

DISENTANGLING THE INFLUENCES OF LEADERS' RELATIONAL EMBEDDEDNESS ON INTERORGANIZATIONAL EXCHANGE

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Drawing on the concept of relational embeddedness and the associated mechanisms of mutual understanding, trust, and commitment, we examine how leaders' prior exchange experiences influence the likelihood of subsequent interorganizational exchange. We begin to develop a microlevel model of organization-level relations that accounts for nodal multiplexity. In data on baseball player trades, we found that individual leaders' ties affected exchanges less than did an organization's other ties. The sharing of exchange experiences by organizations and their current leaders increased the influences of those experiences on exchange behavior. Thus, leaders have more influence within their organizational contexts than in isolation.

Organizations commonly undertake exchanges with other organizations to gain access to needed resources. In doing so, they often face multiple options in deciding which organizations to engage and which to avoid. Traditionally, research on economic exchange has highlighted the defining role of incentives and complementarities within an idealized, atomistic market (Aiken & Hage, 1968; North, 1990). Although this perspective has been adapted to account for market imperfections, such as “bounded rationality” and “small numbers bargaining,” it does not adequately explain the relational prerequisites of exchange, such as mutual awareness and trust.

To help account for the role of relational mechanisms in shaping exchange behavior, researchers have increasingly focused on social embeddedness (Adler & Kwon, 2002; Inkpen & Tsang, 2005; Powell, 1990; Uzzi, 1996, 1997). Social embeddedness refers to the influences that prior relations among actors have on their subsequent economic behavior. By facilitating the spread of social information that promotes mutual understanding, trust, and commitment, prior relations determine the relative impacts of different actors and, in turn, shape economic behavior (Granovetter, 1985). Thus, to the extent that prior relations facilitate access to re-

sources, social embeddedness is the fundamental mechanism underlying social capital.

Social embeddedness includes both relational and structural components (Granovetter, 1992). Relational embeddedness refers to the influences of the content of direct, dyadic relations. Structural embeddedness refers to the influences of the overall pattern of direct and indirect relations in a set of actors. Because the influence of structural embeddedness is contingent upon the content of dyadic relations (Podolny & Baron, 1997; Rowley, Behrens, & Krackhardt, 2000), relational embeddedness is an important starting point for understanding the influences of network structures on economic behavior. However, research on the role of relational content remains underdeveloped (Burt, 1997). Thus, this study focuses on relational embeddedness, while controlling for key aspects of structural embeddedness.

Theoretical development and testing of the concept of relational embeddedness initially were utilized to examine relations among individuals, but more recent research shows that relational embeddedness predicts several forms of interorganizational exchange, including strategic alliances (Gulati, 1995), buyer-supplier relations (Uzzi, 1997), and government relations (Hitt, Bierman, Uhlenbruck, & Shimizu, 2006). However, translating ideas concerning relational embeddedness from the individual to the organization level can lead to misspecification, owing to the “nodal multiplexity” of organizational ties. The problem stems from the fact that interorganizational relationships are

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inherently multilevel (Brass, 2001; Klein, Palmer, & Conn, 2001). Relationships among organizations and the subgroups that compose them originate with individuals. Thus, whereas conventional multiplexity refers to variation in the content of ties (e.g., friendship versus business ties) (Granovetter, 1973), nodal multiplexity refers to variation in relational experiences within pluralistic actors (e.g., teams, organizations, collectivities).

Nodal multiplexity is relevant when assessing how individuals' and organizations' prior exchange experiences influence their subsequent interorganizational exchange behavior. Individual members of the same organization often do not share identical sets of exchange experiences, because of employment turnover and variation in exchange decision processes. Hence, it is not always clear whose experiences shape an organization's behavior. Moreover, it is also not clear whether exchange experiences that members of an organization shared have the same effects as prior exchanges that organization members experienced separately.

This theoretical problem manifests itself in the research on how relational embeddedness affects interorganizational exchange. Researchers have either constrained analyses to the interorganizational level without considering the roles of interpersonal ties (e.g., Gulati, 1995) or relied heavily on data provided by organizational leaders in a context in which individual-level and organization-level influences cannot easily be disentangled (e.g., Uzzi, 1997). In the first case, researchers risk overattributing interorganizational exchange behavior to organizations' embeddedness when, in fact, individual ties could be the determinants. Indeed, to the extent that influential individuals change their organizational allegiances over time, it is possible that individual-level ties formed before the existence of an interorganizational relationship lead to new interorganizational exchange relations. In the second case, the influences of leaders' exchange experiences could be overemphasized when, in fact, the experiences of other members and parts of organizations are more influential. Moreover, neither of these approaches entertains the possibility that the sharing of an exchange experience by organization members could have influence above and beyond the influences of distinct, parallel ties that an organization and a leader have with the same exchange partner.

Each of these approaches embodies a distinct rationale. The rationale for explaining interorganizational exchange behavior on the basis of leaders' experiences is that leaders have the authority needed to inject their views into organizations' decisions (Brass, Galaskiewicz, Greve, & Tsai, 2004).

By contrast, other researchers suggest that leaders' exchange experiences might have only limited influence on organizations' relational behavior. Other boundary-spanning members of an organization, such as buying agents and sales personnel, possess relevant interorganizational experience that may influence organizations' decisions (Burt, 1999). Beliefs about the interorganizational exchange environment may also become embedded in organization-level repositories such as routines, cultures, and protocols (Fiol & Lyles, 1985). Such beliefs often become institutionalized before the tenures of current leaders or lie beyond the control of even long-tenured leaders. Thus, a more comprehensive model of relational embeddedness and interorganizational exchange must accommodate multiple explanations.

Given this theoretical imperative, we tested a model that assesses both the influences of leaders' individual-level experiences and those of the aggregate of other prior organizational experiences. Moreover, our approach went beyond simply isolating the direct effects of leader-to-leader ties on subsequent interorganizational exchange behavior from the effects of organization-to-organization ties. It included examination of the influences of leader-to-organization ties, which could reinforce or substitute for organization-to-organization or leader-to-leader ties. In addition, the model isolated the influences of shared and unshared exchange experiences among organizations and their leaders. We examined 1,657 player trades among 30 clubs in Major League Baseball (6,771 club dyads), using data from 1978 to 2003.

CONCEPTUAL BACKGROUND

Embeddedness and Interorganizational Exchange

Interorganizational exchange is a means by which firms respond to dynamic and unpredictable business environments (Eisenhardt & Martin, 2000). Researchers have used several labels to describe organizations that rely on exchange relationships, such as "network organizations" (Jones, Hesterly, & Borgatti, 1997; Miles & Snow, 1986, 1992), "virtual organizations" (Chesbrough & Teece, 1996), and "modular organizations" (Lei, Hitt, & Goldhar, 1996; Sanchez & Mahoney, 1996; Schilling & Steensma, 2001). Interorganizational exchange has multiple forms that vary by temporal duration, recurrence, and governance structure (Ring & Van de Ven, 1992). Examples of interorganizational exchange include business acquisitions, buyer-supplier relations, and alliances. This study focuses on repeated, arm's-length exchange

relations among horizontally related industry actors. Examples of this kind of interorganizational exchange include initial public offering syndications, horizontal acquisitions and divestitures, patent and product licensing arrangements among competitors, standard-setting alliances, and shared production arrangements, in addition to the player trades among sports clubs that this study examines.

The common element among forms of interorganizational exchange is the bilateral transfer of resources triggered by mutual decision of the exchange partners (Cook & Emerson, 1978; Jones et al., 1997; Ring & Van de Ven, 1994). Actors in exchange processes serve in dual roles, as both the makers of the exchange decisions and referents of others' decisions. This implies that embeddedness includes decisional and relational components. Indeed, the mechanisms of embeddedness—knowledge, trust, and commitment—facilitate both an actor's exchange decisions and others' decisions to exchange with the actor.

Early explanations of exchange highlighted the roles of complementarity (Thibaut & Kelley, 1959; Levine & White, 1961; Pfeffer & Salancik, 1978; Schermerhorn, 1975) and calculative judgments about the utility of a proposed exchange (Cook & Emerson, 1978; North, 1990). However, economic calculations are not the sole determinant of exchange. Many dyads of actors with complementary resources do not exchange those resources. Still other dyads exchange resources even when actors know that superior economic deals exist elsewhere in the market. In such cases, the structure and content of prior relations that define embeddedness often play important roles in influencing subsequent exchange relations by spreading market knowledge, reducing risks associated with opportunism, and increasing the noneconomic rewards of exchange (Gulati, 1995; Powell, 1990; Uzzi, 1996, 1997). In practice, virtually all relations possess both economic and social elements (Adler, 2001; Cook & Emerson, 1978), making this study applicable to many forms of exchange.

