

**In Pursuit of Coordination and Control:
Revisiting the Effects of Contracts on Trust**

Deepak Malhotra
Harvard Business School
Baker Library, Room 471
Boston, MA 02163
Phone: 617.496.1020
Fax: 617.496.4191
Email: dmalhotra@hbs.edu

Fabrice Lumineau
IMD International
Chemin de Bellerive 23
P.O. Box 915
1001 Lausanne
Switzerland
Phone: 0041.21.618.04.24
Email: fabrice.lumineau@imd.ch

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Abstract

Research on the interplay of contractual and relational governance has surfaced a debate regarding whether contracts facilitate or diminish trust in exchange relationships. Here we begin to reconcile these perspectives by (a) distinguishing between control and coordination functions of contracts, and (b) separating character-based and competence-based trust. Leveraging a unique longitudinal dataset comprising over 150,000 pages of documents concerning 102 inter-firm disputes, we assess the degree to which contractual provisions affect trust, and how trust, subsequently, affects the likelihood of continued inter-firm collaboration. We find that control provisions reduce character-based trust and, consequently, the likelihood of continued inter-firm collaboration. Coordination provisions increase competence-based trust and, consequently, the likelihood of continued collaboration.

Keywords: Contracts, Trust, Control, Coordination, Character-Based Trust, Competence-Based Trust, Governance, Disputes, Inter-Firm Relationships

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Inter-firm relationships allow firms to create value and build competitive advantage (Dyer, 1997; Anand and Khanna, 2000), but mutual cooperation in such relationships is neither automatic nor easily fostered. In spite of their increasing importance and use, inter-firm relationships entail significant risks (Park and Ungson, 2001). Chief among these are the threat of exploitation by an opportunistic exchange partner (Williamson, 1985) and the possibility of coordination failures that can derail the efforts of even well-intentioned parties (Camerer and Knez, 1994; Salbu, 1997; Knez and Camerer, 2000; Gulati, Lawrence, and Puranam, 2005). In recognition of the mixed-motive nature of most exchange relationships (Kogut, 1988; Gulati, 1999), and of the inherent difficulty in coordinating expectations and action (Camerer, 2003), firms rely on inter-firm governance mechanisms to mitigate their risks, facilitate coordination, and promote cooperation (Ring and Van de Ven, 1992; Gundlach, Achrol, and Mentzer, 1995; Lusch and Brown, 1996).

Contractual governance provides one such mechanism for facilitating coordination and control (Dwyer, Schurr, and Oh, 1987; Jap and Ganesan, 2000). Backed by legal authority, formal contracts between firms detail the rights and obligations of parties within an exchange agreement, and place limits on acceptable behavior (Lyons and Mehta, 1997). Contractual arrangements also help make explicit the unspoken assumptions and expectations that underlie the transaction and ensure that the parties have a shared understanding of each side's role and a blueprint for coordinated action (Smitka, 1994). Alternatively, firms may rely on relational governance mechanism to facilitate cooperation, whereby they leverage a history of cooperation

and/or the possibility of continued future interaction as a basis for developing implicit obligations, shared expectations and behavioral norms associated with trust and reciprocity (Uzzi, 1997). Likewise, Granovetter (1985) and Powell (1990) have emphasized the role of socially “embedded” ties in economic exchange; these tend to be characterized by high trust and cooperative norms associated with joint problem solving and information exchange.

Parties seeking to mitigate or manage the risks inherent in exchange relationships may rely on formal structures such as contracts, or on informal mechanisms such as trust—or on both simultaneously (Williamson, 1991; Das and Teng, 2001; Malhotra and Murnighan, 2002; Poppo and Zenger, 2002; Flynn, 2005). When the stakes are sufficiently high, contracts help facilitate exchange by reducing uncertainty (Williamson, 1979), mitigating the risk of opportunism (Walker and Weber, 1984; Williamson, 1985), and coordinating the perspective and expectations of the interacting parties (Van de Ven, Delbecq, and Koenig Jr., 1976; Argyres, Bercovitz, and Mayer, 2007). However, because it is impossible to foresee every contingency that may arise in a relationship, and the costs associated with monitoring and enforcing contracts may be considerable, exchange partners might instead rely on trust as a means of managing risk and fostering collaboration (Macaulay, 1963; Sitkin and Roth, 1993; Gulati, 1995a; Uzzi, 1996; Jensen, 2003). Because neither contracts nor trust can typically provide a complete solution to the problems inherent in exchange, most complex relationships rely on both simultaneously (Bradach, 1997; Poppo and Zenger, 2002).

Considerable attention has been devoted in recent years to examining the interplay between contractual and relational governance mechanisms—and in particular, on the relationship between contracts and trust (see Vlaar, 2008 for a review). This research has developed along three distinct lines of inquiry (Puranam and Vanneste, 2009). The first

examines how (pre-existing) trust influences the form and degree of contractual governance that emerges, or is adopted (e.g., Gulati, 1995a; Corts and Singh, 2004; Kalnins and Mayer, 2004; Argyres, Bercovitz, and Mayer, 2007). The second focuses on how contracts and trust interact, as found in the work on complementarities between contractual and relational mechanisms (Luo, 2002; Ryall and Sampson, 2009), and on the role trust plays as a moderator of the relationship between contractual governance and performance (Poppo and Zenger, 2002). The third domain of research has sought to examine the effects of contractual governance on the development of trust (Macaulay, 1963; Malhotra and Murnighan, 2002). The current investigation relates most directly to the third research stream.

Specifically, this paper tackles a debate that has emerged regarding the viability of relying on contracts while simultaneously seeking to build and leverage trust (Zaheer and Venkatraman, 1995; Malhotra and Murnighan, 2002; Poppo and Zenger, 2002; Lazzarini, Miller, and Zenger, 2004; Puranam and Vanneste, 2009). On the one hand, there is evidence to suggest that the existence of contracts can “crowd out” trust-related motivations and behavior (Bernheim and Whinston, 1998; Bohnet, Frey, and Huck, 2001; Malhotra and Murnighan, 2002), and that formal contracting becomes less important as the relationship develops (Gulati, 1995a). On the other hand, there is evidence to suggest that contracts, by encouraging initial cooperation, may facilitate trust (Poppo and Zenger, 2002), and that contractual detail increases as the relationship—and presumably, trust—develops (Mayer and Argyres, 2004; Ryall and Sampson, 2009).

One way to resolve some of this discrepancy is to note that different research agendas have often conceptualized contracts and trust in different ways. As we discuss in greater detail below, contracts serve (at least) two distinct functions: a control function and a coordination

function (Macneil, 1974, 1978; Van de Ven, Delbecq, and Koenig, 1976; Reuer and Ariño, 2007). Similarly, there are (at least) two distinct types of trust that are relevant to exchange relationships: character-based trust and competence-based trust (Mayer, Davis, and Schoorman, 1995; Das and Teng, 2001).

These distinctions provide an opportunity to start bridging the seemingly discrepant perspectives on the effect of contracts on trust. For example, Malhotra and Murnighan (2002) suggest that contracts diminish trust, but their operationalization of these constructs reveals that they are studying only the control function of contracts and only the character dimension of trust. Meanwhile, Mayer and Argyres (2004) argue that contracts and trust are complementary, but their analysis focuses more so than others have on the coordination function of contracts, and is among the very few to implicate the competence dimension of trust in addition to character-based trust. As a result, while these two papers are often cited in ways that suggest contradictory results, they may be less incompatible than previously considered. For example, it may be that the inclusion of too many control provisions in a contract makes it difficult to build character-based trust, and that the inclusion of coordination provisions is compatible with (and even enhances) competence-based trust.

In this paper, we follow the lead of those who have taken a broader perspective on the ways in which contracts may influence trust in exchange relationships (Woolthuis, Hillebrand, and Nooteboom, 2005; Argyres, Bercovitz, and Mayer, 2007; Faems et al., 2008). We distinguish between the control and coordination functions of contracts, and between the character and competence dimensions of trust. Specifically, we predict that an increase in control provisions will diminish character-based trust, which will in turn reduce the willingness of parties to continue in the relationship. Meanwhile, an increase in coordination provisions will

enhance competence-based trust, which will in turn increase the willingness of parties to continue in the relationship. The context of our empirical investigation allows us to evaluate the consequences of contractual choices on an outcome variable that has previously received little direct attention, but which is of crucial importance in inter-firm relationships: the willingness to continue the relationship after a dispute has arisen. We predict that, by influencing character- and competence-based trust, respectively, control and coordination provisions of contracts will ultimately impact the decision of whether to end a relationship that has experienced conflict.

We recognize, of course, that any study of the relationship between contractual and relational governance must contend with endogeneity concerns and the complex relationship between contracts and trust. Contractual provisions are not randomly assigned to inter-firm relationships; they are typically chosen (or negotiated) at the outset of the relationship and are influenced by multiple factors, including pre-existing trust (if any). As such, our analyses control for various factors that may impact initial governance decisions, thereby reducing considerably, if not entirely eliminating endogeneity concerns.

To test our hypotheses, we leverage a unique dataset comprising more than 150,000 pages of details regarding 102 business disputes arising in vertical exchange relationships in the years 1991-2005. The data include a wide range of contractual and exchange characteristics for each relationship, along with thousands of pages of communication between the disputants. The contracts enable us to codify the degree to which control and coordination provisions were incorporated into the agreement, and the communications allow us to code for statements that reveal character-based and competence-based trust in the relationship. This is notable because, to our knowledge, the current dataset is the first to provide this level of detail on inter-firm conflict, and the first to allow such a fine-grained analysis of trust in inter-organizational

relationships. The paper is organized as follows. In the following sections, we start by elaborating on the control vs. coordination function of contracts and on character vs. competence dimensions of trust. We then provide the theoretical background for the study and develop our hypotheses. We then describe the data, methods, and results of our analysis. We conclude with a discussion of the results, their implications, limitations of the current investigation, and opportunities for future research.

Contracts as Instruments of Control and Coordination

Legal scholars (e.g., Baird, Gertner, and Picker, 1994; McAdams, 2009), decision theorists (e.g., Luce and Raiffa, 1957; Schelling, 1963), and economists (e.g., Knez and Camerer, 2000; Camerer, 2003), among others (e.g., Axelrod, 1984), have all previously contemplated the distinction between coordination and control concerns in exchange relationships. Across these multiple disciplines, a compelling method of abstracting this distinction has emerged in the comparative analysis of Prisoners' Dilemma Games (PDG) and Coordination Games (CG). In a typical two-player PDG, total value is maximized when both parties "cooperate", and minimized when both "defect", but since each party has an individual incentive to defect, the value minimizing outcome becomes likely (and is the unique, Pareto-suboptimal equilibrium outcome in a one-shot interaction). Unlike in the PDG, where each party prefers to defect regardless of what the other party does, parties in a CG are made better off if they can anticipate the behavior of the other party and can coordinate their actions. Thus, while the parties in a CG may prefer different final outcomes (due to multiple equilibria), they are always better off if their actions are aligned with each other, rather than misaligned.

