, pressure, or less than acceptable relations for at least one of the parties (Oliver, 1990). One notable non-voluntary partnership is the *cupid alliance* described by Ring and Van de Ven (1994). It is an alliance formed as a result of an interested party, the 'cupid' organization, 'shooting' target organizations with cupid's alliance arrows in order to broker a relationship between them that will benefit the cupid organization. This broker has been identified as the *tertius gaudens* or the 'third who benefits' by allying with the other two while keeping them apart, thus controlling the flow of resources between them (Simmel, 1923: 154 as cited in Burt, 1992).

The cupid metaphor is used loosely in this context. According to the myth, Cupid shot a target in order to make the target fall in love with a third party who already loved the target. In the present application, Cupid does not act on behalf of one already in love, but out of self-interest for what Cupid can gain from a relationship between the other two. The resulting arranged organizational 'marriage' (Kanter, 1994) will be referred to as a *cupid alliance* throughout this article.

Research has confirmed the importance of initial dispositions toward cooperation, such as power dependency, in influencing the dynamics of alliance relationships (Faerman et al., 2001; Van de Ven & Walker, 1984). Provan and Skinner (1989) found that the frequency of opportunistic behavior increases when power discrepancies increase. A recent review of work on interorganizational networks highlights the need for increased understanding of how government and policy entities can shape and constrain the structure of relationships (Monge & Contractor, 2003; Provan et al., 2007). One study found that mandated relationships, like cupid relationships, altered interactions and produced tension and perceptions of lower cooperation (Hall et al., 1977).

Cupid alliances can occur in any situation where strong power-dependence relations exist (Pfeffer & Salancik, 1978). Recently, US government agencies such as homeland security and disaster preparedness have fostered cupid alliances by altering their funding practices so as to strongly encourage agencies to form relationships (Hocevar et al., 2006). Customers can be cupids. A major client of a regional advertising agency, for example, may seek worldwide coverage by offering its current agency the option of either partnering with another agency selected by the cupid because it has complementary regional coverage or losing the account (Kanter et al., 1993). Suppliers can be cupids. A powerful supplier to a fragmented industry may want to achieve some consolidation and can use its power to try to force partnerships. Parent organizations can be cupids to their subsidiaries, as

illustrated by Comet et al.'s (2008) research on forced research and development (R&D) partnerships across French firms. In the non-profit sector, funding agencies can be cupids, as was the case with The California Endowment, which made funding to three non-profit organizations contingent on creating an alliance to pursue policy changes in the area of children's health coverage (Holland, 2007). In short, cupid alliances are far from rare, and can occur any time a powerful organization is motivated to force partnerships among other organizations that have significant resource dependencies on the cupid. Despite the frequency of these dependencies, almost no literature has yet focused on this important alliance type.

Central to the cupid relationship is the role of embeddedness. *Embeddedness* is a concept proposed by Granovetter (1985) and explored by Uzzi (1996, 1997), Sydow and colleagues (Sydow & Windeler, 1998; Sydow et al., 1998) and Gulati (1995b, 1998), among others. It refers to the social relationships in which economic exchange takes place, bounded at one end by a lack of social relations and at the other by an overly restrictive set of relations (Granovetter, 1985). Granovetter (1985) argues that embedded social relationships are key to encouraging trust and discouraging malfeasance. Sydow and colleagues (Sydow & Windeler, 1998; Sydow et al., 1998) also note that these structures work to constrain action. In this way, structural embeddedness plays an important role in the ways that organizations interact. Gulati (1998) differentiates two types of embeddedness: relational and structural embeddedness. *Relational embeddedness* refers to the direct interaction that shapes the set of actions available to individuals within the relationship (Gulati, 1998). In this way, direct experience with a partner provides information on likely behaviors (Granovetter, 1985) and produces trust (Uzzi, 1996). *Structural embeddedness* emphasizes how the structural positions of the partners in a network provide access to information about others through indirect ties (Gulati, 1998).

A particularly interesting cupid alliance occurs when the target organizations have no prior alliance experience with each other. This lack of history, or *relational unembeddedness*, implies that the target organizations have no direct experience upon which to base expectations. In voluntary alliances relational embeddedness is important in that organizations tend to choose as future alliance partners others with whom they have had prior direct alliance relationships hoping, thereby, to reduce the risks of entering new alliances (Osborn & Hagedoorn, 1997). The dynamics by which cupid organizations put target organizations in relationally unembedded alliance situations have yet to be explored in the research literature.

The next two sections develop a model of cupid alliance decisions. The first section reviews the current literature on alliance choices, organized by

the three core issues: whether to ally, with whom to partner, and how to govern the alliance. We label this the *traditional choice model*. The following section describes the conditions that differ in cupid alliances, which we label a *choice-constrained model*. We then present a case study of a cupid alliance that illustrates the complexities and dynamics in negotiating a cupid alliance.

The traditional choice model

Whether to ally: Why do organizations choose to enter alliances?

Alliance formation can be seen as a risk reduction strategy (Williamson, 1975), one that is often found in highly uncertain industries such as oil exploration, investment banking or creative industries (Gardini, 2004). Alliances can provide access to resources when the alternative of purchasing them through market transactions is not possible and/or when integrating them into the organization's operations is too costly (Gulati, 1998). These resources could include a range of goods such as operational knowledge (Khanna et al., 1998) and access to new markets (Hagedoorn, 1993). As Kogut (1988) points out, alliances are one of the only ways that tacit knowledge can be transferred without merger or acquisition.

When organizations enter into alliances with other organizations that have multiple partners, they form alliance networks. Two factors relate to decisions on whether to engage in a particular alliance. The first is relational embeddedness in their alliance networks, the prior and current direct ties they have with other organizations. Organizations may choose to partner again if prior trustworthy partners are available (Gulati, 1995a) because it reduces relational risk. Alternatively, they may elect not to partner at all if it requires creating new relationships in which trust has not yet been established.

The second factor is structural embeddedness, where focal organizations are directly connected to other organizations who are connected to potential partners to whom the focal organizations are not directly connected. Structural embeddedness can reduce uncertainty by allowing access to important information about others through indirect ties (Gulati et al., 2000). Such reputational information may give organizations more confidence that a new partner may be trustworthy. Gulati et al. (2000) argue that the network positions that organizations occupy can operate as strategic resources. For example, organizations that have made alliance choices that place them as central players in alliance networks theoretically have broader choices of organizations with which to form

alliances. Organizations may also mimic the alliance strategies of other organizations (Garcia-Pont & Nohria, 2002), and network position can be related to whether organizations lead or mimic alliances choices (Madhavan et al., 1998).

With whom to ally: How do organizations select alliance partners?

When choosing alliance partners, organizations generally seek compatible partners who will provide them with knowledge of local markets and offer unique experience or capabilities (Geringer, 1988). Organizations rely on many types of information to ensure that they enter productive relationships. Li and Berta (2002) and Podolny (1994) found that organizations select alliance partners with similar status. Status similarity may be defined in terms of industry position, as in the investment banking industry (Li & Berta, 2002), in terms of the levels of technical, commercial or social capital companies possess (Ahuja, 2000), or in terms of the positions organizations hold within their social networks (Gulati, 1998). Status acts as an indicator of organizations' capabilities, and provides valuable information regarding the operational quality of potential partners (Podolny, 1994). Chung et al. (2000) argue that similar status organizations are more likely to ally because 1) they are more likely to have compatible operating systems, 2) they are better able to signal the quality of their outputs, and 3) they are more likely to 'exhibit increased levels of fairness and commitment in sharing both the costs and benefits of an alliance' (p. 4) because they have relatively equal resources to contribute.

Partner choices are also sought among prior partners. Relational embeddedness reproduces the pattern of repeated ties that has been found in studies of alliances (Gulati, 1995a). Repeated relations benefit network members in partner selection by diffusing information on the alliance-worthiness of other network members (Gulati et al., 2000).

Finally, as Das and Teng (2000) elaborate, firms may choose strategic alliance partners based on the resources those partners can provide. The more general resource based view of the firm asserts that competitive advantage accrues to those firms that have valuable, inimitable, non-substitutable and rare resources (Barney, 1991). Teece (1986) emphasized that firms often need to locate complementary resources in other firms to achieve competitive advantage. Das and Teng (2000) theorized that firms with greater resources will look to alliances for complementary resources to earn abnormal returns. Therefore, securing such resources can also be a means for partner selection.

Governance: How do organizations behave during the formation and execution of alliances?