Relational information acquired through prior exchange experiences promotes subsequent interorganizational exchange in two basic ways. First, exchange ties support the economic basis of exchange by facilitating calculative judgments. Actors' prior exchange experiences establish mutual awareness of each other's resource portfolios. Because the search for exchange opportunities is costly (Geertz, 1978), a model of exchange must account for what market actors know and how they learn about each other (Stigler, 1968). Prior exchange partners represent current options for future social and economic resources (McGrath, Ferrier, & Mendelow,

2004). Prior exchanges provide information about others' incentives to behave reliably and can help deter opportunism (Gulati, 1995). Prior exchanges also allow partners to develop relationship-specific exchange routines and structures (Amburgey & Miner, 1992) that reduce the transaction costs of subsequent negotiation and resource transfer.

Second, exchange ties enhance the social attractiveness of potential partners by building trust and commitment. Even when repeated exchanges between partners are unlikely to continue indefinitely, partners can build trust by developing reciprocity (Blau, 1964), shared norms of efficiency and fairness (Ring & Van de Ven, 1994), and other dispositional similarities (McPherson, Smith-Lovin, & Cook, 2001). Prior exchange relations also generate social outcomes such as friendship that have value beyond economic calculations (Lawler & Yoon, 1998). Moreover, actors may have interests in supporting other actors with similar values or political views (McPherson et al., 2001).

Exchange Ties at the Leader and Organizational Levels of Analysis

Social influences shape both interpersonal (Blau, 1964; Emerson, 1967; Homans, 1974; Thibaut & Kelley, 1959) and interorganizational (Burt, 1976; Coleman, 1973; Cook, 1975; Van de Ven, 1976) exchange behavior. The social determinants of interpersonal and interorganizational exchange share many characteristics (Emerson, 1976). The similarities show that interorganizational researchers have borrowed from social theories of interpersonal relations (Klein, Palmer, & Conn, 2001). Indeed, many studies have extended social structural models of exchange to interorganizational settings (e.g., Ahuja, 2000; Baker, 1990; Gulati, 1995; Gulati & Westphal, 1999; Kogut, Shan, & Walker, 1992; Uzzi, 1997).

Nonetheless, differences arise between exchanges at the interpersonal and interorganizational levels, owing to the nodal multiplexity of organization ties. Whereas interpersonal exchange involves atomistic mutual decisions, the multilevel nature of organizations makes interorganizational exchange more complex (Klein et al., 2001). Interactions among microlevel elements can have distinct influences on interorganizational exchange decisions. Typically, microlevel elements are individual organization members, but they can also be repositories of organizational schemata such as documentation and routines. Each of these micro elements is shaped by a distinct set of social experiences, and each mediates the influence of social context on organization-level behavior. The

theoretical challenge is determining which microlevel social experiences guide organization-level behavior (Adler & Kwon, 2002; Brass, 2001; Oh, Labianca, & Chung, 2005). How one understands whose exchange ties, or what combinations of ties, shape interorganizational exchange remains an open question.

In helping answer this question, social structural models offer tools for linking micro- and macrolevel structures (Granovetter, 1973). Indeed, some empirical research links microlevel ties to interorganizational exchange. For example, Gulati and Westphal (1999) examined how corporate board interlocks influence alliance formation. Such research focuses on causal links between qualitatively different types of exchange, however, and does not disentangle hierarchically nested exchange experiences (e.g., organizations' and leaders' experiences).

Most existing empirical research that links embeddedness to subsequent interorganizational exchange constrains analyses to a single level, by focusing on the influences of organizations' ties. As we have shown, this approach risks theoretical misspecification and misleading empirical conclusions because individuals and organizations exchange ties overlap. If organization members spend their entire careers with a single organization, the issue is less important because the individuals' and organizations' experiences overlap. However, in dynamic labor markets in which individuals tend to change their organizational allegiances, the seeds of an interorganizational exchange relationship can arise from individual-level ties that existed before the interorganizational relationship. Studies that constrain analyses to the organizational level without simultaneously testing the influences of individuals' exchange ties risk producing results that overstate the influences of organization-level relationships.

The complexity of organizations requires a step-by-step approach to a multilevel empirical study of interorganizational exchange (Emerson, 1976; Klein et al., 2001). This study takes the first step toward the development of a microlevel model of interorganizational exchange by focusing on isolating the influences of leaders' ties from the influences of other ties within an organization. Leaders' ties represent a valuable theoretical starting point because leaders' instrumental and symbolic roles in organizations suggest that their social experiences are likely to be highly influential (Brass et al., 2004).

In this study, *organization ties* refers to the collective exchange experiences of all structures and individuals that define an organization, excluding

the experiences of its senior leaders. Thus, the predictions and results of this study related to organization ties should be interpreted with care, because organization ties are more complex than a simple leader-organization dichotomy implies. However, this bilevel approach offers a conceptually meaningful and empirically tractable starting point for a multilevel theory.

This seemingly simple dichotomy leads to six combinations of ties that can influence interorganizational exchange behavior. These combinations include prior exchange ties between two organizations (organization-organization, henceforth denoted as "OO"), prior ties between leaders (leader-leader, "LL"), and prior exchange ties between an organization and the leader of the other organization (organization-leader, "OL"). Because organizations and their current leaders often share exchange experiences, three additional types of ties can exist at any time within a given dyad. Such shared ties include exchange ties shared by both organizations and both current leaders (organization-organization-leader-leader, "OOLL"), ties shared by both organizations and only one current leader (organization-organization-leader, "OOL"), and ties shared by only one organization but both current leaders (organization-leader-leader, "OLL"). Table 1a lists examples of these six types of ties.

Each of these types of ties affects the level at which prior relations influence subsequent interorganizational exchange. If social influences operate primarily at the interpersonal level between leaders, then exchanges in which both leaders were present (LL, OLL, OOLL) will affect subsequent exchange. If social influences operate at other organizational levels, then previous exchanges involving both organizations will affect exchange (OO, OOL, OOLL). If social influences operate across leaders and other organizational elements, then exchanges involving both an organization and the leader of the other organization (OL, OOL, OLL, OOLL) will affect future exchange. Furthermore, shared exchange experiences of organizations and their leaders may reinforce each other, leading to synergistic influence going beyond the effects of individual- or organization-level ties alone. The challenge is to reconcile these different kinds of ties with the mechanisms underlying social explanations of interorganizational exchange.

THEORY AND HYPOTHESES

Given the dual roles of an actor in an exchange process, the question of whose relational embeddedness is most influential has two components: First, who shapes a decision to exchange? Before an

TABLE 1a
Possible Organization and Leader Exchange Ties between Two Organizations

Tie Type	Generalized Illustration ^a	Major League Baseball Illustration for Potential Trades in 2002
OO	Prior exchanges that involved both organizations, but not their current leaders: The Star Company and Moon Inc. dealt with each other when the two organizations had different leaders.	In 1999, the Boston Red Sox traded players with the Detroit Tigers when neither Theo Epstein nor David Dombrowski was general manager of their respective 2002 team.
LL	Prior exchanges that involved both current leaders of the organizations but not the organizations themselves: Norma and Chandra dealt with each other when they led other organizations.	In 2001, the 2002 Baltimore Orioles' general manager, Jim Beattie, and the 2002 Milwaukee Brewers' general manager, Doug Melvin, traded players when they were general managers of different teams.
OL	Prior exchanges that involved one organization and the current leader of the other organization but not the focal organization's current leader and not the other organization: Star dealt with Chandra before Norma's tenure at the Star Company and when Chandra led an organization other than Moon Inc.; symmetrically, Moon Inc. dealt with Norma before Chandra's tenure at Moon and when Norma led an organization other than the Star Company.	In 1999, the 2002 Anaheim Angels' general manager, Bill Stoneman, traded players with the Seattle Mariners when Stoneman was the general manager of a different team and before the 2002 Seattle Mariners' general manager, Pat Gillick, joined the Mariners' organization.
OOL	Prior exchanges that involved both organizations and the current leader of one of those organizations but not the other current leader: The Star Company dealt with Moon Inc. while Norma led Star but Chandra did not lead Moon; symmetrically, the Star Company dealt with Moon Inc. while Chandra led Moon but Norma did not lead Star.	In 2000, the Boston Red Sox traded with the Cincinnati Reds when Jim Bowden was general manager of the Reds, but Theo Epstein was not general manager of the Red Sox.
OLL	Prior exchanges that involved the current leaders of both organizations and one of the organizations but not the other organization: Norma dealt with Chandra while Norma led the Star Company but Chandra did not lead Moon Inc.; symmetrically, Norma dealt with Chandra while Chandra led Moon Inc. but Norma did not lead the Star Company.	In 2000, the Cincinnati Reds' general manager, Jim Bowden, traded with David Dombrowski when Dombrowski was general manager of a team other than the Detroit Tigers.
OOLL	Prior exchanges that involved both organizations and their current leaders: The Star Company and Moon Inc. dealt with each other while Norma and Chandra led the organizations	In 1999, the Atlanta Braves traded with the San Diego Padres when John Schuerholz and Kevin Towers were general managers of the two teams.