We leverage this perspective to more rigorously define the two problems that parties to an exchange relationship may face: control problems stem from *misaligned incentives* that cause parties to prefer different outcomes (or equilibrium) in the exchange; coordination problems stem from *misaligned expectations* that cause parties to pursue actions that diverge from an outcome that both parties would have preferred (Gulati, Lawrence, and Puranam, 2005).

Accordingly, contracts serve at least two distinct functions in exchange relationships (Gulati, Lawrence, and Puranam, 2005; Mellewigt, Madhok, and Weibel, 2007; Reuer and Ariño, 2007; Mesquita and Brush, 2008). First, contracts are a means by which to exert control over the behavior of opportunistic exchange partners (Williamson, 1985). Second, contracts are a means by which the parties can coordinate their actions and expectations (Macneil, 1974; 1978). In inter-firm relationships, contracts are typically designed to serve both functions, but extant research has typically focused more so on the role of contracts as control mechanisms.

Organizational scholars have long considered the use of contracts as instruments of control (Macneil, 1978; Williamson, 1975; 1985; 1991). Inter-firm collaborations, for example, have the potential of creating significant value, but parties considering such relationships must consider and contend with the risk of exploitation by an opportunistic partner (Walker and Weber, 1984; Williamson, 1985; Das and Teng, 1996). The legal underpinnings of contracts give firms the option of sanctioning an exchange partner who is unable or unwilling to abide by agreed upon terms (Joskow, 1987; Dyer, 1997). This possibility (or threat) of third-party intervention and enforcement is the primary means by which contracts serve to exert control over the behavior of parties in an exchange.

The coordination function of contracts has received relatively less attention (Mayer and Argyres, 2004; Argyres, Bercovitz, and Mayer, 2007). Especially in complex relationships, a

contract—and the contracting process itself—helps parties make explicit their assumptions and expectations regarding the transaction and each side’s role (Smitka, 1994; Beatty and Samuelson, 2001). As Macneil (1978: 856) suggests, one important objective of the contracting process is to give the parties an opportunity to enumerate the obligations of each party “within the four corners of the document.” More generally, provisions in a contract that relate more directly to coordination (rather than control) are aimed at mitigating the risk of misunderstanding, structuring means of efficient collaboration, and clarifying each party’s roles and responsibilities (Macaulay, 1963).

In this paper, we build on the work of those who have called, simultaneously, for a broader perspective on contractual complexity, and a more nuanced approach to studying the effects of contracts on relational attitudes and performance outcomes (Mellewigt, Madhok, and Weibel, 2007; Puranam and Vanneste, 2009). For example, Poppo and Zenger (2002) insist that it is important to examine more closely the impact of specific contractual provisions, and to not simply use gross measures of contractual complexity (e.g., contract length; Joskow, 1987). Likewise, Reuer and Ariño (2007: 313) suggest that analysis of “the particular contractual provisions that firms put into their collaborative agreements...has received very little research attention to date.” As such, in our analysis we evaluate contracts at the level of the individual provisions they contain, and we distinguish between contractual provisions aimed primarily at exerting control and those aimed primarily at facilitating coordination.

Two Dimensions of Trust: Character and Competence

Following Rousseau et al. (1998), and consistent with other influential conceptualizations of trust (Deutsch, 1960; Gambetta, 1988; Mayer, Davis, and Schoorman, 1995; Lewicki,

McAllister, and Bies, 1998), we define trust as the psychological willingness of a party to be vulnerable to the actions of another party based on positive expectations regarding the other party's motivation and/or behavior. Trust, so defined, can be meaningfully distinguished from the underlying dimensions of trust, which entail attributions of the other party's trustworthiness along relevant characteristics (e.g., integrity). Consistent with prior work on the attributional underpinnings of trust (Mayer, Davis, and Schoorman, 1995; McKnight, Cummings, and Chervany, 1998; Kramer, 1999; Ferrin and Dirks, 2003; Weber, Malhotra, and Murnighan, 2005) we posit that attributions along relevant dimensions are what create in the trustor a willingness to accept vulnerability.

While various frameworks for cataloging the relevant dimensionality of trust have been offered in recent years (e.g., Rempel, Holmes, and Zanna, 1985; Mayer, Davis, and Schoorman, 1995; Lewicki and Bunker, 1996), we follow the lead of Nooteboom (1996) and Das and Teng (2001), whose research agendas—to understand trust in the context of control mechanisms—most closely relate to our own. These authors focus on two dimensions of trust: “competence” and “goodwill.” According to Nooteboom (1996), goodwill captures attributions regarding the *intention* of a party to behave in a trustworthy manner; competence captures attributions regarding the party's *ability* to do so.

We substitute the term “character” for “goodwill” in this paper, because it better represents our more expansive notion of the intentionality dimension. Whereas Das and Teng (2001) liken goodwill to Mayer, Davis, and Schoorman's (1995) dimension of integrity, our character dimension is intended to capture both integrity *and* benevolence in Mayer, Davis, and Schoorman's (1995) typology. Taken together, our competence and character dimensions include all three of Mayer, Davis, and Schoorman's (1995) dimensions of trust—ability,

benevolence, and integrity—but do so within a framework that we believe better captures the way in which trustworthiness attributions are made in the context of contractual relations (Das and Teng, 2001; Malhotra and Bazerman, 2007). As discussed in greater detail further below, we find that a significant number of statements made by parties in our data are hard to categorize as *either* benevolence *or* integrity attributions; many are ambiguous, or are suggestive of a dual attribution (e.g., “We know you will do what is right for us,” “You have been very fair when we have voiced a concern,” etc.).

Our focus on the attributional underpinnings of trust situates us most directly in what Lewicki and Bunker (1996) refer to as knowledge-based trust. According to their typology, calculus-based trust (CBT), knowledge-based trust (KBT), and identification-based trust (IBT) comprise the three stages of trust development. CBT characterizes early stage relationships and is based on cost-benefit analyses regarding the decision to trust; CBT relies more so on an evaluation of incentives rather than on an assessment of character. At the other extreme, IBT is based on shared values, preferences, and intentions; IBT is a characteristic of few, close relationships. KBT characterizes the plurality of organizational relationships (Lewicki, Tomlinson, and Gillespie, 2006) and is based on judgments regarding the perceived intentions and ability of the other party.

In our analysis, we thus focus on both the competence and character dimensions of trust, rather than treating trust as one-dimensional. In so doing, we build on prior work that has identified character and competence attributions as critical to trust judgments in organizational relationships (Barber, 1983; Kim et al., 2006). This allows us not only to more comprehensively understand the effect of contracts on trust, but also to respond to those who have argued for a

more nuanced approach to studying trust in organizational relationships (e.g., Mayer, Davis, and Schoorman, 1995; Das and Teng, 2001).

The Effect of Contracts on Trust

Contracts and trust represent alternative means by which parties can manage risk in exchange relationships. It has been widely observed, however, that inter-firm relationships typically rely on both simultaneously (Sitkin, 1995; Wicks, Berman, and Jones, 1999; Poppo and Zenger, 2002). Reliance on trust alone can be dangerous. When the stakes are high (cf., Jensen and Meckling, 1976), it makes sense for parties to rely on contracts to promote initial cooperation, even as they seek to accumulate the resources (time, third-party ties, etc.) that are necessary for trust development (Kramer, 1999). Reliance on contracts without trust is also potentially hazardous: contracts are necessarily incomplete because in most complex environments, it is simply not possible for parties to anticipate and specify in writing every potential contingency that may arise (Simon, 1961; Grossman and Hart, 1986; Williamson, 1996). Furthermore, contracting is costly, both from a monitoring and enforcement perspective (Macaulay, 1963), and because overly detailed contracts limit strategic flexibility as the relationship evolves (Crocker and Reynolds, 1993; Argyres, Bercovitz, and Mayer, 2007).

The seemingly modal state of governance in inter-firm relationships—to rely simultaneously on contracts and trust—has sparked a debate regarding the viability of this strategy. Some have argued that contracts and trust are often incompatible (Sitkin and Roth, 1993; Bernheim and Whinston, 1998; Tenbrunsel and Messick, 1999; Molm, Takahashi, and Peterson, 2000; Malhotra and Murnighan, 2002). Others suggest that contracts and trust are not only compatible, but mutually reinforcing (Poppo and Zenger, 2002; Gulati and Nickerson,

2008). Instead of aligning ourselves with either side, we borrow from both literatures in order to expound a more comprehensive (and nuanced) perspective on the effect of contracts on trust. We do so by considering the different functions of contractual provisions (control vs. coordination) and the different dimensions of trust (character vs. competence). Our review of the mechanisms proposed in prior research suggests that the positive and negative effects of contracts can be better understood (and at least partially reconciled) when we separately consider the effects of control and coordination provisions on the two types of trust.

The Effect of Control Provisions on Trust

Those that have posited a negative relationship between contracts and trust have largely (if not exclusively) focused on the control function of contracts and on the character dimension of trust (Sitkin and Roth, 1993; Bernheim and Whinston, 1998; Tenbrunsel and Messick, 1999; Malhotra and Murnighan, 2002). At least three different underlying mechanisms have been proposed for the negative effect of control provisions on character-based trust.

First, as suggested by Macaulay (1963) and Ghoshal and Moran (1996), the mere suggestion or introduction of contracts may signal distrust of the other party's intentions, thereby disrupting what may otherwise be a cycle of trust and reciprocity leading to mutual trust development (Pillutla, Malhotra, and Murnighan, 2003). A second, related mechanism is proposed by Tenbrunsel and Messick (1999), who argue that the existence of a control mechanism changes the "decision frame" that guides the information processing and behavior of exchange partners. As a result, control provisions designed to protect against opportunism may, ironically, promote such behavior by inducing a "business" rather than "ethical" framing of the interaction. A third mechanism is proposed by Uzzi (1997), who argues that trust develops when

parties are able to go beyond the dictates of contractual obligations to serve the needs of their exchange partners. Contracts that are overly controlling, and which leave little room for such discretion, may inhibit trust development. Likewise, Malhotra and Murnighan (2002) argue that trust development depends on perceived vulnerability, and control provisions that mandate cooperation lead to situational rather than personal attributions for the cooperativeness of exchange partners (e.g., “They treated us nicely because they had to, and not because they are trustworthy”).

