
Trust and Transitions in Modes of Exchange

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In this study, we investigate the relationship between uncertainty and trust in exogenous shifts in modes of social exchange (i.e., those that are not initiated by the individuals in a given exchange system). We explore how transitions from a high uncertainty environment (reciprocal exchange) to lower-uncertainty environments (nonbinding or binding negotiated exchange) affect the level of trust among exchange partners. Our results show that if cooperation rates are high before and after a change in mode of exchange, trust declines when the uncertainty created by the mode of exchange decreases. Furthermore, we find that trust depends on both the amount of uncertainty inherent in the form of the exchange and the level of cooperation before and after the transition.

Keywords: trust, exchange, transitions, uncertainty, cooperation

INTRODUCTION

Sociologists have long recognized that social exchange is an elementary part of human interaction (Blau [1964]1986; Homans 1958; Emerson 1972a, b). However, they are not alone in their acknowledgement of the significance of social exchange in society. The exchange of goods and services has been at the heart of economic theory from the beginning and anthropologists such as Levi-Strauss (1955, 1969), Mauss (1925), and Malinowski (1922) focused attention on the social implications of exchange. These varied social science perspectives share the observation that individuals exchange goods and services through different forms of

interaction, including negotiation, gift-giving, and even implicit understandings of direct or indirect reciprocity among individuals in networks, groups, or communities. The resulting social structures and the consequences for social relations are often taken as dependent variables in exchange theories (Emerson 1972b). In this article we focus on differences in the basic forms of exchange and the effects of transitions between modes of exchange on trust.

Experimental research on social exchange has primarily involved the study of specific types of exchange such as negotiated exchange (Cook and Emerson 1984; Lawler and Yoon 1993, 1996), reciprocal exchange (Molm 1988, 1997; Molm, Quist, and Wiselley 1993), generalized exchange (Cheshire 2007, Molm, Collett, and Schaefer 2007, Takahashi 2000, Yamagishi and Cook 1993), and, more recently, direct comparisons of these forms of exchange (Gerbası 2007; Lawler, Thye, and Yoon, 2008; Molm 2003; Molm, Schaefer, and Collett 2009). This research clearly demonstrates that exchange

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outcomes differ by type of exchange, and one of the major factors contributing to the variation in outcomes is the underlying difference in types of risk and levels of uncertainty involved in each mode of exchange.

Previous work on exchange typically begins with fixed networks involving one form of exchange.¹ Uzzi's (1996) study of the apparel industry, however, clearly shows us that exchange relationships outside the laboratory may be complex and dynamic, taking different forms over time, often with the same participants. For example, in the early 1990s various industries presumed that buyers and sellers would engage in an unprecedented amount of exchange in internet markets. Referred to as business-to-business (B2B) systems, they were assumed to be a "perfect market" because they offered open and transparent exchange without the complexities of interpersonal negotiation. B2B systems promised to connect buyers and sellers more easily and efficiently than was possible in traditional business practices. While improvements in efficiency occurred in some markets, in many others the transition from direct reciprocity and negotiation to unfettered online exchange faltered because some businesses preferred the security of long-term, more personal, reciprocal relations of exchange to the more impersonal world of exchange characteristic of traditional economic markets.² The new online markets altered or eliminated the dependence on ongoing, negotiated relationships in favor of open markets mediated by third party Internet companies. Acts of reciprocity, negotiation, and cooperation that once allowed businesses to build and maintain relationships gave way to optimized matching systems that undermined and diminished the role of trust (Kollock and Brazier 2006).

Exchange transitions also occur at the interpersonal level. Some relationships begin with the reciprocal exchange of favors such

as picking up mail for a neighbor who is away for a weekend in exchange for taking care of one's pet on a subsequent occasion. Eventually such relationships might evolve to include more formal, direct negotiations over other goods or services (such as bargaining over the price of a neighbor's old lawnmower). Alternatively, relationships might start out based on negotiations between two parties, and, as the parties get to know each other better, they may shift into a less formal mode of exchange, perhaps exchanging favors or gifts on relevant occasions. By doing so, they transform the negotiated exchange relationship over time by including elements of reciprocal exchange involving no explicit negotiation of any kind.

Recently, Molm and her colleagues (Molm 2003; Molm, Peterson, and Takahashi 1999; Molm, Schaefer, and Collett 2009) and Lawler and his colleagues (Lawler, Thye, and Yoon 2008; Thye, Lawler, and Yoon 2006) have compared the various forms of exchange in terms of power dynamics (differentiating outcomes), as well as their effects on integrative outcomes including dyadic commitment, trust, relational cohesion, and other indicators of solidarity. In this article we build on this empirical work by investigating transitions between modes of exchange and the effect of these transitions on the development of trust between the individuals engaged in exchange.

Modes of Social Exchange

Exchange theorists generally focus on three modes of exchange: negotiated exchange, reciprocal exchange, and generalized exchange. These distinctions primarily grow out of the experimental work on exchange, though early theoretical discussions of the differences between various types of exchange were included in work by Homans (1958), Blau (1964), Heath (1976), and Ekeh (1974), among others. For simplicity we focus on the main differences between negotiated and reciprocal exchange involving two parties engaged in direct exchange. Dyadic negotiated and reciprocal exchanges occur directly

¹ A few articles in the exchange tradition have looked at network dynamics (Leik 1992; Willer and Willer 2000), but there is little experimental work on this topic.

² Over time there was a high failure rate (above 60 percent) in part because a premium was placed on long-term relations (Canella 2003).

between two individuals at a time. Generalized exchange, which we do not discuss in this article, involves indirect reciprocity between three or more individuals.³ See Figure 1 for a graphic representation of the three major forms of exchange.

Recent efforts to compare types of exchange have focused on the dimensions that differentiate them. Molm and her colleagues (Molm, Schaefer, and Collett 2007, 2009) argue that negotiated and reciprocal exchange differ not only in terms of the risk of nonreciprocity involved, but also in the salience of conflict and in the expressive value attached to acts of reciprocity. We focus in this article on only one of these dimensions—the nature of the risks involved, though we comment on the potential implications of these other factors in our discussion of the findings and potential alternative explanations. In our view, the primary differences in the major forms of exchange are the underlying type of risk involved and the uncertainty this creates. Clearly, however, variations in the salience of conflict and the symbolic value of acts of reciprocity may play a role in reactions to transitions in modes of exchange and should be the focus of future research.