^a The examples focus on two leaders and their organizations: Norma is the current leader of the Star Company; Chandra is the current leader of Moon, Inc.

interorganizational exchange decision can be made and executed, organizations' members must reconcile intraorganizational differences in understanding the resources, processes, and parties involved. It is often unclear whose beliefs and, ultimately, whose prior exchange experiences guide subsequent organization-level exchange decisions.

Second, who or what serves as the referent for others' judgments when they make exchange decisions? Actors have limited capacity to judge the values and reliabilities of all potential transactions and partners (Simon, 1955). Actors often lack complete information about potential part-

ners and their resource portfolios and/or the cognitive agility to process all information that they do have about a potential partner. As a result, actors must rely on partial information and/or simplify their cognitive judgments by using heuristics (Tversky & Kahneman, 1974). This is important because an actor's exchange ties to a potential partner can vary depend on the way that potential organizational partner has changed since prior exchange experiences. Thus, determining which ties influence subsequent interorganizational exchange requires understanding which subcomponents of a potential partner command the decision maker's attention.

Interleader Ties

Both the decisional and referential aspects of leaders' relational embeddedness influence interorganizational exchange. First, the knowledge, trust, and commitments that leaders garner from their personal exchange experiences are influential because leaders bear the ultimate responsibility for organizational decisions, including those related to interorganizational exchange. This responsibility is particularly strong in highly centralized, hierarchical organizations where, by definition, power tends to be concentrated in senior leaders (Crozier, 1964; Mintzberg, 1979). Behavioral decision making research also suggests that leaders' experiences are particularly influential because decision makers tend to limit their searches for information and alternatives to their own experience, given search costs and cognitive limits (Simon, 1955). Furthermore, decision making research suggests that when selecting among alternatives, leaders tend to be biased toward their own ideas (Beach, 1993).

Second, a leader can also shape the way others in a marketplace view the attractiveness of the leader's organization. If one views an organization as a resource delivery system for which a leader bears responsibility for effective functioning, then others must make some judgment about the reliability and value that the leader can provide. As an organization's key boundary spanner, a leader must be trusted to negotiate honestly and competently. As an architect of organizational action, a leader must be trusted to direct exchange processes competently. Even when a leader has less than complete influence over the organization's resource delivery system, judgments about the leader can be important criteria during the exchange decision. Indeed, a leader's reputation can provide a heuristic for the reliability of a referent organization in others' exchange decisions. Finally, a leader can be a direct source of value during an exchange because of the leader's knowledge, skills, legitimacy, and friendships. Thus, potential partners' exchange experiences with an organization's leader constitute important bases for subsequent exchange decisions, even if those experiences occurred when the leader was not a member of the focal organization.

We state a general proposition, followed by a hypothesis that refers to specific ties:

Proposition 1. Prior exchange ties between two organizations' leaders increase the likelihood of subsequent exchange between the two organizations.

Hypothesis 1. LL, OLL, and OOLL ties all increase the likelihood of subsequent interorganizational exchange.

Organization-Level Ties

Several elements of organizations other than their leaders can play decisional and referential roles in interorganizational exchange. First, other organization members can play boundary-spanning roles. Because leaders often do not have the capacity to gather and process comprehensive information about the marketplace, support staff such as sales and purchasing personnel frequently must formulate exchange alternatives. Such diffusion of decision-making responsibilities defines the decentralized organization (Crozier, 1964) and allows nonleaders to inject their own social-experience-based beliefs into interorganizational exchange decisions. Boundary-spanning organization members with little decision-making authority can also shape organization-level exchange decisions when leaders see value in their alternative perspectives (Burt, 1999). When a leader draws on the experiences of other boundary spanners to make interorganizational exchange decisions, the social basis of the exchange shifts from the leader's exchange experiences to those of the broader organization. In addition, other boundary-spanning organization members, such as salespeople, frequently serve as heuristics for reliability and value in others' interorganizational exchange decisions.

Second, social information can be processed within organizational cognitive structures. Organizational learning research suggests that organizations have cognitive capabilities that are distinct from the cognitive capabilities of their individual members (Fiol & Lyles, 1985). Organizations can store knowledge and beliefs in locations other than their individual members' memories. Such repositories include archives, routines, culture, and technologies (Hedberg, 1981). For example, online social networking technologies, such as Meeting-Maker™ and LinkedIn®, can facilitate interorganizational links. The interactivity of collective knowledge acquisition and usage can also influence organizations' social behavior (Thompson, Levine, & Messick, 1999). This view of organizations as distinct, interactive cognitive systems is consistent with the idea that trust operates at the interorganizational level (Zaheer, McEvily, & Perrone, 1999). When organization-level social cognition processes exist, organization-level ties will influence interorganizational exchange behavior.

Third, prior exchange experiences can determine the expected value of future potential exchange

with previous organization-level partners. Structures and routines developed during past exchange relationships (Gulati, 1995) enhance the referent value of potential organization-level partners. Past experiences not only reduce the costs of replicating exchange routines, but also build trust in an organization as a resource delivery system. The referent value of potential organization-level exchange partners also arises because organizations can take on distinct psychological meaning (Selznick, 1957). Such meaning causes others to project human qualities onto organizations and helps develop psychologically valuable relational commitment (Levinson, 1965). In sum, because the cognitive and referent elements of organizations influence interorganizational exchange processes, interorganizational exchange ties will influence patterns of subsequent interorganizational exchange.

Proposition 2. Prior exchange ties between a dyad of organizations increase the likelihood of subsequent exchange between the two organizations.

Hypothesis 2. OO, OOL, and OOLL all increase the likelihood of subsequent interorganizational exchange.

Exchange ties between a leader and an organization can also be influential. Such ties take multiple forms. Interpersonal ties can exist between a leader from one organization and nonleaders from another organization. If a nonleader is sufficiently influential, that interpersonal relationship can serve as a basis for future interorganizational exchange. Thus, the logic of interpersonal relational embeddedness is applicable.

The mechanisms of relational embeddedness can also operate over levels between an individual and an organization. Exchange ties between individuals and organizations have been discussed in the context of employment relationships (Levinson, 1965). The existence of individual-organization relations is a basic assumption underlying concepts such as organizational commitment (Mowday, Porter, & Steers, 1982) and organizational citizenship (Organ & Konovsky, 1989). Indeed, research shows that employee-leader relationships and employee-organization relationships are distinct (Wayne, Shore, & Liden, 1997).

Although some scholars have suggested that the only social links that can exist between individuals and collectivities is membership (e.g., Goffman, 1971), others have cited alternative links (Breiger, 1974). Research on interactions between patients and hospitals (Reider, 1953) and on consumer attitudes toward product suppliers (Lessig, 1973) sup-

ports the view that individual-to-organization relationships can span organizational boundaries. Indeed, concepts such as brand equity and brand loyalty imply that trust and commitment cross levels of analysis. Thus, when an influential leader uses prior experiences with another organization while making subsequent interorganizational exchange decisions, leader-to-organization ties are relevant. Alternatively, when an organization uses prior experiences with another organization's leader while making subsequent interorganizational exchange decisions, organization-to-leader ties become relevant.

Proposition 3. Prior exchange ties between an organization and the leader of another organization increase the likelihood of subsequent exchange between the two organizations.

Hypothesis 3. OL, OLL, OOL, and OOLL all increase the likelihood of subsequent interorganizational exchange.

Shared Ties

When an organization's leader and other actors share prior exchange experience, two sets of factors interact to increase the degree to which those exchange ties influence subsequent interorganizational behavior. First, for several reasons, knowledge, trust, and commitments developed through exchange experiences shared by both an organization and its leader are more likely to be available for subsequent exchange decisions. On the most basic level, this shared experience creates a richer organizational memory system that increases the likelihood that leaders and other organizational elements will recall and use the resulting relational information when weighing subsequent exchange alternatives (Walsh & Ungson, 1991). In addition, relational information garnered through prior exchange experience shared by a leader and other organizational elements is also more likely to become institutionalized within the organization's structures and culture, increasing the legitimacy of its subsequent use (Douglas, 1986). Furthermore, relational information acquired during shared exchange experiences is more likely to create salient symbols of the intraorganizational relationships that produced the exchange. For example, shared exchange experiences may affirm and streamline the subsequent interactions between leaders and the other organization members. This relational interaction inside the organization may institutionalize information and beliefs about the interorganizational environment in cultural structures, such as the organization's rules, mythology, and written

records. Thus, organizations are more likely to use relational information garnered through exchange experiences organizational leaders and other boundary-spanning elements share.

Second, external market actors are likely to be more confident in the reliability of their own judgments about a potential exchange partner when their prior exchange experiences involved both the partner organization and its current leader. A potential partner cannot comprehensively judge its partner's systemic reliability by observing the organization's subcomponents independently. Exchange experiences with an organization and its current leader provide opportunities to observe the interactions between the two. Decision makers will have greater confidence in exchange decisions when those decisions are based on prior experiences with both a potential organizational partner and its current leader.