These three mechanisms share some notable characteristics. First, each focuses on how contracts influence attribution processes among those who are subject to, and who must interpret the contract, rather than focusing on the initial intent of the contract. Relatedly, each presumes that the contract is a sufficiently salient feature of the exchange relationship. This is more likely to be the case when the parties themselves (and not simply their legal representatives) have participated in contract-related discussions, and in contexts where formal contracting is least legitimated or institutionalized (Malhotra and Murnighan, 2002; Mayer and Argyres, 2004; Puranam and Vanneste, 2009). Finally, each of these mechanisms pertains to the effect of control provisions on character-based trust; there is no suggestion that these dynamics lead parties to see their counterparts as less competent.

The above discussion suggests that, by signaling distrust, by changing the decision frame, and by crowding out trustworthiness attributions, control provisions may undermine character-based trust. We therefore hypothesize the following:

Hypothesis 1: Increasing the control provisions of a contract results in a decrease in character-based trust.

The Effect of Coordination Provisions on Trust

In addition to serving a control function, contracts provide a means by which parties can coordinate their expectations and efforts (Mayer and Argyres, 2004; Gulati, Lawrence, and Puranam, 2005; Woolthuis, Hillebrand, and Nooteboom, 2005; Reuer and Ariño, 2007). Not only do contracts represent a codification of each party's rights and responsibilities, but the contracting process itself entails a useful dialogue in which parties can better understand each other's—and their own—expectations and assumptions regarding the exchange (Das and Teng, 1998; Mayer and Argyres, 2004; Carson, Madhok, and Wu, 2006). As a result, common knowledge structures such as shared language and routinized interactions emerge between exchange partners, making it easier for parties to communicate their ability to meet each other's needs (Puranam, Singh, and Zollo, 2006). The process of coordination can thus facilitate competence-based trust development.

Mayer and Argyres (2004) find that coordination provisions, by clarifying expectations, facilitate trust in the ability of the other party to fulfill obligations. They point to a mutually reinforcing relationship between contracting, trust, and relationship development: relationship development facilitates more efficient contracting aimed at better coordination of expectations and behaviors; better (and more elaborate) contracting facilitates trust in the capabilities of the exchange partner; and increased trust facilitates relationship development. More generally, coordination provisions, by clarifying roles and responsibilities, and by creating channels through which differences in perspective will be resolved, make it easier for parties to meet the expectations of their exchange partners (Argyres, Bercovitz, and Mayer, 2007), thereby enhancing perceptions of competence.

In their time series analysis of 11 contracts signed between two firms, Mayer and Argyres (2004) describe incidents involving misaligned expectations which, if coordination provisions had not been adopted to address them, could well have resulted in a sustained breach of competence-based trust. As an example, they relate how “HW Inc. had expressed frustration in the first two projects over the length of time it took Softstar to complete what HW Inc. perceived to be minor changes...Softstar added a system architecture section to the third [contract]. This section allowed both firms to better understand how the entire product fit together and the impact to Softstar if HW Inc. made a late hardware change” (Mayer and Argyres, 2004: 400). As the example illustrates, the revised contract was aimed at aligning expectation regarding the extent to which change requests could cause reasonable delays, lest HW Inc. attribute delays to Softstar’s incompetence. Mayer and Argyres (2004: 407) speculate that one of the reasons trust between these firms increased over time, even as the contracts became more elaborate, was the “positive atmosphere created by joint learning,” again implicating the role of competence attributions in trust development.

Weber et al. (2001) demonstrate that successful coordination may lead to attributions of competence even when they are undeserved. They found that “leaders” were seen as more effective when their groups coordinated to achieve Pareto efficient outcomes in a coordination game, even though successful coordination in their study was almost entirely a function of situational factors. Weber et al. (2001) suggest that such “misattributions of leadership ability” stem from the well-established psychological phenomenon known as the “fundamental attribution error” (Ross and Nisbett, 1991), whereby evaluators underestimate the role of situational factors and over-weight the influence of personal characteristics. The extension of this logic to our context would predict that, when coordination provisions lead to coordination

success, a potentially disproportionate amount of credit may be given to the ability of the interacting parties, thereby facilitating competence-based trust.

This suggests the following hypothesis:

Hypothesis 2: Increasing the coordination provisions of a contract results in an increase in competence-based trust.

Trust and Consequences

The considerable research attention devoted to the effect of contracts on trust reveals the extent to which trust is seen as crucial for inter-firm collaboration and value creation (Arrow, 1974; Uzzi, 1997). Trust has been shown to increase cooperation (Mayer, Davis, and Schoorman, 1995), facilitate information exchange between strategic partners (Thompson, 1991), lead to more efficient negotiated outcomes (Carnevale and Isen, 1986) and provide numerous performance benefits that make it a potential source of competitive advantage for organizations that can build and leverage it (Barney and Hansen, 1994; Nahapiet and Ghoshal, 1998).

Our interest in the effect of contractual provisions (aimed at coordination or control) on trust is similarly driven by the ultimate effect this has on relational and performance outcomes. Our data allows us to begin the process of linking contractual choices with relational outcomes, with trust serving as a mediator in this relationship. In so doing, we respond to the recent calls by Reuer and Ariño (2007) and Argyres, Bercovitz, and Mayer (2007) for researchers to examine how different components of a contract affect relational and performance outcomes.

In this paper, we consider a particular consequence of trust that has received little direct attention, but which is critical to the value-creating potential of inter-firm relationships: the

willingness to continue the relationship after a dispute has arisen. We expect that contractual provisions aimed at coordination and control will, respectively, influence competence- and character-based trust (the mediators), which will in turn influence the decision of whether to stay together or end a relationship that has experienced conflict.

Control provisions in contracts have been widely recognized as key enablers of cooperation (Williamson, 1991), but the cooperation they foster is often limited to the extent dictated by the letter of the law (Macaulay, 1963; Bernheim and Whinston, 1998). In contexts where uncertainty is high or monitoring is costly, this level of cooperation may be insufficient to promote collaboration (Uzzi, 1997). Conflict situations offer another context in which reliance on the letter of the law is likely to be insufficient for the sustenance of collaboration. If a dispute arises despite reliance on provisions designed to protect against opportunism, parties are likely to more seriously question the viability of future exchange. The prospects for continued collaboration are even dimmer in such situations if control provisions do not simply substitute for (character-based) trust, but actually undermine it (Malhotra and Murnighan, 2002).

Zand (1972) suggests three mechanisms by which diminished character-based trust (our mediator) will diminish the likelihood of continued future collaboration between exchange partners. When character-based trust diminishes, it leads parties to be (a) less willing to share information that is accurate and timely, (b) less open to influence by each other's proposals and perspective, and (c) less willing to accept dependence on each other in domains where formal control mechanisms cannot be applied. Because such behaviors undermine collaboration, we can expect that control provisions, by reducing character-based trust, will lessen the likelihood that disputing parties will agree to continue working together in the future. Consistent with this

expectation, Zand (1972) finds that low-trust groups are less motivated to implement agreements and more likely to want to leave the group and join another.

Research on the role of psychological contracts, albeit focused on within-organization relationships, has also documented the positive effect of trust on willingness to continue in relationships (Robinson, 1996). In inter-organizational contexts, Uzzi (1997) argues that (character-based) trust is a crucial predictor of future exchange between parties. In a less “embedded” context, Bottom et al. (2006) find that agents who perceive principals as benevolent are more likely to expend effort aimed at creating value in the exchange relationship.

Thus, to the extent that control provisions of a contract diminish character-based trust, control provisions should lead to a decreased willingness to continue collaboration after a conflict (Macaulay, 1963). We therefore suggest the following hypotheses:

Hypothesis 3a: Increasing the control provisions of a contract results in a decreased willingness to continue a relationship.

Hypothesis 3b: The effect of control provisions on relationship continuance is mediated by the level of character-based trust.

Coordination provisions, through their effect on competence-based trust, should increase the willingness to continue in a relationship following a dispute. According to Mayer and Argyres (2004), coordination provisions become easier to craft as a relationship matures, and that coordination provisions also facilitate more efficient future collaborations. This suggests that inter-firm collaborations face increasing returns to coordination: the longer a relationship lasts, the better the parties are able to coordinate, and the more likely they are to continue working together, which further facilitates coordination, and so on. As suggested earlier

(Hypothesis 2), competence-based trust serves as the mechanism underlying this self-reinforcing cycle of coordination and relationship continuance. It would appear axiomatic that parties will be more willing to continue in a relationship when they perceive each other as more rather than less competent. However, the role of coordination provisions in facilitating competence-based trust is worth additional comment.

Argyres, Bercovitz, and Mayer's (2007) findings suggest that coordination provisions do not simply increase competence-based trust directly (as in Hypothesis 2), but also indirectly, by allowing parties to demonstrate their competence in an increasing set of domains. As the relationship continues, according to Argyres, Bercovitz, and Mayer (2007), parties learn more about the types of contingencies that may arise, and about the types of responsibilities they need to work harder at clarifying. This leads to the development of additional coordination provisions aimed at creating a more efficient working arrangement (cf., Zaheer and Venkatraman, 1994). Thus, as time goes on, coordination provisions not only allow parties to make fewer mistakes and appear more competent (the direct effect), but also to increase the domain of tasks in which they can demonstrate competency. Both of these effects should facilitate future collaboration and a willingness to continue participation in an existing relationship. This suggests the following hypotheses:

Hypothesis 4a: Increasing the coordination provisions of a contract results in an increased willingness to continue a relationship.

Hypothesis 4b: The effect of coordination provisions on relationship continuance is mediated by the level of competence-based trust.

METHODS

Data

We were granted access to all legal files concerning contract disputes handled by one law firm in Western Europe between 1991 and 2005. The law firm is a mid-sized company which was founded in the late 1980s, and which has clients that include small, mid-size and large firms from a wide variety of industries. According to the lawyers at the firm, the company does not have an identifiable specialty (i.e., they are a generalist in the field of corporate law). We restricted our sample to all two-party disputes involving vertical relationships; these represented 80 percent of the two-party disputes handled by the firm.

