The Effects of Contracts on Interpersonal Trust

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This paper uses two laboratory experiments to investigate the effects of contracts on interpersonal trust. We predict that the use of binding contracts to promote or mandate cooperation will lead interacting parties to attribute others' cooperation to the constraints imposed by the contract rather than to the individuals themselves, thus reducing the likelihood of trust developing. We also predict that, although non-binding contracts may not generate as much initial cooperation as binding contracts, they will generate personal rather than situational attributions for any cooperation that results and will therefore not interfere with trust development. Two experiments investigated the effects of the use and removal of binding and non-binding contracts. When binding contracts that were previously allowed were no longer allowed or no longer chosen, trust dropped significantly. In contrast, non-binding contracts led to considerable cooperation, and their removal reduced trust less than removing binding contracts. Behavioral and perceptual data suggest that non-binding contracts lead to personal attributions for cooperation and thus may provide an optimal basis for building interpersonal trust in a variety of situations.

People in social and organizational contexts often face risk and uncertainty in their interpersonal interactions (Arrow, 1974; Fukuyama, 1995). To mitigate these problems, individuals and organizations rely on both formal structures, such as hierarchies, regulations, and contracts (e.g., Williamson, 1975), and informal structures, such as communication, norms, and trust (e.g., Macauley, 1963; Kramer and Tyler, 1996). Among the formal mechanisms, the use of contracts is both prevalent and pervasive. In organizations, contracts have become routinized solutions to problems of agency, control, and uncertainty. Between organizations, contracts dictate the terms of buyer-seller relationships, alliances, and joint ventures. In social domains, contracts facilitate exchanges by reducing uncertainty (e.g., Williamson, 1979), eliminating risk (e.g., Williamson, 1996), enhancing control (e.g., Klein, 1993), and mitigating agency problems (Jensen and Meckling, 1976). Often, contracts make it possible for risk-averse parties to create mutually beneficial relationships. In cases like employer-employee relationships, contracts are often taken for granted, even though their details may be negotiated.

Although contracts may be necessary as stakes increase (cf. Jensen and Meckling, 1976), cooperation can also be achieved without them. Informal mechanisms such as trust can help solve agency problems (e.g., Jones, 1995), facilitate market processes (Arrow, 1974), and increase cooperation within and between organizations (e.g., Smith, Carroll, and Ashford, 1995). Trust increases cooperation in strategic interactions (e.g., Mayer, Davis, and Schoorman, 1995), information sharing in negotiations (Thompson, 1991), and the mutual benefits of interpersonal interactions (e.g., Siamwalla, 1978). Trust can also reduce uncertainty (Kollock, 1994) and lead to more efficient negotiated agreements (e.g., Carnevale and Isen, 1986).

The literature suggests that contracts and trust can or do substitute for one another (Zucker, 1986; Ring and Van de

0001-8392/02/4703-0534/$3.00.

This project benefited from the assistance and support of several organizations and many people. We gratefully acknowledge the financial assistance of the Dispute Resolution Research Center at the Kellogg Graduate School of Management at Northwestern University. We thank Sheeraz Daudi for his assistance with computer programming. We also thank Michael Jensen, Linda Johanson, Mark Kennedy, Gillian Ku, Joseph Porac, Sandra Robinson, Maurice Schweitzer, Richard Shell, and three anonymous reviewers for their constructive and insightful comments on earlier versions of this manuscript.

Ven, 1994; Guseva and Rona-Tas, 2001). If trust has not been established, a contract that specifies the rights and responsibilities of the parties makes sense (e.g., Coffrin and Cochran, 1982; Sitkin and Roth, 1993). If trust is strong, the parties may feel no need for the specifics or constraints of a contract. Instead, they may be able to fulfill mutually beneficial agreements without one (e.g., Zaheer and Venkatraman, 1995; Uzzi, 1997). Yet neither trust nor contractual agreements, in isolation, may be enough to secure long-term cooperation. On the one hand, contracts, though important, cannot address all of the contingencies that might develop in a relationship (see Bernheim and Whinston, 1998). This makes it necessary to cultivate trust (cf. Dasgupta, 1988; Parkhe, 1998). On the other hand, it may be crucial for the parties not to underestimate the need to "get it in writing" (e.g., Nye, 1988; Berger, 1997; Drake, 1999).

Some theorists (Sitkin, 1995; Das and Teng, 1998; Wicks, Berman, and Jones, 1999) have suggested that a mix of formal and informal structures is often necessary to manage complex relationships. According to Sitkin (1995), formal structures can simultaneously manage risk and uncertainty while furthering the development of trust. Using contracts to promote cooperation, for instance, might provide a foundation for future interactions and future cooperation. This, in turn, can help build trust. In contrast, others have suggested that it may be difficult to rely on contracts and trust simultaneously to deal with risk and uncertainty. Bernheim and Whinston (1998), Sitkin and Roth (1993), and Ghoshal and Moran (1996) suggested that the existence of formal structures can diminish the viability of informal structures. Several other authors have also alluded to the possibility that using contracts might undermine the development of trust (e.g., Shapiro, Sheppard, and Cheraskin, 1992; Sitkin and Roth, 1993; Lewicki, McAllister, and Bies, 1998). To clarify the effects of contracts on trust, we conducted two experiments to investigate whether the use or the type of a contract might inhibit or facilitate trust development.

THE EFFECT OF CONTRACTS ON TRUST

Definitions of trust vary across both disciplines (e.g., psychology, sociology, economics) and levels of analysis (e.g., interpersonal, societal, institutional). In their interdisciplinary survey of research on trust, Rousseau et al. (1998: 395) offered the following, general definition of interpersonal trust: "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another." Similarly, Mayer, Davis, and Schoorman (1995: 712) defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party." As these definitions suggest, both vulnerability and the expectation of cooperation (or benevolence) on the part of the trusted party are central to the idea of trust. Thus, trust differs from contracts in that the mechanism underlying trust resides with the individuals involved, while contracts are external mechanisms of control.

Alternatively, trust has been defined as a set of expectations that are shared among those involved in an exchange or who are otherwise interdependent (Macaulay, 1963; Garfinkel, 1967; Luhmann, 1979; Zucker, 1986). According to this conceptualization, because contracts also help to reduce uncertainty and create shared expectations, both contracts and trust are different bases for the same underlying construct (e.g., Garfinkel, 1963, 1967). Whereas Rousseau et al.'s (1998) conception of trust focuses on a psychological state and locates trust in the individual, Garfinkel (1967) and Zucker (1986) focused on trust as a set of shared expectations that must necessarily be situated in relationships between individuals, i.e., in dyads, groups, or society.

These two perspectives are neither mutually exclusive nor contradictory. We follow Rousseau et al. (1998) and others (e.g., Parsons, 1939; Mayer, Davis, and Schoorman, 1995; Lewicki, McAllister, and Bies, 1998; Kramer, 1999), however, in distinguishing between trust and contracts and reserve the use of the term "trust" to refer to the reduction of uncertainty (or the management of risk) via informal structures, for two reasons. First, we are interested in the effects of formal structures (i.e., contracts) on the long-term efficacy of informal structures (i.e., trust). Second, we are interested in understanding the psychological mechanisms involved in one party being able (or unable) to expect cooperation from another. Thus, we conceptualize trust as a psychological state of the individual, comprising positive attributions about another's behavior that is subject to influence by formal structures in a relational context.