The actual locus of uncertainty may be rooted in several factors. We focus on two distinct forms of uncertainty: (1) uncertainty inherent in the form of social exchange, and (2) uncertainty created by the experience of noncooperation. These two sources of uncertainty are intrinsically linked: the form of social exchange defines the *potential* for cooperation, and the behavior of others in the exchange system creates the *experience* of cooperation or noncooperation. In negotiated

direct exchange the only risk involved is the risk of not concluding a successful exchange by failing to reach an agreement, since jointly reached agreements are *binding* on the actors. Once agreement is reached there is no risk that the exchange will not occur and thus there is very low uncertainty.⁴ However, to mirror a world in which negotiated exchanges can fail, recent experimental studies have investigated “nonbinding” negotiated exchange involving a two-step decision process (Rice 2002; Molm, Schaefer, and Collett 2009; Gerbasi 2007).⁵ In the first step the exchange is negotiated and a joint agreement is reached over the exchange of mutually valued resources, as in standard negotiated exchanges. In the second step, the individuals involved must each decide whether to abide by the agreed on terms; thus, there is the potential risk that one’s partner will defect, failing to comply with the terms of the negotiated agreement, creating uncertainty.⁶

In reciprocal exchange between two parties, the key risk is of a completely different character. Since each actor must initiate exchange by making a “gift” or contribution to a partner without knowledge of the nature of the return, the actor risks that the recipient will not return the favor in subsequent rounds of exchange (Molm 2003). Molm, Collett, and Schaefer (2007) refer to this as the risk of nonreciprocity and the lack of prior agreements creates uncertainty about the possibility of incurring a net loss from the act of

³ Typically individuals in a generalized exchange system do not engage in direct two-party exchange, but rather provide resources of some form to an actor (or set of actors) who then provide resources to others in a circle of exchange in the case of chain or network generalized exchange or to a collective entity which subsequently distributes the gains from exchange to those who have contributed (as in the case of group-generalized exchange, Ekeh 1974; Yamagishi and Cook 1993; Cheshire 2007).

⁴ In natural settings, agreements are most often guaranteed by law or a third-party mediator, while in experimental settings they are ensured by the design and structure of the environment created by the experimenter.

⁵ Gerbasi (2007) finds that when individuals consistently cooperate with their partners in nonbinding negotiated exchange, they experience significantly higher levels of trust, affect, and commitment, as compared to those engaging in binding negotiated exchange. However, when individuals fail to cooperate in nonbinding negotiated exchange, high levels of distrust and negative affect emerge.

⁶ This setting is common in many real-world contexts in which institutional backing is weak or nonexistent. Thus, the possibility of nonreciprocity and the potential for deceit or opportunism (Williamson 1975) are both sources of uncertainty inherent in nonbinding negotiated exchange.

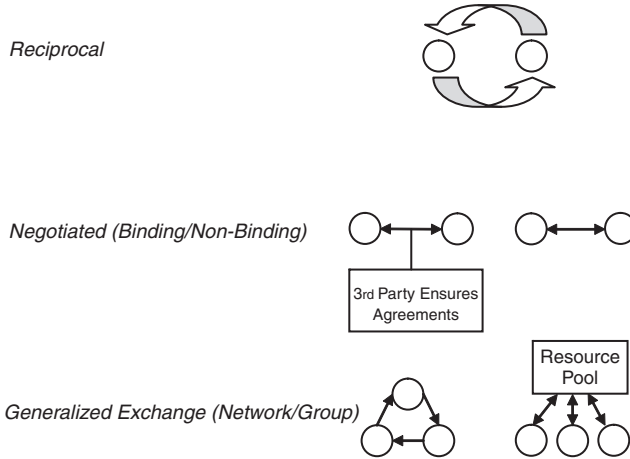


Figure 1. Major Forms of Social Exchange

giving to others without receiving anything in return.

The ordering of the modes of exchange with respect to uncertainty (as a result of the types of risk involved) thus tends to follow the pattern: *Reciprocal Exchange* > *Nonbinding Negotiated Exchange* > *Binding-negotiated Exchange*. Binding negotiated exchange involves the least risk and thus presents less uncertainty. Reciprocal exchange represents the most risk and thus the highest degree of uncertainty.⁷ Nonbinding negotiated exchange falls somewhere in between. Since these modes of exchange exhibit different types of risk and varying levels of uncertainty, a key question arises: what are the behavioral and attitudinal consequences of the changes in types of risk and levels of uncertainty for the actors involved when there is a transition from one mode of exchange to another?

We make an important distinction between two general types of transitions. The first type of transition is imposed exogenously on the actors in the exchange setting and the individuals have to adapt to changing circumstances. We refer to this type of transition

⁷ The process of giving small gifts that slowly increase in value over consecutive interactions between persistent partners is analogous to the process of iterative risk-taking that is vital to the development of interpersonal trust (Cook et al. 2005).

as *structural transitions*. The second type of transition originates endogenously with the individuals in the exchange system, and in these *agent-based transitions*, individuals may choose to move into new forms of exchange based on their own experiences and/or dispositions.⁸ In our first experiment on transitions in modes of exchange we begin with a focus on the consequences for trust of only one class of transitions, those that are structurally imposed exogenously. In future work we will address “agent-based” transitions in modes of exchange. Our larger research goal is to understand more completely the micro-level dynamics and consequences of both structural and agent-based transitions.

SOCIAL EXCHANGE TRANSITIONS

Past research directly comparing the various forms of exchange suggests that changing

⁸ For example, a group of friends could be involved in the dyadic, reciprocal exchange of goods and services. At some point, however, some individuals may choose to negotiate the exchange of the same goods and services rather than to depend loosely on norms of reciprocity. Experiences based on the initial reciprocal exchanges are likely to influence the probability of transitioning successfully to a new form of social exchange. Furthermore, these experiences based on the first form of exchange are likely to affect the selection of subsequent exchange partners, as well as the degree of risk an individual is willing to take when engaging in a new form of exchange.

the mode of exchange should have consequences for the actors involved. These include changes in perceived trustworthiness, the nature of the attributions actors make about one another, and attributions regarding the situation in which they find themselves.⁹ At the relational level there may be changes in affect and levels of dyadic commitment, cohesion, and solidarity.¹⁰ Molm, Takahashi, and Peterson (2000) found that reciprocal exchange produces stronger trust and affective commitment compared to negotiated exchange, and that behaviors signaling the partner's trustworthiness have a greater impact on trust in reciprocal exchange. In addition, they find that features of negotiated exchange heighten the salience of conflict between actors, trigger self-serving attributions that lead actors to perceive others' motives and traits unfavorably, and increase perceptions that the other is unfair compared to reciprocal exchange (Molm, Peterson, and Takahashi 2003).

We focus on only one major type of social exchange transition—one that is structurally determined by a third party (which we refer to as “exogenously” initiated shifts). Exogenous shifts between modes of exchange are made without intention on the part of the individuals involved. Such shifts in the mode of exchange are typical of situations in the real world in which a new set of rules or guidelines for exchange are imposed by organizational, institutional, or other third-party

entities (or when created by changes in the macro setting for exchange).