Our sample consists of 102 cases (i.e., disputes), 99 of which involved only European firms; each of the other three involved at least one non-European firm. Because some companies were repeat clients of the law firm and were involved in more than one dispute, the sample contained 178 different firms.¹ To check for potential selection bias, differences were examined between included and excluded files, with the latter representing disputes in non-vertical relationships. Because Levene's test showed homogeneity of variances, *t*-tests were conducted on a number of different variables (e.g., contractual provisions, firm size, etc.). The findings suggest no significant differences between the files/firms included vs. excluded from the sample on any of the dimensions we examined.

Because all of the inter-firm relationships we study involve legal disputes, it is important to consider the representativeness of our sample and whether the results of our analysis would generalize to the broader universe of inter-firm relationships. To address this issue, we conducted a series of analyses to assess the degree to which key characteristics of our sample—at the contract level, the firm level, and the relationship level—compare with available benchmarks in datasets that do not involve disputing firms. At the contract level, we compared

¹ The results were unchanged when a “repeat client” control variable was included in the analyses.

the contractual complexity of our sample with contracts described in prior research. Specifically, on Parkhe's (1993: 829) unweighted index of complexity—which tabulates the presence of up to eight key contractual clause categories—our sample's score (4.36) is situated comfortably between the score (3.69) for Reuer and Ariño's (2002; 2007) sample of 88 alliances involving Spanish firms (of various sizes from a variety of industries) and the score (5.05) of Reuer, Ariño, and Mellewig's (2006) sample of 66 alliances in the German telecommunications industry. At the firm level, we compared the revenue of firms in our sample with revenue data on 123,595 comparable firms provided in the AMADEUS database managed by the Bureau van Dijk, which is a pan-European database of financial information on over 11 million public and private companies. Comparing firms by industry (using the 2-digit SIC code) revealed that manufacturing firms in our sample had higher revenues (341 million euros) than the comparison group (128 million euros), but retail and services firms in our sample had lower revenues (76 million euros and 36 million euros, respectively) than the comparison group (156 million euros and 74 million euros, respectively). Thus, no clear pattern of differences seems to emerge. Finally, at the relationship level, we compared the percentage of prior ties between interacting parties in our data (32.4 percent) with inter-firm relationships described in prior research. Gulati (1995b) reports that 12 percent of firms in his sample had a previous direct tie; Reuer and Ariño (2002) report that 20 percent of firms in their sample had previously engaged with the same partner in a different venture; Hagedoorn and Hesen (2009) report that 53 percent of their sample includes a prior relationship between the contracting parties. The level of prior ties in our relationship appears to be comfortably within the range implied by prior research. Taken together, these analyses suggest that our sample appears, *a priori*, to consist of contracts, firms, and relationships that do not differ significantly from the larger universe of (non-dispute)

datasets.

The law firm provided extensive and detailed information on the 102 disputes in our sample. Each legal file contained between 800 and 5,000 pages and included (a) the original contract, along with any contract revisions that were made prior to the dispute, and (b) all documents exchanged during the dispute-resolution process. In addition to providing us with legal documents, the lawyers in each case obtained from the clients all potentially relevant information related to the initial context of the relationship, the origins of the conflict, and its progression over time. In total, over 150,000 pages of documents were collected and analyzed for this study.

Data collection took place over four months. This period of immersion enabled us to speak extensively with the lawyers and administrative staff of the firm. In addition, 17 structured interviews, lasting between one and three hours each, were conducted with lawyers at the law firm and with law professors who specialize in contract law. These discussions and interviews were used, as needed, to clarify our understanding of legal procedures, to validate the distinction between contractual provisions, and to check our interpretation of specific clauses. The law firm did not allow us to contact the disputing firms directly.

Sample Characteristics and a Dispute Prototype

The firms in our sample came from a variety of industries: manufacturing (52 percent), services (32 percent), retail (15 percent) and construction (2 percent); see Table 1 for more information. The contracts represented different types of transactions, with a roughly evenly split across distribution contracts (35.3 percent), production supply contracts (29.4 percent), and IT contracts (26.5 percent); there were a smaller number of contracts for consulting and other

services (8.8 percent). The issues underlying the dispute also varied across relationships, and in some cases the disputes evolved over time in size and scope. Four primary types of conflicts were identifiable at the outset of the disputes: issues regarding deal scope and deliverables (40.2 percent), work quality (23.5 percent), work delays (21.6 percent), and payment (14.7 percent). 46 percent of the cases involved cross-border relationships. 65.7 percent of the contracts were time-bound in that they stipulated a pre-specified end to the relationship. As mentioned previously, 32.4 percent of the cases included exchange partners that had interacted with each other previously.

[Insert Table 1 About Here]

Although the dataset consists of more than 100 disputes which vary on multiple dimensions (some of which we can meaningfully control for, as described further below), it may be helpful to provide an example of a dispute from our study.

Sample Dispute

In April 2003, a small Italian firm specializing in the production of industrial equipment (Firm A) contracted with a mid-sized French manufacturing firm (Firm B). The contract called for Firm A to be paid €116,000 over the length of the relationship, during which time Firm A would manufacture specialized components for machinery in use at Firm B. After a few meetings involving the two firms' engineers, Firm B became increasingly skeptical about Firm A's ability to deliver the products in the relatively short time period that had been promised. After a number of emails failed to resolve the problem, managers at Firm B decided that the delays were costing significant financial damage and it was time to engage the services of a law firm. This took place 39 days after Firm B had voiced its initial complaint. The dispute

continued for another 214 days, at which point it was privately settled without going to court.

The parties decided to revise their initial agreement and to pursue their collaboration. A total of 23 messages were exchanged between the two firms during the course of the dispute. We had access to all messages, even those exchanged prior to the involvement of the law firm.²

Figure 1 presents a timeline of the key events and communications associated with this sample case.

[Insert Figure 1 About Here]

Dependent Variable

Intent to Continue

We analyzed the intent of the parties to continue their relationship after the dispute was resolved. To do so, we examined the messages that were exchanged between the parties, as well as the terms of the settlement/judgment recorded in the legal files to look for indications of a willingness to continue with the relationship. Such intent was sometimes manifested in a direct communication between the firms (e.g., “Fine! I hope we have clarified and overcome this ‘misunderstanding’ and we can now continue our fruitful collaboration on a sound basis.”) In other cases, it was made evident through the crafting of a new agreement by the parties. For example, in one case, the following clause was added to the contract: “Addendum to Clause 14: The Parties thereby agree that [Firm A] and [Firm B] shall now each conduct by the end of each month review of the progress made [...] The Agreement is thereby extended for a 2 (two)-year period.” We coded as “no intent to continue” those cases in which either or both parties explicitly stated no willingness to continue the relationship (e.g., “You should perfectly

² Communications prior to the involvement of the law firm were accessible because the law firm, as a matter of practice, asks clients for all documents pertaining to the dispute.

understand that we have put an end to our collaboration.”), or when there was an absence of an indication to continue the relationship. Intent to continue the exchange relationship was indicated in 29 cases out of 102. 7 of these cases were settled in court, representing 11.4 percent of all cases settled in court. The remaining 22 of these cases were settled privately, representing 54.6 percent of all cases settled privately.

Independent Variables

Coordination vs. Control Provisions

The analysis of control vs. coordination provisions in the contract was based on an examination of the actual formal contracts signed by the firms. We relied upon a set of indicators developed by Parkhe (1993) which help to evaluate various provisions in the formal contract. Parkhe (1993: 829) conducted a computer-aided search of the relevant legal literature and arrived at the following eight key provisions that might be included in a formal contract: (1) the exchange of periodic written reports of all relevant transactions; (2) prompt written notice of any departures from the agreement; (3) the right to examine and audit all relevant records through a firm of CPAs; (4) designation of certain information as proprietary and subject to confidentiality provisions of the contract; (5) non-use of proprietary information even after termination of agreement; (6) termination of agreement clauses; (7) arbitration clauses; and (8) lawsuit provisions. Figure 2 displays the frequency with which each of these provision types was represented in our sample of contracts.

To evaluate the control vs. coordination functions of contracting, Reuer and Ariño (2007) factor analyzed the inclusion of Parkhe’s eight provisions in an analysis of 88 strategic alliances. The analysis yielded two factors: enforcement (which we call control) and coordination.

Specifically, their results suggest that the first three provisions of Parkhe's 8-item index relate primarily to coordination between the contracting parties and the remaining five provisions relate primarily to control.³ We therefore measure *Coordination Provisions* in the contract as the number of coordination-related clauses included in the contract (i.e., clauses 1, 2, and/or 3 from Parkhe (1993)). The coordination provisions score is an integer variable ranging from 0 to 3. In the same way, we calculate *Control Provisions* as the number of control-related clauses in the contract (i.e., clauses 4, 5, 6, 7 and/or 8 from Parkhe (1993)) to obtain a score ranging from 0 to 5.⁴ The coding of contracts for control vs. coordination provisions was done by (i) one of the authors and (ii) a research assistant with a degree in law. To eliminate the possibility of bias, all coding of contracts was done prior to any analysis of the dispute-related data (e.g., trust messages, intent to continue, etc.). Pairwise correlation among raters for the coding of control-related provisions ($r = 0.911$; $p < 0.001$) and for coordination-related provisions ($r = 0.923$; $p < 0.001$), along with high Cronbach's alphas (0.953 and 0.959, respectively), confirm the reliability of the coding. Any disagreements on coding were resolved by discussion.⁵

[Insert Figure 2 About Here]

Mediator Variables

Competence-Based Trust and Character-Based Trust

³ We ran a principal components factor analysis with varimax rotation with our own dataset, which confirmed the same two dimensions of contractual complexity for these eight contractual provisions.

⁴ We use an unweighted composite index of contractual detail because Lui and Ngo (2004: 477) have pointed out that the relative importance of contractual provisions is unclear and because Barthélemy and Quélin (2006: 1785) have shown that weighted and unweighted measures of contractual complexity are very highly correlated ($r = 0.96$; $p < 0.01$). See also Reuer and Ariño (2007).

⁵ Because some provisions may be ambiguous with regards to function (coordination vs. control), we conducted a robustness check with follow-up analyses for all of our hypotheses using a revised coding scheme. A rater read each provision, along with the context in which the clause was embedded, and eliminated all seemingly ambiguous provisions. A second rater evaluated 10 randomly selected clauses in each of the 8 provision categories. For the 80 clauses evaluated by both raters, the level of agreement was 91.25 percent. This more conservative measure resulted in the elimination of 5.96 percent of coordination provisions and 12.42 percent of control provisions. Re-running the analyses with the revised measure gave us results that were almost identical to those reported below.