Unlike trust, contracts are external controls that help to reduce uncertainty by constraining individual and organizational behaviors. According to the Lectric Law Library (http://www.lectlaw.com), a contract is "an agreement between two or more competent parties in which an offer is made and accepted, and each party benefits. The agreement can be formal, informal, written, oral, or just plain understood. Some contracts are required to be in writing in order to be enforced." As this definition suggests, contracts vary in the degree to which they can be enforced and are binding. Depending on the institutional or societal context, different types of contracts might be more or less binding for various reasons (e.g., legal statutes, strong norms, etc.). Thus, strong normative pressures can make handshake deals or promises binding. In other contexts, such agreements may provide only the weakest of constraints. Explicit, written contracts between freely agreeing parties are most easily enforceable by law (e.g., Elkouri and Elkouri, 1985). They tend to be stringently binding. Informal, verbal agreements, or handshake deals, may also be enforceable, but disputes involving these agreements can be more contentious, as terms of the agreement may be less clear. Thus, they tend to be less binding. Needless to say, different contractual forms may generate different consequences, especially with regard to interpersonal trust. Subtle interactional nuances may have considerable impact later (cf. Weick, 1993). Thus, studying the extremes—contracts that are binding versus short, informal messages that can generate expectations but are considered

non-binding—could provide a first step in understanding the interactive dynamics of contracts and trust.

Mayer, Davis, and Schoorman (1995) suggested that perceptions of ability, benevolence, and integrity underlie interpersonal trust. When people are seen as capable, as having our best interests in mind, and as being honest or fair, we come to trust them. Kramer (1999) summarized six broad categories of the causes for these perceptions. Among them is "dispositional trust," which refers to individual differences in people's propensities to trust others (Rotter, 1967, 1971). Some people are more inclined to presume that others tend to act ethically. "Category-based trust" refers to trust based on the trusted party's membership or affiliation with a social category (e.g., Orbell, Dawes, and Schwartz-Shea, 1994). Thus, accredited doctors are usually considered competent and, hence, may be trusted. Third parties provide another basis for attributions of trustworthiness (cf. Burt and Knez, 1995). Thus, a friend of a friend may be perceived as benevolent. Role-based and rule-based trust depend on roles and rules, respectively, to reduce risk and uncertainty. The final and perhaps primary way in which interpersonal trust tends to develop is through repeated, positive interactions (e.g., Shapiro, Sheppard, and Cheraskin, 1992).

Research on interpersonal trust development has largely focused on the role of accumulated firsthand knowledge of others and suggests that trust depends in large part on the parties' interaction history (e.g., Lindskold, 1978; Lewis and Weigert, 1985; Boon and Holmes, 1991). As Kramer (1999: 575) noted, "interaction histories give decision makers information that is useful in assessing others' dispositions, intentions, and motives. This information, in turn, provides a basis for drawing inferences regarding their trustworthiness and for making predictions about their future behavior." Regardless of the level of presumptive trust that each party might bring to a relationship, or the extent to which categories or third parties enhance perceptions of trustworthiness, repeated cooperative interactions provide a central means for building or increasing trust.[1]

For interpersonal trust and its antecedent attributions to develop, however, cooperative interaction is not sufficient. Cooperation must also be interpreted as a reflection of the cooperator's disposition or motives rather than to other, situational factors (cf. Gambetta, 1988). A person who has no choice but to cooperate would not be said, on this basis alone, to be trustworthy. Trust can only develop when the parties have an incentive and an opportunity not to cooperate. If one party cooperates under such conditions, the other party may reasonably attribute trustworthiness to him or her. This logic suggests that formal structures that restrict the behavior of actors might preclude the development of positive dispositional attributions. Thus, the presence of a contract that restricts exploitation and opportunism may make trust development difficult.

Agreeing to either binding or non-binding contracts indicates a willingness to cooperate and encourages individuals to follow through on their stated commitments (cf. Kerr and Kauf-

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Shapiro, Sheppard, and Cheraskin (1992) suggested three broad categories or typologies of trust: deterrence-based trust, knowledge-based trust, and identification-based trust. These typologies overlap somewhat with Kramer's (1999). We use Kramer's typologies to frame our discussion because our focus is on how prior interactions might affect trust.

man-Gilliland, 1994). Thus, both types of contracts should facilitate cooperation. The two types of contracts differ, however, in the constraints that they impose. While binding contracts restrict the ability to renege, non-binding contracts entail greater risk. By eliminating or greatly reducing risk, binding contracts should enhance cooperation more than non-binding contracts. The elimination of risk associated with binding contracts, however, may limit an individual's ability to attribute positive or benevolent intentions to a cooperative counterpart, eliminating a primary mechanism of trust development. In contrast, individuals who cooperate when their actions are less restricted (i.e., after agreeing to non-binding contracts) can still build trust on the basis of personal attributions for their volitional cooperation.

Binding contracts. Truly binding contracts ensure that each party will follow through on his or her commitments. Thus, if one party proposes a binding contract and the other party accepts, the two can eliminate the risk of opportunism or exploitation and enjoy a mutually beneficial exchange. Having the option to use binding contracts, then, can be mutually beneficial. This suggests:

Hypothesis 1 (H1): Interacting parties who have the option of using binding contracts will achieve greater cooperation than interacting parties who cannot use contracts.

The difficulty with binding contracts is that they give the interacting parties an opportunity to attribute their cooperation to the contract (a situational attribution) rather than to each other's fair or noble motives. Thus, binding contracts may limit interacting parties' willingness or ability to judge each other as being benevolent or possessing integrity, and underlying trust may not develop. When people use binding contracts, they are more likely to formulate situational rather than personal (dispositional) attributions of the other's cooperation for two reasons. First, the existence of the situational constraint (the contract) is likely to be particularly salient, which Taylor and Fiske (1975, 1978) suggested makes a factor more likely to be perceived as causal. Second, analysis of a behavior's variance is an important basis for attributional judgments (Kelley, 1967): when consensus is high (i.e., most people act this way), situational attributions become more likely. Due to the legal enforcement of binding contracts, most people act in accordance with their requirements. Their behavior, consequently, may not be seen as particularly indicative of their dispositions. If contracts are considered the primary reason for another party's cooperation, situational attributions should replace dispositional attributions, and a cooperative interaction history may not lead to trust development. Thus, contractually mandated cooperation may provide an insufficient basis for continued cooperation if contracts are no longer available to parties who have previously used them or if contingencies not included in the contract arise. Someone who has only been known to cooperate under the constraints of a binding contract might not, in the absence of the contract, be expected to cooperate because he or she is not seen as trustworthy. Hence, the use of contracts might inhibit trust, suggesting the following hypothesis:

Hypothesis 2 (H2): Not being allowed to use a binding contract after having used binding contracts previously will inhibit the development of trust.

Finally, the loss of a contract is likely to be particularly detrimental when one party freely chooses no longer to propose or allow one. Although both parties may gain from the use of a contract (see Bernheim and Whinston, 1998), asymmetries in information and in costs of contracting (see Spier, 1992) can create imbalances in the parties' motives. This can lead one or the other of the parties to want to forego a contract, include more contingencies, or suggest other variations. One party no longer offering a contract can easily lead the other party to wonder what's up. Thus, being asked to accept the risks of unprotected, non-contracted actions after having the security of a series of binding contracts may be a negative outcome that is easily attributable to the other party. This can result in perplexity or anger (e.g., Ortony, Clore, and Collins, 1990). It may be easier to accept a poor outcome (here, the removal of the contract) if it can be attributed to chance, mutual acknowledgement of costs, or some external source, rather than to the other party (e.g., Blount, 1995). Thus, the loss of a contract may be particularly detrimental when it is the result of the other party's choice rather than because of some exogenous force.

Hypothesis 3 (H3): Choosing not to offer a binding contract after having offered binding contracts previously will inhibit the development of trust.

Hypothesis 4 (H4): Choosing not to offer a binding contract will inhibit the development of trust more so than will an exogenous removal of contracts.