Proposition 4. The influence of prior exchange ties on the likelihood of subsequent interorganizational exchange is stronger when leaders and other organizational elements share the prior experiences.

Because there are three types of unshared ties (OO, LL, and OL) and one type of fully shared tie (OOLL), the logic underlying Proposition 4 leads to four comparative hypotheses:

Hypothesis 4a. OLL and OOLL both have stronger positive influences than LL on the likelihood of subsequent interorganizational exchange.

Hypothesis 4b. OOL and OOLL both have stronger positive influences than OO on the likelihood of subsequent interorganizational exchange.

Hypothesis 4c. OOL, OLL, and OOLL all have stronger positive influences than OL on the likelihood of subsequent interorganizational exchange.

Hypothesis 4d. OOLL has a stronger positive influence than OLL and OOL on the likelihood of subsequent interorganizational exchange.

The hypotheses define a partially specified rank ordering of the relationships between the types of exchange ties and subsequent interorganizational exchange, while also posing empirical questions about the relative importance of organization ties and leader ties. Table 1b summarizes the ordering: 9 of the 15 pairwise comparisons have a clear order, but the other 6 are uncertain. The clearest ranked position in the table is that OOLL (fully shared organization-leader ties) will have the strongest influence. OLL (one organization and both leaders) dominates OL (one leader and one organization) and LL (both leaders but neither organization), but might not dominate OO (both organizations without current leaders) if organization ties are very influential. In parallel, OOL (one leader and both organizations) dominates OO (both organizations) and OL (one leader and one organization), but might not dominate LL (both leaders in other organizations) if leader ties are very influential. Similarly, the rank order of OOL and OLL depends on whether organization ties or leader ties have the most influence. The rank order of the three simpler combinations—OO, LL, and OL—also depends on whether organization ties or leader ties have more influence. We used this empirical ordering to help develop a more nuanced understanding of when organization experience is more important and when leader experience dominates in a decision to exchange.

METHODS

Sample, Data, and Statistical Method

We examined the determinants of Major League Baseball (MLB) player trades. Player trading is an important part of many professional sports industries. Because teams own the contractual rights to

TABLE 1b
Predicted Rank-Order Influence of Combinations of Leader-Organization Exchange Ties on Subsequent Interorganizational Exchange^a

Type of Tie	OL	OO	LL	OOL	OLL
OOLL	>>	>>	>>	>>	>>
OLL	>>	?	>>	?	
OOL	>>	>>	?		
LL	?	?			
OO	?				

^a Each cell reports the expected relationship of a type of tie to the type in the top row. Cells containing a question mark (“?”) have ambiguous relative influence.

specific players, they are able to trade these rights with other teams to adjust financial liabilities and stocks of player skills.

MLB player trades offered several advantages as a research context. The relational mechanisms of embeddedness (Uzzi, 1997)—information, trust, and commitment—arise in this setting. Prior exchanges often provide information about the values and availability of the players who are contractually bound to major league teams at any given time. Although a variety of player statistics and other facts are publicly available, the availability and usefulness of this public information are limited (Schuerholz & Guest, 2006). For example, it is more difficult to get complete information about the 4,000–5,000 minor league players who are contractually bound to major league organizations than it is to get information about major league players. Making this informational task even more challenging is the fact that the market values of these players constantly change over time owing to injuries, player development, and the spread of knowledge about players' weaknesses. Indeed, teams struggle with the challenges of player information overload (Lewis, 2003), making exchange processes important means by which teams refresh their knowledge about other teams' players.

Trust developed through prior exchanges is important because player trades involve substantial uncertainty (Schuerholz & Guest, 2006; Thrift & Shapiro, 1990). Many injuries and other problems (e.g., hairline bone fractures, bone spurs, back problems, and illegal drug use) are not obvious during standard physical exams and sometimes spur public disputes between teams. For example, the New York Yankees' general manager, Bob Watson, publicly suggested that his trust in the Milwaukee Brewers' general manager, Sal Bando, was shaken after a 1996 trade dispute involving an injured player. The Kansas City Royals' general manager, John Schuerholz, kept a San Francisco Giants batting helmet displayed in his office for three years as a reminder not to deal with the Giants organization because he believed that they knowingly traded a player with a cocaine addiction to the Royals in 1982 (Schuerholz & Guest, 2006: 239). General managers must also be trusted not to waste each others' time because the values of different potential trades are often contingent on each other (Thrift & Shapiro, 1990).

Finally, there is anecdotal evidence that commitments developed through prior trades influence exchange decisions (Schuerholz & Guest, 2006; Thrift & Shapiro, 1990). Indeed, John Schuerholz stated that he began considering trades with the Giants again after his friend and former trading partner, Al

Rosen, left the Houston Astros to become the Giants' general manager in 1985 (Schuerholz & Guest, 2006: 240).

MLB trades offered three other methodological advantages as a study setting. First, the defined boundaries of the industry allowed us to fully specify the set of potential trading partners in any given period. Defined scope was particularly valuable given the longitudinal nature of the study. In 2002, there were 30 MLB team organizations. In this study, each team organization is defined as a continuous legal entity, which is bound neither by team name nor by the franchise's host city. For example, the Seattle Pilots moved to Milwaukee in 1970, with a change of name to the Brewers. We considered the two teams to be the same organization. We treated the Seattle Mariners club, which was created in 1978 as an expansion team, as a new entity. We used the dyad-year as the base unit of analysis (e.g., there were 435 club dyads in 2002). Study years began on April 1, at the beginning of the baseball season, and ended on March 31 of the following calendar year. Because of incremental expansion in the number of club franchises over the years, not all baseball clubs included in the study existed throughout the entire period of the study, April 1, 1985, to March 31, 2003. We used 1978 as the starting point for observing prior exchange experiences. There were 6,771 dyad-years at risk of exchange.

Second, longitudinal data were available for all player trades, which helped us assess causality. Trades involved the exchange of exclusive contractual rights to players' services. Between 1985 and 2002, the number of trades per year ranged from 41 in the strike-shortened 1994 season to 123 in 2000. A total of 1,657 distinct trades between dyads of teams occurred over the 17-year period. We collected data on trades and team management from the *Sporting News Official Baseball Guide*. There were no missing trade data.

Third, baseball organizations possess well-defined repositories of knowledge and beliefs that define the mechanisms of relational embeddedness. The focus of this study was the role of a general manager as one of these repositories. "General manager" (GM) is the title usually used in baseball to identify the leader of a team's baseball operations. Although GMs often do not preside over nonbaseball functions, such as marketing and park maintenance, they are directly responsible for engineering player trades and other important baseball-related decisions (Thrift & Shapiro, 1990). Since the retirement of Minnesota Twins' owner Calvin Griffith in 1984, no team owner has held the dual role of owner and general manager. Active

team owners, such as George Steinbrenner of the New York Yankees, sometimes make suggestions about the kinds of human resources needed and assess the financial viability of potential trades, but they are not directly responsible for formulating and executing player trades. Although proactive owners sometimes shape teams' complementarities (e.g., refusals to trade certain players), owners have less direct influence on the information, trust, and commitment mechanisms of relational embeddedness that are at the heart of this study.

The leadership role of general managers in formulating and executing player trades is clear; the actual influence of a particular general manager's exchange experiences on subsequent exchange behavior is less clear. Indeed, the dichotomy of academic viewpoints about the influence of leaders on interorganizational exchanges extends into popular press coverage of baseball. With some evidence pointing to GMs as the dominant force in interorganizational exchange relations, other evidence suggests that the influence of general managers is less direct.

A number of authors have articulated the view that baseball general managers are the dominant force in teams' exchange relations (e.g., Brown & Eisenhardt, 1998; Lewis, 2003; Thrift & Shapiro, 1990). Belief in the direct influence of general managers is also evident in the high accountability to which team owners, popular press analysts, and fans hold GMs. This intense accountability contributes to frequent movement of general managers between teams. There is intense competition for successful general managers, who are often lured away by other teams. Moreover, general managers who are fired for poor team performance are often rehired by other teams. Of the people who took general manager positions during the observation period and served in that capacity for longer than one year, 40 percent were employed as general manager by more than one team. This frequent job switching had the empirical advantage of creating a divergence between the exchange ties of the organizations we studied (the baseball clubs) and the exchange ties of the individual leaders (the general managers).

In addition, the relatively small size and hierarchical nature of Major League Baseball organizations suggested that general managers and their exchange experiences should be influential for our prediction of subsequent interorganizational exchange. Decision-making authority is generally most concentrated in leaders in small, hierarchical organizations, so that the influence of leader embeddedness should be strongest in such a context (Uzzi, 1997). Therefore, Major League Baseball as a

context permits a conservative test of whether leaders are as influential as the popular press and baseball's other constituencies imply.