Structurally determined shifts in modes of exchange are also important at the personal level. Families in a neighborhood might ask each other to watch their homes while they are out of town. Initially, this might take the form of reciprocal exchange—family A asks family B to watch their home, and at some later point family B asks family A to return the favor. However, the neighborhood homeowner's association might create a policy about managing extended house sitting to insure neighborhood safety, etc. Thus, families would now need to negotiate with each other through the homeowner's association according to this new policy. The same actors are still involved, and the object of exchange is still the same—but a structural shift from reciprocal to negotiated exchange has been initiated by a third party. Other types of exogenously determined shifts in modes of exchange may be created by circumstances in the network or by political, economic, and related institutional factors that influence the prevailing conditions for exchange.

The exchange setting we examine initially involves purely direct reciprocal exchange and then shifts to one of two types of negotiated exchange, regardless of what the individuals involved might prefer. Once these shifts have been initiated, the individuals involved must react and adapt to the new conditions of exchange. Structurally determined shifts in modes of social exchange raise questions about variations in behavior and have implications for the development (or erosion) of trust between partners over time. Of course, other types of transitions may also occur, beginning with negotiated exchange and moving to reciprocal exchange. These and other types of transitions will be the focus of future research.

Trust and Transitions

We refer to trust as a cognitive notion involving individuals' assessments of others'

⁹ In addition, there may be changes in perceived fairness of the exchange since there are typically different modes of accounting under different exchange regimes.

¹⁰ At the network level, changes in modes of exchange may also have direct effects on the larger network in which the exchange relations are embedded. For example, moving from negotiated exchange to reciprocal exchange may open up new opportunities as actors move out of more exclusive relations of exchange to the “give and take” of reciprocal relations—possibly resulting in network extension. In contrast, moving from reciprocal relations of exchange to more direct negotiated relations of exchange may result in clique formation or network closure as dyads move to more exclusive modes of exchange involving a “tit for tat” mentality.

trustworthiness (Hardin 2002; Cook, Hardin, and Levi 2005).¹¹ Cognitive trust is based on beliefs that derive from personal experience, reputation, or similar sources of information that facilitate our estimation of one's trustworthiness. Other beliefs that have been shown to influence trust judgments include integrity, competence, loyalty, consistency, openness, credibility, reliability, and dependability (see: Baba 1999; Hardin 2001, 2002; Dasgupta 1988; James 2002).

Cognitive trust is based on beliefs, but trusting behavior can only be observed in situations in which something is at stake; that is, there is both uncertainty and some risk or vulnerability involved (Heimer 2001). In the absence of a regulatory agency that sanctions opportunistic behavior on the part of the individuals engaged in social exchange, the decision to trust involves taking a risk. Risk-taking is therefore an indispensable part of building trust between individuals in social exchange (Cook et al. 2005). Through the process of trust building, initially opportunistic, socially risky relations can become trust relations over time. In social exchange environments such as those used in this study, the risks involved include the potential loss of valued resources as well as the possibility of exploitation by others.

Current research clearly demonstrates that the form of social exchange determines overall levels of uncertainty, which can affect integrative outcomes such as trust between partners (Gerbasi 2007; Lawler et al. 2008; Molm, Takahashi, and Peterson 2000). Kollock's (1994) work shows that the level of uncertainty¹² in a social exchange setting is directly related to the development of trust between individuals as they search out trustworthy partners. As a result, trust is more

likely to develop in more uncertain environments, such as that created in reciprocal exchange or, to some extent, in nonbinding negotiated exchange. The uncertainty in the situation allows actors to make better assessments of the trustworthiness of another party. To return a gift or similarly valued resource when not required to do so or not to take advantage of the opportunity to exploit one's partner (an option available in nonbinding negotiated exchange) presents clear signals of trustworthiness (Malhotra and Murnighan 2002). When negotiated exchanges are binding, in contrast, there is no uncertainty about the outcome once a deal is made. Thus, there is no way to infer from a partner's agreement to the contract or terms of trade that he or she is particularly trustworthy outside the confines of this institutionally imposed constraint.

Another basis for assessing trustworthiness is our behavioral experience with a specific party, in particular their level of cooperation. Blau (1964) demonstrated that the positive behavioral experience of cooperation is important for the emergence of trust. By engaging in cooperative exchange, one party indicates that she is less likely to take advantage of her partner. This close link between cooperation and trust has been extensively explored in social psychology and political science (see review by Cook and Cooper 2003). Indeed, it is difficult, and in some cases impossible, for trust to develop in the absence of any cooperation between parties; yet, the opposite is not necessarily true—cooperation can occur without trust under specific conditions (Cook, Hardin, and Levi 2005).

HYPOTHESES

We investigate changes in levels of trust by focusing on relationships that initially begin with reciprocal exchanges. Classical exchange theorists such as Blau (1964) have argued that trust is more likely to develop between partners in reciprocal exchange compared to other exchange environments. Experimental work (Molm et al. 2000) supports this claim, demonstrating that reciprocal

¹¹ While we agree that there is also affective trust we believe this type of trust is less likely to emerge in brief experimental sessions and thus is harder to investigate in the laboratory. We will, however, try to get at attitudinal correlates of cognitive trust in our measures (see McAllister 1995).

¹² In Kollock's (1994) study, the uncertainty was primarily about the quality of the goods being exchanged (the "rice versus rubber" market analogy).

exchanges produce higher levels of trust and stronger feelings of affective attachment and/or commitment than do negotiated exchanges. Reciprocal exchange has relatively high levels of uncertainty, generally requiring more trust than the two forms of negotiated exchange because the terms of exchange are not simultaneously discussed and opportunism is possible (Molm et al. 1999, 2000). The initial act of giving in a reciprocal exchange acts as a "signal" that the actor is willing to take a risk and trust the recipient. Binding negotiated exchanges do not require interpersonal trust, though it may emerge over time. We argue that trust decreases as the uncertainty in the mode of exchange decreases.

Mutual cooperation is usually described as a positive occurrence from the perspective of individuals involved (Axelrod 1984). Cooperation is one of the primary ways individuals actively demonstrate their trustworthiness to each other (Macy and Skvoretz 1998, Cook et al. 2005). As prior experimental work shows, low cooperation in reciprocal and negotiated exchange is associated with low trust (Molm et al. 2009, Gerbasi 2007). In the three forms of direct exchange, cooperation can either occur when an individual reciprocates (in reciprocal exchange), or follows through with agreements (in binding and nonbinding negotiated exchange). When individuals do not reciprocate or follow through with agreements, it sends a clear message to others that they are not trustworthy. This implies that trust decreases as cooperation declines.

This reasoning leads to several predictions about the level of trust that develops between partners when there is a shift from one mode of social exchange to another. Assuming consistently high cooperation rates, if individuals experience a high degree of cooperation in reciprocal exchange, then the reduction in uncertainty associated with a shift to cooperative binding or nonbinding negotiated exchange should reduce trust. The uncertainty associated with the form of the exchange in high-cooperation environments should be the primary determinant of trust between

partners following a shift from one mode of exchange to another.