In order to assess the level of trust that existed between the parties during the conflict, every document exchanged between the disputing firms during the entire resolution process was analyzed. Each time either firm sent a communication to the other firm, it was counted as a message. Following the methodology used to test signaling theories (e.g., Spence, 1974; Harms, 2004), the choice *not* to reply to a communication by the other party was also coded as a (“no reply”) message. In total, 2,293 messages were studied (of which only 132 were coded as “no reply”). A scheme for categorizing trust statements was constructed to evaluate each message (see below for further details). Following prior literature on the different dimensions of trust (Mayer, Davis, and Schoorman, 1995; Nootboom, 1996; Das and Teng, 2001), we made a distinction between competence-based trust and character-based trust. *Competence-based trust* refers to Party X’s attributions of Party Y’s ability to perform in ways that are relevant to Party X’s vulnerability. *Character-based trust* refers to Party X’s attributions of Party Y’s benevolence towards Party X, and/or Party Y’s, integrity (Mayer, Davis, and Schoorman, 1995).

Prior studies have shown that some communications contain mixed or dual messages (e.g., Lewicki, McAllister, and Bies, 1998). As such, we allowed each message from either party to be coded as signaling neither, one, or both types of trust. After an evaluation of all documents in a given dispute, the ratio of competence-based trust messages to total messages was calculated, and served as a measure of the degree of competence-based trust. Likewise, the ratio of character-based trust messages to total messages served as a measure of the degree of character-based trust. Thus, consistent with our hypotheses, we separately coded for competence-based trust and character-based trust messages, making it possible for a particular dispute to be coded as high (or low) in both approaches. For example, consider a dispute which has a total of 32 messages, with 7 containing references to competence-based trust and 12

containing references to character-based trust. The score for competence-based trust would then be $7/32 = 0.218$; the score for character-based trust would be $12/32 = 0.375$. All messages, from both parties in the dispute, were coded.

Coding of messages was done by a team of two researchers, following Weber's (1990) protocol. Drawing upon Mayer, Davis, and Schoorman's (1995) definitions of the ability, benevolence, and integrity dimensions of trust (with the latter two being combined in our measure of character), the team developed a list of relevant preliminary response categories to use for coding. We first applied our coding scheme to four cases. Second, we assessed the sample coding and slightly revised the coding rules as a result. (See Appendix A for examples of statements that were coded as competence-based trust and character-based trust.) Third, all documents exchanged by the parties were independently read and coded by each of the two team members.⁶ Fourth, we assessed the reliability of coding by calculating the percent of agreement between the raters (97 percent for competence-based trust and 95 percent for character-based trust) and the pairwise correlation among the raters ($r = 0.948$; $p < 0.01$ for competence-based and $r = 0.939$; $p < 0.01$ for character-based trust). Finally, any disagreements on ratings were resolved through discussion.

Control Variables

Asymmetry. Weber, Malhotra, and Murnighan (2005) suggest that those who have relatively less power in the relationship (cf., Emerson, 1962) often exhibit greater trust in their exchange partners as a means of resolving the psychological anxiety associated with dependence. Because we do not have specific information regarding the ability of one party to exert influence

⁶ We did this based on the item selection and classification process outlined by Jauch, Osborn, and Martin (1980), using computer-software designed for content analysis (Concordance™).

on the other, or on either party's outside options, we controlled for power asymmetry between the parties using firm revenues as a proxy for firm strength. Asymmetry is also necessary to control because it may affect the likelihood that the parties include coordination and/or control provision in the contract. Asymmetry was measured as:

$$\log [\text{ABS} [(\text{Revenue of Firm A}) - (\text{Revenue of Firm B})].$$

Revenue was measured in thousands of inflation-adjusted Euros for the year when the contract was signed. These data were obtained from the Bureau van Dijk's ORBIS database, which contains data for more than twenty million companies.

Type of Settlement: We controlled for the type of resolution that was eventually pursued (litigation vs. private settlement) because the anticipation of this eventuality may have influenced the parties' willingness to make statements that admit to the other party's trustworthiness (or lack thereof). Type of Settlement takes the value of 0 if the dispute was eventually settled through litigation and the value of 1 if the dispute was eventually settled via private negotiation.

National vs. International: Because international disputes may differ from domestic disputes on multiple dimensions, we included a variable to indicate whether or not the transaction was a cross-border relationship (Morris et al., 1998). We created a dummy variable with a value of 0 for relationships between firms from the same country and 1 for international relationships.

Technical Detail. The level of complexity of a transaction may affect trust perceptions, particularly those related to competence-based trust. Parties that are able to handle complex transactions may be viewed as more competent; on the other hand, complex transactions may be more likely to result in misunderstandings and mistakes, which may diminish competence-based trust. The vast literature on transaction cost economics (Williamson, 1985; Sampson, 2004) also

suggests controlling for transaction complexity as it impacts the degree to which parties find it necessary to include coordination and control provisions (our independent variables). We controlled for the level of technical detail of the contract as measured by the degree to which technical specifications of the transaction were specified in the contract (Ryall and Sampson, 2009). This variable was calculated as the logarithm of the number of pages of technical details included in the contract or in its appendix.

Prior Ties. In order to mitigate endogeneity concerns regarding the relationship between contractual provisions and trust, we controlled for the level of trust that existed prior to the contract being signed. Following Gulati (1995a), we used prior ties as a proxy for pre-existing trust. To create our measure of prior ties, we first coded for the existence of a prior relationship. We then improved on this baseline measure of prior ties by coding whether the previous transactions (if any) were viewed positively or negatively by the parties. Based on prior research on satisfaction with trading partners (Heide and John, 1992; Jap and Ganesan, 2000), files that contained messages with explicit references to norms of flexibility, participation, and/or solidarity (elements of a positive relationship) were coded as positive prior ties; files referencing inflexibility, non-participation, and/or individualism in prior business interactions between the partners were coded as negative prior ties. (See Appendix B for further details on this coding scheme.) Two dummy variables (*Positive Prior Ties* and *Negative Prior Ties*) were created. 16.67 percent of the relationships contained references to positive prior ties; 12.74 percent contained references to negative prior ties. When there was no prior tie (67.65 percent), or when there was no reference to positive or negative perceptions (2.94 percent), both variables took on a value of “0”.

Prior Relationship Length. We controlled for the length of the prior relationship between the disputants for two reasons. First, a lengthy interaction history may help the parties build trust (Kramer, 1999). As such, including prior relationship length as a control helps to further mitigate endogeneity concerns. Second, organizations interacting repeatedly may learn from prior experiences, allowing contracts to be specified in greater detail (Mayer and Argyres, 2004; Vanneste and Puranam, 2009). We therefore measure the amount of time for which the firms transacted prior to engaging in the transaction that led to the current conflict (Argyres, Bercovitz, and Mayer, 2007; Dekker, 2008). Prior relationship length is measured as $\ln(\text{number of days} + 1)$. The mean prior relationship length in the sample was 942 days for the 33 cases where firms had prior ties.

Other Factors. The following variables were tested in a supplemental set of tests for our hypotheses, but dropped from the analyses reported below because they did not have any significant effects in any of the analyses: industry (e.g., manufacturing), type of transaction (e.g., distribution contract), time bound (i.e., a dichotomous variable capturing whether the initial contract had a specified end time), stakes (i.e., the amount of money involved in the contract), and geographic distance between the firms. Industry and transaction type had been evaluated because different industries and different types of transactions may be subject to different normative or technical considerations regarding the types of provisions that are deemed necessary to include in a contract (Saussier, 2000). Time bound and geographic distance had been evaluated because these factors may serve as additional proxies for pre-existing trust, with trust potentially higher between firms that plan to work together indefinitely (Poppo, Zhou, and Ryu, 2008; Vanneste and Puranam, 2009), and those that are situated in close proximity (Ryall

and Sampson, 2009). Stakes was evaluated because the amount at risk may influence the type and number of provisions that are included in a contract (Williamson, 1985; Sampson, 2004).

Statistical Analyses

Because the levels of character-based trust and competence-based trust were measured as continuous variables, hierarchical ordinary least squares (OLS) regression were used to test the impact of contractual provisions on the level of each type of trust (Hypotheses 1 and 2). When intent to continue the relationship, a binary variable, served as the dependent measure (Hypotheses 3a, 3b, 4a, and 4b), we used probit models. As a robustness check, we also used logit models for these analyses; results were identical to those reported below.

Hypotheses 3b and 4b predicted mediated relationships. To test for mediation, we followed the procedure outlined by Baron and Kenny (1986). Mediation is supported if all of the following conditions hold: (1) the IV significantly predicts the DV, (2) the IV significantly predicts the MV (mediator variable), (3) the MV significantly predicts the DV, and (4) when the IV and MV are simultaneously included in the analysis, the MV is a significant predictor of the DV, but the IV is no longer a significant predictor. If, in the fourth analysis, the IV remains a significant predictor of the DV when the MV is included, but its effect on the DV has diminished significantly, the result is interpreted as supporting partial mediation.

Finally, it is worth noting that although regression analysis cannot be used to evaluate temporal causality, our data suggest strongly that a temporal sequence is in play. The data associated with the contractual provisions and transaction attributes is based on information that existed prior to the onset of the dispute (T=1). The data associated with character- and competence-based trust is based on messages exchanged at a later time (T=2), after the onset of

the conflict. Finally, the intent to continue the relationship is manifested at the end of the dispute resolution process (T=3). Thus, there is a *de facto* temporal lag that exists between the three sets of data (associated with the independent, mediating, and dependent variables). This provides support for the directionality proposed in our paper (cf., Berry, 1984) as well as in the mediation model. To further mitigate endogeneity concerns regarding the relationship between contracts and trust, we have included measures of positive and negative prior ties, as well as a measure for the length of prior ties, as proxies for pre-existing trust (Argyres, Bercovitz, and Mayer, 2007).

RESULTS

Inter-firm relationships in our sample varied in the degree to which they included control vs. coordination provisions in the contract. The mean number of coordination provisions was 1.58 (out of 3) and the mean number of control provisions was 2.79 (out of 5). Table 2 provides summary statistics and Pearson correlations for the variables used in our analysis. Because some variables were significantly correlated, we checked for potential problems with multicollinearity. The variance inflation factors (VIF) range from 1.25 to 4.75, suggesting that multicollinearity is not a concern (Chatterjee and Price, 1991).