When a partner concludes an alliance and anticipates no future interaction, it would appear to be economically rational to earn private benefits first and then leave the relationship, or to otherwise take advantage of the vulnerabilities of the partner (Khanna et al., 1998). Although these situations do exist, malfeasant behavior is not necessarily the most rational course of action when organizations are structurally embedded in broader alliance networks because of long-term reputational effects (Gulati et al., 2000). Organizations that behave in a trustworthy manner in one alliance are more likely to be referred to another organization that is seeking an alliance partner, while those who behave badly are not (Granovetter, 1985; Gulati, 1998).

In the interorganizational context, trust is treated as part of the relationship between organizations rather than as a quality possessed by individual persons (Mayer et al., 1995). Individuals can influence interorganizational trust, however, by transferring interpersonal trust to the formal organizational roles they occupy (Ring & Van de Ven, 1994; Zaheer & Venkatraman, 1995). Zaheer et al. (1998) differentiate the *interpersonal trust* between the individuals filling the boundary roles from the *interorganizational trust* that is based in the trust that those within the organizations have for the partner organization. Organizational culture and the latitude afforded to the boundary spanners influences interpersonal trust in the boundary spanners of both organizations (Perrone et al., 2003). Thus, both interpersonal and interorganizational trust are implicated in interorganizational relationships and influence each other.

Mayer et al. (1995) argue that both levels of trust are related to risk. Trust can be defined as 'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party' (Mayer et al., 1995: 712). Das and Teng (2001) assert that trust and risk are related in that higher levels of perceived risk require greater levels of trust. Mayer et al.'s (1995) definition relates to what Das and Teng (1996) have labeled relational risk, where trust acts as the organizing principle upon which members build expectations for behavior (McEvily et al., 2003). However, when the level of trust does not provide adequate expectations to achieve the threshold for the level of perceived risks, governance mechanisms can bridge the gap (Davis et al., 1997).

Many have written on the importance of governance of firm activities. Williamson's (1985) Transaction Cost Economics Theory (TCE) deals with

how firms govern relationships by minimizing the risks present. Research on contracts shows how resources invested in relationships are protected by increasing the duration of the contracts (Joskow, 1987) and how uncertainty involved in measuring quality of a product can influence the choice to use fixed-fee or time and materials type contracts (Kalnins & Mayer, 2004). Other work looks at the relationship between governance choices and trust, showing that increasing contractual provisions can lead to increasing levels of trust (Mayer & Argyres, 2004; Poppo & Zenger, 2002). It is possible that these contractual provisions increase protection against performance risk, not relational risk, as the partners learn what types of planning can aid performance (Das & Teng, 1999).

Barney and Hansen (1994) develop a typology of trustworthiness that incorporates both trust and governance. The first is *weak form trust*, which is achieved when the partnership involves no significant vulnerabilities to the organizations (Barney & Hansen, 1994). The second is *strong form trust*, which can be a result of either an organizational culture that holds the values of strong form trust, or characteristics of the particular individuals involved in the partnership that make them strong form trustworthy (Barney & Hansen, 1994; Mayer et al., 1995). Barney and Hansen (1994), like Davis et al. (1997), acknowledge the difficulty of establishing strong form trust.

The third type is *semi-strong form trust*, which takes the form of complex governance structures, such as contracts, that define appropriate behaviors as well as repercussions for failing to meet expectations (Barney & Hansen, 1994; Williamson, 1985). Semi-strong form trust permits organizations to engage in relationships because they can protect potential vulnerabilities with governance structures that enforce costs for engaging in opportunistic behavior (Barney & Hansen, 1994). Greater concern for opportunistic behavior often results in elaborated governance structures, while greater governance increases both negotiation and coordination costs (Gulati, 1998; Williamson, 1985; Zaheer et al., 1998). Governance structures often include safeguarding and monitoring, which are non-productive organizational activities (McAllister, 1995). In order to minimize coordination and negotiation costs organizations must erect semi-strong form trust only in the absence of both weak and strong form trust (Barney & Hansen, 1994).

Governance mechanisms also can help mitigate performance risk. Das and Teng (1999) argue that performance risk can be reduced by providing the appropriate level of flexibility in governance that supports needed adaptation and also permits recovery of invested resources if the alliance performance starts to fail. They describe three mechanisms. The first is to use repeated short-term contracts, which builds alliances 'incrementally'. A second is to design less engaging forms, such as licensing, rather than more engaging ones, like joint ventures. A third is to provide exit provisions.

Performance can suffer even when firms are well intentioned and contribute appropriate resources. Key stumbling blocks can be found in differing organizational cultures and learning styles (Das & Teng, 1999). It is likely that structural embeddedness in an alliance network can provide information on these intangible factors for potential partners, helping to pinpoint potential problem areas early so that solutions can be designed and implemented.

Breiger (1974) argues, citing Nadel (1957), that belonging to an organization involves members acting out roles with members of other organizations that creates relational ties at the level of the organizations. This 'interpenetration' of personal and organizational relational networks occurs because organizations are comprised of individuals acting in membership roles. Eisenberg et al. (1985) refined this conceptualization by defining three levels of exchange between organizations. *Institutional linkages* occur when information or material is exchanged between organizations without the involvement of specific organizational roles or personalities. *Representative linkages* occur when people who are acting officially on behalf of their organizations contact officials who represent other organizations. *Personal linkages* arise when people from different organizations contact one another in a private capacity. Alliances may involve all three types of linkages. However, initial negotiation of an alliance and its governance involves individuals acting in representative capacities for their organizations. Thus, the focus for understanding the negotiation of interorganizational alliance networks is best directed toward representative linkages.

The discussion to this point has focused on voluntary alliances in which organizations freely confront each of three major strategic choices. We next argue that this model has a number of limitations when applied to cupid alliances, where options are considerably constrained at each choice point. Cupid alliances require a modified, choice-constrained, model.

The cupid choice-constrained model

Cupid alliances are those in which external, cupid organizations broker alliances between other target organizations because the target organizations are likely to be resource dependent on the cupids, although the cupids do not themselves directly participate in the brokered alliances. Two key factors differentiate cupid from voluntary alliances. The first factor is the asymmetry created by resource dependence of the targets on the cupid organization. This situation is different from asymmetry motivation for traditional choice alliances in which 'resource scarcity prompts organizations to attempt to exert power, influence or control over organizations that possess the required

scarce resources' (Oliver, 1990: 243–4). In this traditional case the asymmetry is between partners; in the cupid alliance the asymmetry is between each partner individually and the cupid organization, so that the resources desired by each partner are not obtainable directly from each other. The presence of only external rewards is likely to influence the development of trust and cooperation with the other target.

The second factor is the role that embeddedness plays in providing reassurance of trustworthy behavior. If the cupid selects relationally unembedded organizations as targets, they will not have the benefits of trust and behavior expectations that would have accompanied their prior direct ties. If the targets are not structurally embedded except in relation to the cupid, they will not have the benefit of reputational and other information about the other target via indirect ties, except as is provided by the cupid organization. The cupid, however, has its own interest in making the alliance happen, which may conflict with providing high quality reputational information to the targets.

Whether to ally

In the traditional choice model, this question is part of an organization's strategic decision-making. This strategic decision may be part of a two-step process in which organizations first elect to seek the resources through a partnership and subsequently explore possibilities for viable partners. Alternatively, organizations may collapse these steps into a single decision point in which it decides on 'whether to ally' based on the availability of suitable partners. Partners with prior direct ties, organizations with similar status, or organizations with trust and reputational capital in the organizations' structurally embedding networks provide information that helps resolve the decision as to whether to partner at all.

In cupid alliances the location of needed resources is changed. The cupid organizations, rather than the proposed partners as in the traditional choice model, hold the resources that the focal organizations cannot otherwise make or buy. The target organizations still face the decision as to whether to ally to obtain the resources. However, they do not have the option of a two-step process, since they are not free to explore alternative possibilities for partners. The options in the one step process are similarly circumscribed. For cupid alliances in which the target parties have no prior experience with each other, they will not have the benefit of uncertainty reduction through prior ties. Nor will it be clear if combining their operations will improve operational performance or decrease it given the relative lack of knowledge of each other. Performance risk, therefore, also could be substantial. Status similarity will be the result of the choices of the cupid

organizations and not within the targets' control. The lack of structural embeddedness in this situation, except in relation to the cupids, reduces access to valid uncertainty reducing and reputational information that would otherwise be available from indirect ties. Successful strategies must be created anew without the informational and other advantages traditionally available through the structural network.

If cupids shoot their arrows at organizations that have both prior ties and structural embeddedness (through organizations other than the cupid) these problems are likely to be lessened. Cupids, however, are most likely to be found where the partners lack valuable resource complementarities that would have drawn the organizations together voluntarily. In short, the choice situation is one in which target organizations must decide whether to accept the relatively unmitigated risks of opportunism, uncertain compatibility of operations, and uncertain control over partnership outcomes in return for the resources offered by cupid organizations.

