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Commitment in Structurally Enabled and Induced Exchange Relations*

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Network structures both enable and constrain the development of social relations. This research investigates these features by comparing the development of commitments in structurally enabled and structurally induced exchange relations. We integrate ideas from the theory of relational cohesion and the choice process theory of commitment. In an experiment we manipulate and compare a structurally enabled relation with a structurally induced relation. The main hypotheses are that a structurally enabled relation generates a greater sense of control, more positive emotions, greater perceived cohesion, and more commitment behavior than a structurally induced relation. The results of the experiment support these hypotheses. The implication is that enabling and constraining features of network structures exert important effects on cohesion and commitment in relations within those structures.

Contemporary social exchange theory emphasizes networks in which actors prefer some exchange partners to others, and in which the social structure shapes the degree to which they are able to exchange with their preferred partners (Emerson 1972, 1981). In this tradition, partner preferences are based on the expected profits attached to alternative exchange relations; these profits are embedded in the structural arrangements or network ties (Ekeh 1974; Emerson 1981; Willer and Anderson 1981). Nearly all work in social exchange theory implicitly adopts an assumption that social structures shape actors' preferences as well as their capacity to make choices consistent with those preferences. Structures may either enhance or limit actors' opportunity to exchange with their preferred partners. Giddens (1984) conceptualizes this phenomenon in terms of the "enabling" and "constraining" features of social structure (also see Blau 1994); we adopt this idea. We offer the concepts of "structurally enabled" and "structurally induced" social relations to capture how a network promotes or constrains interaction.

In structurally enabled relations, the actors prefer to exchange with one another on the basis of the incentives embedded in the structure, and subsequently they can consummate exchange. Structurally induced relations occur when two actors each would prefer to exchange elsewhere, but have no choice except to exchange with one another. This distinction has an important, yet unrecognized, place in the history of exchange theory. Early on, Homans (1950) emphasized that more highly valued relations produce greater sentiment, but also that a "companionship of misery" develops in induced or forced exchange relations. Moreover, the earliest exchange network studies explicitly manipulated whether relations were of high

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or low value (Cook and Emerson 1978; Stolte and Emerson 1977) and implicitly created enabled and induced relations. Those early studies detected no theoretically important power differences across such relations; since that time, most of the theory and research has held relational value constant (for an exception, however, see Bonacich and Friedkin 1998). Thus the distinction between enabled and induced relations has not been part of the theoretical landscape.

In this paper we reintroduce this distinction to exchange theory. Specifically, we examine whether enabled and induced relations respectively alter the formation of relational commitments. Commitment is defined broadly as an actor's tie to a relation, group, or organization (Kanter 1968). To theorize and predict how structural conditions alter the commitment process, we integrate ideas from the theory of relational cohesion (see Lawler and Yoon 1996, 1998; Lawler, Thye, and Yoon 2000) and a choice process theory of person-to-group commitments (Lawler 1992, 1997; Mueller and Lawler 1999). The former proposes an emotional/affective explanation for the development of commitment in exchange relations; the latter proposes that people become more strongly committed to social units (relations, groups, organizations) that give them a sense of control. An implication is that the emotional/affective process of relational cohesion theory should be stronger in structurally enabled than in structurally induced exchange relations because the former generate a greater sense of control. At issue is whether repeated transactions promote or inhibit commitment processes in enabled versus induced exchanges (Emerson 1981).

Building on relational cohesion theory, we hypothesize that repeated exchange can promote commitment in both enabled and induced social relations, insofar as repetitive exchange generates positive emotions in each case. Drawing upon the choice process theory of commitment (Lawler 1992), we further predict that a lack of perceived control will inhibit emotional reactions in structurally induced exchange relations, and thereby will weaken relational commitments. Thus the claim from relational cohesion theory is that commitment will emerge in both enabled and induced relations. The choice process theory, however, adds that perceptions of choice or control will heighten commitment in structurally enabled exchange relations.