[Insert Table 2 About Here]

Table 3 displays the first set of regression results in which character-based trust and competence-based trust are regressed on contractual provisions (control vs. coordination). Hypothesis 1 predicted that increasing the control provisions of a contract would result in lower character-based trust. As predicted (Table 3, Model 1d), controlling for attributes of the transaction, of the dispute, and of the relationship (e.g., the existence, quality and length of prior ties), the higher the level of control provisions, the lower the level of character-based trust ($\beta = -$

.05; $p < 0.01$). As predicted by Hypothesis 2 (Table 3, Model 2d), increasing the coordination provisions of a contract results in an increase in competence-based trust ($\beta = .14$; $p < 0.001$). Unexpectedly, we also find that increasing the number of control provisions has a positive effect on competence-based trust. We revisit this finding in the Discussion section.

[Insert Table 3 About Here]

Table 4 shows the results of binomial probit regressions in which the dichotomous dependent variable is *Intent to Continue*. A positive coefficient indicates an increased likelihood of continuing the relationship. We had predicted that the greater the level of control provisions, the less likely it would be that the parties would intend to continue the relationship (Hypothesis 3a), and that this effect would be mediated by character-based trust (Hypothesis 3b). Consistent with Hypothesis 3a (Table 4, Model 3d), the higher the level of control provisions, the lower the likelihood of continuing the relationship after a dispute ($\beta = -.78$; $p < 0.01$).

The mediation prediction of Hypothesis 3b requires three additional tests, as outlined by Baron and Kenny (1986). First, as reported above (Table 3, Models 1d), we have established that control provisions predict character-based trust ($\beta = -.05$; $p < 0.01$). Second, we find (Table 4, Model 4c), that character-based trust is positively related to the intent to continue ($\beta = 11.01$; $p < 0.001$). Finally, when we simultaneously include control provisions (the independent variable) and character-based trust (the mediating variable) as predictors of intent to continue (Table 4, Model 5a), character-based trust is still a significant predictor ($\beta = 15.61$; $p < 0.01$), but control provisions is now only marginally significant ($\beta = -.64$; $p < 0.10$), suggesting partial mediation. Thus, we find that control provisions appear to have some degree of direct (negative) effect on the intent to continue the relationship even after we control for the effect of control provisions on character-based trust. As a further test of the mediation effect, we used the procedure outlined in

Sobel (1982). The Sobel test computes a Z-value that assesses whether the indirect effect of the independent variable on the dependent variable through the mediator is significantly different from zero. The Sobel test confirmed the significance of the mediating effect ($z = -2.167; p < 0.05$).

Hypothesis 4a predicted that coordination provisions would positively influence intent to continue and Hypothesis 4b predicted that competence-based trust would mediate this effect. Consistent with Hypothesis 4a, we find that the higher the level of coordination provisions, the higher the likelihood of continuing the relationship after a dispute ($\beta = .74; p < 0.001$). The mediation analysis is also supported. First, as reported above (Table 3, Models 2d), we have established that coordination provisions predict competence-based trust ($\beta = .14; p < 0.001$). Second, we find (Table 4, Model 4c) that competence-based trust positively influences intent to continue the relationship ($\beta = 5.69; p < 0.01$). Finally, when we simultaneously include coordination provisions (the independent variable) and competence-based trust (the mediating variable) as predictors of intent to continue (Table 4, Model 5b), competence-based trust is still a significant predictor ($\beta = 19.97; p < 0.01$), but the coefficient on coordination provisions switches to negative ($\beta = -1.15; p < 0.05$), suggesting that the effect of coordination provisions on intent to continue is partially mediated by competence-based trust. A follow-up Sobel test again confirmed the mediating effect ($z = 3.141; p < 0.01$). The significant *negative* effect of coordination provisions on intent to continue the collaboration after a dispute has arisen, when controlling for the mediator, is an interesting and unexpected result we revisit in the Discussion section.

For completeness, as a final analysis (Table 4, Model 5c), we simultaneously included both independent variables (coordination and control provisions) and both mediating variables

(competence- and character-based trust) as predictors of intent to continue. Consistent with our predictions, both mediators remain marginally significant predictors of intent to continue ($\beta = 15.51; p < 0.10$ and $\beta = 20.43; p < 0.10$). Also, consistent with our predictions, coordination provisions is no longer significant ($\beta = -.02, ns$). Finally, consistent with the results presented above, control provisions continues to have a direct negative effect on intent to continue ($\beta = -2.24; p < 0.10$).

[Insert Table 4 About Here]

DISCUSSION

Prior research on the effects of contracts on trust has yielded results that, at least on the surface, seem contradictory. The results of the current investigation suggest that a more nuanced approach to the study of contracts, coupled with a more nuanced approach to the study of trust, may serve to reconcile, if only in part, the different perspectives on whether contracts diminish or facilitate trust. We find, consistent with those who have argued that contracts “crowd out” trust (e.g., Bernheim and Whinston, 1998; Malhotra and Murnighan, 2002) that the greater the number of control-oriented provisions in a contract, the lower the subsequent level of character-based trust. However, consistent with those who perceive a more complementary relationship between contracts and trust (e.g., Poppo and Zenger, 2002; Lazzarini, Miller, and Zenger, 2004), we find that the greater the emphasis on coordination in a contract, the higher the subsequent level of competence-based trust.

The current investigation also sought to address the scarcity of research on the effects of contractual governance on performance and relational outcomes (e.g., Poppo and Zenger, 2002; Argyres, Bercovitz, and Mayer, 2007; Reuer and Ariño, 2007). We leveraged a rich dataset

comprising over 150,000 pages of contractual detail and inter-firm communications in order to assess the effect of contractual provisions on an important relational and economic outcome: the willingness of firms to continue collaborating after a dispute has arisen. We found that control provisions, by diminishing the level of character-based trust in the relationship, make it less likely that firms will agree to work together after the dispute is resolved. Meanwhile, coordination provisions, by enhancing competence-based trust, facilitate the continuance of a relationship. To our knowledge, the current results are the first to document an effect of contractual choices on the viability of future exchange.

The findings suggest that the contractual choices organizations make when structuring inter-firm exchange have both short-term and longer-term consequences. In the short- to medium-term, initial decisions regarding the extent to which coordination and control are emphasized will impact the level of trust that is built in the relationship. While our data did not allow us to study the effects of trust prior to the onset of the dispute, it is reasonable to expect that relationships with higher levels of competence- and character-based trust are more productive and efficient. In the long-term, contractual choices influence the viability of continued exchange, at least in part due to the type and level of social capital (i.e., trust) that they have fostered. Thus, the results strongly suggest that firm decisions regarding contractual governance should take into account not only (a) transaction attributes (as proposed by the transaction cost economics perspective; Williamson, 1985; Sampson, 2004), and (b) existing levels of trust (e.g., Gulati, 1995a), but also (c) the effect of contractual choices on subsequent trust and relational commitment (cf., Puranam and Vanneste, 2009).

Two unexpected results of our investigation warrant some further discussion. First, we find that control provisions lead to an increase in competence-based trust. Because our review of

the existing literature provides us with little theoretical or empirical basis for explaining this result, we are forced to speculate. One possibility is that the time spent on drafting contractual provisions, even those that pertain to control, leads to a coordination of expectations and assumptions, which in turn facilitates competence attributions (cf., Mayer and Argyres, 2004; Argyres, Bercovitz, and Mayer, 2007). Another, more intriguing possibility is that control provisions, by eliminating incentives for shirking, cheating, and renegeing, force parties to focus more time and effort on their roles and responsibilities. This “substitution effect” away from nefarious conduct promotes exactly the types of behavior (e.g., attention to detail, timely completion, etc.) that will lead to attributions of competence. There may be other explanations for this result, and further research aimed at better understanding the link between control and competence-based trust would be useful.

Another unexpected finding pertains to the effect of coordination provisions on intent to continue the relationship. As reported above, we found that the inclusion of the mediator (competence-based trust) causes the coefficient on coordination provisions to switch from positive to negative. In other words, controlling for the trust effect of coordination, the inclusion of coordination provisions has a separate, negative effect on the relationship. What might explain this negative effect? One possibility is that exchange partners who have worked hard to try to coordinate their expectations, but who *still* fail to avoid a dispute, are more likely to be pessimistic about the viability of continued collaboration. In contrast, those who included few coordination provisions at the outset may conclude that a lack of coordination was the problem, and that “next time we should coordinate better.” More research on how contractual choices affect perceptions of conflict is clearly needed.

The current investigation has a number of additional implications for future research. First, our findings suggest that future research on contracts should attempt to distinguish between control and coordination provisions, and to avoid overly simplified measures of contractual complexity (e.g., length). Had such a distinction not been made in the current investigation, it would have been impossible to accurately assess the effect of contracts on the viability of future exchange. Second, research on the effects of contractual governance should seek to include both outcome measures and mediator variables. In the current investigation, for example, we find that our proposed mediators account for some, but not all of the effects of contracts on the intent to continue, thus raising additional questions regarding the mechanisms underlying these relationships. Our findings also underscore the importance of studying trust in ways that are sensitive to the multidimensionality of this rich construct. Building on the work of Mayer, Davis, and Schoorman (1995) and Das and Teng (2001), we distinguished between character-based and competence-based trust. However, there are many other typologies of trust that may be useful to consider in the context of contractual relationship (e.g., Rempel, Holmes, and Zanna, 1985; McAllister, 1995; Lewicki and Bunker, 1996).

It is worth considering the conditions under which the results we have documented are most likely to surface. As noted previously in our discussion of control provisions, the mechanisms that result in a “crowding out” of character-based trust all require that the contract itself is a sufficiently salient feature of the relationship (Malhotra and Murnighan, 2002; Puranam and Vanneste, 2009). This is more likely to be the case in small and mid-size firms, in contexts where contracts are negotiated at least in part by the interacting parties themselves (and not entirely by an arm’s length legal entity), and when the contract is the first of its kind in structure or scope. Our results, as well as our discussions with lawyers of the firm, suggest that

the contracts in our sample were not merely ceremonial, nor entirely institutionalized, and were likely salient to the interacting parties. It is likely, we are told, that although lawyers would have drafted much of the contractual language, the interacting parties would have been involved in the contracting process. This appears consistent with the processes described by Mayer and Argyres (2004); in their sample, lawyers were responsible for part, but not all aspects of contracting.

Notably, the effect of coordination provisions on competence-based trust may be less reliant on the salience of the contract. In the early stages of the relationship, coordination provisions—or the discussions that lead to the inclusions of such provisions—would need to be salient in order to guide expectations and behaviors. Once such expectations and behaviors have taken hold, the provisions may become less relevant. This is consistent with research on Coordination Games, which finds that once parties have managed to coordinate on a Pareto-optimal equilibrium, they no longer need to rely on coordinating mechanisms (Camerer, 2003).