To simplify presentation of the hypotheses, we use abbreviations to designate different types of shifts in modes of exchange (S_1 through S_6 , with an arrow indicating the form of exchange before and after the shift). The three forms of exchange in this study are abbreviated as reciprocal (R), binding negotiated (B), and nonbinding negotiated (NB). Finally, we denote cooperation rates using subscripts (H = high cooperation, L = low cooperation). See Figure 2 for complete descriptions of each shift in mode of exchange.

Our first two hypotheses relate to the shift from reciprocal to negotiated exchange, given high rates of cooperation. As the uncertainty inherent in the form of exchange declines we predict trust between partners should decline:

Hypothesis 1: Trust decreases when there is a shift from cooperative reciprocal exchange to cooperative nonbinding negotiated exchange ($C_H R \rightarrow C_H NB$).

Hypothesis 2: Trust decreases when there is a shift from cooperative reciprocal exchange to binding negotiated exchange ($C_H R \rightarrow C_H B$).

In the converse situation, when individuals are in a situation in which there is a shift from reciprocal to nonbinding negotiated exchange and cooperation rates remain low in both modes of exchange, trust should increase after the shift in mode of exchange because nonbinding negotiated exchange is a less uncertain form of exchange. However, the salience of the broken agreements in low-cooperation nonbinding negotiated exchange may diminish the predicted increase in trust, leading to a relatively small increase in trust.

Hypothesis 3: Trust will increase when there is a shift from low-cooperation reciprocal exchange to low-cooperation nonbinding negotiated exchange ($C_L R \rightarrow C_L NB$).

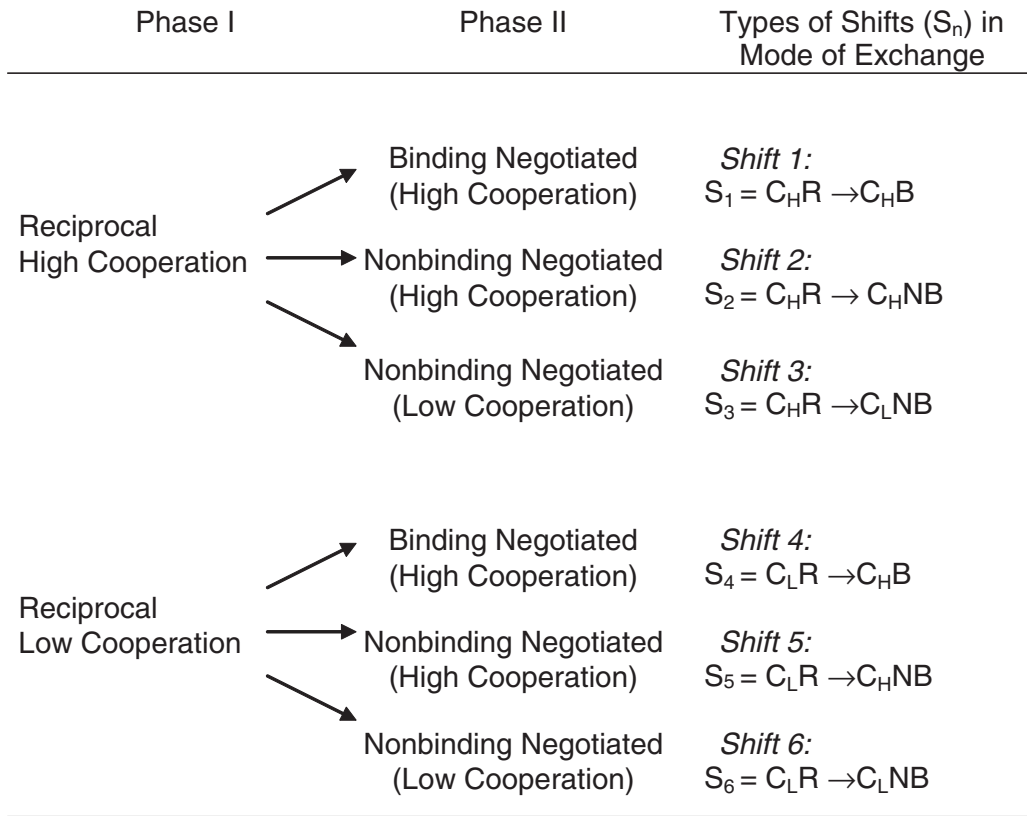


Figure 2. Phases and Types of Shifts in Mode of Exchange in the Experiment

Hypotheses 1 through 3 predict that trust changes when there is a shift from a high uncertainty to a lower uncertainty exchange condition, holding constant cooperation levels before and after the shift in mode of exchange. However, we also assess whether the cooperation level in the first exchange environment has an independent effect subsequently on the *final* level of trust reported after a shift in mode of exchange.

Current experimental work on cooperation and social exchange demonstrates that when an individual varies her level of cooperation, the change in cooperation level increases the salience of her behavior to her partner (Gerbasi 2007; Molm, Schaefer, and Collett 2009). When an individual always cooperates, her behavior becomes relatively routine and thus more predictable to her partner. However, a sudden change to a low

rate of cooperation from a high cooperation rate is likely to be cause for concern, thus increasing the salience of the partner's behavior. Conversely, an individual who has experienced a low cooperation rate from her partner will be especially attentive if that partner begins to cooperate continually.

If we were only examining a single mode of exchange, a sudden change from low to high rates of cooperation should lead to an increase in trust, while a change in the opposite direction should lead to a decrease in trust. However, in the following hypotheses, we are interested in how changes in cooperation rates during a shift in mode of exchange subsequently affect final levels of trust (i.e., evaluations of one's partner after all exchanges are complete). Thus, we compare final levels of trust between different shift conditions. By controlling for the type of transition in mode

of exchange and altering the cooperation rates before and after the transition, we examine the direct effect of cooperation rates on trust at the end of the process.

When one's partner abruptly varies her cooperative behavior, the salience of that behavior increases. A positive or negative change in cooperation rates should increase one's concern about the partner's consistency and reliability. Since reliability and consistency are key components of trustworthiness, a positive change in cooperation rate should enhance one's trust in her partner. When there is a shift from reciprocal to either of the two forms of negotiated exchange, we expect trust to be significantly higher at the conclusion of the study for those who transition from a less cooperative exchange environment to a higher cooperation environment, compared to those who experience a high cooperation environment before and after the shift in mode of exchange.

Hypothesis 4: Trust will be higher for those who engage in shift S_5 ($C_L R \rightarrow C_H NB$), compared to those who engage in shift S_2 ($C_H R \rightarrow C_H NB$).

Hypothesis 5: Trust will be higher for those who engage in shift S_4 ($C_L R \rightarrow C_H B$), compared to those who engage in shift S_1 ($C_H R \rightarrow C_H B$).