Non-binding contracts. While the use of binding contracts is quite common, especially in business relationships, non-binding, informal agreements form the basis for many mutually beneficial interactions between individuals and between organizations (e.g., Powell, Koput, and Smith-Doerr, 1996). Non-binding contracts are often characterized by mutual agreement and may be explicit, but due to the legal or normative context, they may not be strictly enforceable. Although such agreements can be efficient substitutes for binding contracts, either party can more easily renege on a non-binding agreement than a binding one because the cost of doing so is relatively low. To some degree, the choice between binding and non-binding contracts may depend on an analysis of the costs of binding contracts and the risks associated with informal, non-binding contracts.

An additional benefit of non-binding contracts is the possibility that they may not inhibit the development of interpersonal trust. In contrast to the effects of binding contracts, promises and assurances that are not binding may actually facilitate trust development by increasing the likelihood of attributions of trustworthiness: when one party promises to cooperate and then fulfills his or her promise, positive attributions are likely. Subsequent positive interactions can then increase trust. Here we investigate whether assurances of benevolence or reciprocity, which are characteristics of non-binding contracts, will elicit cooperation without the clear control or

monitoring mechanisms that are provided by binding contracts. If they do not, then people must choose between building trust (by foregoing binding contracts) versus using binding contracts that mandate cooperation. If non-binding contracts enhance cooperation but do not inhibit the development of trust, then they can solve the potential problems of binding contracts (hypotheses 2–4).

Formal models of rational economic behavior (e.g., Farrell and Gibbons, 1989) suggest that, in many economic interactions, talk is "cheap," that is, the claims of potentially self-interested parties are unverifiable and essentially costless and so should not be presumed to be trustworthy (e.g., Pillutla and Murnighan, 1995; Croson, Boles, and Murnighan, 2002). Cheap-talk models suggest that because people will be dubious, neither party has anything to gain by communicating an intent to behave in a trustworthy manner unless a proposal is binding or one party can impose costs on the other for violating the proposal. Cheap-talk experiments, however, have consistently shown that mere words can facilitate mutual cooperation (e.g., Farrell and Rabin, 1996; Bottom, et al., 2002). Talk is particularly beneficial in coordination tasks, in which the parties' interests may differ but are not opposed (e.g., Crawford, 1998). Thus, two negotiators who have compatible interests will gain from communicating their interests to each other. Models of procedural and interactional justice (e.g., Bies and Moag, 1986) also suggest that words have potent effects on individuals' feelings of satisfaction as well as on their behavior (e.g., Shapiro, 1991; Elsbach, 1994). In addition, the recent literature on psychological contracts (e.g., McLean Parks and Kidder, 1994; Robinson and Rousseau, 1994; Rousseau, 1995; Robinson, 1996) indicates that talk provides the basis for both expectations and substantive action. Similarly, Shapiro, Sheppard, and Cheraskin (1992) suggested that regular communication can lay the foundation for trust. Finally, research on deception suggests that verbal assurances are often perceived to be credible. McCornack and Parks (1986) noted that people exhibit a "truth bias," or a tendency to judge others, even strangers, as truthful even without supporting evidence (e.g., Comadena, 1982; Miller, Mongeau, and Sleight, 1986). All of these perspectives suggest that non-binding contracts will enhance cooperation, but not necessarily as much as binding contracts. Thus,

Hypothesis 5 (H5): The use of non-binding contracts (i.e., the communicated willingness to cooperate) will enhance cooperation.

Hypothesis 6 (H6): Binding contracts will lead to more cooperation than non-binding contracts.

Unlike binding contracts, non-binding contracts may not lead to situational attributions of cooperation because they are not particularly restrictive. A party who promises to cooperate or reciprocate and then follows through on this communicated commitment is likely to be perceived as benevolent or as having high integrity (Mayer, Davis, and Schoorman, 1995). Thus, trust may increase as a result of the cooperation that non-binding contracts help to foster. Research on non-binding agreements suggests that keeping promises can facilitate the development of trust within (e.g., St. John, 1983) and

between organizations (e.g., Bitner, 1995). Having used a non-binding contract in the past, therefore, should not inhibit trust development in future interactions:

Hypothesis 7 (H7): Not being allowed to use a non-binding contract after having used non-binding contracts previously will not inhibit the development of trust.

Hypothesis 7 is stated as a null hypothesis, i.e., something won't happen. Thus, it is difficult to support but can be refuted (Murphy, 1990). Hypothesis 7 may only be true, however, for the exogenous removal of the opportunity to use non-binding contracts. When one party chooses to no longer communicate a willingness to cooperate and does not offer a non-binding contract, trust may drop. Because non-binding contracts or informal agreements are likely to be cheap (if not free), interacting parties might expect them. This suggests:

Hypothesis 8 (H8): Choosing not to offer a non-binding contract will inhibit the development of trust.

We tested the hypotheses in two experiments focusing on the dynamics of interpersonal trust and individuals' trusting choices, on the assumption that even in complicated, organizational interactions, trust by individuals is essential.

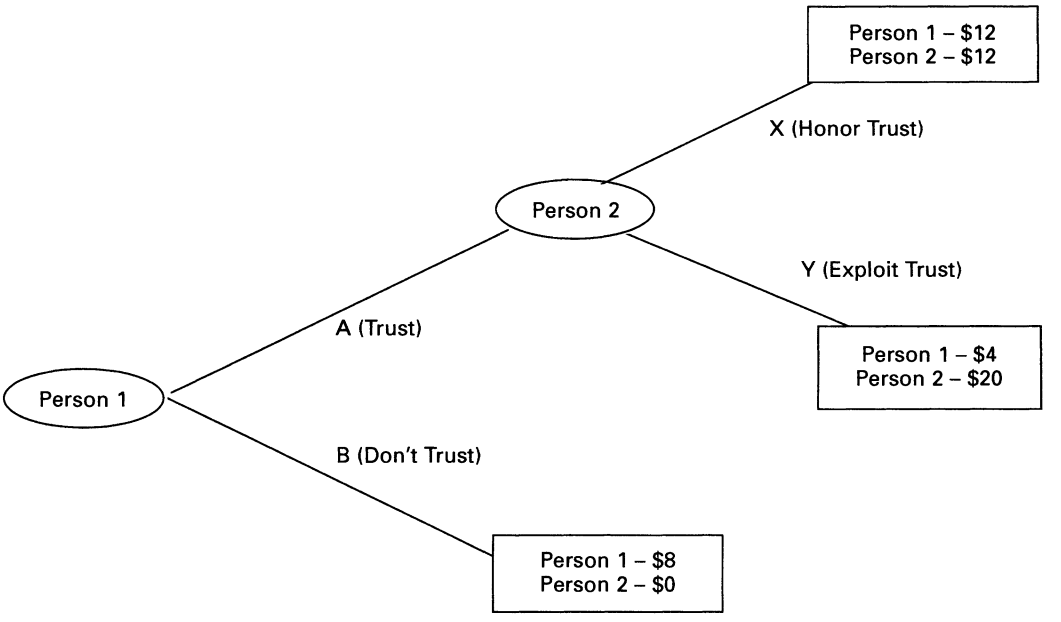
EXPERIMENT 1

We operationalized our definition of trust in a two-person interaction known as the "Trust Game" (Dasgupta, 1988). In this sequential game, the first person chooses to "trust" (A) or "not trust" (B). If person 1 chooses not to trust, the game ends, with person 1 receiving a moderate monetary outcome and person 2 receiving nothing. If person 1 chooses to trust, person 2 has the option of honoring (X) or exploiting the trust (Y). When person 2 honors trust, both receive a high outcome. That is, when person 1 trusts and person 2 honors trust, both are better off than when person 1 does not trust. When person 2 exploits trust, however, person 2 maximizes personal gain, achieving the highest possible outcome, to the detriment of person 1, who receives less than if he or she had chosen not to trust. Essentially, person 1 can risk a moderate amount of money (by trusting) in hopes of achieving a larger outcome if person 2 acts honorably. Person 2, meanwhile, has a monetary incentive to exploit trust. The Trust Game differs from the Prisoners' Dilemma Game because it is sequential. As a result, person 2s in the Trust Game, who act only after knowing what person 1 has chosen, face no risk. The Trust Game is thus an accurate operationalization of our definition of trust (Mayer, Davis, and Schoorman, 1995; Rousseau et al., 1998) because "trustors" (person 1s) can choose to accept vulnerability at the discretion of "trusted parties" (person 2s) whom they do not control. Figure 1 displays the structure of the Trust Game used here.