A number of limitations of the current study are also worth delineating. First, because of the nature of our dataset, our sample consists only of inter-firm disputes. On the one hand, this approach provided a wealth of data (not just on the contracts, but also on inter-firm communications), and was critical for evaluating the effects of contractual choices on trust and relationship continuance following a conflict. On the other hand, this creates a potential for selection bias: relationships in dispute may differ from well-functioning relationships on important dimensions (e.g., transaction complexity, pre-existing trust, contractual provisions, etc.). This could serve to limit the generalizability of our findings. There are a number of factors that mitigate this concern: (a) our comparison of contract, firm, and relationship characteristics of our sample with available benchmarks suggests that our sample is quite representative of the broader universe of inter-firm relationships; (b) if relationships in conflict

are less likely to entail trust, or more likely to contain certain contractual provisions, then this should make it harder for us to find any effect in the data; (c) given the extreme disruption that a legal dispute represents, it is arguable that we have picked perhaps the harshest possible context in which to document an effect of contracts on trust and on willingness to collaborate; (d) even if there is a selection bias (e.g., towards firms that are less competent, or transactions that are more complex), there is no obvious reason why such a bias would lead to support for our hypothesized relationships between contractual provisions, trust dimensions, and relationship continuance; and (e) to the extent possible, we have tried to control for as many relevant factors (prior ties, transaction attributes, etc.) in our analyses. Nonetheless, future research aimed at replicating and building on these results in a “conflict-free zone” will be useful. A second limitation of the current study is that we focus on only one type of outcome variable (relationship continuance). Research aimed at assessing other performance variables (e.g., profits) and relational variables (e.g., partner satisfaction) would be of clear benefit. Third, as with any such analysis, it is impossible to fully ensure that the results of our analyses support precisely the causal relationships we have predicted (i.e., that contractual provisions affect trust, and that trust, in turn, influences the intent to continue). Two factors help mitigate these concerns: (a) our data is longitudinal in nature; (b) we have included proxies for pre-existing trust—measuring not only the existence of prior ties, but also their quality and length—as control variables in our analyses. Nonetheless, future research using an experimental design aimed at more rigorously assessing causality would certainly complement the current investigation. Relatedly, while we have improved on previous measures of pre-existing trust, which have typically looked only at the existence of prior ties, there is room for further improvement. Better ways of measuring and controlling for pre-existing trust would serve the interests of all who study these issues. Fourth,

while our empirical approach suggests a clear distinction between control and coordination provisions, we acknowledge that some provisions may simultaneously accomplish both objectives (e.g., Woolthuis, Hillebrand, and Nooteboom, 2005). For example, a provision that imposes penalties for unacceptable behaviors will both control the actions of the other party as well as clarify what is expected. Although our coding scheme, derived from existing research (Reuer and Ariño, 2007), relied on what may be considered a “blunt instrument” approach to categorization of provisions, our supplemental analyses (see footnote 5) suggest that even when we eliminate ambiguous clauses from the analysis, the results hold. Future research should seek to not only refine methods for coding coordination vs. control provision, but also incorporate insights from other frameworks that make related predictions. For example, Malhotra and Murnighan (2002) distinguish between binding and non-binding contracts, whereas Argyres, Bercovitz, and Mayer (2007) distinguish between contingency planning and task description terms.

This study sought to conceptually refine and empirically extend previous work on the relationship between contractual and relational governance, and specifically, the effect of contracts on trust and trust-related outcomes in inter-organizational relationships. The findings not only point to opportunities for bridging the divide between heretofore discrepant perspectives, but also provide a more nuanced understanding of these issues. It is hoped that future research that builds on the strengths of the current approach, and overcomes the weaknesses herein admitted, will be forthcoming.

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Figure 1. Timeline of Sample Dispute

Each box represents a message that was exchanged between the parties and coded in our analysis. For purpose of visual clarity, we only show messages that (a) are important for understanding the process and/or (b) contain trust statements.

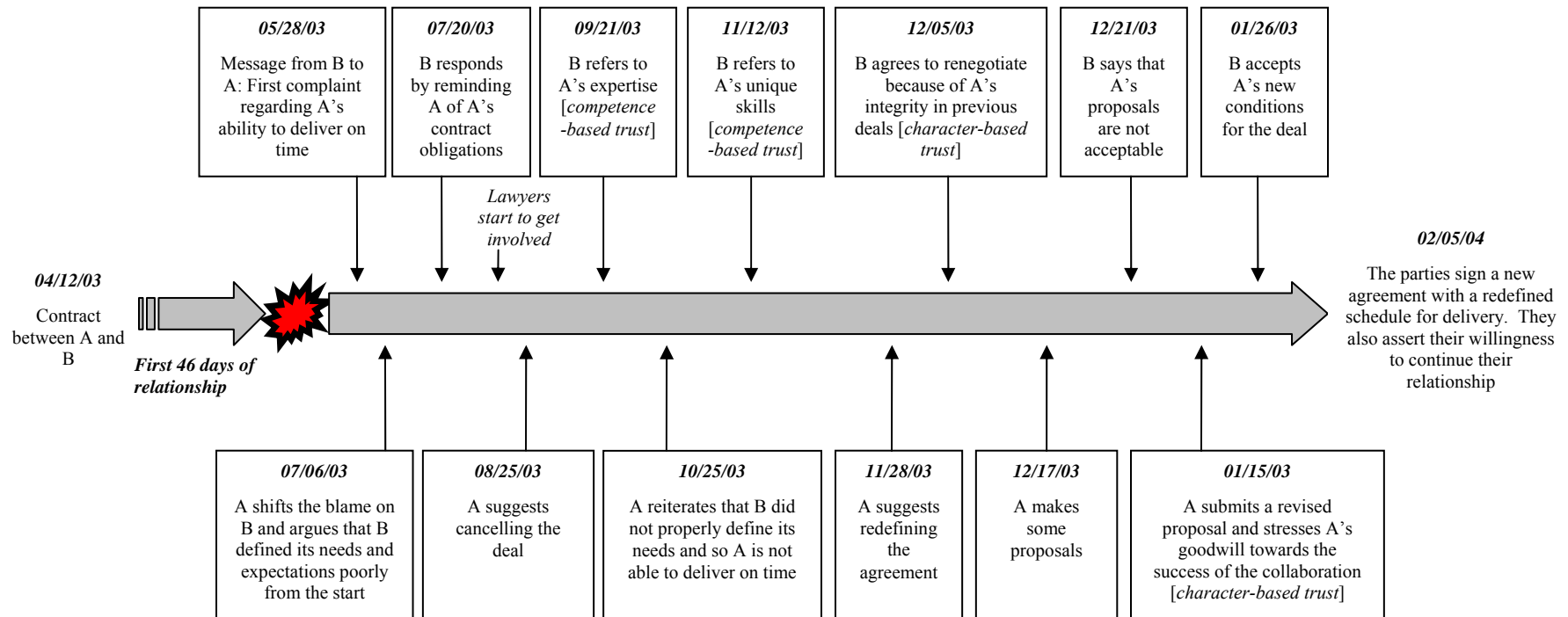


Figure 2. Representation of Contract Clause Categories in Sample

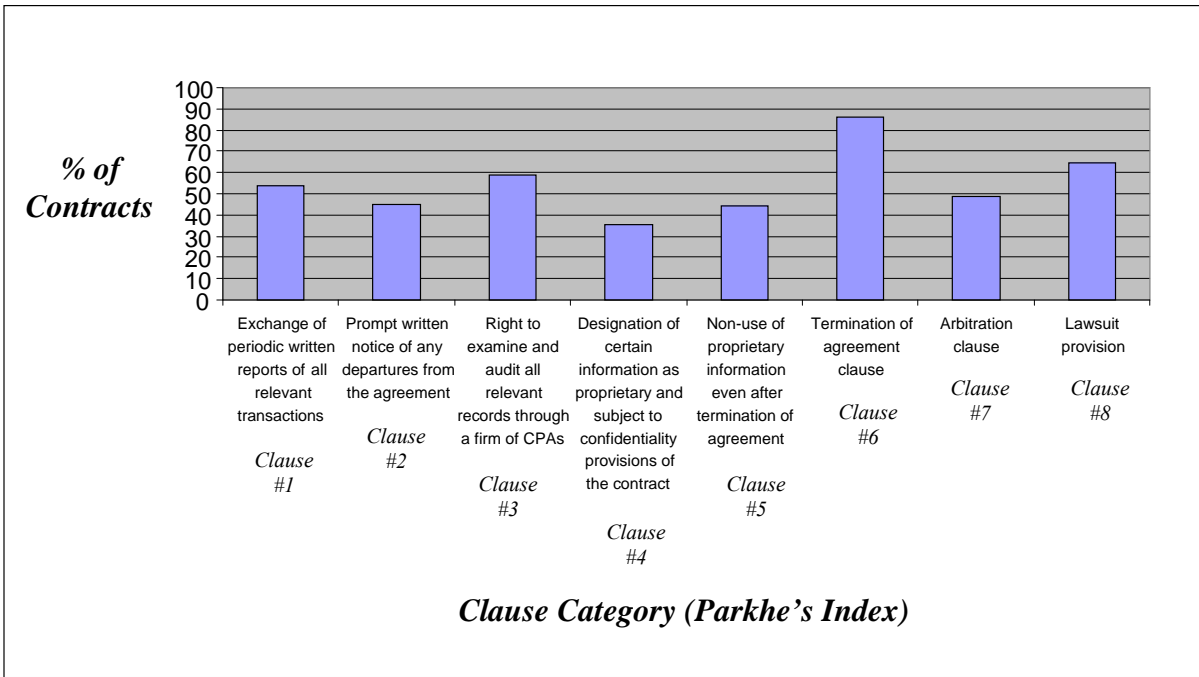


Table 1. Primary Industry Affiliation of Firms in the Sample

	# of firms	% of total
Manufacturing: Industrial & Commercial Machinery (SIC 35)	25	14.0%
Manufacturing: Chemicals & Allied Products (SIC 28)	21	11.8%
Manufacturing: Electronic & Electrical Equipment & Components (SIC 36)	15	8.4%
Manufacturing: Other (SIC 20-39, excluding above)	32	18.0%
Construction (SIC 15-17)	3	1.7%
Retail (SIC 52-59)	26	14.6%
Services (SIC 70-89)	56	31.5%
<i>Total</i>	178	100.0%