Individuals who move from a highly cooperative reciprocal exchange environment to low cooperation, nonbinding negotiated exchange are likely to be disappointed in their partner's sudden decline in cooperative behavior. On the other hand, those who first participate in low-cooperation reciprocal exchange should already have diminished expectations before a shift to low cooperation nonbinding negotiated exchange. The failure to cooperate in the second form of exchange may be interpreted as an act of deceit since one's partner must choose to renege on a prior agreement. The change in cooperation rate (from high to low) is clearly important and should lead to the dissolution of trust between partners. Combined with the explicit, broken assurances in low-cooperation nonbinding negotiated exchange, a shift from high

cooperation reciprocal exchange to low-cooperation nonbinding negotiated exchange should be devastating to trust between partners. Thus, we expect trust to be lower for those who shift from high cooperation reciprocal exchange to low cooperation nonbinding negotiated exchange (S_3) compared to those who shift from low cooperation reciprocal exchange to low cooperation nonbinding negotiated exchange (S_6).

Hypothesis 6: Trust will be lower for those who engage in shift S_3 ($C_H R \rightarrow C_L NB$), compared to those who engage in shift S_6 ($C_L R \rightarrow C_L NB$).

DATA AND METHODS

To assess the effects of a change in the mode of exchange on trust, we control level of behavioral cooperation in this experiment. We also vary cooperation levels under specific circumstances (across conditions) to examine how the combined changes in cooperation and mode of exchange affect trust. We conducted a computer-based experiment in four-actor networks using a modified Z-Tree experimental software program (Fischbacher 2007). Each network consisted of one real participant and three simulated actors. Each participant was given the option of completing only one transaction on each opportunity to exchange with one of her three partners. All interactions were computer-mediated and each participant was placed in an isolated room. Participants for this study were undergraduates at a large research university, recruited for the purpose of earning money.

There were two decision-making phases in the experiment. Each participant began in reciprocal exchange (phase 1) and was randomly assigned to either a high or low cooperation condition. In the second phase, the mode of exchange changed from reciprocal exchange to one of two forms of negotiated exchange: binding negotiated exchange or nonbinding negotiated exchange. Rates of cooperation varied as well in phase 2. Participants either remained in a high or low

cooperation condition or moved to a different level of cooperation. Since binding negotiated exchange does not include the opportunity for defection or failed exchange, we did not include a low cooperation condition in this form of exchange. Together, the two levels of reciprocal exchange in phase 1 and three types of negotiated exchange in phase 2 produce a six-condition experimental design (see Figure 2). Each condition included 18 participants, with a valid N of 108 participants (49 percent male, 51 percent female).¹³

Experimental Manipulations

The three different forms of direct two-party exchange (reciprocal, binding negotiated, nonbinding negotiated) were designed to be as comparable as possible except for the actual structure of the exchange. The exchange relations were negatively connected, which simply means that only one exchange between dyads could occur in the negotiated exchanges. In reciprocal exchange the subject could only give to one partner on each round, but could receive benefits from multiple partners (Molm et al. 2003). In each case participants exchanged “points” during each phase of the experiment that were translated into money at the end of the study. We briefly describe each type of exchange here in operational terms.

Reciprocal exchange. In reciprocal exchange, participants were told they could choose to give between 0 and 12 points to the other participants in the network on each trial. Participants could not give points to themselves. It was possible to receive points from multiple actors, but participants could only give points to one other participant on

each trial. The exchanges were organized sequentially such that the simulated actors always gave points on the first opportunity to induce exchange. If the participant returned the points, the simulated actor who gave points on the first trial would repeat that action at the same level, while another simulated actor would give more points to the participant based on an increment that was randomly determined, ranging from one to six points. This random process allowed us to maintain valid social exchanges while lowering suspicion about the nature of the computer-controlled partners.

Binding negotiated exchange. In binding negotiated exchange the participant could make several offers to multiple partners, but only one exchange could be completed on each trial. Participants were given a pool of 24 points that could be used to make offers to others in the network. The values of the points were different for each actor in the network, but the value was always equal to one for the real participants. The different values allowed participants to negotiate profitable deals without knowing exactly what their partners were earning. Earnings on each round were calculated in the following way: earnings per round = points received from partner – points given to partner + remaining points out of 24 that were not offered to the partner.

The number of points used in negotiated exchange per trial was twice as large as in the reciprocal exchange condition, reflecting the fact that two rounds of reciprocal exchange took about the same amount of time to complete as one round of negotiated exchange. In addition, the difference in potential earnings was controlled by using half as many trials in negotiated exchange (18) as in the reciprocal exchange phase (36).

If a participant did not send an offer to any of her potential partners after 10 to 20 seconds, the simulated actors were programmed to send predetermined offers. Once a request had been made, the recipient could accept the offer, reject the offer, or make a counter offer. The simulated actors were programmed to accept profitable deals. If after two minutes

¹³ The exclusion rate for the study was 6 percent; four participants were excluded due to a software failure and three more were excluded because of other behavior during the study (cell phone use, texting messages, etc). Although gender is not a variable in this study, we used a 50/50 gender distribution randomizing an equal number of males and females to each condition. Other basic demographic information (i.e., age and ethnicity) were also collected. There were no effects for gender, age, or ethnicity so these variables are excluded from the present analyses.

of negotiation no agreement was reached, actors retained their original points and a new round commenced. On the second exchange opportunity, if no agreement was reached the simulated actors repeated the programmed offer from the previous exchange. If an agreement was reached, the simulated actor who completed the agreement on the first trial repeated that offer, while another simulated actor offered a more profitable option to the participant based on a randomly assigned value between one to six points more than the participant's previous exchange outcome. These patterns continued until each phase of exchange ended.

Nonbinding negotiated exchange. Nonbinding negotiated exchange was identical in all respects to binding negotiated exchange except for one additional decision step. In nonbinding negotiated exchange, participants faced the decision on each trial of keeping their agreement or not following through with the exchange at the agreed on terms.

If both partners followed through on the agreement, the participants received the negotiated points plus any remaining points that they did not exchange out of the initial 24. Participants were told if they reneged on the agreement they would keep all of their initial points plus the points that the partner agreed to give to the participant. However, if the participant followed through and their partner defected, the participant would lose the points they had agreed to give and could only keep any remaining points that were not used in the negotiation. If both partners reneged, they would each keep their initial points.¹⁴

Cooperation levels. In this study, cooperation is measured in terms of follow-through by one's partner. In reciprocal exchange, this meant that simulated others returned the same benefit they received on the previous trial. In nonbinding negotiated exchange, cooperation is operationalized as upholding

the current agreement. As previously mentioned, there is no way to renege in binding negotiated exchange, thus all binding negotiated exchanges are cooperative.

The simulated actors were used to create either a high cooperation or a low cooperation exchange environment. In the high cooperation environment, simulated actors cooperated all of the time. This allowed us to eliminate the potential negative effect of any kind of defection in the high cooperation condition. In the low cooperation environments, the simulated actors were programmed to cooperate slightly more than half of the time. Cooperation rates were chosen to maximize the difference between the high and low conditions, without halting exchange all together in an extremely low cooperation condition (e.g., less than 50 percent). The two discrete levels allow us to make clear comparisons between cooperation rates. However, systematically varying levels of cooperation between these limits will be important for future research.