Partner choice

In the case of cupids, the partners have already been selected by the cupid organizations, and the target organizations must either accept or reject that choice. The core questions of whether to ally and with whom have been constrained to the single question: 'should I ally or not with the recommended organization(s)?' In some cases, this devolves to a rhetorical question, since targets' resource dependence on the cupids means that a negative answer may imperil their survival.

If the target organizations accept the alliance, their only remaining degrees of freedom are in negotiating the governance mechanisms. They must use the process of negotiating the alliance as a source of information regarding the relational and performance risk associated with each partner and also negotiate the governance provisions to reduce such risk. Thus, negotiating governance is likely to be complex and difficult.

Governance

In cupid alliances weak-form trust, in which neither party is highly vulnerable to the other, is unlikely to exist. Because the potential benefits are exogenous to the alliances themselves, incentives in the relationships shift from what each target can gain from the other to what each target might gain independently from the cupids. The presence of third party rewards may make target firms highly vulnerable both to one another and to the demands of cupids. Strong form trust also is not likely to exist between any partners that do not have the informational benefits of relational embeddedness.

The most probable situation for cupid alliances is the need to develop semi-strong form trust through the development of effective governance mechanisms, which are likely to be very costly. The situation is further complicated when lack of prior trust means that some form of trust must be established during the negotiation process. This trust will be difficult to establish since benefits are individual (targets benefit from cupids and not one another) and exogenous to the partnership.

Managing performance risk through governance mechanisms also may be challenging. Cupids will likely establish the metric for the success of the alliances on the basis of the benefits that they reap from the relationships. The cupids' motivations are likely to differ from those of the target organizations. For example, cupids may be rewarded simply by a signed agreement among the target organizations, leaving them to figure out how to implement it. Cupid also may press for certain alliance forms, reducing the ability of the target organization to select less engaging forms and flexible provisions such as incremental short-term contracts. Finally, even the negotiation of exit provisions may be insufficient if exit means losing the cupids' resources.

Thus far we have envisioned cupid alliances as ones in which each of the target organizations faces the same challenges related to lack of embeddedness. In *multi-party* cupid alliances, it is possible that some targets chosen by cupids have extant direct network ties while other targets do not. In such a case, there will be imbalances across alliance partners in their abilities to assert trust and reduce risk. This imbalance can add another element of uncertainty as coalitions may develop and some parties may be more vulnerable than others. As Das and Teng (2002) assert, multi-party alliances are often characterized by generalized exchange, meaning that direct reciprocity, often seen in dyadic alliances, is replaced with a more general notion of reciprocity among all members of the group. Such a dynamic can be complicated in the cupid context when there are coalitions and differential tendencies to trust partners. We label these *unbalanced multi-party cupid alliances*, those in which generalized exchange can only be assumed to take place among trusted members within the alliance. It is possible that among partners without extant trust, exchange more closely reflects the reciprocal exchange found in dyadic relations.

Negotiating unbalanced multi-party cupid alliances

Although both traditional and cupid alliances described above exist at the organizational level, the processes by which they come into being are influenced by activities of the individuals who are tasked to negotiate on behalf of their organizations. Organizational outcomes depend on interpersonal

interaction, exchange and trust-building among organizational representatives. Initially, representative linkages (Eisenberg et al., 1985) take place among key executives; subsequently, other organizational members will be brought into alliance discussions (Kanter, 1994).

Alliance negotiations among organizational representatives are influenced by interpersonal relational embeddedness (Zaheer & Venkatraman, 1995) and interpersonal trust (Kramer & Tyler, 1995) among negotiators. *Interpersonal relational embeddedness* is the extent of interpersonal ties that exist between individuals outside the current alliance negotiations. *Interpersonal trust* refers 'to the extent of a boundary-spanning agent's trust in her counterpart in the partner organization' (Zaheer et al., 1998: 142). Interpersonal relational embeddedness can be created by social interactions (Uzzi, 1997) or business interactions outside of alliance negotiations (Van de Ven, 1976). Interpersonal relational embeddedness also can create the opportunities for development of interpersonal trust.

These interpersonal interactions exist in dynamic interplay with interorganizational factors (Zajac & Olsen, 1993), so that actions at one level influence those at the other. At the interpersonal level, Barney and Hansen (1994) note that if those individuals representing the partnership have been found to be strong form trustworthy, then *interpersonal* relational embeddedness might serve as an adequate substitute for *interorganizational* relational embeddedness. At the organizational level, interorganizational embeddedness frames the interpersonal negotiation and creates initial conditions for individual choices on behalf of organizations. Also, trust developed successfully between organizations in the past may initialize trust among the representatives, even if they have no prior personal experience with each other.

For traditional choice alliances, a reasonable presumption is that prior direct organizational ties will be associated with higher levels of interpersonal trust; organizations in traditional choice alliances are not likely to select partners with whom their past experience is negative. In the situation of 'forced' cupid relationships, however, such a presumption is not reasonable. For representatives of relationally embedded firms, initial trust levels will be based on the character of past experience. Representatives of unembedded firms lack information on trust and must acquire information and adjust perceptions of trustworthiness during the negotiation (Currall & Inkpen, 2002). As a result, initial perceptions of trust are likely to be relatively more stable for representatives of embedded firms compared to unembedded firms.

Similarly, as unembedded individuals become acquainted they will have the opportunity for social and other business interactions, which can contribute to interpersonal relational embeddedness. Thus, interpersonal

relational embeddedness is more likely to evolve over the course of the alliance negotiations for those individuals without any prior interorganizational history. If interpersonal trust and interpersonal relational embeddedness change more for representatives of unembedded firms, what will be the nature of that change? In traditional choice alliances, these factors are likely to increase with the opportunity to become more familiar with each other. The alliance negotiation processes involve sense-making processes that 'permit parties with initially different views of the potential purposes and expectations of a relationship to achieve congruency in their relationship' (Ring & Van de Ven, 1994: 99). Ring and Van de Ven (1994: 99) identify sense-making as an integral part of the development of trust in an interorganizational relationship, noting that 'through these interactions emerge trust in the goodwill of others' (Ring & Van de Ven, 1994: 99). Sense-making also likely contributes to interpersonal relational embeddedness as individuals learn more about each other. Thus, in traditional choice alliances representatives of unembedded organizations likely will develop increased levels of interpersonal trust and interpersonal relational embeddedness.

Cupid alliances complicate the sense-making and trust-building processes in two ways. First, it is difficult to assume that targets bring a motivation to build a successful relationship rather than simply meeting the minimum requirements of the cupid organizations. Second, because the benefits of the alliance are external, it will be more difficult for representatives to develop trust in the goodwill of the other party. Ironically, the lack of history makes the negotiation process even more crucial to developing a basis for trust in future interactions, while at the same time the external motivation erects barriers to the kinds of interpersonal and interorganizational investments needed to realize relational trust. Despite these significant barriers, the targets at least share the goal of meeting the minimum needs of the cupids.

The next section details an example of negotiating an unbalanced multi-party cupid alliance among four firms. Three organizations were relationally embedded, and one was not. The alliance negotiations took place among upper level executives as representatives of their respective organizations in negotiating what we have labeled the 'AllSoft (a pseudonym) cupid alliance'.

The AllSoft cupid alliance

Research setting and background: AllSoft alliance and participants

The AllSoft alliance was based in a Cooperative Research and Development Agreement (CRADA). CRADAs were authorized in the United States by

Technology Transfer legislation in 1986 and 1991. The goal was to transfer technology from government laboratories to the private sector for commercialization. The mechanism was agreements to conduct joint government–industry research and in the process to ensure ownership rights for the industry partners through copyrights and patents. Legally, the US government cannot hold such exclusive ownership and its products become part of the public domain. Ownership of such technology by US companies, however, limits access by foreign competitors, uses taxpayer money to support US ventures and industries, and ensures more efficient use of taxpayer dollars through development of products that improve the efficiency of government functioning. CRADAs are 'the chief way by which federal labs and industry work together' (Berman, 1994: 338). Within the first eight years of their availability, more than 3500 CRADAs were successfully negotiated (Abramson et al., 1997), typically between the government and a single private partner. These numbers, however, fail to account for the large number of CRADA negotiations that failed to lead to a signed agreement. As Berman (1994) noted, CRADA negotiations face many important obstacles for both government and private partners, particularly in the historical context of the traditional American form of arm's length contracting relationships between government and industry.