General managers also face constraints. Some authors have highlighted the influences that organizational support staff members, such as talent scouts and medical personnel, have in general managers' exchange decisions (Schuerholz & Guest, 2006; Shanks, 2005; Thrift & Shapiro, 1990). If such influences are strong, then general managers' ties may be less influential than those of the rest of the organization.

Thus, there are varying views of the relative roles that leaders' and aggregate organizations' social relations play in shaping interorganizational exchange behavior. Overall, Major League Baseball provided a definable context that allowed us to study processes that arise in many business and social contexts.

We used Cox regression analysis to predict the likelihood (log hazard rate) of a player trade between the members of a dyad of teams. The dependent variable was a dichotomous measure signifying whether a trade event occurred between two teams in a given year in the 17-year observation window (1 indicated a trade; 0 indicated no trade). Although a few team dyads traded more than once during a given year, dichotomization caused little information loss because less than 3 percent of the dyad-years at risk in the study experienced more than one trade (removing these cases did not substantially change the results). Moreover, dichotomization enhanced the clarity of the analyses and prevented problems created by contagion within the dependent variable (e.g., a trade in July could motivate a trade in November of the same year under observation).

The longitudinal nature of the study made the use of Cox regression particularly apt. Cox regression allows covariates to change after the last occurrence of the dependent variable (Tuma & Hannan, 1984). This variability is especially useful because complementarities tend to ebb and flow over time as a result of actors' exchange behaviors and resource portfolio redevelopments. Cox regression also accounts for the statistical information associated with "right-censored" cases, or spells of time between dyad exchange events that are cut off by the end of a study's observation window (the present study had no "left-censored" cases).

Independent Variables

Disaggregated exchange ties. The strength of ties between actors at different levels captures the social structure of interorganizational exchange.

These include interorganizational ties, interpersonal ties, and person-organization ties. Because overlap of these ties at different levels creates multicollinearity, we separated shared ties from unshared ties to isolate the effects of each level as a basis for a type of ties. The tendency of MLB general managers to move from organization to organization makes this disaggregation meaningful. The analysis modeled the probability of an exchange in a dyad of teams in a given year as a function of the orthogonal set of six leader and organization tie combinations:

$$P(\text{Exchange}) = OOLL + OOL + OLL + OO + LL + OL + e.$$

We weighted the exchange ties measures to account for both the number of players involved in previous trades and the decay of prior experience over time. First, we expected prior exchanges involving greater complexity and risk to have greater influence on the value of experience. Thus, we weighted each prior exchange by the number of players involved. Second, we weighted prior exchanges by a decay function that captured memory loss, resource portfolio changes (to teams' player rosters), changes in organizations' personnel, and other structural changes. Because rates of decay are difficult to determine a priori, we tested the explanatory values of exchange ties using one, two, three, four, five, and seven-year linearly decayed and undecayed sliding windows. We found two relevant historical decays, which reflected intriguing differences in the decay rate of organization and leader experience. A linearly decayed three-year window provided the best statistical fit for the interorganizational tie measures (OO, OOL, and OOLL), and an undecayed five-year sliding window provided the best fit for the other exchange tie measures. In sum, coefficients on the exchange tie variables can be interpreted as the degree to which a change in the decayed number of previously traded players changes the likelihood that a dyad of teams will trade players again at a given future time.

Control variables. We used several control variables and sensitivity analyses to assess the robustness of the results. This section describes variables that appear in the reported analysis. The Appendix describes other efforts to assess sources of variance.

The analyses include a dummy variable, "dyad teams in same division," indicating whether a dyad's members operated in the same division, as a control for the fact that interdivisional rivals compete against each other for playoff spots. In 1993, team owners also approved the "wild card playoff rule," which increased rivalry among teams in the

same league. Therefore, we included another dummy variable that indicated whether dyad teams were in the same league after 1992 ("same league \times wild card years").

Other sources of organizational embeddedness may also be relevant. Teams from the same league play substantially more games against each other than against teams from different leagues. This practice allows teams from the same league to gather more information about each others' players (Thrift & Shapiro, 1990). Therefore, the analyses included a dummy variable indicating whether dyad teams were from the same league for all years of the study ("dyad teams in same league"). In addition, because each member of an organization is a potential interorganizational contact point through which relational information can travel, we included the total employment of team dyads as a control variable ("dyad total employment"). This measure included all executives, scouts, and administrative personnel, but not players. The employment histories of team leaders can also shape organizational embeddedness. General managers who have been employed by other teams could possess more information about previous employers or feel trust and commitment to former employers. Thus, we included a variable, "cumulative leader employment ties," that denotes the number of general managers in a given dyad who have been employed by their potential trading partners as players or administrators (decaying employment ties did not improve the statistical fit of the model).

Other factors may influence the sense of urgency with which organizations engage in exchange relations. Research on "problemistic search" (Cyert & March, 1963) suggests that performance can influence exchange behavior. We controlled for dyad teams' average winning percentage with the variable "dyad average team performance." Because qualitative evidence suggests that new general managers tend to reshape teams, we included a variable denoting the cumulative tenures of general managers with their respective teams, "dyad total leader tenure."

Several contextual forces can influence patterns of exchange. First, because historical period effects such as economic cycles can influence the risks associated with interorganizational exchange, the analyses included dummy variables for each year from 1985 to 2001. Second, because individual teams may have distinct propensities to undertake exchanges as the result of inertia or distinct cultural characteristics, the analyses included dummy variables for each team (the Toronto Blue Jays club served as the comparison group). Because the population was small and the statistical power of the

study was substantial, this fixed-effects solution was a feasible method of controlling for the non-independence of the dyad-years.

Major League Baseball created four new teams during the study period (the Colorado Rockies and Florida Marlins in 1993; the Arizona Diamondbacks and Tampa Bay Devil Rays in 1998). The new teams faced different regulatory and economic contexts than long-standing teams; for example, expansion drafts were conducted in which expansion teams could select players from other teams. The analyses included two control variables to capture the numbers of teams in each dyad that were expansion teams in the year after the expansion drafts.

The overall network structure also might affect dyadic exchange relations. We tested the effects of several structural measures at both the interorganizational and interleader levels. The final analysis included the only measure that had a significant effect on interorganizational exchange, dyad teams' "flow betweenness." Flow betweenness indicates an actor's power within an exchange network because it measures the degree to which the actor occupies valued paths between other actors. (Freeman, Borgatti, & White, 1991). (The Appendix describes other structural measures not used in our final analysis.)

Anecdotal evidence suggests that teams are more likely to trade players who are in the final year of their contracts (Thrift & Shapiro, 1990). Once a player's contract expires, the player becomes a "free agent" and is allowed to sign a contract with any team. The prospect of losing contractual control of a player reduces a team's incentive to keep him on the roster, especially if he is highly paid and the team has little chance of making the playoffs. Therefore, we controlled for the number of players in the final year of their contracts on each team's major league roster at the beginning of a season ("dyad total free agents").

Finally, controlling for asset complementarity is essential in any study of exchange behavior (Gulati, 1995). We tested four measures of complementarity (skill differences, winning percentages, market size, and payrolls). When the regression analysis included all four measures, the only significant variable was "dyad teams' skill difference," which we therefore retained in the final analysis (the difference in dyad teams' winning percentages was significant when models omitted the skill difference measure). The Appendix describes the complementarity measures.

The skill difference variable was needed because teams with lower performance often trade experienced and more expensive veteran players to teams

with stronger performance during each season's race to qualify for the playoffs (Lewis, 2003; Schuerholz & Guest, 2006; Shanks, 2005). Such trades allow the poorer performers to lower payroll costs and lets the better performers make roster adjustments to maximize chances of succeeding in the playoffs. To control for dyad teams' skill differences, we created a variable measured by summing the dyad teams' differences in normalized pitching and batting statistics each season:

$$SD_{AB, t} = |Z_t(RPI_{A, t}) - Z_t(RPI_{B, t})| + |Z_t(ERA_{A, t}) - Z_t(ERA_{B, t})|.$$

This measure of skill differences between teams A and B in year t ($SD_{AB, t}$) is calculated as a function of each team's earned-run average (ERA; a measure of the strength of a team's pitching staff) and runs scored per inning (RPI; a measure of the strength of a team's offense), standardized in relation to year t (Z_t).

Table 2 reports the descriptive statistics of the variables in the final analysis.

RESULTS

Table 3 reports the results of the regression analyses. Model 1 illustrates how the control variables influence the likelihood that the two teams in a dyad will trade players in a given year. Model 2, which explains significantly more variance than model 1, reports the effects of the exchange tie measures.