General Procedures

Participants were assigned to an individual waiting room when they were recruited. Upon arrival an experimenter greeted the participants and led them to a private room. Participants were told they would be interacting with three other individuals through their computer, but they would not see their partners nor communicate in any other way.

Participants were first given detailed instructions and then a series of short practice trials. Once practice was over, phase one began. At the end of each opportunity for exchange participants were informed of the source and the amount of any points they had gained, and their own total earnings were displayed on the computer. There were 36 rounds of reciprocal exchange in phase 1, followed by a short computerized questionnaire. After completing the questionnaire, participants were told that while the mode of exchange would change, their *partners would remain the same*. Participants read a new set of detailed instructions to ensure that

¹⁴ These rules of exchange create a standard prisoner's dilemma in which the temptation to defect is more profitable than the reward for mutual cooperation, but these outcomes are even more profitable than mutual defection or cooperating when one's partner chooses to defect (i.e., receiving the "sucker's" payoff).

they understood the rules of their new mode of exchange. Phase 2 consisted of 18 rounds of either binding or nonbinding negotiated exchange, depending on the experimental condition (see Figure 1). The second phase was also followed by a questionnaire. The study took approximately one hour to complete and participants did not know how many trials were in either phase of the experiment to control for end-game effects.

Dependent Variables

Trust. We employ a multidimensional view of cognitive trust composed of four related concepts: trustworthiness, reliability, credibility, and dependability. At the end of phase 1 and phase 2, participants rated each of their three partners on all four dimensions of trust. The measures were derived from attitudinal scales that ranged from 1 (most negative) to 10 (most positive) for each construct. We averaged the responses to the four questions to create a single index for cognitive trust (Cronbach's $\alpha = .94$). Since all of the simulated actors cooperated at the same rate during any given phase in each experimental condition, we averaged the questionnaire responses the participants gave concerning their partners to obtain an overall measure of trust at the end of each phase of the study.

Perceptions of risk. As a supplemental check for changes in perceptions of risk, we included several items in the post-exchange questionnaires following each experimental phase. Participants indicate how much they believe their most recent interactions were predictable, certain, stable, and clear, with 1 being the most negative and 10 being the most positive response. We average the responses to these four items to create a single scale measure of perceived risk (Cronbach's $\alpha = .94$).

Results

Shifts in modes of exchange and trust. Our first three hypotheses make predictions about changes in levels of trust for individuals when there is a shift from one form of exchange

to another, holding the cooperation rates of their partners constant. Hypotheses 1 and 2 deal with positive, cooperative environments that shift from reciprocal to nonbinding and binding negotiated exchange, respectively. Hypothesis 3 predicts that in low-cooperation environments a shift from reciprocal exchange to nonbinding negotiated exchange will lead to an increase in trust as a result of the change in mode of exchange. Table 1 shows the means and standard deviations for the dependent variable (trust) by phase in each experimental condition.

We use repeated measures analysis of variance to test the equality of means and to reduce the chance of making a Type I error when making multiple comparisons. The within-subjects effect of experimental phase (Wilks's Lambda = .96, $p < .05$) and the phase \times condition interaction (Wilks' Lambda = .67, $p < .001$) are significant. In addition, the between-subjects effect of experimental condition is significant, $F(5, 13) = 4.78$, $p < .001$. These results indicate that some of the differences between experimental conditions are significant.

Hypothesis 1 predicts that trust will decrease for those who shift from cooperative reciprocal exchange to cooperative nonbinding exchange. However, the mean difference between the two modes of exchange (.72) is borderline significant ($t = 1.7$, $p < .1$). Hypothesis 2 also predicts a decrease in trust with a shift from cooperative reciprocal to binding negotiated exchange. As Table 2 shows, trust decreases significantly for those who shift from cooperative reciprocal to binding negotiated exchange ($t = 2.6$, $p < .05$). Thus, Hypothesis 2 receives support and Hypothesis 1 receives limited support. The significant reduction in trust when binding negotiated exchange is imposed on individuals after engaging in highly cooperative reciprocal exchange is an important finding which supports previous work on the underlying differences in these modes of exchange. What we cannot address in this study is the role that the increased salience of conflict under negotiated exchange regimes might have had in the reduction of trust. What we do know is that under negotiated exchange there is little

Table 1. Means and Standard Deviations for the Perceived Trust Scale by Experimental Condition (Type of Shift in Mode of Exchange)

Experimental Condition (Shift)	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆
Phase 1	Reciprocal	Reciprocal	Reciprocal	Reciprocal	Reciprocal	Reciprocal
	High	High	High	Low	Low	Low
	Cooperation	Cooperation	Cooperation	Cooperation	Cooperation	Cooperation
	5.47 (1.14)	5.7 (1.33)	5.79 (1.45)	4.5 (1.67)	4.77 (1.45)	3.86 (1.59)
Phase 2	Binding	Nonbinding	Nonbinding	Binding	Nonbinding	Nonbinding
	Negotiated	Negotiated	Negotiated	Negotiated	Negotiated	Negotiated
	High	High	Low	High	High	Low
	4.8 (1.13)	4.98 (1.35)	3.74 (1.28)	5.63 (1.41)	5.6 (1.32)	3.58 (1.36)

Note: $N = 108$ (18 per condition). Standard deviations in parentheses.

room for individuals to demonstrate their trustworthiness.

Hypothesis 3 predicts that trust between partners will increase after the shift from low-cooperation reciprocal exchange to low-cooperation nonbinding negotiated exchange. However, the means for trust are very low before and after the shift in mode of exchange (3.86 and 3.58, respectively). The minimal difference in means (-0.27) does not reflect a statistically significant change between phase 1 and phase 2. It appears that any trust that could have developed after a shift to nonbinding negotiated exchange is largely erased by the experience of non-cooperation. Hypothesis 3 is not supported.

Hypotheses 4 through 6 make predictions about comparisons of levels of trust between specific experimental conditions. In these comparisons, phase 1 (reciprocal exchange) varies by level of cooperation, but the phase 2 mode of exchange is always equivalent (i.e., the mode of exchange and the level of cooperation are always equivalent in each hypothesis). Since we are evaluating the level of trust at the end of the experiment between pairs of conditions, we use independent sample means tests for each comparison. Thus, we are able to determine if the within-condition changes in the experience of cooperation lead to different levels of trust *between*

conditions in which the same structural shift in mode of exchange occurs.

Hypothesis 4 predicts that the shift from low-cooperation reciprocal exchange to high-cooperation nonbinding negotiated exchange will lead to more trust than a shift from high-cooperation reciprocal exchange. The difference between the final levels of trust is borderline significant (difference = -0.62 , $t = 1.4$, $p = .08$). Hypothesis 4 receives limited support.