The CRADA studied here as a cupid alliance was highly complex, involving three government laboratories and four private sector organizations. The product was software to improve the efficiency of design and construction of large facilities such as military barracks and hotels by providing better coordination and collaboration tools for designers across the range of functions in the construction process. The software was based on the premises of modularized design, technology-intensive coordination across functions, and object-oriented software architecture. At the time of the study the technology had been developed for US military facilities, but was extensible to other facility types. The official purpose of this CRADA partnership was to develop the technology into a viable commercial product.

The four private organizations, which we give the pseudonyms 'Platform', 'Software', 'Estimation' and 'Data', worked with various aspects of digital technology, but in different industries. 'Platform' is a large privately held company in the northern United States whose computer-assisted design (CAD) product is the software platform for applications to design large buildings, such as airports, hospitals, and bridges. At the time of the CRADA negotiations it was 12 years old and had revenues of $95 million, 25 percent of which came from the platform that would be the foundation of the CRADA. Platform is one of two main competitors in its platform industry. 'Software' is a self-described 'medium-size' (10 employees) software development organization in the southern United States. It was founded nine years

earlier by its representative to the CRADA negotiations and 'run out of an attic' until it was acquired four months previously by a software company that writes third party programs for software produced by Platform's major competitor. Five months into the CRADA negotiations, the CEO bought back Software from its acquirer as a stand-alone company. 'Estimation', is a very small privately held organization of 'just a few people' located in the south. It provides cost estimation software to support architectural, engineering, and construction projects. 'Data' is a privately held 100-person organization in the south specializing in architectural, engineering, and interior design services for both domestic and foreign clients based on use of proprietary databases on certain classes of buildings. It had been in business for more than 100 years. All business partners *except* Platform were originally involved in traditional contract arrangements with the government for the development of the military version of the software being transferred in the CRADA. Data, Software and Estimation not only had prior direct ties with each other but also had worked together on the product that was involved in the CRADA.

One of the three government organizations in this alliance acted as the cupid, mandating which organizations must be included in the CRADA. This was a large federal organization located in the nation's capital. The other government organizations were regional branches located outside of the capital.

The researchers gained access to these CRADA negotiations through a relationship between one researcher's university and a senior administrator of a government research lab located in a research park adjacent to the university. The lab would be involved in the technology transfer, but the senior administrator himself would not. He made introductions and encouraged the CRADA participants to support the researchers' interests in studying virtual organizations and collaborative engineering. Figure 1 portrays these relationships graphically.

Data collection methods

Information on the alliance negotiations was obtained through qualitative interviews (Weiss, 1994), observations, and network surveys. Each is described in more detail below.

Meetings

Researchers attended 16 major face-to-face meetings and several teleconferences during which the agreement was negotiated. Although the

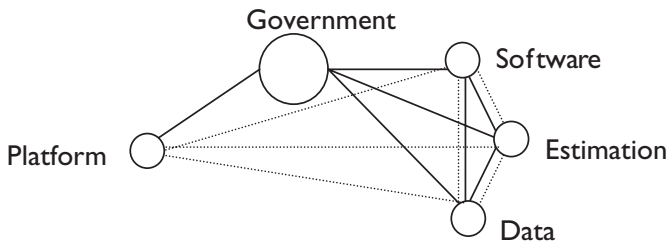

Figure 1 Proposed multi-party cupid alliance and interorganizational embeddedness
Note: Dotted lines represent proposed multi-party cupid alliance and solid lines represent interorganizational embeddedness.

discussion in these meetings was not audio-recorded, the attending researcher kept running field notes on the discussion via computer (Creswell, 1998; Emerson et al., 1995), identifying each comment by each person throughout each entire meeting, creating the equivalent of a transcript. After each meeting concluded, the researchers asked the participants clarifying questions as necessary to understand the content of the discussion.

Formal interviews

An in-depth literature review was conducted to aid in the construction of the interview questions (McCracken, 1988). Semi-structured interview protocols were developed for interviews conducted at two points in time. The goal of these interviews was to gain 'nuanced descriptions' of how the alliance relationship was developing in terms of trust and interaction among representatives of the participating companies from the perspective of those who were directly participating (Kvale, 1983). These descriptions were used to add detailed description and to understand how events were interpreted by participants (Weiss, 1994) to inform the quantitative responses gained through survey results. All interviews lasted from 45 minutes to approximately one hour. The first round was conducted relatively early in the negotiation process and the second round about midway through the negotiation process. Interview questions asked participants about their professional backgrounds, their thoughts on how the CRADA negotiations were going as well as their feelings toward members representing the other organizations involved in the CRADA.

Informal interviews

Researchers met informally with participants individually or in small groups as opportunities arose outside of the formal meetings. Notes from these

informal meetings identified person interviewed, date, and main points of the discussion, but few direct quotes. These informal discussions largely covered issues related to relationships among the participants and opinions about the evolving CRADA. Informal interviews were conducted with most of the private partners and many of the government representatives, including some persons not directly involved in the negotiations themselves.

In combination, these meetings and interviews produced approximately 300 pages of transcripts and notes. Quotations reported in subsequent sections are taken from these meeting transcripts and field notes.

Network survey

A retrospective network survey was constructed and administered at two different points in the negotiation process. Survey participants included the 12 individuals from the four private sector organizations who were involved in the negotiation process among the private partners, as well as several less central participants. The survey asked them to report their frequency of communication with each of the other participants in three areas: communication about the CRADA, social communication, and communication about other business issues not related to the CRADA. The interpersonal relational embeddedness variable was defined as the sum of social communication and non-CRADA business communication at each time period among the 12 key negotiators. The survey also measured trust in each of the other participants using a two-item assessment modified from Kramer and Tyler (1995) specifically to the CRADA situation. The results reported in subsequent sections are based on survey responses from the 12 key individuals from the private sector organizations.

Participants

For the earliest meetings, both government and industry partners were represented in the discussion. By the third meeting the government representatives were no longer present at the meetings. In the earliest meetings Platform was represented by a Vice President/General Counsel, a marketing manager, and an experienced government liaison who had just joined Platform. He had been involved in CRADA negotiations while employed by other companies before joining Platform, although none of them had led to a successful CRADA. The remaining organizations were represented by their CEOs and supporting managers. Platform's Vice President/General Counsel soon handed representation over to the marketing manager, who was the main point of contact for Platform for the bulk of the negotiations. The

experienced CRADA negotiator left Platform 8.5 months into the 18-month negotiations. All but one of the participants at all stages were male. With one exception, the representatives of the southern partners were all from the southern part of the United States; one was a European. He was concerned about his future with Software, and considered leaving the company in anticipation that it might be sold. The representatives from Platform were from the north.

Analysis

Interview and observation field notes were reviewed with the goal of identifying common themes among participants' feelings toward the CRADA negotiation process (Creswell, 1998). The researchers made every attempt to suspend expectations for what might be found in these data based on preconceptions from either individual experience, or from existing literature on alliances and trust development (Creswell, 1998; Weiss, 1994). In fact, the initial impetus for studying this CRADA was to learn more about virtual organizations. Upon reviewing the data, however, issues of trust and embeddedness emerged as far more salient factors in this particular relationship. As such, the themes and ideas uncovered in these interviews were used to inform the quantitative survey results. The following section outlines the insights gained from the interviews.

Interview findings

Both informal interviews and snippets of discussion in formal meetings confirmed that the cupid stood to receive substantial reputational benefits from a signed CRADA agreement among the four private partners. This finding was also voiced by the administrator who had facilitated the researchers' entry into this ongoing negotiation. One regional government representative noted further in a private conversation that the most senior government official stood to gain substantially in his career if he could get the parties to sign a CRADA agreement. One private partner noted that a senior government official 'put his future on the line a bit in favor of CRADA' because it was sold to the highest levels of government as a 'major change in the way procurement will be done' in the military sector.

Although the government organizations kept themselves apprised of the negotiation of the CRADA agreement among the private partners and were in contact with them, the role of the government was merely to transfer the technology and not to participate in the alliance itself. The role of the

four private organizations, however, was joint value creation, and required ongoing interaction and operational coordination once the agreement was signed. The private organizations, therefore, had a considerably higher risk in entering this agreement, as they mentioned often in the early meetings. For example, the government liaison from Platform noted in an early meeting among the private partners that:

> The CRADA is a crapshoot. We don't know what if anything it will yield. We don't know what the numbers are. They want us to place a bet before we know the game and, by the way, every number is wild.

There was a clear resource dependent relationship between the private organizations and the government, as the target organizations relied on government contracts for a significant portion of their business. One regional government official reported in an informal interview with one of the researchers that he had met privately with the CEOs of the three southern partners to ensure that they fully understood that this CRADA was a necessary condition for them to get any further contracts with the government. In a private partners' meeting one partner reported that:

> He [the regional government official] told [a private partner] last night that unless they are stupid they have these contracts. CRADA is the linchpin because higher-ups are looking for privatization because the government is not supposed to be in the software business.