Procedures

Because the focus of this research was on trusting choices, all participants played the role of person 1 in a repeated Trust Game. Person 2 was a computer program that always honored trust. Participants interacted via computer, ostensibly to

Figure 1. Structure of the Trust Game.



preserve anonymity. They received an instruction sheet that contained an explanation of the rules, a plain copy of figure 1 (without any references to trust), instructions on how to use the computer to interact with person 2, and an explanation of how contracts worked and when they could be used. The experiment was referred to as a "decision-making study." The word "trust" was not mentioned until the post-experiment questionnaire. Participants were told that they would be interacting with the same person "more than once." All interactions lasted for four rounds. At the end of each round, the payoffs for that round (but not cumulative payoffs across rounds) were announced. All participants were provided with paper and a pencil and encouraged to take notes to track their outcomes for each round. Just prior to the last round, a message on the screen informed participants that this would be the last round. They were told that their counterpart also received this announcement. All of their choices were anonymous, and participants were assured that they would not be meeting their counterparts during or after the interaction. Participants were told that at the end of the experiment one round of their interaction would be randomly chosen and that they would be paid according to the outcome of that round. Bolle (1990) reported that such lottery procedures led to no differences from other procedures that make smaller, direct payments to each respondent, suggesting that this payoff scheme is reasonable and effective.

In some conditions, participants were told that person 2 could propose a contract. As person 1, he or she had the right to accept or reject any proposed contract. Accepted contracts dictated that person 1 would choose A (trust) and person 2 would choose X (honor trust). They were told that the computer would automatically enforce accepted contracts. Whenever participants accepted a contract, that round

of their interaction ended, and a message on the screen informed person 1 that he or she would receive $12 for that round (if it were chosen to determine the payoff at the end of the experiment). It was clearly in the economic best interest of person 1 to accept all contracts.

In each non-contract round, in which person 2 could not or did not propose a contract, participants chose either A (trust) or B (not to trust). If they chose B, the round ended, and their potential payoff (if this round was chosen for the payoff) was $8. If they chose A, they waited approximately 20 seconds for person 2 to choose X (honor trust) or Y (exploit trust). Person 2 invariably chose X. Participants were informed in the instructions and also on the screen (if a contract was proposed) that the contract imposed a cost of $2 on person 2; each time person 2 proposed a contract, he or she paid $2. This allowed participants to interpret the non-use of a contract as a money-saving move rather than as an explicit signal of upcoming exploitation (thereby providing a more conservative test of hypotheses 3 and 4).

Participants were seated at a networked computer in one of six private rooms. They read the instructions with no time pressures imposed and could ask clarification questions at any time. They were instructed to stay in their rooms after the interaction was over until the experimenter dismissed them, ". . . so that you don't bump into people in the hallway that you may have interacted with." After the last round, the experimenter entered the room and asked each participant to complete a short questionnaire that measured his or her attributions of the other person, asking "How much did you trust" and "How much did you like" person 2, for each round of their interaction. Rather than asking them to record these perceptions after each round (which might have influenced their subsequent choices), participants recalled earlier rounds and recorded their responses on 7-point, Likert-type scales. One potential pitfall of this approach is that participants might not recall what outcome had resulted in each of the four rounds, but the majority of participants had their own notes of the results of each round. In addition, the questionnaire asked participants to report the results of each round ("What did you choose?" and "What did your counterpart choose?"). Only one participant reported an outcome in one round that did not match what had actually occurred. This discrepancy had no bearing on any of the results reported here. Finally, participants rolled a die to determine the round that would determine their payoff. Participants who were interested in the results and/or a detailed explanation of the study received this information approximately six weeks after the completion of the study.

Design and analysis. Participants were randomly assigned to one of four conditions, as shown in table 1.[2] Condition 1 was a control condition in which contracts were neither mentioned nor allowed. In conditions 2 and 3, participants were told that person 2s might or might not be able to propose a binding contract. If person 1 accepted a proposed contract, person 1 would automatically trust, and person 2 would automatically honor his or her trust. At the beginning of each round, the computer told participants whether person 2 could

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We initially used seven conditions. The three conditions that we do not report here were identical to conditions 2, 3, and 4 but ended after three rounds rather than four. They were excluded from the final version of the paper because they provided no unique insights.

Table 1

Use of Binding Contracts among the Different Experimental Conditions, Experiment 1

	Round			
Condition	1	2	3	4
1	No mention of contracts	No mention of contracts	No mention of contracts	No mention of contracts
2	Allowed and chosen	Allowed and chosen	Not allowed	Not allowed
3	Allowed and chosen	Allowed and chosen	Allowed but not chosen	Allowed but not chosen
4	Contracts mentioned but not allowed	Contracts mentioned but not allowed	Contracts mentioned but not allowed	Contracts mentioned but not allowed

propose a contract. If contracts were allowed, participants waited for approximately 10 seconds for person 2 "to decide whether to propose a contract." In condition 2, contracts were allowed (and chosen by person 2) on the first two rounds; they were not allowed on rounds 3 and 4. In condition 3, person 2 was allowed to propose contracts on all four rounds but was programmed not to propose them on the last two. Condition 4 was a second control condition, a "mere mention" condition, which described the possibility for contracts but never allowed them.

Condition 4 was included to help eliminate a potential confound. If the use of contracts leads to less trust, this is consistent with the idea that contracts generate situational attributions for cooperation and that these attributions keep trust from developing. An alternative explanation is that the existence (and discussion) of contracts may have reduced trust by making the inherent risks salient to person 1. The mere mention of contracts, in effect, might prime the connection between trust and risk taking, with any reductions in trust resulting from attentional mechanisms rather than situational attributions. If the mere mention of contracts diminishes trust, then there should be less trust in condition 4 than in condition 1, in which contracts were never mentioned.

Hypothesis 1, that the ability to use contracts would enhance cooperation, was tested by comparing cooperation in rounds 1 and 2 of condition 1 (in which contracts were never allowed) with cooperation in rounds 1 and 2 of conditions 2 and 3 (in which contracts were proposed in the first two rounds). Hypothesis 2, that the exogenous removal of binding contracts would inhibit trust, was tested first by comparing trust in round 3 of condition 2 (in which contracts were used and then no longer allowed) with trust in round 3 of condition 1 (no use of contracts). Less trust in condition 2 would support hypothesis 2. The second test for hypothesis 2 compared trust in round 3 of condition 2 with trust in round 1 of condition 1. Less trust after a history of cooperation under binding contracts than when there is no interaction history (round 1, condition 1) would also support hypothesis 2. Hypothesis 3, which predicted a negative effect for the volitional removal of binding contracts, was tested by comparing trust in the third rounds of conditions 1 and 3. Less trust in round 3 of condition 3 (when an available contract was not chosen) than in round 3 of the control condition would support hypothesis 3. A second test of this hypothesis compared round 3 of condition 3 with round 1 of condition 1. Hypothesis 4, which predicted an effect of volition over and above

Table 2

Percentage of Trusting Choices in the Different Conditions, Experiment 1

	Round			
Condition	1	2	3	4
1. Baseline: No mention of contracts (N = 22)	86.4%	86.4%	86.4%	59.1%
2. Exogenous removal: Allowed and chosen, then not allowed (N = 28)	Contract (100%)	Contract (100%)	60.7%	57.1%
3. Volitional removal: Allowed and chosen, then not chosen (N = 21)	Contract (100%)	Contract (100%)	42.9%	38.1%
4. Mere mention: Never allowed (N = 23)	69.6%	73.9%	78.3%	60.9%

the effect of removing a contract was tested by comparing trust in the third rounds of conditions 2 and 3.