Hypothesis 5 predicts that individuals who shift from a low-cooperation reciprocal exchange environment will have higher levels of trust once they move to binding negotiated exchange compared to those who shift from highly cooperative reciprocal exchange. As Table 3 shows, trust is higher in the condition that shifts to binding negotiated exchange from low-cooperation reciprocal exchange (5.6), compared to the condition that shifts to binding negotiated exchange from high-cooperation reciprocal exchange (4.8). The difference is significant ($t = 1.9$, $p < .05$), providing support for Hypothesis 5.

Hypothesis 6 predicts that there will be a significant decrease in trust levels for those who switch from high cooperation reciprocal exchange to low cooperation nonbinding negotiated exchange, compared to those who shift from low cooperation reciprocal

Table 2. Trust Assessments by Experimental Condition (Paired Means Tests)

Hypothesis	Mean Difference (<i>SE</i>)	<i>t</i>	Support for Hypothesis
Hypothesis 1			
Reciprocal High Cooperation/Nonbinding Negotiated High Cooperation	.72(.44)	1.7 [†]	Limited Support
Hypothesis 2			
Reciprocal High Cooperation/Binding Negotiated High Cooperation	.67(.26)	2.6*	Supported
Hypothesis 3			
Reciprocal Low Cooperation/Nonbinding Negotiated Low Cooperation	.27(.49)	.55 (n.s.)	Not Supported

Note: *N* = 54 (18 per condition)

df = 17 for all tests

[†]*p* < .1; **p* < .05 (one-tailed tests).

exchange to low cooperation nonbinding negotiated exchange. However, we find no significant difference in trust between these two experimental conditions. In fact, these two conditions produce the lowest levels of trust in the entire study (*S*₃ = 3.74; *S*₆ = 3.58), demonstrating that low-cooperation nonbinding negotiated exchange is an especially devastating environment for establishing or maintaining trust between partners. Hypothesis 6 is not supported.

Assessments of risk. To supplement our primary analyses about changes in trust, we also measured perceptions of risk using a scale constructed from individual questions (e.g., predictability, certainty, stability and clarity of the situation). Overall risk assessments stay the same when cooperation rates remain consistent between the first and second forms of exchange. However, perceptions of risk significantly increase when participants shift from high-cooperation reciprocal exchange to low-cooperation nonbinding negotiated exchange (mean change = 1.60, *p* < .05). Furthermore, we observe a significant decrease in perceived risk when individuals shift from low-cooperation reciprocal exchange to high-cooperation nonbinding negotiated exchange (mean change = −.97, *p* < .05) or binding negotiated exchange (mean change = −.73, *p* < .1). Given these observed changes and

the fact that there are no significant changes between phase 1 and 2 when cooperation rates are constant, perceptions of risk appear to be largely influenced by experiential information such as that provided by cooperative behavior rather than by structural affordances or limitations of the environment.

DISCUSSION AND FUTURE DIRECTIONS

When we consider the forms of exchange examined in our study, the differences we observe in trust are consistent with current experimental work on trust formation under different types of exchange (Gerbası 2007; Gerbası and Cook 2008; Molm et al. 2000, 2003). For example, we find that in reciprocal exchange, trust levels tend to mirror the levels of cooperation. It is likely that for reciprocal exchange to persist, acts of reciprocity must serve to promote and reinforce the development of trust (Blau 1964). Low cooperation in reciprocal exchange clearly inhibits trust-building, while high cooperation rates allow trust to fully develop in this high-uncertainty environment. Compared to reciprocal exchange, we find that individuals in both non-binding and binding negotiated exchange tend to have less trust, controlling for overall cooperation rates. The risks involved in the social exchanges in this study include the

Table 3. Trust Assessments by Comparison Conditions (Independent Sample Means)

Hypothesis	Mean Difference (<i>SE</i>)	<i>t</i>	Support for Hypothesis
Hypothesis 4			
Reciprocal High Cooperation/ Nonbinding Negotiated High Cooperation	-.62(.45)	-1.4 [†]	Limited Support
Reciprocal Low Cooperation/ Nonbinding Negotiated High Cooperation			
Hypothesis 5			
Reciprocal High Cooperation/Binding Negotiated High Cooperation	-.82(.43)	-1.9*	Supported
Reciprocal Low Cooperation/ Binding Negotiated High Cooperation			
Hypothesis 6			
Reciprocal High Cooperation/ Nonbinding Negotiated Low Cooperation	.15(.44)	.38(n.s.)	Not Supported
Reciprocal Low Cooperation/ Nonbinding Negotiated Low Cooperation			

Note: $N = 108$ (18 per condition)

$df = 34$ for all tests

[†] $p < .1$; * $p < .05$ (one-tailed tests).

potential loss of valued resources, as well as the possibility of exploitation by others. When individuals repeatedly demonstrate their trustworthiness through cooperation, socially risky relations can lead to more trust between exchange partners over time.

This study provides several new findings about trust between exchange partners in groups that transition from one form of social exchange to another. Perhaps most importantly, in a highly cooperative reciprocal exchange environment trust significantly declines when there is a transition to binding negotiated exchange. Since we control for partners' behavior (i.e., rate of cooperation) our results clearly demonstrate the independent effect of a shift in mode of exchange. Importantly, these results raise an interesting question about why the decrease in trust is somewhat muted when shifting to nonbinding negotiated exchange, while the shift to binding negotiated exchange leads to a clear, significant decline in trust.

One answer to this question, consistent with our theoretical reasoning, is that the level of uncertainty involved in the form of exchange partially regulates the potential range of trust development. When there is a small chance of opportunism and the partner engages in a high level of cooperative exchange, one's behavior signals less about one's trustworthiness than it would when there is greater potential for opportunism to occur (Heimer 2001). As many scholars have argued, uncertainty regarding the outcome of an interaction is a necessary—but not sufficient—condition for trust to emerge¹⁵ (Gambetta 1988; Hardin 2002; Kelley and Thibaut 1977; Kollock 1994; Malhotra and Murnighan 2002). Thus, at the same levels of cooperation, trust may be contingent on the types of risk involved and the associated levels of uncertainty

¹⁵ Exchange under conditions of uncertainty not only requires trust, it also promotes its creation by allowing partners to display their trustworthiness through positive interactions (Ekeh 1974; Levi-Strauss 1969).

characteristic of the different forms of direct exchange (reciprocal versus nonbinding and binding negotiated exchange).

In binding negotiated exchange, there is no opportunity for malfeasance after a deal is made, so behaviors do not provide a clear signal regarding one's trustworthiness. As a result, "trust" becomes conceptually and practically less relevant in these interactions.¹⁶ However, in nonbinding negotiated exchange, there is some risk and uncertainty about whether any given partner will renege on the agreement. Trust also declines after the shift from cooperative reciprocal exchange to cooperative nonbinding negotiated exchange. However, the source of uncertainty in the first form of exchange is traded for a different source in the second. Reciprocal exchange involves uncertainty about the likelihood of receiving anything after giving to one or more partners. In nonbinding negotiated exchange, uncertainty arises from the potential for renegeing by one's partners. Our findings thus support Molm's (2003) delineation of the uncertainties entailed in different types of exchange; however, this is the first study to show that shifts in modes of exchange alter participants' trust in their partners.