And,

> Everything is going to stop until we get this CRADA.

Further interviews with the private partners confirmed that the private partners believed that the government organizations had clearly communicated that future business with the government was contingent on successful negotiation of an alliance agreement among these four specific private organizations.

Despite the government's public 'hands-off' role, it had a very strong opinion on how the CRADA should be organized and governed and was prepared to force the issue if necessary. The most senior government official reported in a private interview with one of the researchers that he cared about the form of the partnership, and that if Data was the lead, he might not sign the CRADA. However, if Software was the lead, he would be 'delighted'. He also noted that the CRADA solved an unspecified 'problem'

in his job. The private partners also felt pressures to push forward on the CRADA without proper planning. They felt the need to do a market analysis, a demonstration, specifications for future product development, and a management plan for taking future development forward. They also felt the need to assess the impact for their shareholders. As one noted in a private partners' meeting:

> We may come out on the short end of the stick unless we get more information. We have no business plan, what we are trying to do. They [government] want royalties but we as businessmen don't have the information needed to make that kind of judgment . . . If this were a normal business deal I would not commit to any royalty without a business plan.

Not only was it not a normal process, but the partners felt that the technology that would be transferred from the government was inferior to what they could develop from scratch without any government technology. Furthermore, they believed that the government was not aware of this. The government liaison from Platform attributed this, in part, to the fact that the government was not permitted to sign the kind of non-disclosure agreement that would be required in order to get the latest technology, whereas the private partners could sign such an agreement. Some quotes from private partners' meetings are illustrative:

> They [government labs] do not have the expertise for code, so what are they contributing to earn a particular % royalty . . . I bet they think they have the expertise, especially [the most senior government official]. We don't want [government lab people] on the projects because they don't have the right expertise and they don't realize it . . .

And,

> There are some pieces of [the software product to be transferred] but much is not really worth a lot. You'd want to start all over for a [commercial client] . . . a total remake of the product.

And,

> Confusing thing is a lack of understanding by government of where we know the technology is going to be five years from now . . .

Informal interviews with the southern partners indicated that they shared a code of southern business ethics in that they were willing to do business 'on a handshake, especially with [each other]'. They had an immediate hesitation about what to expect from a big company in the north. The three southern firms were not structurally embedded with Platform except via the cupid, but they had shared indirect ties with each other through overlapping personal and business networks.

The southern partners reported several important challenges. First, they did not believe they needed a partner from Platform's industry, given that they had developed the first version of the software without such a partner. Platform, however, was one of only two major players whose platform could be the basis for the technology to be transferred. Platform's government liaison argued that if Platform were not involved, then the final product would have to be retrofitted to the latest Platform technology. Second, the partner selected was from the north, so they were not able to assume a shared 'southern' approach to business. Third, they knew very little about Platform and what to expect from the organization. Fourth, Platform's main representative during the latter part of the negotiations was clearly a middle level manager, whereas the southern partners sent representatives that were more highly placed in their respective organizations. Also, negotiation of the CRADA appeared to be only a small part of the marketing manager's job responsibilities. Fifth, Platform's representative was difficult to reach, typically failing to answer email and phone calls promptly.

The southern partners said they felt that when meetings were held at the northern partner's facility, Platform's negotiator was distracted with other tasks and did not focus sufficiently on the CRADA. They also felt that they were in Platform's territory. They liked teleconference meetings because it gave none of the parties a home town advantage.

The marketing manager from Platform reported a number of challenges as well. First, he was designated as key negotiator before the top level representatives had agreed on a general framework. He was only a middle manager and did not have the authority to make some of the most important remaining decisions and sometimes had difficulty getting timely answers from the Vice President/General Counsel. He believed that his bosses wanted the CRADA but weren't willing to give him the time and resources needed to make it really work. Second, as a marketing manager he had many other responsibilities and the CRADA was only a small part of his job. His email inbox was always full and he rarely responded to all the requests made of him. He clearly felt the weight of a heavy workload.

Quantitative data analysis and findings

After learning more about how the participants viewed the CRADA alliance through the qualitative interviews (Weiss, 1994), the researchers conducted analyses of the quantitative network and trust data from the negotiators at the first time point using the Quadratic Assignment Procedure (QAP; see note 1 for details).[1] QAP computes a Pearson correlation coefficient for the relationship between two variables where the data for the two variables are contained in two matrices, one for each variable. For *interpersonal relational embeddedness*, a matrix was created that represented how many hours each person spent communicating socially and on non-CRADA business with each other person. Entries ranged from a low of 0 to a high of 33. For *interpersonal trust* a matrix was created that represented how much each person trusted each other person on a scale of 1 (low trust) to 7 (high trust). Across all pairs, including both directions in each dyad, the mean score was 5.31 (SD = 1.67). For *interorganizational embeddedness*, a person-by-person matrix was created that represented whether each person's organization had partnered before with each other person's organization (scored as 1) or not (scored as 0). Linkages between members of the same organization were considered embedded and scored as 1. These matrices were then correlated using QAP. The analysis showed that interorganizational embeddedness was positively related to interpersonal relational embeddedness ($r = .23$, $p < .05$) and to interpersonal trust ($r = .53$, $p < .05$) early in the negotiation of the CRADA relationship (at Time 1). That is, those individuals who represented the organizations that had a history of alliance relationships or were from the same organization were more likely to engage in social and business interaction in addition to the CRADA negotiation, as well as to trust each other more. Descriptive statistics are provided in Table 1.

The trust data from Time 1 and Time 2 also were used to look at how trust changed for embedded versus unembedded representatives. Given the small number of partners and the lack of independence in the data, we used a straightforward analysis based on percentage changes in trust across time using the procedure described below. As described earlier in the section on multi-party cupid alliances, trust is likely to both change more and be more difficult to establish for dyads from unembedded firms.

The trust variable for each dyad was dichotomized to facilitate analysis across time. A score of greater than 3 on the seven-point scale was considered 'high trust' and scored as '1', while a score of 3 or lower was considered 'low trust' and scored as '0'. For unembedded firms, there were a total of nine trust assessments of each of the three persons from Platform (i.e. each of nine southern partners rated each of three Platform partners), and three trust

Table 1 Descriptive statistics

	Interpersonal relational embeddedness	*Interpersonal trust*	*Interpersonal relational embeddedness*	*Interpersonal trust*
	Time 1	Time 1	Time 2	Time 2
N	132.00	132.00	132.00	127.00
M	1.52	5.31	5.09	4.54
SD	4.64	1.67	14.90	1.86
Min.	0.00	1.00	0.00	1.00
Max.	33.00	7.00	120.00	7.00

Note:
N is the number of pairwise relationships among the 12 private CRADA partners (12 × 11 = 132); each member of each pair is shown once as 'sender' of embeddedness and trust and once as 'receiver' of embeddedness and trust.

Mean is the average across all pairs of a) number of hours communicating with the other member of the pair about social and non-CRADA business (interpersonal relational embeddedness), and b) reported trust in the other member of the pair (seven-point scale).

For interpersonal relational embeddedness, note that number of hours can rise quickly when multiple persons attend the same meeting. For example, when a group of four people communicate with each other for one hour, that will be recorded as one hour for each person to each of the other three persons and vice versa, resulting in 12 person-hours spent communicating in the single one-hour meeting.

assessments for each of the nine southern partners (i.e. each of three Platform partners rated each of nine southern partners). The proportion of 'high trust' was computed by counting the total number of high trust scores ('1') toward a focal person relative to the maximum possible: nine for each Platform partner or three for each southern partner. These proportions were compared between Time 1 and Time 2 to assess changes in trust for representatives of unembedded firms. These changes are shown in column 2 of Table 2.

In addition to these trust assessments across unembedded firms, there were trust assessments across embedded firms. The embedded representatives included five partners from Estimation, two partners from Data, and two partners from Software. Each member of Estimation received two assessments from Data and two assessments from Software. Each member of Data received five assessments from Estimation and two assessments from Software. Each member of Software received five assessments from Estimation and two assessments from Software. We also calculated internal (to the organization) trust assessments, which were four per person for Estimation and one per person for Data and Software. These internal relationships were considered embedded. Data analysis excluding these internal trust scores produced the same results as excluding these trust scores. Thus, the data in

Table 2 Changes from Time 1 to Time 2 in proportion of 'high trust' scores

	Changes in trust toward embedded representatives	*Changes in trust toward unembedded representatives*
Estimation rep. 1	0%	0%
Estimation rep. 2	25%	33%
Estimation rep. 3	0%	–33%
Estimation rep. 4	0%	–67%
Estimation rep. 5	0%	0%
Data rep. 1	13%	0%
Data rep. 2	–13%	0%
Software rep.1	–50%	–67%
Software rep. 2	0%	–67%
Platform rep. 1	0%	–31%
Platform rep. 2	0%	–39%
Platform rep. 3	0%	0%

Notes: Cells show changes in proportion of 'high trust' scores toward each type of representative; for example, Estimation rep. 1 shows no change across time in proportion of 'high trust' scores for any of the partners; Platform rep. 1 shows a decrease in 'high trust' scores toward 31% of the southern partners (unembedded relations).