The results in model 2 partially support Hypothesis 1, which predicts that exchange ties between organizational leaders (LL, OLL, and OOLL) increase the likelihood that those leaders' organizations subsequently exchange. On the one hand, prior exchanges in which both general managers were involved but only one was leading his/her current organization (OLL) significantly predicted the likelihood of subsequent exchange. On the other hand, ties formed between general managers when they were not leading their current organizations (LL) did not significantly predict subsequent exchange between their current organizations. This result would not be possible if leaders' exchange experiences had no influence above and beyond organization exchange experiences (OO). In addition, prior exchanges that involved both current leaders and both of the organizations being observed in the dependent variable (OOLL) significantly influenced the likelihood of subsequent exchange. One must interpret these results with caution, because it is possible that leader-to-organ-

TABLE 2
Descriptive Statistics and Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Correlations</i>																		
1. Dyad exchange																		
2. Dyad Teams' total flow betweenness	.08																	
3. Dyad Teams' skill difference	.06	.02																
4. Dyad average team performance	-.02	.18	.09															
5. Dyad total employment/10	.02	.05	.08	.25														
6. Dyad teams in same division	-.03	.03	.03	.02	-.01													
7. Dyad teams in same league	0	.01	.03	.06	.03	.46												
8. Cumulative leader employment ties	.01	.01	.01	-.02	0	.02	.02											
9. Dyad total leader tenure	-.07	-.18	0	.18	.09	.01	.02	-.01										
10. 1993 expansion teams	-.03	-.19	-.05	-.54	-.30	-.04	-.1	.01	-.11									
11. 1998 expansion teams	-.01	-.15	.05	-.06	.11	0	.01	0	.02	-.02								
12. Dyad total free agents	0	-.06	0	.26	.31	-.02	.01	0	.08	-.14	-.07							
13. Both organizations, both leaders (OOLL)	.04	.18	.02	.08	.05	-.04	0	-.01	.11	-.06	-.01	.02						
14. Both organizations, one leader (OOL)	0	.2	.03	.05	.05	0	.03	.01	-.13	-.06	-.05	-.02	.03					
15. One organization, both leaders (OLL)	.03	.03	.01	-.06	-.04	-.01	-.04	.02	0	.09	-.03	-.04	0	.04				
16. Both organizations (OO)	.07	.14	0	-.03	0	0	.04	-.01	-.25	-.03	-.03	-.06	.01	.09	-.02			
17. Both leaders (LL)	0	.03	.04	-.02	.01	.05	.02	0	-.06	.01	-.01	-.01	0	0	-.01	.01		
18. One organization, one leader (OL)	.04	.08	0	-.04	-.03	0	-.03	0	-.21	.02	-.03	-.04	.02	.01	.02	.11	.16	
<i>Descriptive statistics</i>																		
Minimum	0	0	0	0.34	3.6	0	0	0	0.5	0	0	0	0	0	0	0	0	0
Maximum	1	20.75	6.43	0.68	22	1	1	2	29	2	2	22	15	10.7	15.55	16	18	15
Means	0.21	7.67	1.52	0.5	13.1	0.16	0.48	0.12	9.14	0.02	0.02	8.27	0.66	0.4	0.23	0.12	0.03	0.1
Standard deviations	0.41	2.63	1.12	0.06	2.2	0.37	0.5	0.33	4.38	0.11	0.12	3.77	1.4	0.95	0.98	0.55	0.39	0.65

TABLE 3
Results of Cox Regression Analysis Predicting Interorganizational Exchange

Variables	Model 1			Model 2		
	<i>b</i>	s.e.	Exp(<i>b</i>)	<i>b</i>	s.e.	Exp(<i>b</i>)
<i>Exchange ties between</i>						
Both organizations, both leaders (OOLL)				0.34***	0.02	1.40
Both organizations, one leader (OOL)				0.33***	0.03	1.40
One organization, both leaders (OLL)				0.07**	0.03	1.08
Both organizations (OO)				0.19***	0.03	1.21
One organization, one leader (OL)				0.02	0.02	1.02
Both leaders (LL)				-0.06	0.08	0.94
<i>Control variables</i>						
Dyad teams' total flow betweenness	0.06***	0.01	1.06	0.03*	0.01	1.03
Dyad teams' skill difference	0.13***	0.02	1.14	0.13***	0.02	1.14
Dyad Average team performance	-1.60**	0.63	0.20	-1.66**	0.64	0.19
Dyad total employment / 10	0.05**	0.02	1.05	0.04*	0.02	1.04
Dyad teams in same division	-0.39***	0.09	0.68	-0.30***	0.09	0.74
Dyad teams in same league	0.31***	0.09	1.36	0.16*	0.10	1.18
Same league × wild card years	-0.24*	0.11	0.79	-0.13	0.11	0.87
Cumulative leader employment ties	0.13	0.08	1.09	0.12 [†]	0.08	1.14
Dyad total leader tenure	-0.04***	0.01	0.96	-0.03***	0.01	0.97
1993 expansion teams	0.39	0.42	1.47	0.83*	0.42	2.28
1998 expansion teams	0.95**	0.39	2.59	1.26***	0.40	3.53
Dyad total free agents	0.02**	0.01	1.02	0.03**	0.01	1.03
Year and team dummy variables		Included			Included	
χ^2 (df)	480.3*** (58)			1,577.4*** (64)		
$\Delta\chi^2$ (df)				1,097.1*** (6)		

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

One-sided tests.

ization ties in the OLL and OOLL combinations, rather than the leader-to-leader ties, could have driven the significant results.

The results support Hypothesis 2, which predicts that exchange ties between organizations in a dyad (OO, OOL, and OOLL) increase the likelihood that the dyad members will subsequently exchange. Exchange ties between organizations when they were not led by their current leaders (OO) significantly predicted subsequent interorganizational exchange. Furthermore, prior exchanges involving both dyad organizations with at least one leader also involved (OOL and OOLL) also significantly predicted the likelihood of subsequent exchange.

The results partially support Hypothesis 3, which predicts that exchange ties between an organization and the leader of another organization increase the likelihood that the organizations will exchange (OL, OLL, OOL, OOLL). Three of the four ties involving an organization and the current leader of another organization (OOL, OLL, and OOLL) significantly predicted the likelihood of

subsequent exchange. However, the coefficient that could isolate the influence of leader-organization ties (OL) is not statistically significant. Thus, these results cannot directly distinguish the influences of leader-to-organization ties from the influences of interorganizational ties or interleader ties. We discuss this point in more detail below.

Proposition 4 generates four hypotheses focusing on prior exchange experiences shared by leaders and other members of their organizations. Most results support the predictions.

The results in model 2 of Table 3 partially support Hypothesis 4a, which predicts that interleader exchange experiences shared with one or more of the organizations under observation (OLL, OOLL) have stronger influence than unshared interleader ties (LL). Coefficient comparison tests (Table 4) suggest that the positive influences of OOLL (both organizations and both leaders) are larger than the influences of LL (both leaders outside their current organizations). In turn, the positive influences of OLL (both leaders and one organization) are mod-

TABLE 4
Coefficient Comparison Tests

Model	χ^2	Change	$p <$
Unconstrained	1,577.0		
OOL > OO	1,552.4	24.6	0.0001
OOLL > OO	1,570.3	6.7	0.01
OLL > LL	1,574.2	2.8	0.09
OOLL > LL	1,420.2	156.8	0.0001
OOL > OL	1,441.4	132.6	0.0001
OLL > OL	1,576.1	0.9	0.34
OOLL > OL	933.5	643.5	0.0001
OOLL > OOL	1,559.6	17.4	0.0001
OOLL > OLL	1,248.7	328.3	0.0001

erately significantly larger than the influences of LL ($p < .09$).

The results support Hypothesis 4b, which predicts that the influences of shared interorganizational ties (OOL and OOLL) are both stronger than the influence of OO. Coefficients on OOLL and OOL (both organizations and one leader) are all significantly larger than the coefficient on OO (both organizations without their current leaders).

The results partially support Hypothesis 4c, which predicts that the influences of OOL, OLL, and OOLL all dominate the influence of OL. As expected, the coefficients on OOLL and OOL are significantly greater than the coefficient on OL. By contrast, though, the coefficients on OLL (both leaders and one organization) are not.

Finally, the results support Hypothesis 4d, which predicts that fully shared ties (OOLL) have more influence on future exchange than partially shared ties (OLL and OOL). The positive coefficient on OOLL is significantly larger than the coefficients on both OOL and OLL.