In addition to different levels of risk and uncertainty, Molm and her colleagues (Molm, Schaefer and Collett 2007, 2009) argue that the forms of exchange also differ in terms of the salience of conflict and in the expressive value attached to acts of reciprocity. An increase in the salience of conflict in social exchange reduces solidarity and increases sensitivity to a partner's negative behavior (Molm, Schaefer, and Collett 2007). However, the expressive value of reciprocity increases solidarity through symbolic

or communicative value, "over and above the instrumental value of the benefits provided" (Molm, Schaefer, and Collett 2007:210). Both of these factors may also be at play when there is a transition from cooperative reciprocal exchange to cooperative binding negotiated exchange and may help to explain the reduction in trust associated with this transition in modes of exchange. However, we expect that the salience of conflict associated with a shift from reciprocal cooperative exchange to binding negotiated exchange potentially triggering the belief that the relationship grounds have changed is likely to be much more significant in agent initiated changes in mode of exchange in which one of the actors involved chooses to move from one mode of exchange to another, than in the case in which the change in mode of exchange is exogenously determined, as in this study.

When participants move from reciprocal exchange to negotiated exchange, the shift may increase the salience of conflict because the exchanges change from implicit reciprocity to explicit negotiation. Furthermore, a shift from reciprocal exchange to negotiated exchange may decrease the affective value of reciprocity because the explicit communications and agreements in negotiated exchange depend less on the affective value of reciprocity than reciprocal exchange (Molm et al. 2009). Although we do not directly examine the effects of conflict and affective value in reciprocity, we believe that these two characteristics are important for building a more complete understanding of changes in behavior and attitudes following a shift in mode of exchange and should be the focus of future research.¹⁷

¹⁶ Of course, our results show that individuals report high trust in binding negotiated exchange, especially when they shift into binding negotiated exchange from a low-cooperation environment. We do not argue that trust cannot be *perceived* in binding negotiated exchange. Rather, there are few if any ways to express trust over time when all transactions are guaranteed by a third party. Conceptually, trust becomes less relevant in this type of environment. Some even argue that since assurance is provided by some third party trust is not at issue.

¹⁷ In addition, the limitations in this study in the number of trials in each form of exchange may have constrained the effects of a transition in mode of exchange and led to weaker results. Commitment may also have been weaker as a result of the limitation in the length of time subjects had to focus on one particular partner. These factors should be the subject of future research in which the partners are not simulated. This research is now in progress.

Low-cooperation Environments

At first glance, the low-cooperation reciprocal exchange environment may seem like a suboptimal situation for trust development. Indeed, when directly compared to the other forms of exchange with low cooperation rates, the low-cooperation reciprocal exchange environment produces nominal levels of trust. However, when individuals transition from this low-trust environment to binding negotiated exchange, they report significantly more trust compared to those who shift to binding negotiated exchange from a highly cooperative reciprocal exchange environment. Low rates of cooperation in reciprocal exchange environments may lead to fears about lack of trust that are mitigated by a move to a more certain environment such as that produced by binding negotiated exchange. This demonstrates that trust may not develop in low-cooperation reciprocal exchange, but the experience of exchange in the less cooperative, more uncertain environment enhances trust once these same individuals move to the certainty of cooperative binding negotiated exchange. We find a similar result when individuals shift from reciprocal to nonbinding negotiated exchange: trust is higher for those who shift from low-cooperation reciprocal exchange to high-cooperation nonbinding negotiated exchange, compared to those who shift from high-cooperation reciprocal exchange to high-cooperation nonbinding negotiated exchange.

Our results indicate that trust levels are not significantly different when individuals shift to a low-cooperation environment, even if the second mode of exchange is more certain than the first. When individuals shift from high or low cooperation reciprocal exchange to low-cooperation nonbinding negotiated exchange (S_3 compared to S_6), the trust levels reported in each condition at the end of the study are very low. The trust levels at the end of all the exchanges are similar, regardless of the initial environment before the shift in mode of exchange.

Individuals learn that uncertain and uncooperative environments are risky and that it is extremely difficult to build cooperation in

such environments once low levels of cooperation become the dominant behavior. A shift in the form of social exchange that reduces or eliminates uncertainty can help individuals break an impasse by exogenously assuring cooperative outcomes. In this way, low-cooperation reciprocal exchange may act like an incubator for future trust. We already know from previous research that individuals who engage only in binding-negotiated exchange do not necessarily trust their partners because there is little or no uncertainty and thus little opportunity to demonstrate one's trustworthiness. However, individuals who shift from the negative experience of a low cooperation environment appear to appreciate the positive outcomes produced in a more certain system. In fact, they clearly report more trust *after* the transition. In such situations, a change in the structure of the exchanges that are allowed facilitates the emergence of trust—even when trust has previously eroded as a result of widespread non-cooperation.

Examples of this effect can be found in real-world social exchanges. For example, when online auction sites such as eBay.com first appeared, there were no exogenous systems in place to ensure legitimate transactions, which led to an increase in exploitation and other forms of opportunism and malfeasance. In fact, third-party Internet indemnity systems likely emerged in response to the severe lack of trust in these highly uncertain and risky environments for exchange. The success of internet markets, such as eBay, has clearly been bolstered by assurance systems that have guaranteed cooperative outcomes in the wake of high-profile scams (see Stone 2007).

In future research we plan to investigate structural shifts in modes of exchange without using simulated actors and controlling cooperation rates. In addition, we will examine different transitions (e.g., moving from negotiated to reciprocal exchange). By investigating four- or six-participant networks without simulated actors we can more fully examine the dynamics of negotiation and reciprocity between real participants before and after the structural shift in mode of exchange. In

addition, we will examine a range of other outcome variables, including level of exchange, overall profit, relative profit, attributions as mediating factors, and changes in the network (including networks in which the number of potential partners can increase the opportunity structure) as well as the salience of conflict. We will include a study of other transitions (e.g., beginning with binding negotiated exchange and then shifting to one or more other forms of exchange). Our continuing research will examine and compare structural shifts such as those explored in this study, and agent-based transitions that depend on the preferences and decisions of the individuals involved in a given exchange network.

In addition to transitions or the evolution of an exchange relation from one type of exchange to another, there are other exchange network dynamics worthy of further investigation. The real world is dynamic, such that an exchange relationship between individuals in one small network may affect one or more other exchange relationships among the same (or different) actors embedded in a larger system. Complex systems are often taken for granted in everyday life. Much of the future of social exchange theory will involve the investigation of these more complex systems and the specification of the determinants of power and relational outcomes such as trust and commitment. Empirical studies of social exchange transitions in particular have the capacity to directly address questions about processes and outcomes in rapidly changing systems of real-world exchange. Given the increased interest in these relatively new systems of exchange, the opportunities for further theoretical development and applications based on the study of transitions in modes of exchange are substantial.

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