Embedded relations for Platform are to other representatives of Platform; embedded relations for the other organizations include both relations to members of their own organization as well as to members of the other embedded organizations.

Shaded cells call attention to representatives whose trust nominations decreased from Time 1 to Time 2.

column 1 of Table 2 include both types of 'embedded' relationships. As with the unembedded relationships, the data on embedded relationships report the changes in the percentage of high trust relationships in relation to the total number possible from Time 1 to Time 2.

Table 2 shows that the number of individuals whose 'high trust' proportion decreased over time was greater in the case of unembedded representatives. In essence, over the course of the negotiation trust decreased

between representatives of Platform and the other three private partners. This decrease in trust seemed bilateral; for two of the three representatives of Platform the trust in the southern partners decreased over time, just as trust in Platform changed over time for four of the southern partners. Interestingly, two of the southern partners reported decrease in trust toward some of the other southern partners.

Figures 2 and 3 present a visual representation of the decline in trust. The size of the node is indicative of the level of trust that others in the network placed in each individual. The squares indicate those individuals representing the firm that had no prior network ties with any of the other three firms (Platform). As can be seen in the diagram, the size of two-thirds of the squares decreased from Time 1 to Time 2.

These results are consistent with comments made by the southern partners about Platform in private conversations. The CEO of Software stated that none of the other three private partners trusted Platform and they were convinced that Platform had 'another agenda' beyond making the CRADA work. They agreed among themselves not to do any work on the CRADA until there was a signed partnership agreement. There were just too many trust/distrust issues to risk NOT putting things in writing.

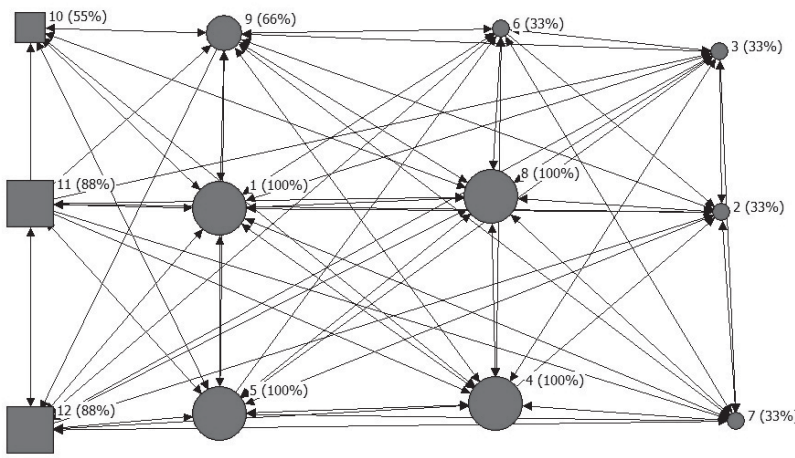

Figure 2 Trust at Time 1

Node Size indicates % of high trust scores from unembedded others. % is listed in parentheses following the node label.

Lines indicate high trust scores from all others.

Squares indicate representatives of the unembedded firm; circles indicate embedded representatives.

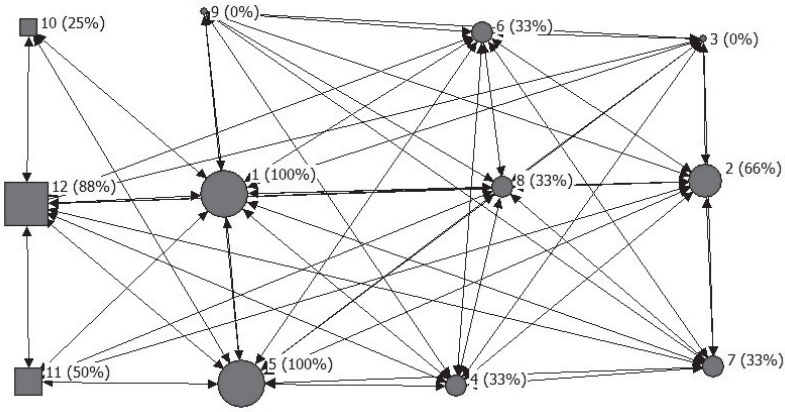

Figure 3 Trust at Time 2

Node Size indicates % of high trust scores from unembedded others. % is listed in parentheses following the node label.

Lines indicate high trust scores from all others.

Squares indicate representatives of the unembedded firm; circles indicate embedded representatives.

They didn't trust that representatives of Platform would keep their commitments. It was hard to schedule meetings with Platform, and Platform frequently cancelled at the last minute. The southern partners felt that Platform wanted them to make all the concessions and did not show them respect. What began as skepticism but resignation to working with Platform developed into significant resistance to Platform and distrust of both its intentions and its ability and willingness to deliver on commitments. The other participants also saw Platform as bringing a purely instrumental attitude toward the alliance, with no intention of building a true partnership. One other possible contributor to the trust decrement was that early in the CRADA negotiation Software was owned by a larger organization that produces a product that competed with the primary product of Platform. Software was later spun-off from this organization five months into the negotiations. Software subsequently was acquired by Platform 13 months after the conclusion of CRADA negotiations.

Some specific incidents were reported as examples of Platform's lack of trustworthiness. In one, Software had submitted a bid on a contract related to the software to be transferred in the CRADA with the other three private partners as subcontractors. Platform 'sort of, removed themselves by not sending us any corporate information on pricing or pricing for [Platform]

that we could include in our proposal'. At the same time, Platform submitted a competing bid on the same contract listing Software as a subcontractor, without any consultation with Software. 'I [CEO of Software] had to write a letter stating that no other firm proposing for this project had [Software's] permission to be used as a subcontractor' (direct quotes from email from Software CEO to the researchers). Another example occurred a few days before the CRADA signing. The government stated that it would not sign the CRADA until the private partners had a separate partnership agreement that detailed how they would work together. Platform had volunteered to take the lead in writing a draft, but failed to do so, so Software took over. Platform 'did not like any of the drafts that were circulated', and suggested instead that a letter of intent be signed in place of a partnership agreement. The other private partners objected to the letter of intent. At that point the Vice President/General Counsel of Platform phoned the CEOs of each of the other partner firms and accused each, in a 'rude and mean-spirited fashion', of blocking the letter of intent. Then Platform contacted the government and lobbied them to accept the letter of intent. The result was that the government then called the other three private partners and told them to go ahead with the letter of intent.

In traditional choice alliances, such negative experiences might well lead to decisions to discontinue negotiations. The cupid situation, however, creates other demands. In the end, after 18 months of tense negotiations, the parties signed a CRADA agreement with great fanfare at a ceremony in the nation's capital (with only a letter of intent, not a partnership agreement).

Discussion

This study sought to explore the development of embedded and unembedded alliance relationships in the presence of an external cupid organization. In an effort to understand such developments, we used a unique case that allowed the comparison between embedded and unembedded relationships in the context of the same multi-party alliance. We examined how trust differed between these organizations at the outset, as well as how those trust levels changed as the relationship negotiations progressed.

The trust changes displayed in this case study are particularly interesting in light of the fact that this CRADA was successful in reaching a negotiated agreement. This case has, however, reaffirmed several aspects of existing literature. First, as Granovetter (1985), Gulati (1998) and Uzzi (1996, 1997) all suggest, higher levels of trust exist between those representatives of organizations that have a history of past experience with each

other. Second, as was seen in this particular case, when trust was not present, representatives of the organizations sought to erect weak form trust in the form of contracts or governance to bridge the gap, as suggested by Barney and Hansen (1994) and Davis et al. (1997). In this way, the relationship between trust and governance is confirmed. Third, Uzzi's (1997) explanation that organizations partner with new, untested, and potentially less trusted organizations in an effort to access new information is supplemented with an additional rationale, that organizations may also form relationships with new partners as a result of resource dependent relationships. Fourth, this study identified a constrained choice model which can occur in the presence of resource dependent cupid alliances. The traditional model outlined in current theory articulates three decisions an organization must make: whether to ally, with whom to partner, and what governance to employ. The cupid alliance elaborated here suggests a revision to existing theory in that these three decisions may not always be progressive or independent of one another. These decisions can be preempted by external conditions influencing their sequence, interdependence and intentionality.