Participants. A total of 94 students at a major Midwestern university participated in this experiment. They were recruited via advertising at the university's business school and included Master's of Business Administration (MBA) students (N = 39; 41.5 percent), undergraduates (N = 28; 29.8 percent), Ph.D. students (N = 24; 25.5 percent), and individuals who did not provide this information (N = 3; 3.2 percent). Most (70 percent) were male. Participants averaged 3.6 years of work experience, and 22.3 percent (N = 21) were married. Inclusion of demographic variables in the analyses did not explain any more variance than the removal of contracts on its own.

Results

Table 2 shows the percentages of trusting choices in each of the conditions. All of the contracts that were proposed were accepted, resulting in 100 percent cooperation in the first two rounds of conditions 2 and 3. In comparison, significantly fewer participants trusted person 2 in the first two rounds of condition 1, in which there was no mention of contracts, supporting hypothesis 1, that the ability to use contracts would increase cooperation [$\chi^2(1, N = 142) = 13.95$, $p < .01$].

When contracts were no longer allowed, after having been allowed previously, trust dropped: round 3 of condition 2 led to significantly less trust than round 3 of condition 1 [$\chi^2(1, N = 50) = 4.25$, $p < .05$], supporting hypothesis 2.[3] Thus, the existence and subsequent removal of binding contracts revealed that trust had failed to develop during the cooperative but contractually mandated interactions. There was also significantly less trust in round 3 of condition 3 than in the first round of condition 1 [$\chi^2(1, N = 50) = 4.25$, $p < .05$], indicating that the existence of binding contracts not only kept trust from developing but also appears to have diminished it. This further supports hypothesis 2.

When person 2 chose not to propose a contract, after having proposed contracts twice previously, trust dropped precipitously, with only half as many participants (42.9 percent) trusting in round 3 of condition 3 as those in round 3 of condition 1 [$\chi^2(1, N = 43) = 9.41$, $p < .01$], supporting hypothesis 3. Choosing not to propose a contract after having proposed contracts in previous rounds also led to less trust than not having had any prior interaction at all, i.e., there was signifi-

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The use of the term "dropped" might suggest a within-condition comparison, but it should be noted that all of our claims regarding the inhibition of trust development and reductions in trust due to the use of contracts necessarily rest on between-condition comparisons.

cantly less trust in round 3 of condition 3 than in round 1 of condition 1 [$\chi^2(1, N = 43) = 9.41$, $p < .01$]. This again indicates that a cooperative history under contracts was worse than no history at all, further supporting hypothesis 3. Hypothesis 4 was also supported: when person 2 chose not to propose a contract (in round 3 of condition 3), it generated significantly less trust than when person 2 was no longer allowed to propose a contract (in round 3 of condition 2) [$\chi^2(1, N = 95) = 8.65$, $p < .01$].

Merely mentioning but not allowing binding contracts did not have a significant effect on trust. Trust in round 1 of condition 1 was not significantly different from trust in round 1 of condition 4 [$\chi^2(1, N = 45) = 1.88$, n.s.]. This suggests that the drop in trust after contracts were removed in conditions 2 and 3 is not due to contracts focusing attention on risk (due to the mention of contracts in these conditions). Trust in the subsequent rounds of conditions 1 and 4 was even more similar, further disconfirming the possibility of a mere-mention effect.

Additional findings, tangential to our central purposes, indicated that the endgame of these interactions also affected trust. Both theory and research (e.g., Luce and Raiffa, 1957; Rapoport and Chammah, 1965; Roth and Murnighan, 1978; Axelrod and Hamilton, 1981) suggest that a final, known endgame will reduce cooperative choices. Knowing that person 2 has less incentive to honor person 1's trust if their interaction is ending, person 1 might reduce his or her risk and be less likely to trust (e.g., Reis, 1981).

In the baseline and the mere-mention conditions (conditions 1 and 4), trust fell from round 3 to round 4, significantly in the former case: $\chi^2(1, N = 44) = 4.13$, $p < .05$ and $\chi^2(1, N = 46) = 1.64$, $p < .20$. Trust did not drop significantly, however, between rounds 3 and 4 in conditions 2 and 3, in which contracts had been used in the past [$\chi^2(1, N = 56) = .07$, n.s., $\chi^2(1, N = 42) = .10$, n.s., respectively]. Thus, while trust diminished immediately upon the removal of contracts in conditions 2 and 3 (supporting hypotheses 2 and 3), participants who still trusted person 2 after their contracts disappeared continued to do so even in the endgame. The logic of hypotheses 2 and 3 suggests that the removal of an existing contract makes the option of trusting particularly risky for person 1. The absence of an endgame effect for participants who trusted in this situation, and the appearance of an endgame effect in the baseline and mere-mention conditions, suggests that trust can thrive when one party takes a risk and the other party responds honorably.

Perceptions of trust. Participants' post-experiment questionnaire responses, which focused specifically on person 1's perceptions of trust, also support the notion that the existence and then the removal of contracts led to situational rather than dispositional attributions for person 2's cooperation. The two perceptual items on trusting behavior ("How much did you like person 2?" and "How much did you trust person 2?") were significantly correlated and were summed to form a single measure ($\alpha = .75$). Perceptions of trust dropped significantly when contracts were no longer cho-

sen—from a mean of 8.43 in round 2 to a mean of 7.19 in round 3 of condition 3; $t(20) = 2.7$, $p < .01$—but did not drop significantly in any of the other conditions. In the two control conditions (1 and 4), perceptions of trust showed a consistent, gradual increase from the first to the third round (means of 7.78, 8.20, and 8.91) with a decline (to 8.54) on the last round. In condition 2, in which the opportunity for binding contracts was removed, perceptions of trust increased from round 1 (mean = 9.83) to round 2 (mean = 10.61) and then showed small, nonsignificant decreases in rounds 3 and 4 (means of 10.1 and 10.0).

These results suggest that perceptions of trust increased with the accumulation of positive interactions when contracts were not available. Also, consistent with hypothesis 3 and with the behavioral data, volition (in terms of no longer choosing to propose a contract) had a significant negative effect on perceptions of trust. These data are not consistent, however, with either hypothesis 2 or the behavioral data that supported it. Instead, they suggest that perceptions of trust did not drop significantly when exogenous forces removed the opportunity for forming binding contracts, even though trusting behavior did drop. A strong caveat to these findings is that participants responded to these questions after they had made all of their decisions. As a result, it is possible that their responses reflect post hoc sensemaking.

Discussion

Several authors have proposed that binding contracts can set the foundation for mutual trust (e.g., Macaulay, 1963; Coffrin and Cochran, 1982; Sitkin, 1995; Lorenz, 1999). The current results suggest otherwise: interpersonal trusting choices were less frequent following a contractually mandated cooperative history than with no cooperative history at all. This suggests that contracts not only impeded the development of trust but also diminished existing trust. The use of binding contracts seems to have kept interacting parties from seeing each other's cooperative behaviors as indicative of trustworthiness. This is consistent with Gambetta's (1988: 219) claim that "if other people's actions were heavily constrained, the role of trust in governing our decisions would be proportionately smaller, for the more limited people's freedom, the more restricted the field of actions in which we are required to guess *ex ante* the probability of their performing them."

These results are also consistent with Strickland's (1958) findings, which suggest that monitoring reduces trust. Strickland (1958) found that "supervisors" were less likely to trust "subordinates" whom they had earlier chosen to monitor, even though they had been forced to choose someone to monitor. Whereas the attributions made by participants in Strickland's study resulted in part from a consideration of their own behavior (i.e., the decision to monitor), our participants' attributions stem from considering only the behavior of and constraints facing the other party. The attributions of our participants resulted from a consideration of the constraints posed by contracts rather than a consideration of their own earlier decisions to trust.