We used multiple sensitivity analyses to assess the robustness of the results; the Appendix reports

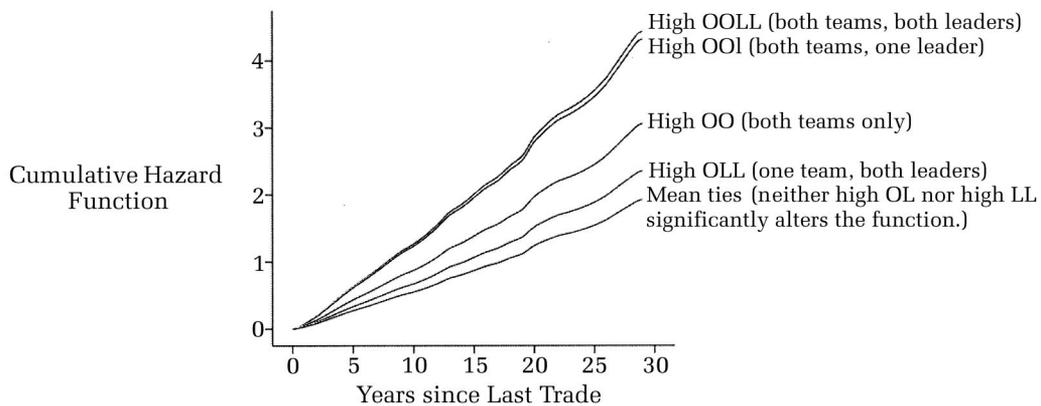
these analyses in greater detail. The sensitivity tests assess across-team variation in the power of general managers and other organizational elements, executive history (negative employment history, general manager success, and executive turnover), structural embeddedness, player power, other complementarity effects (winning percentage, market size, differential skills), and dyadic disaggregating (asymmetric measures of OL, OOL, and OLL). The reported results did not change materially in any of these analyses. We believe that any remaining unwanted variance does not create a serious bias because the observed pattern of results remains consistent throughout the many combinations of control variables that we assessed in sensitivity analyses.

Although we discuss the implications of the results in greater detail below, we note that our core finding is that the greatest impact arises from organization-to-organization experience, especially if at least one leader in an organization dyad shares that experience (i.e., OOLL and OOL have the greatest impact, with smaller but still substantial impact from OO). Figure 1 illustrates the relative influence of each kind of tie, given an increase in that measure equal to one standard deviation of all exchange ties.

DISCUSSION

This study contributes to the literature that extends the concepts of embeddedness and social capital to interorganizational settings. Prior research linking exchange ties to subsequent interorganizational exchange offers limited insight over levels because it constrains analyses to a single level or conflates multiple levels. The exchange tie measures of prior research have reflected either interorganizational relations or relations among or-

FIGURE 1
Cumulative Hazard Function of Interorganizational Exchange



ganizational leaders. In contrast, we examined how both leaders' and organizations' exchange ties influence subsequent interorganizational exchange behavior. By simultaneously examining organizational and leader exchange ties, the present study begins to isolate the influences of nodal multiplexity on interorganizational exchange and the formation of larger network structures.

The disaggregation of leaders' and organizations' exchange ties allows us to address two related issues. First, debates in the academic and practitioner literatures about the relative influences of leaders on organizations' economic behavior are emblematic of the underlying theoretical question of the role of nodal multiplexity. Some authors have suggested that the exchange experiences of leaders with decision-making authority play dominant roles in shaping organizations' economic behavior (Brass et al., 2004), and others have suggested that the influences of other organizational repositories of exchange experiences condition and possibly supplant the influence of leaders' experiences (Burt, 1999). Second, we consider an array of ties in which organizations and their current leaders share prior exchange experiences. Disaggregating exchange ties and then examining the patterns of results allow us to isolate the effects of exchange ties at different levels of analysis.

We found strong evidence that interorganizational exchange ties have influences on interorganizational exchange behavior that go above and beyond the influences of leaders' exchange ties. These results suggest that social influences on interorganizational exchange arise, in large part, outside the experiences of individual leaders. As the results illustrate, we found no support for the direct effects of unshared leader-to-leader and leader-to-organization exchange ties. In addition, the positive influence of shared exchange experiences involving both leaders and only one current organization is significantly weaker than the influences of all other kinds of exchange ties involving both current organizations. Thus, contrary to the intuition that the social experiences of leaders with decision-making authority should have the strongest effect, the actual influence of leaders' exchange ties appears limited.

The finding that leader ties are not as influential as other organizational ties is particularly intriguing, given received wisdom about the empirical context of this study and other more general organizational settings. Writers in the popular press commonly hold that general managers are highly instrumental in formulating interorganizational exchanges among Major League Baseball teams. Furthermore, Major League Baseball clubs are rel-

atively small and simple hierarchies. Thus, common management theory would suggest that leaders' schemata heavily influence organizational behavior (e.g., Mintzberg, 1979). Given this posited central role of senior leadership, one might expect general managers' exchange experiences to influence interorganizational exchange behavior strongly (Uzzi, 1997). The fact that individual leaders' exchange ties had little direct influence helps reshape such seemingly intuitive conclusions both in this empirical setting and more broadly.

Although this study does not identify specific reasons for this counterintuitive finding, at least three causes are possible. First, key knowledge about other teams used in exchange decisions may originate from individuals other than a team's GM. Teams generally employ scouts, advisors, and assistant general managers who help shape general managers' trading decisions through personal advice and player scouting reports. The complexity and dynamism of teams' player rosters could reinforce general managers' reliance on support staff. Second, the employing organization may be the primary referent for others' exchange decisions, rather than the GM, because players are legally bound to the organization and not to the general manager. Third, individual-level negative exchange experiences may moderate others' reliability judgments more than organization-level experiences. That is, as attribution error research has shown (Ross, 1977), exchange decision makers might be more likely to attribute negative prior exchange experiences to general managers' actions than to other aspects of their organizational context. If so, then the negative effects of bad exchange experiences could counterbalance the positive effects at the level of individual leaders' ties, but not at the level of organization ties.

Although we found little direct effect of individual leaders' ties, we did find that leaders had indirect influence via their reinforcement of organization-level exchange ties. The results suggest that leaders' exchange experiences are influential when they occur within one or more organizations in an exchange dyad. That is, leaders matter, but they matter more in their broader organizational context than they do as isolated individuals.

Anecdotal evidence from John Schuerholz, general manager of the Atlanta Braves, reinforces this result. Schuerholz and Guest (2006: 211) both likened the responsibilities of a major league general manager to those of an orchestra conductor and called the GM a "final filter" in decision making. This description suggests that leadership, even in small organizations, often does not involve directly injecting one's own knowledge and beliefs into or-

ganizational decisions. Instead, leadership in organization exchange decisions involves gathering insights from others' experiences before reconciling those insights with one's own schema.

We believe that such inferences about the microlevel foundations of organization-level embeddedness generalize to a broad range of organizational settings. Nonetheless, as with any industry study, the question of boundaries on generalization of the results arises. The results apply most directly to situations in which organizations of at least moderate complexity undertake repeated transactional exchanges (e.g., initial public offering syndications, patent- or product-licensing arrangements, standard-setting alliances, and shared production arrangements, as mentioned earlier). The results may be weaker for very simple organizations, in which an individual executive is able to identify resource needs, assess sources, and negotiate terms of exchange. In addition, the results may be less applicable to idiosyncratic exchanges for which prior experience—whether individual or organizational—will be less relevant. Moreover, temporally extended forms of prior exchange, such as ongoing alliances, could foster stronger, more complex development of interpersonal relations than arm's-length exchanges. If so, then individual leaders' prior experiences might have stronger effects on the likelihood of subsequent interorganizational exchange than the more transaction oriented experiences in this study. The study's results showing that the leaders' employment ties could have some influence are evidence of that. Future research could explore these boundaries.

The natures of organizations' cognitive processes also raise questions for future research. Organization-level processes, such as collective interpretation of past experiences, collective storage of knowledge and beliefs, and collective decision making, involve many individuals in and aspects of an organization other than its leader. Variation in these processes is likely to moderate the influences of specific individuals, subgroups, and other social structures. A comprehensive model of organization-level economic and social behavior requires a complete understanding of contextual forces as well as the dynamic, underlying processes.

The processes that define organization-level embeddedness are likely to vary as a result of several contextual factors. Organizational characteristics such as size, structure, culture, and stability are likely to influence how capabilities and responsibilities for interorganizational exchange processes are distributed (Uzzi, 1997). For example, in a multidivisional organization, divisional leaders may have more responsibility for interorganizational ex-

change decisions than the corporation's CEO. This example highlights the value of distinguishing influences at the group and organization levels in future research.

This discussion calls attention to the importance of identifying variations in the roles and characteristics of leaders. An operational leader's exchange experiences might have a different level of influence on an organization's embeddedness than those of a more symbolic leader. Numerous characteristics of leaders, including their capabilities and legitimacy, could determine the degree to which their experiences influence organizational exchange decisions. In the Major League Baseball context, for instance, we cannot fully rule out the possibility that team owners' exchange experiences have greater influence than those of general managers, although we attempted to control for this possibility.

In addition to the organizational context, structural aspects of interorganizational and interpersonal environments are intriguing. Although this study assesses network density, actors' closeness centralities, actors' betweenness centralities, and common third-party ties, more comprehensive examination of larger network structures is warranted. For example, different kinds of structural equivalence and network density might affect exchange. Structure-based studies of organization-level behavior also could consider cross-level relationships and the degrees to which organization members share prior experiences.