In addition, whereas current theory outlines several types of motivations, such as learning (Khanna et al., 1998; Kogut, 1988), risk reduction (Williamson, 1975) and access to resources or new markets (Hagedoorn, 1993), each of these benefits come from inside the relationship. The cupid model presents a situation where the benefits to be gained from the relationship lie outside the relationship. As was seen in the cupid case, due to the location of the benefits, trust in all alliance partners and even in the governance created was less important than satisfying the cupid. Research by Barney and Hansen (1994), Davis et al. (1997), Gulati (1995a), and others does recognize at least a two-way interaction between trust and structure or trust and governance; however, this three-way interaction dynamic is missing in current literature and implies more complex relationships among trust, motivations and governance. Specifically, this case demonstrates that motivation or benefits may override an organization's need for a trusted partner or strong governance. In this way, taking a calculated risk to sign an agreement and rely on the protections of the negotiated contract may be less risky than facing the repercussions from declining a cupid's proposal. The belief that this CRADA was a one-time learning relationship with no foreseen obligations for future ties also may have influenced the final decision to formalize an agreement. Future research should address how the likelihood of future interactions influences the development of trust in cupid alliances.

Future research might also consider the role of structural embeddedness in a cupid situation. The AllSoft partners were not all structurally

embedded except in relation to the cupid. There are likely to be other cupid situations where structurally embedded targets can gain knowledge about potential partners from their network and perhaps even influence the behavior of the cupid. As long as the cupid has the power to mandate a particular set of relationships, however, the question remains as to the extent to which structural embeddedness can bring the kinds of benefits that have been found in traditional choice alliances.

Finally, this article asserts that the presence of a tertius who seeks to benefit from others can alter the dynamics of alliance negotiations. The power for this tertius comes through the resource dependence it creates in the target organizations, and thus, may have some application in all asymmetric relationships. Because information about behavior and expectations for whether a potential partner will behave in a trustworthy manner are central to all alliance relationships, future work should consider how power inequalities influence development of trust in alliance relationships. This variable, for instance, may provide explanations for some of the disparate findings regarding the level of trust and the details or provisions included in contract relationships. It is also possible that such power inequalities may substantively alter the dynamics for generalized exchange as suggested by Das and Teng (2002).

Conclusion

The constrained-choice model of cupid alliances highlights the need for attention to the source and nature of rewards, both private and common, associated with alliance building. We have argued that the cupid alliance differs from the traditional choice model in that it reduces the series of three decisions into one highly limited choice. In this situation, governance becomes the primary means through which the target organizations could place boundaries on the potential for opportunism associated with entering into the cupid alliance. Governance mechanisms targeted toward reducing the risk associated with the cupid alliance may be complex and costly due to the inability to reduce uncertainty through partner selection. A careful balance must be secured so that the costs of governance do not exceed the exogenous benefits to be earned from the cupid. The negotiation of governance in these conditions is further complicated when lack of history means that trust must be negotiated concurrently with the governance provisions. Trust development, however, is complicated by the fact that benefits are individual rather than joint and exogenous to the partnership: each partner benefits primarily from cupid and not from each other.

It is possible that this type of relationship also creates totally new dynamics in unbalanced multi-party alliances among both those organizations that are experienced partners as well as those with no experience. Additional examination of behaviors between experienced partners and comparison to behaviors between new partners should be addressed in multi-party cupid alliance studies. Populations conducive to such study include firms who rely almost exclusively on government contracts for survival, such as the aerospace industry, or firms seeking venture capital funds, non-profits that rely on similar sources of financial capital, and buyers or suppliers who wish to influence the level of consolidation in an industry. Exploration of these ideas will provide researchers and practitioners with more informed expectations for the development of trust in alliance relationships and the importance of incentives in shaping firm behavior. It will also facilitate an enhanced understanding of the role that contracts and negotiation can play in providing firms with the confidence necessary to assume calculated risk.

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Note

1 QAP (Quadratic Assignment Procedure) calculates whether the similarity between two observed square matrices is greater than an association observed by chance alone (Krackhardt & Porter, 1986). Using UCINET VI (Borgatti et al., 2002) the QAP is computed in two stages. In the first stage the Pearson's correlation is computed between each of the corresponding cells in each of the two matrices. Following the Pearson calculation, the rows and columns are randomly and synchronously permuted in one matrix and the correlation is recomputed (Borgatti et al., 2002). The permutation process is iterated hundreds or thousands of times. This process produces a measure of the proportion of times that the random correlation is greater than or equal to the observed correlation. Thus, a high proportion indicates that the relationship between the matrices is unlikely to have occurred by chance alone (Borgatti et al., 2002). This method is appropriate for analysis of network data in that it takes into account the interdependence between the actors and does not make parametric assumptions about the data (Krackhardt & Porter, 1986).

References

Abramson, H.N., Encarnacao, J., Reid, P. & Schmoch, U. *Technology transfer in the United States and Germany: Lessons and perspectives*. Washington, DC: National Academy Press, 1997.

Ahuja, G. The duality of collaboration: Inducements and opportunities in the formation of interfirm linkages. *Strategic Management Journal*, 2000, *21*, 317–43.

Aldrich, H. & Ruef, M. *Organizations evolving*, 2nd edn. Thousand Oaks, CA: SAGE, 2006.

Arrow, K.J. *Aspects of the theory of risk bearing*. Helsinki: Yrjo Jahnssonis Saatio, 1965.

Barney, J. Firm resources and sustained competitive advantage. *Journal of Management*, 1991, *17*, 99–120.

Barney, J.B. & Hansen, M.H. Trustworthiness as a source of competitive advantage. *Strategic Management Journal*, 1994, *15*, 175–90.

Berman, E.M. Technology transfer and the federal laboratories: A midterm assessment of cooperative research. *Policy Studies Journal*, 1994, *22*, 338–48.

Borgatti, S.P., Everett, M.G. & Freeman, L.C. *UCINET for Windows: Software for social network analysis*. Harvard, MA: Analytic Technologies, 2002.

Breiger, R.L. The duality of persons and groups. *Social Forces*, 1974, *53*, 181–90.

Burt, R.S. *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press, 1992.

Castells, M. *The rise of the network society*, 2nd edn. Oxford: Blackwell, 2000.

Chung, S., Singh, H. & Lee, K. Complementarity, status similarity, and social capital as drivers of alliance formation. *Strategic Management Journal*, 2000, *21*, 1–22.

Comet, C., Lazega, E. & Selz, M. R&D partnerships as social exchange. Paper presented at the meeting of the International Network on Social Network Analysis, Tampa, FL, 2008.

Creswell, J.W. *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE, 1998.

Currall, S.C. & Inkpen, A.C. A multilevel approach to trust in joint ventures. *Journal of International Business Studies*, 2002, *33*, 479–95.

Das, T.K. & Teng, B.S. Risk types and inter-firm alliance structures. *Journal of Management Studies*, 1996, *33*, 827–43.

Das, T.K. & Teng, B.S. Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review*, 1998a, *23*, 491–512.

Das, T.K. & Teng, B.S. Resource and risk management in the strategic alliance making process. *Journal of Management*, 1998b, *24*, 21–42.

Das, T.K. & Teng, B.S. Managing risk in strategic alliances. *Academy of Management Executive*, 1999, *18*, 50–62.

Das, T.K. & Teng, B.S. A resource-based theory of strategic alliances. *Journal of Management*, 2000, *26*, 31–61.

Das, T.K. & Teng, B.S. Relational risk and its personal correlates in strategic alliances. *Journal of Business and Psychology*, 2001, *15*, 449–65.

Das, T.K. & Teng, B.S. Alliance constellations: A social exchange perspective. *Academy of Management Review*, 2002, *27*, 445–56.

Davis, J.H., Schoorman, F.D. & Donaldson, L. Toward a stewardship theory of management. *Academy of Management Review*, 1997, *22*, 20–47.

Eisenberg, E.M., Farace, R.V., Monge, P.R., Bettinghaus, E.P., Kurchner-Hawkins, R., Miller, K. & Rothman, L. Communication linkages in interorganizational systems. In B. Dervin & M. Voight (Eds), *Progress in communication sciences*, Vol. 6. Norwood, NJ: Ablex, 1985, pp. 210–66.

Emerson, R.M., Fretz, R.I. & Shaw, L.L. *Writing ethnographic fieldnotes*. Chicago, IL: University of Chicago Press, 1995.

Faerman, S.R., McCaffrey, D.P. & van Slyke, D.M. Understanding interorganizational cooperation: Public–private collaboration in regulating financial market innovation. *Organization Science*, 2001, *12*, 372–88.