The results of experiment 1 suggest that the binding nature of the contracts overjustified person 2's cooperation for person 1 and affected person 1's perceptions of person 2's trustworthiness. The underlying, attributional mechanisms that are responsible for this unfortunate result provide some hope, however, by suggesting that non-binding contracts might be more effective. In particular, if non-binding contracts reduce the potency of binding contracts' situational attributions, then trust and contracts may be able to develop in tandem. In the current context, if individuals perceive that their counterparts freely (rather than contractually) chose to honor their trust, dispositional rather than situational attributions might augment rather than reduce their perceptions of their counterparts' trustworthiness. Thus, non-binding contracts may be able to promote trust without the negative effects that accompanied binding contracts. This is the focus of experiment 2. In experiment 2, we expected that non-binding contracts would enhance cooperation but not mandate it with certainty, as the binding contracts in experiment 1 did. Thus, non-binding contracts might be less effective in enhancing cooperation, though not necessarily less efficient than binding contracts. On the positive side, exogenously losing the opportunity to use non-binding contracts may not hurt interpersonal trust development, as might the removal of binding contracts.

EXPERIMENT 2

Procedures

Most of the procedures duplicated experiment 1's. All participants acted as person 1 in a repeated Trust Game and interacted anonymously via computer. Person 2 continued to be a computer program that always honored trust. At the end of the experiment, participants filled out a short questionnaire, and one round was randomly chosen to determine their payoffs. Experiment 2's design differed from experiment 1's in four ways: (1) non-binding contracts replaced binding contracts; (2) there was no cost associated with proposing contracts; (3) the mere-mention condition was eliminated; and (4) a fourth condition, in which non-binding contracts were always allowed and always chosen, was added. This fourth condition allowed us to test the effect of non-binding contracts on trust by comparing it with the baseline condition.

Design and analysis. Participants were assigned to one of four conditions, as shown in table 3.[4] In some conditions, person 2 was allowed to and did propose a non-binding contract, which was operationalized as a communicated message indicating a willingness to cooperate if trusted. The messages were designed to be as simple and straightforward as possible. Whenever a message was sent in the first round, it referred to the choices in figure 1 and stated, "If you choose X this round, I'll choose A." Subsequent messages, in whichever round they were sent, were also designed to be as simple as possible. Each of them stated, "Again—choose X?" Only person 2 was allowed to send messages.

Condition 1 provided baseline data, with participants interacting for four rounds with no communication and no mention

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We initially used seven conditions in this experiment, too. The three conditions that we do not report here were identical to conditions 2, 3, and 4 but included a cost of $2 for proposing informal contracts. They were excluded from the final version of the paper because they provided no additional insight.

Table 3

Use of Non-Binding Contracts among the Different Experimental Conditions, Experiment 2

	Round			
Condition	1	2	3	4
1	No mention of non-binding contracts	No mention of non-binding contracts	No mention of non-binding contracts	No mention of non-binding contracts
2	Allowed and chosen	Allowed and chosen	Not allowed	Not allowed
3	Allowed and chosen	Allowed and chosen	Allowed but not chosen	Allowed but not chosen
4	Allowed and chosen	Allowed and chosen	Allowed and chosen	Allowed and chosen

of contracts. In the other conditions, instructions to person 1 indicated whether person 2 would be allowed to send messages in each round (conditions 3 and 4) or only in some rounds (condition 2). Participants were not told of any limit on the length of messages that person 2 could send, and these messages were not referred to as "contracts." At the beginning of each round, a message on the screen indicated whether a message was allowed and, if it was, participants were asked to wait while person 2 chose whether to send a message. After approximately 30 seconds, the message (if it was chosen) was displayed on the screen. Participants then made their decision. In condition 2, person 2 was allowed to send (and did send) a message before rounds 1 and 2 but was not allowed to send a message before rounds 3 and 4. In conditions 3 and 4, person 2 could send a message before *each* round. In condition 3, person 2 sent a message before rounds 1 and 2 but chose not to before rounds 3 and 4. In condition 4, person 2 did send a message, which offered a non-binding agreement to cooperate, before each round.

Hypothesis 5, that non-binding contracts would facilitate cooperation, was tested by comparing trust in the four rounds of condition 1, in which there was no use of contracts, with trust in the four rounds of condition 4, in which non-binding contracts were always allowed and always chosen. Logistic regression tested for these effects while simultaneously controlling for rounds. Hypothesis 6, that binding contracts would facilitate cooperation more than non-binding contracts, was tested by determining whether cooperation in the first two rounds of conditions 2, 3, and 4 in this experiment were significantly less than complete, 100-percent cooperation, as that was the level achieved when binding contracts were proposed in experiment 1. Hypothesis 7, that the exogenous removal of non-binding contracts would not reduce trust, was tested by comparing the third rounds of conditions 2 and 4. If there is less trust when non-binding contracts were used and then are no longer allowed (condition 2) than when they were always allowed and used (condition 4), restricting communication will have led to a drop in trust, refuting hypothesis 7. Hypothesis 8 predicted that the voluntary nonuse of non-binding contracts, after having used them before, would reduce trust. It was tested by comparing the third rounds of conditions 3 and 4. If there is more trust when non-binding contracts were always allowed and chosen (condition 4) rather than voluntarily not chosen (condition 3), then the volitional nonuse of non-binding contracts will have led to a drop in trust, supporting hypothesis 8.

Participants. People were recruited exactly as they were for experiment 1. A total of 55 participants included MBAs (N = 21; 38.2 percent), undergraduates (N = 20; 36.4 percent), Ph.D. students (12; 21.8 percent), and individuals who did not provide this information (N = 2; 3.6 percent). This distribution is not significantly different from experiment 1's [$\chi^2(3, N = 149) = .78$, n.s.]. As in experiment 1, participants averaged three years of work experience, were most often male (66 percent), and mostly unmarried (79 percent). Inclusion of demographic variables in the analyses did not explain any more variance than the removal of contracts on its own.

Results

Condition 1, the baseline condition, generated frequencies of trusting choices that were similar to and not significantly different from those in the baseline condition of experiment 1 [$\chi^2(1, N = 160) = .03$, n.s.]. All but one participant in this condition (N = 18) trusted in round 1; all but two trusted in rounds 2 and 3. On the last round, only half trusted, a significant drop [$\chi^2(1) = 6.41$, $p < .02$], again indicating a clear endgame effect. Table 4 displays the data in each condition.

Unlike the conditions of experiment 1, person 2's non-binding contracts in experiment 2 were not automatically binding: if person 1 chose to trust following a non-binding contract, person 2 could still exploit that trust. Even given the high levels of trust in the baseline condition, non-binding contracts increased trust. In three of the four rounds, person 1 trusted more in condition 2 than in the baseline condition. Non-binding contracts led to an average of 90.9 percent of participants (10 of 11) trusting in rounds 1 and 2, 100 percent in round 3 (11 of 11), and 81.8 percent (9 of 11) in the last round. Logistic regression showed that the effect of contracts on trust approached but did not achieve statistical significance [$\chi^2(1) = 2.45$, $p < .12$], possibly due to a ceiling effect, given the already high level of trust (over 90 percent in rounds 1 and 2) in the baseline condition. Thus, hypothesis 5 received marginal support.

Hypothesis 6 predicted that binding contracts would generate more cooperation than non-binding contracts. In experiment 1, binding contracts led to 100 percent cooperation. The comparable conditions for non-binding contracts produced 88 percent cooperation, which was significantly less than complete cooperation, $\chi^2(1, N = 172) = 12.57$, $p < .001$. This supports hypothesis 6.