Other characteristics of an exchange process are likely to influence which individuals and structures are responsible for key exchange-related activities. For example, if the level at which an organization's relational embeddedness operates depends on which individuals' knowledge and beliefs are incorporated into interorganizational exchange decisions, then theories of information search (Feldman & March, 1981; Marschak, 1968; Ocasio, 1995) will offer insights. Alternatively, if the level at which organization-level relational embeddedness operates depends on who or what serves as the referent focus of others' interorganizational exchange decisions, then theories of attention (Ocasio, 1997; Simon, 1955) and attribution (Jones & Nisbett, 1972) will be helpful. The vast wealth of research on decision making and judgment could offer insights into the microlevel foundations of organizational embeddedness.

The outcomes of prior exchanges also will shape perceptions of reliability during subsequent interorganizational exchange decisions, raising a complex set of questions about how norms of fairness and efficiency moderate organizational embeddedness

(Ring & Van de Ven, 1994). For two reasons, however, we believe that accounting for exchange outcomes would not fundamentally alter the results of this study, or of studies in similar contexts. First, even moderately negative exchange experiences short of egregious opportunism provide relational information that can facilitate subsequent exchange between parties. Second, although partner opportunism presents a meaningful risk, participating actors in the context of this study viewed the vast majority of player trades as being reasonably fair. Such satisfaction arises, in part, because the public nature of the exchanges and the ability of teams to appeal perceived injustices to their league governing body offer protections against egregious opportunism, as do legal and arbitration processes in commercial exchanges. Moreover, to the extent that exchange outcomes introduce unwanted variance into the model, these analyses represent conservative tests of the hypotheses. Nonetheless, the impact of exchange outcomes warrants greater study.

Several other issues merit study. Other characteristics of prior exchange ties (e.g., duration, risk, conventional content multiplexity) could shape how prior exchange ties influence subsequent interorganizational exchange because different types of exchange produce and require different combinations of mutual knowledge, trust, and commitment. Indeed, this study suggests that a general manager's prior employment relationships directly influence subsequent player trading behavior. It would be useful to unpack the influences of knowledge, trust, and commitment and determine how the nature of exchanges moderates the influences of those different mechanisms of embeddedness.

Finally, future researchers should entertain the possibility that embeddedness at different levels has different implications for organization performance. This article begins to disaggregate how different forms of established exchange relations provide access to resources. In doing so, the study puts the impact of leaders' social capital in perspective. The results suggest caution in assessing the social significance of even industry-experienced leaders. In contrast, the research emphasizes the importance of broader organizational characteristics in shaping interorganizational social relationships.

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APPENDIX

Additional Control Variables and Sensitivity Tests

Power Variations

A few team owners—such as George Steinbrenner of the New York Yankees—have reputations for being highly involved in baseball operations. This suggested that each team's general manager or organizational ties could have a different impact on the dependent variable. Because there was no reliable way to know the nature of this variance a priori, additional analyses included two sets of 30 controls (one for each team), which we called across-team influence variables. In the first set of 30, each control was equal to the sum of the dyad team's total number of GM ties. In the second set of 30, each control was equal to the sum of the dyad team's total number of organization ties. For example, in a dyad consisting of team A and team B, team A's GM ties (GMT_A) and team B's GM ties (GMT_B) would be set according to the following equations (the other 28 teams' across-team influence variables would equal zero):

$$GMT_A = L_A L_B + O_A L_A L_B + O_B L_A L_B + O_A O_B L_A L_B + O_B L_A + O_B L_A L_B.$$

$$GMT_B = L_A L_B + O_A L_A L_B + O_B L_A L_B + O_A O_B L_A L_B + O_A L_B + O_B L_A L_B.$$

In parallel, team A's organizational ties (OT_A) and team B's organizational ties (OT_B) would be set according to the following equations (the other 28 teams' control variables would equal zero):

$$OT_A = O_A O_B + O_A O_B L_A + O_A O_B L_B + O_A O_B L_A L_B + O_A L_B + O_A L_A L_B.$$

$$OT_B = O_A O_B + O_A O_B L_A + O_A O_B L_B + O_A O_B L_A L_B + O_B L_A + O_B L_A L_B.$$

Including these variables in the analysis did not materially change the results.

Negative Employment History, General Manager Success, and Turnover

Because negative employment experiences could affect exchanges, a supplemental analysis included a variable that captured the number of GMs in a dyad who had ever been fired while acting as GMs for the other organization in the dyad. Similarly, because a GM's overall success could affect trading behavior, an analysis included variables capturing the teams' cumulative winning percentages during the current GMs' tenures. An

analysis also added three dummy variables capturing turnover in ownership, field managers, and scouting directors, because executive turnover can disrupt administrative processes and social embeddedness. The reported results did not change.

Structural Embeddedness

Supplemental analyses assessed aspects of interorganizational and interleader network structure. At each level, we calculated two measures of general network density, four measures of each team's centrality, and two measures of dyad teams' common ties. The density measures equaled the sum of all network dyad exchanges in a given year divided by the total number of team dyads. The exchanges of one of the density measures were weighted by the number of players traded and linearly decayed over three years. None of the density measures was significant or changed the results of the hypothesis tests. The centrality measures for each team and each GM in a given year included Freeman closeness and Freeman betweenness (Freeman, 1979), the Bonacich eigenvector (Bonacich, 1972), and flow betweenness (Freeman et al., 1991). Inclusion of none of these measures changed the hypothesis tests; the final analysis retained the organization-level flow betweenness measure because it had a significant impact on interorganizational exchange). Finally, common ties measures equaled the sum of the products of the dyad actors' ties to the same third-party actors in a given year. We calculated the common ties measures with and without weighted measures of exchange ties. Including the common ties measures did not change the results.

Player Power

Although few professional baseball players can directly influence teams' trading behavior, a few players have clauses in their contracts that prevent their teams from trading them without permission. Typically, only the very best players have the bargaining power to obtain such a no-trade clause; however, some veteran players qualify for implicit no-trade contracts under the "10-and-5" rule (ten years in MLB; five years with the same team). Because historical employment contract information is difficult to obtain, we could not conduct direct analyses of no-trade clauses over the span of the study. However, an analysis of 2006 contracts suggested that these clauses were unlikely to substantially influence our results because they are rare. In 2006, 71 players had explicit or implicit no-trade clauses in their contracts—about 1.5 percent of all professional baseball players (including minor league players who were contractually bound to major league organizations). We believe that this percentage was even lower in previous years because contract negotiations have become significantly more sophisticated over time (Schuerholz & Guest, 2006). Moreover, teams' 2006 no-trade clauses have a high correlation ($r = .75$) with team payroll, which occurs because almost all players with no-trade clauses are highly paid

stars or veterans. Inclusion in a supplemental analysis of a variable capturing teams' payrolls did not substantially change the results. Moreover, the fixed-effects variables in the analyses indirectly controlled for no-trade clauses because such clauses tend to vary systematically across teams. For example, some teams (e.g., the Atlanta Braves) refuse to offer these clauses to any players, including superstars, because doing so reduces their roster flexibility.

Complementarity: Differential Skills

We considered the roles of different skill balances in shaping interorganizational exchange behavior. Teams tend to "[trade] strengths for strengths" (Thrift & Shapiro, 1990: 240). In particular, teams with strong pitching staffs tend to trade with teams that have strong batting line-ups. The reason is that major league teams have only a few roster spots available. Talented minor league players who are blocked from playing in the major leagues because their teams are particularly strong in some area have a diminished marginal value to the teams' competitive capabilities; blocked players often have greater value on the open trade market. For example, the Atlanta Braves had a particularly strong pitching staff throughout the 1990s. As a result, the Braves used talented pitchers in their minor league system to attract exchange partners (Shanks, 2005). We created a control variable, "relative skill balance" (*RSB*) using teams' relative normalized pitching and batting statistics each season, as follows:

$$RSB_{AB,t} = |[Z_t(RPI_{A,t}) - Z_t(ERA_{A,t})] - [Z_t(RPI_{B,t}) - Z_t(ERA_{B,t})]|.$$

The skill balance between teams A and B in year t ($RSB_{AB,t}$) is based on each team's earned-run average (*ERA*) and runs scored per inning (*RPI*), standardized by year t (Z_t).

Other Complementarity Effects: Winning Percentage, Market Size, and Payrolls

We assessed three other complementarity effects, finding no material impact on the reported results. First, we

included a variable equal to the absolute difference in the winning percentages of each dyad's teams. Second, we included a control for absolute differences in market population size, because teams in smaller markets (e.g., Oakland and Kansas City) have an incentive to acquire less expensive players and develop that talent in-house, but teams in larger markets (e.g., New York) can afford to acquire more expensive talent via trades (Lewis, 2003). Third, we controlled for difference in dyad team payrolls.

Dyadic Disaggregation

An additional model included nine disaggregated exchange ties, which treated OL, OOL, and OLL as organization- and leader-specific asymmetric measures rather than symmetric measures. The disaggregated analysis did not explain significantly more variance in the likelihood of exchange than the reported effects, and coefficients on all of the disaggregated measures were directionally consistent with the symmetric measures reported in Table 3.



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