Table 2. Descriptive Statistics and Correlations

Variables	Mean	Min.	Max.	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1. Intent to continue	.284	0	1	.453	1											
2. Control provisions	2.794	0	5	.988	-.066	1										
3. Coordination provisions	1.578	0	3	1.093	.383*	.239*	1									
4. Character-based trust	.223	0	.666	.168	.788*	-.047	.167	1								
5. Competence-based trust	.261	0	.8	.220	.600*	.456	.769*	.476*	1							
6. Settlement type	.401	0	1	.492	.458*	.252*	.097	.576*	.366*	1						
7. International	.460	0	1	.500	.115	-.086	-.039	.167	-.006	.084	1					
8. Asymmetry	7.66	5.17	10.28	.965	.007	.046	-.019	.037	-.083	.141	-.169	1				
9. Technical detail	1.19	-.69	4.8	1.405	.101	.487*	.348*	.032	.307*	.052	.132	.093	1			
10. Negative prior ties	.127	0	1	.335	-.110	-.218*	.040	-.125	-.200*	-.253*	.000	.227*	-.041	1		
11. Positive prior ties	.166	0	1	.374	.009	-.013	-.068	.022	.034	.169	-.202*	.034	-.097	-.170	1	
12. Prior relationship length	1.80	0	8.63	2.94	-.087	-.202*	-.052	-.076	-.168	-.076	-.094	.152	-.088	.641*	.596*	1

* $p < 0.05$

Table 3. The Effect of Control vs. Coordination Provisions on Character- and Competence-Based Trust

	Type of trust							
	Character-based				Competence-based			
	Model 1a	Model 1b	Model 1c	Model 1d	Model 2a	Model 2b	Model 2c	Model 2d
<i>Independent variables</i>								
Control provisions		-.045** (.017)		-.047** (.016)		.062** (.023)		.054*** (.014)
Coordination provisions			.021 (.014)	.022 (.013)			.145*** (.012)	.143*** (.011)
<i>Control variables</i>								
Judicial resolution	.200*** (.030)	.220*** (.030)	.193*** (.030)	.214*** (.030)	.166*** (.042)	.138** (.042)	.120*** (.026)	.096*** (.025)
International	.034 (.029)	.019 (.029)	.040 (.029)	.024 (.029)	-.038 (.041)	-.016 (.040)	-.002 (.026)	.015 (.024)
Asymmetry	-.005 (.015)	-.006 (.015)	-.001 (.015)	-.003 (.015)	-.044* (.021)	-.042* (.021)	-.021 (.013)	-.019 (.013)
Technical detail	-.001 (.010)	.014 (.011)	-.007 (.010)	.008 (.011)	.050** (.014)	.028† (.015)	.007 (.009)	-.010 (.010)
Negative prior ties	.006 (.127)	.017 (.123)	-.027 (.128)	-.018 (.124)	.026 (.174)	.250 (.169)	.033 (.112)	.023 (.105)
Positive prior ties	-.026 (.108)	-.008 (.105)	-.045 (.108)	-.028 (.105)	.242 (.149)	.218 (.144)	.115 (.095)	.095 (.088)
Prior relationship length	.000 (.017)	-.004 (.016)	.004 (.017)	.000 (.016)	-.044† (.023)	-.038 (.023)	-.018 (.015)	-.012 (.014)
Constant	.169 (.120)	.295* (.125)	.117 (.124)	.243† (.128)	.502** (.165)	.331† (.172)	.150 (.109)	.005 (.108)
R ²	.350	.397	.366	.415	.285	.335	.716	.755
Adjusted R ²	.301	.345	.311	.358	.232	.278	.691	.731

$N = 102$; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Standards errors are in parentheses.

Table 4. The Effect of Control and Coordination Provisions on the Intent to Continue in the Relationships

	Intent to continue									
	Model 3a	Model 3b	Model 3c	Model 3d	Model 4a	Model 4b	Model 4c	Model 5a	Model 5b	Model 5c
<i>Independent variables</i>										
Control provisions		-.595** (.201)		-.778** (.246)				-.642† (.339)	-2.275** (.620)	-2.238† (1.158)
Coordination provisions			.622*** (.172)	.739*** (.194)				1.445* (.518)	-1.146* (.514)	-.023 (.884)
Character-based trust					9.906*** (2.013)		11.005*** (2.928)	15.613** (4.864)		15.508† (9.271)
Competence-based trust						4.954*** (1.134)	5.689** (1.984)		19.965** (6.167)	20.434† (11.399)
<i>Control variables</i>										
Judicial resolution	1.393*** (.327)	1.805*** (.381)	1.440*** (.371)	1.986*** (.452)	.061 (.510)	.999* (.404)	-.274 (.643)	.236 (.795)	2.101** (.760)	1.440 (1.331)
International	.217 (.312)	.059 (.331)	.425 (.345)	.282 (.375)	-.174 (.480)	.559 (.393)	.069 (.595)	-.037 (.769)	1.047 (.832)	.261 (1.725)
Asymmetry	-.142 (.170)	-.150 (.181)	-.112 (.184)	-.177 (.206)	-.139 (.241)	.023 (.204)	-.027 (.275)	.042 (.303)	.238 (.315)	.160 (.517)
Technical detail	.070 (.099)	.269* (.125)	-.062 (.116)	.196 (.153)	.045 (.136)	-.140 (.134)	-.288 (.215)	-.272 (.340)	.320 (.247)	-.330 (.602)
Negative prior ties	.932 (1.248)	.965 (1.298)	.521 (1.407)	.728 (1.500)	1.486 (1.478)	.494 (1.573)	.880 (1.859)	1.224 (2.098)	3.367 (2.351)	5.132 (4.457)
Positive prior ties	.470 (1.017)	.598 (1.052)	.228 (1.127)	.502 (1.191)	1.107 (1.229)	-.216 (1.260)	.347 (1.534)	.868 (1.745)	1.401 (1.693)	1.979 (2.674)
Prior relationship length	-.108 (.165)	-.166 (.169)	-.059 (.185)	-.156 (.193)	-.182 (.195)	-.020 (.213)	-.057 (.252)	-.233 (.267)	-.355 (.273)	-.534 (.469)
Constant	-.354 (1.279)	1.031 (1.442)	-1.643 (1.403)	.350 (1.646)	-2.115 (1.841)	-2.868† (1.620)	-4.263† (2.286)	-5.342† (3.122)	-2.330 (2.688)	-6.373 (5.226)
R ²	.198	.279	.323	.428	.610	.431	.715	.779	.752	.857
χ ²	24.16	34.05	39.36	52.15	74.38	52.56	87.18	94.90	91.62	104.44

$N = 102$; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Standard errors are in parentheses.

Appendix A. Examples of Statements Coded as Competence- vs. Character-Based Trust

Response categories were derived from definitions of trust dimensions in Mayer, Davis, and Schoorman (1995), Mayer and Davis (1999), Davis et al. (2000), and Schoorman, Mayer, and Davis (2007).

Competence-Based Trust: Messages were coded for references to skills, competencies, aptitude, training, and/or experience.

Examples:

“We know that you are able to do it properly.”

“Usually you deliver it on time.”

“My engineers told me that they are confident about your experience in the [...] field.”

“You manifested your high level of competence during Phase 1 of the Project.”

Character-Based Trust: Messages were coded for references to benevolence and/or integrity.

Benevolence Examples:

“We know you want the success of this Project.”

“We really appreciated your technicians’ efforts to repair the damage during the night.”

“Your employees have been kind and friendly to help [Firm A] to face this issue.”

Integrity Examples:

“So far, you have been fair and honest.”

“[Firm B] is well known for respecting its employees. It is what gives you a great reputation!”

“You have moral principles and I like that.”

Appendix B. Distinguishing Positive vs. Negative Prior Ties

Information on the quality of the prior relationship was drawn from files documenting communications between the exchange partners, as well as from lawyers' notes in the case files. Lawyers' notes are typically compiled during the first few meetings between the lawyer and the client. During these meetings, lawyers interview the client regarding the nature of the current and past exchange relationships between the parties, the perceived behavior of the other party in this and prior transactions, the origins of the current dispute, etc.

To distinguish between positive and negative prior ties, we first developed a preliminary list of relevant response categories for use in coding. Extant research on attitudes towards, and satisfaction in, trading relationships suggests three highly interrelated dimensions of the higher order construct of relational norms: flexibility, participation, and solidarity (Macneil, 1980; Heide and John, 1992; Jap and Ganesan, 2000). Flexibility refers to the shared expectations that parties will make adjustments to accommodate changes in the environment or in parties' needs (Noordewier, John, and Nevin, 1990; Boyle et al., 1991); participation refers to the willingness of parties to make investments in the relationship and share information, whether or not these behaviors are contractually mandated (Heide and John, 1992; Lusch and Brown, 1996). Finally, solidarity refers to the expectation that parties will generally act in ways that increase mutual benefit, engage in bilateral problem solving, and commit to joint, coordinated action towards shared objectives (Macneil, 1980; Heide and John, 1992). We thus coded as positive prior ties, messages that contained references to any of these perceptions. Negative prior ties, it follows, were those that referenced elements of inflexibility, non-participation, and lack of solidarity.

Prior ties were coded as follows:

- *Positive Prior* = 1 if the file contains explicit references to flexibility, participation, and/or solidarity in prior interactions between the partners; 0 otherwise.
- *Negative Prior* = 1 if the file contains explicit references to inflexibility, non-participation, and/or individualism in prior business interactions between the partners; 0 otherwise.
- Files coded as zero on both measures were cases with no reference to any transactions between the firms prior to the start of the contract under dispute. 69 cases fit this description. In addition there were three cases with a very brief mention of prior ties but no elaboration regarding positive or negative relations. (For example, "Our teams worked together last year for the [ABC] contract").

Coding of case notes was done by a team of two researchers following Weber's (1990) protocol. The coding scheme was tested on four cases after which minor modifications were made. Next, all documents exchanged by the parties were independently read and coded by each of the two team members. We found that in all cases, the two parties were consistent with regards to how they referenced their prior relationship (positive vs. negative). The next step involved an item selection and classification process (Jauch, Osborn, and Martin, 1980) with a systematic computer-based analysis of the data using Concordance™ software. In order to assess the coding we calculated the level of agreement between the raters (all superior to 95 percent) and the correlation between the ratings (all superior to .90 at the 0.01 level), which together indicate a high degree of consistency in the ratings. Any residual disagreements on ratings were resolved by discussion.