Table 4

Percentages of Trusting Choices in the Different Conditions, Experiment 2

	Round			
Condition	1	2	3	4
1. No non-binding contracts (N = 18)	94.4%	88.9%	88.9%	50.0%
2. Allowed and chosen, then not chosen (N = 14)	100%	85.7%	92.9%	64.3%
3. Allowed and chosen, then not chosen (N = 12)	75.0%	83.3%	66.7%	25.0%
4. Non-binding contracts allowed and chosen (N = 11)	90.9%	90.9%	100%	81.8%

A comparison of the third rounds of conditions 2 and 4 indicates no appreciable reduction in trusting choices when non-binding contracts were no longer allowed [$\chi^2(1, N = 25) = .82$, n.s.]. This supports hypothesis 7: no longer being allowed to use non-binding contracts did not inhibit the development of trust, but, because hypothesis 7 predicted no change between rounds (a null result), these findings may be most reasonably (and cautiously) considered suggestive rather than conclusive.

As in experiment 1, though, volition was potent: choosing not to propose a non-binding contract (round 3 of condition 3) led to significantly less trust than continuing to propose a contract (round 3 of condition 4): [$\chi^2(1, N = 23) = 4.44$, $p < .05$]. This supports hypothesis 8 and makes intuitive sense because, unlike the binding contracts in experiment 1, proposing informal contracts here did not cost $2. Instead, person 1, who did not hear from person 2 when he or she had heard from person 2 on both prior rounds, might reasonably have been concerned. Because communication was essentially cost-free, no longer communicating the intent to cooperate could easily prompt suspicion. Whereas the removal of binding contracts—by choice or otherwise—led to a significant drop in trust, the exogenous removal of non-binding contracts had no effect, and trust diminished only when free, non-binding contracts were allowed but not proposed. Although binding contracts seemed to overjustify person 2's cooperation in experiment 1, non-binding contracts seemed to encourage trust and also seemed to provide positive, dispositional attributions of person 2's decision to honor trust. As a consequence, the exogenous removal of a non-binding contract was not detrimental.

Perceptions of trust. As in experiment 1, the two trust items were significantly correlated and were summed for these analyses ($\alpha = .75$). Consistent with hypothesis 7, there was no drop in perceptions of trust when contracts were no longer allowed vs. consistently allowed and chosen [$t(23) = .96$, n.s.]. Thus, the exogenous removal of contracts did not adversely affect participants' attributions of person 2.

Consistent with hypothesis 8, however, participants reported trusting person 2 less after non-binding contracts were no longer chosen rather than consistently chosen [means of 8.86 and 10.68; $t(20) = 2.40$, $p < .05$]. Participants were naturally suspicious when non-binding contracts were allowed but not chosen. Thus, the participants' post hoc perceptions augment the critical finding that trust remained strong as long as there were rationales available for not proposing a non-binding contract.

Discussion

Non-binding contracts, in this case, informal promises that communicate an intent to cooperate, were not treated like cheap talk. Instead, they clearly affected individuals' perceptions of each other in this experiment. When person 2 communicated trustworthy intentions, person 1's willingness to trust increased. Given the high levels of trust that emerged in the control conditions that did not benefit from these simple proposals, this result is particularly noteworthy. The effects

for non-binding contracts are also notable because of the context and the procedures of the experiment: anonymous, computer-mediated interactions and messages that were, by design, devoid of emotion or personal sentiment.

Non-binding contracts had two important effects on participants. First, they led to an immediate increase in the frequency of trusting actions. Second, they did not signal the kind of strong situational constraint that binding contracts signified in experiment 1. Trust did not diminish when the opportunity to propose non-binding contracts was exogenously removed, suggesting that person 2's cooperation was not overjustified by the non-binding contract. Instead, it appears that person 2's cooperation was attributed to the individual.

A third effect is also evident and surfaces from the comparison of conditions in which non-binding contracts were always used with conditions in which non-binding contracts were no longer chosen after round 2. The data suggest that non-binding contracts may require active renewal and that, regardless of the level of implied trust in a relationship, explicit communication can reinforce shared understandings (Bettenhausen and Murnighan, 1985). In the current study, the failure to maintain existing communication was harmful when person 1 knew that person 2 was allowed to communicate and had chosen not to do so. This condition led to only 25 percent trusting choices in the endgame, considerably lower than every other condition in the experiment. Thus, when communication is cost-free, and when mutual cooperation may be threatened without it, verbal action has particularly salutary effects. The results also provide additional reasons for optimism. Participants in experiment 2 seemed quite understanding of person 2's constraints: they did not withhold trust when person 2 was not allowed to communicate. These results are in direct contrast to those of experiment 1, in which the removal of binding contracts, even when it was not by person 2's choice, resulted in less trust.

The sequential nature of the Trust Game may have also facilitated the effectiveness of non-binding contracts as a means for promoting cooperation. In simultaneous interactions, both parties must communicate positive intent, believe that the other is going to believe him or her, and both believe that they both believe, ad infinitum. In the Trust Game, only one person must communicate intent, only one needs to trust the other's signals, and only one needs to honor the other's trust. Thus, structuring actions sequentially may produce a distinct relational benefit by allowing the parties to rely on a series of single, individual decisions rather than on simultaneous, coordinated, and independent trusting decisions.

GENERAL DISCUSSION AND CONCLUSIONS

Experiment 1 investigated the effects of binding contracts on trust by observing people's behavior after contracts were removed. Binding contracts led to considerable cooperation but significant reductions in trust and cooperation when contracts were no longer chosen or allowed. Experiment 2 investigated the effects of non-binding contracts on trust. Non-binding contracts led to a smaller increase in cooperation but

no significant reductions in trust, except when these freely available, relatively costless contracts were no longer chosen. The striking differences in the effects of these two modes of interaction suggest that individuals' underlying attributional processes may be critical to the continuation of cooperation after contracts are no longer possible or no longer utilized. In particular, the data suggest that the use of binding contracts provided a strong situational attribution for person 2's cooperation and, as a result, trust failed to develop, even when both parties had benefited from their prior mutual cooperation. The negative effects of binding contracts were so strong that parties who had a cooperative history under contracts trusted each other less than parties who had no previous history at all.

A complete understanding of the interaction of contract usage and trust development requires a deep analysis of the process and implementation of contracting. Clearly, the potential benefits that can be derived from mutual trust depend on the parties' motivations and on the attributions each makes about the other's motivation. In this regard, the literature on overjustification may be particularly pertinent. Overjustification research has focused on the cognitions of individual actors and has repeatedly shown that the provision of extrinsic rewards can lead to the reduction of an individual's intrinsic motivation (Deci, Koestner, and Ryan, 1999). More broadly, the provision of one motivational force (extrinsic incentives) can block or replace the activation of another motivational force (intrinsic interest; Frey and Jegen, 2001).

The current findings represent a potentially important extension of the overjustification literature by demonstrating that extrinsic incentives (or constraints) affecting one party can affect the attributions of another party. A straightforward application of overjustification in the current context would suggest that, after person 2 has cooperated under contracts, person 2 will attribute his or her own cooperation to the contract rather than to person 1's decision to trust him or her. This will provide him or her with less reason and less motivation to cooperate in the absence of contracts, since the contracts provided a legitimate, salient rationale for cooperation. In addition, person 1 will attribute person 2's cooperation to the existence of the contract, leading person 1 to be less willing to trust person 2 without a contract. In essence, person 1's positive attributions are blocked by the presence of a contract, reducing his or her expectations that person 2 will be motivated to cooperate (and be trustworthy), thereby reducing his or her own inclination to trust.