Garcia-Pont, C. & Nohria, N. Local versus global mimetism: The dynamics of alliance formation in the automobile industry. *Strategic Management Journal*, 2002, *23*, 307–21.

Gardini, F. Strategic alliances and networks of financial relationships in Hollywood. Unpublished manuscript, Annenberg School for Communication, University of Southern California, 2004.

Geringer, J.M. *Joint venture partner selection: Strategies for developed countries*. New York: Quarum Books, 1988.

Gomes-Casseres, B. *The alliance revolution: The new shape of business rivalry*. Cambridge, MA: Harvard University Press, 1996.

Granovetter, M. Economic action and social structure: The problem of embeddedness. *The American Journal of Sociology*, 1985, *91*, 481–510.

Gulati, R. Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *The Academy of Management Journal*, 1995a, *38*, 85–112.

Gulati, R. Social structure and alliance formation patterns: A longitudinal analysis. *Administrative Science Quarterly*, 1995b, *40*, 619–52.

Gulati, R. Alliances and networks. *Strategic Management Journal*, 1998, *19*, 293–317.

Gulati, R., Nohria, N. & Zaheer, A. Strategic networks. *Strategic Management Journal*, 2000, *21*, 203–15.

Hagedoorn, J. Understanding the rationale of strategic technology partnering: Interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal*, 1993, *14*, 371–85.

Hall, R.H., Clark, J.P., Giordano, P.C., Johnson, P.V. & Van Rockel, M. Patterns of interorganizational relationships. *Administrative Science Quarterly*, 1977, *22*, 457–74.

Hocevar, S.P., Thomas, G.F. & Jansen, E. Building collaborative capacity: An innovative strategy for homeland security preparedness. *Innovation Through Collaboration: Advances in Interdisciplinary Studies of Work Teams*, 2006, *12*, 255–74.

Holland, K. The children's defense fund and the 100% campaign. Unpublished paper, Annenberg School for Communication, University of Southern California, 2007.

Joskow, P.L. Contract duration and relationship specific investments: Empirical evidence from coal markets. *American Economic Review*, 1987, *77*, 168–85.

Kalnins, A. & Mayer, K.J. Relationships and hybrid contracts: An analysis of contract choice in information technology. *Journal of Law, Economics and Organization*, 2004, *20*, 207–29.

Kanter, R.M. Collaborative advantage: The art of alliances. *Harvard Business Review*, 1994, *72*, 96–109.

Kanter, R., Applbaum, K. & Yatsko, P. *FCB and Publicis (A): Forming the alliance*. Cambridge, MA: Harvard Business School Press, 1993.

Khanna, T., Gulati, R. & Nohria, N. The dynamics of learning alliances: Competition, cooperation and relative scope. *Strategic Management Journal*, 1998, *19*, 193–210.

Kogut, B. Joint ventures: Theoretical and empirical perspectives. *Strategic Management Journal*, 1988, *9*, 319–32.

Krackhardt, D. & Porter, L.W. The snowball effect: Turnover embedded in communication networks. *Journal of Applied Psychology*, 1986, *71*, 50–5.

Kramer, R. & Tyler, R. *Trust in organizations: Frontiers of theory and research*. Newbury Park, CA: SAGE, 1995.

Kvale, S. The qualitative research interview: A phenomenological and hermeneutical mode of understanding. *Journal of Phenomenological Psychology*, 1983, *17*, 171–96.

Li, S.X. & Berta, W.B. The ties that bind: Strategic actions and status structure in the US investment banking industry. *Organization Studies*, 2002, *23*, 339–68.

Luhmann, N. *Trust and power.* Chichester: Wiley, 1979.
Madhavan, R., Koka, B. & Prescott, J. Networks in transition: How industry events (re)shape interfirm relationships. *Strategic Management Journal*, 1998, *19*, 439–59.
Mayer, K.J. & Argyres, N. Learning to contract: Evidence from the personal computer industry. *Organization Science*, 2004, *15*, 394–410.
Mayer, R.C., Davis, J.H. & Schoorman, D. An integrative model of organizational trust. *Academy of Management Journal*, 1995, *20*, 709–34.
McAllister, D.J. Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 1995, *38*, 24–59.
McCracken, G. *The long interview.* Newbury Park, CA: SAGE, 1988.
McEvily, B., Perrone, V. & Zaheer, A. Trust as an organizing principle. *Organization Science*, 2003, *14*, 91–103.
Miller, K. A framework for integrated risk management in international business. *Journal of International Business Studies*, 1992, *23*, 311–31.
Miller, K.D. & Leiblein, M.J. Corporate risk-return relations: Returns variability versus downside risk. *Academy of Management Journal*, 1996, *39*, 91–122.
Miller, K. & Reuer, J.J. Measuring organizational downside risk. *Strategic Management Journal*, 1996, *17*, 671–91.
Monge, P.R. & Contractor, N. *Theories of communication networks*. New York: Oxford University Press, 2003.
Nadel, S.F. *The theory of social structure*. London: Cohen & West, 1957.
Oliver, C. Determinants of interorganizational relationships: Integration and future directions. *Academy of Management Review*, 1990, *15*, 241–65.
Osborn, R.N. & Hagedoorn, J. The institutionalization and evolutionary dynamics of interorganizational alliances and networks. *Academy of Management Journal*, 1997, *40*, 261–78.
Perrone, V., Zaheer, A. & McEvily, B. Free to be trusted? Organizational constraints on trust in boundary spanners. *Organization Science*, 2003, *14*, 422–39.
Pfeffer, J. & Salancik, R. *The external control of organizations: A resource dependence perspective*. New York: Harper Row, 1978.
Podolny, J.M. Market uncertainty and the social character of economic exchange. *Administrative Science Quarterly*, 1994, *39*, 458–83.
Poppo, L. & Zenger, T. Do formal contracts and relational governance function as substitutes or complements? *Strategic Management Journal*, 2002, *23*, 707–25.
Provan, K.G. & Skinner, S.J. Interorganizational dependence and control as predictors of opportunism in dealer–supplier relations. *Academy of Management Journal*, 1989, *32*, 202–12.
Provan, K.G., Fish, A. & Sydow, J. Interorganizational networks at the network level: A review of the empirical literature on whole networks. *Journal of Management*, 2007, *33*, 479–516.
Reuer, J.J. & Leiblein, M.J. Downside risk implications of mutinationality and international joint ventures. *Academy of Management Journal*, 2000, *43*, 203–14.
Ring, P.S. & Van de Ven, A.H. Developmental processes of cooperative interorganizational relationships. *Academy of Management Journal*, 1994, *19*, 90–118.
Simmel, G. *The sociology of Georg Simmel*, trans. K.H. Wolff. New York: Free Press, 1923/1950.
Sydow, J. & Windeler, A. Organizing and evaluating interfirm networks: A structurationist perspective on network processes and network effectiveness. *Organization Science*, 1998, *9*, 265–84.
Sydow, J., van Well, B. & Windeler, A. Networked networks: Financial services networks in the context of their industry. *International Studies of Management & Organization*, 1998, *27*, 47–75.

Teece, D.J. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 1986, *15*, 285–305.
Uzzi, B. The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review*, 1996, *61*, 674–98.
Uzzi, B. Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Sciences Quarterly*, 1997, *42*, 35–67.
Van de Ven, A.H. On the nature, formation, and maintenance of relations among organizations. *The Academy of Management Review*, 1976, *1*, 24–36.
Van de Ven, A.H. & Walker, G. The dynamics of interorganizational coordination. *Administrative Science Quarterly*, 1984, *29*, 598–621.
Weiss, R.S. *Learning from strangers: The art and method of qualitative interview studies*. New York: Free Press, 1994.
Williamson, O. *From markets to hierarchies: Analysis and antitrust implications, a study of the economics of internal organization*. New York: Free Press, 1975.
Williamson, O.E. *Economic institutions of capitalism*. New York: The Free Press, 1985.
Zaheer, A. & Venkatraman, N. Relational governance as an interorganizational strategy: An empirical test of the role in economic exchange. *Strategic Management Journal*, 1995, *16*, 373–92.
Zaheer, A., McEvily, B. & Perrone, V. Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 1998, *9*, 141–59.
Zajac, E.J. & Olsen, C.P. From transaction cost to transactional value analysis: Implications for the study of interorganizational strategies. *Journal of Management Studies*, 1993, *30*, 131–45.
Zucker, L.G. Production of trust: Institutional sources of economic structure. In B.M. Staw & L.L. Cummings (Eds), *Research in organizational behavior*, vol. 8. Greenwich, CT: JAI Press, 1986, pp. 53–112.

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