While overjustification research focuses on individuals making self-attributions (albeit in a social context, where rewards or whatever else might be provided by another party), the current findings indicate that the overjustification that contracts provide in this context can also influence attributions of others. This leaves unanswered the question of whether the non-trusting behavior of person 1 in experiment 1 after the removal of binding contracts, or the trusting behavior of person 1 in experiment 2 after the removal of non-binding contracts, is appropriate and effective. If the existence of binding contracts lowers actual trustworthiness, as the traditional

overjustification framework might imply—leading to person 2 being more likely to abuse trust when contracts are removed—or if communicated intent increases his or her willingness to be trustworthy, then the behavior of participants in these studies may result from rational expectations of his or her counterpart's likely behavior. If, however, contracts do not affect trustworthiness and non-binding assurances are often used to deceive, then the behavior of our participants in these experiments is far from optimal.

The dynamics of these processes resonate particularly well with Uzzi's (1997) findings in the garment district in New York. The strength of embedded ties in this market resulted in mutual gains at low cost across numerous exchanges. Even producers who knew that their relationships with other businesses were ending (due to movement of a counterpart's facilities overseas) showed no diminution of trust in their relationship, in contrast to models of narrow economic self-interest. We observed similar phenomena here for non-binding contracts, in an abbreviated laboratory setting. While Uzzi provided clear evidence of the benefits of embedded ties, an implication of our findings is that such ties might not evolve in existing relationships. In particular, it may be more difficult to transform non-embedded ties (i.e., those that are based on formal structures such as binding contracts) into embedded ties than to develop embedded ties from the start.

Similarly, the current findings might also provide some insight into the dynamics of social exchanges that extend beyond dyadic interactions. Social exchange theory (Homans, 1958) distinguishes between restricted (i.e., dyadic) and generalized exchanges, those with three or more parties (Ekeh, 1974). Generalized exchanges entail greater risk due to the difficulties involved in monitoring multiple parties and evaluating the benefits provided by each (e.g., Takahashi, 2000). To address this, parties in generalized exchanges will rely more on group monitoring, social sanctions, and the development of strong group norms to ensure cooperation, whereas dyads might find it easier to adopt legal structures to enforce cooperation (Das and Teng, 2002). Difficulties can emerge when dyads and small groups that have traditionally relied on formal structures to facilitate exchange evolve into larger groups that can no longer rely on such methods. The current findings suggest that this transition is likely to be difficult to a greater degree than currently acknowledged. In addition to confronting greater uncertainty and enhanced opportunities for parties to free ride due to the increase in group size (Das and Teng, 2002), the parties may face the added cost of diminished trust stemming from a prior reliance on formal structures.

Finally, the current findings provide an interesting counterpoint to commonly held notions of the trust development process (Kramer, 1999). Most theories of trust development suggest that parties engaged in an interaction should take small risks initially and then greater risks once trust has been firmly established (e.g., Osgood, 1962). This seems eminently reasonable, since neither party is likely to have sufficient information regarding the trustworthiness of the other party early in a relationship. The results of experiment 1, however,

suggest that attempting to mitigate risks early in the relationship can make it difficult to build the trust necessary to take greater risks in the future. Similarly, Pillutla, Malhotra, and Murnighan (2002) found that trusted parties were less likely to honor trust when trustors had taken small rather than large risks. While trustors might feel that it is entirely reasonable to limit their initial vulnerability, trusted parties often attributed such actions to a lack of trust, which was viewed negatively. The current results indicate that an added problem with minimizing risk early is that trustors themselves might find it difficult to take greater risks and trust more in the future. Contrary to the commonly accepted notion that one must develop trust to take greater risks, then, these results suggest that it may be equally true that one might need to take greater risks to develop trust (cf. Weber, Malhotra, and Murnighan, 2002).

As with any set of experiments, the current research was limited by its methods and procedures. The use of volunteers to participate in short, anonymous interactions simulates trusting interactions but lacks the context of typical interpersonal actions. At the same time, though, the task fostered considerable involvement, boosting confidence in the applicability of participants' ultimate action choices. More pointedly, these experiments investigated specific forms of binding and non-binding contracts. Although person 2's informal, non-binding proposals may be much like many that we encounter in everyday interaction, they are still somewhat idiosyncratic. The automatic, exogenous enforcement of binding contracts in experiment 1 is probably more idiosyncratic. The everyday use of contracts outside the laboratory also leads, naturally, to questions about the ultimate strength of the bonds that they have created. Investigating the effects of contract strength, then, is a clear avenue for new research. In the current experiments, the strong manipulation of the independent variables was critical for understanding the hidden and unexpected costs of completely binding contracts. Because our two manipulations of binding and non-binding contracts were so extreme—exemplars, in some sense—contract types that fall between these two extremes also provide open ground for future research. In addition, organizational actors often have multiple aspects to their relationships, some involving contracts and some not. These various mixes may be an important basis for future theorizing and empirical research.

Future research could also pursue elaborations and enrichments of the contracting process. In the current experiments, this process was particularly abbreviated. In many contexts, the process of formulating a mutually agreeable contract can provide a basis for building trust.[5] Positive interactions during contractual bargaining can lay the groundwork for building trust that may be needed when contract stipulations are insufficient to ensure mutual cooperation. In contrast, long-held concerns and distrust can also emerge during the contracting process and accentuate latent conflict, as evidenced in the lumber and automobile industries, in which the two sides often cite the other's past abuses (Walton and McKersie, 1965).

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This possibility is a restatement of ideas that Richard Shell generously shared with us.

The detrimental effect of binding contracts on trust may be particularly dramatic when contracts are least anticipated or legitimized. Thus, introducing binding contracts in contexts in which stability has long existed without highly formalized contracts may be particularly devastating, as has happened in employer-employee relationship in Japan. Morishima (1996: 139) noted, "Some of the recent changes that are occurring in Japanese HRM [human resource management] practice . . . are likely to threaten the basis of trust between Japanese employers and employees." The impact of these changes may dissipate over time as contracts gain greater legitimacy and command less attention, but trust will have to be rebuilt.

Binding contracts can also have even broader negative impact, particularly when they are poorly specified. One recent instance involves the executives at Johnson and Johnson and Amgen, two otherwise laudable companies. They now have considerable antipathy toward each other, much less trust, because their early contractual agreement was unclear and was interpreted differently by the two companies' representatives. Acrimonious lawsuits and the loss of potential synergies have become their joint outcomes. This example and the data presented here suggest that when companies or individuals use the structural force of a contract as the primary (or sole) basis for their relationship, they may encounter tremendous difficulties when the contract does not fulfill its intended purpose. Because contracts cannot cover all of the possible eventualities of a relationship, increasing dependence on a contract increases the downside risks for the parties' relationship. When contracts fail, the security that they provide disappears, and the parties feel "uncovered" and at risk (cf. Weber, Malhotra, and Murnighan, 2002). Thus, the collateral costs of losing a contract's security suggest, paradoxically, that contractual relationships need more attention, not less, than relationships without contracts.

This paper explored the relationship between explicit, binding arrangements and implicit, informal understandings. These two types of commitments characterize many human relationships, particularly within and between organizations. The irony is that the relationship between the two appears to be far from clean or simple. Whereas binding contracts may help to reduce risk and enhance the likelihood of cooperative interaction, they can work against the development of informal understanding and mutual trust. The converse also rings true. That is, people who have strong bonds of trust may find it difficult to adopt binding contracts, even when doing so reduces their risks. The bottom line is that the creation of confident expectations for the behavior of powerful others, i.e., people who are in a position to exploit vulnerability, requires tremendously careful action. On the one hand, the use of binding contracts may hinder the development of trust. On the other hand, the risks of exploitation can be so serious that neither party is comfortable without one. Although time and interpersonal investment might provide an avenue for solving this dilemma, the current, pressurized nature of global commerce makes such investments costly and, in many cases, increasingly unlikely. Even with encour-

aging findings on non-binding contracts, the potentially monumental problem of coordination offers no easy solutions. For researchers, however, it offers tremendous opportunity.

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