BACKGROUND

Enabled and induced relations are fundamental dimensions within social networks. Consider an everyday example involving two couples (A–G, B–D) having dinner at one of the couples' homes. Assume that A and B are coworkers who have an incentive to use the evening to resolve some work-related issues off-site, whereas D and G have never met. In the course of the evening, A and B settle in the kitchen and "talk shop," while D and G are left in the living room to interact by themselves. D and G do not prefer to interact alone with each other, but this situation is induced by the fact that A and B have an incentive to converse alone. The exogenous structure of relations brought to the evening essentially shapes the actors' preferences about who to interact with most, and the four-actor network breaks down into two dyadic interactions as the evening proceeds. The A–B interaction is enabled and based on a mutual preference of A and B for each other; the interaction of D and G is induced because it is not based on a mutual preference.

In this study we examine a similar four-actor network in which two exchange relations will form simultaneously. In one relation, the actors prefer each other on the basis of incentives embedded in the structure; in the other, the incentives lead them to prefer others. The former relation is structurally enabled; the latter is structurally induced. Elster (1986) identifies three elements of a rational choice situation that can conceptualize such relations: actors have (1) a set of options, shaped by the social structure, (2) beliefs about the payoffs attached to the options, and (3) a subjective preference ranking of the options. As he states, "To act rationally, then, simply means to choose the highest-ranked [option] in the feasible set" (p. 4). According to Elster's framework, preferences are subjective utilities; "choice" behavior involves a set of options with a pref-

erence ranking.[1] As applied to exchange networks, the structure generates (1) a set of partner options, (2) perceptions of the payoffs likely from each partner, and (3) a preference ranking of partners based on the expected payoffs (also see Molm and Cook 1995).[2]

Theoretically, an exchange or exchange relation is enabled if two conditions are combined: actors mutually prefer one another, and the structure gives them the capacity to actualize their preferences. It is the joint occurrence of these conditions that generates a sense of control, because the ability to choose preferred partners reflects agency or efficacy (Weiner 1986). Structurally enabled relations embody these conditions. In contrast, structurally induced relations occur when actors prefer to exchange elsewhere, but have no choice except to interact with one another. Within a group, a network, or even a society, individuals with low power or status often occupy this position. Network exchange theories suggest incentive conditions that will produce both enabled and induced relations.

To date, contemporary exchange theory has focused primarily on network constraints and how these affect the exercise of power and the frequency of exchange (see Skvoretz and Lovaglia 1995; Willer 1999). Such work cannot explain differences between structurally enabled and structurally induced exchange relations as long as the underlying power conditions are the same. If relative power is equal in structurally enabled and

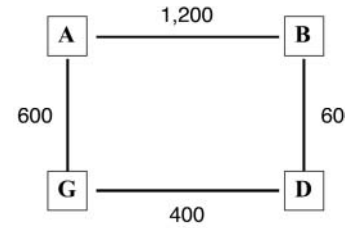

Figure 1. The Box Network

structurally induced relations, network exchange theories predict equal divisions of profit, even if the total profit at stake differs across such relations. Nevertheless, social units—groups, networks, communities, or societies—often are stratified in part by the actors' capacity to realize preferences or by whether they must "settle" for something less. In this sense, our theory and experiment can be construed as addressing a fundamental aspect of social stratification.

The box network depicted in Figure 1 illustrates this phenomenon. Assume an "exclusively" or "negatively" connected network in which an actor can exchange with only one other at a given point in time (Emerson 1972; Willer 1999). Each line represents a structurally possible exchange; the numbers represent the total profit (value) available in each exchange relation. Actors A and B have an incentive to exchange with each other because this exchange generates the greatest joint value (1,200 units of profit). In contrast, D and G do not have such an incentive because the value available from their relation (400 units of profit) is less than the alternative for each (600 units of profit). Actors A and B should prefer each other and should be able to repeatedly consummate exchange. Actors D and G, however, should be unable to actualize their preference for A and B; thus D and G exchange ex post facto. This box structure therefore generates an A–B relation that is structurally enabled, and a D–G relation that is structurally induced.[3]

[1] No assumption is made about the overall quality of the choices. The point is that options exist, and behavior reflects a "choice" among these options. The presence of options that actors can choose is sufficient for a choice situation in Elster's terms. We subscribe to this view; thus our use of the term *choice* should be read as options that an actor can take regardless of how good or how wise these options are.

[2] Theoretically, actors' preference rankings also may be due to structural conditions such as social or role identities associated with positions in the structure (Stryker 1980; Tajfel and Turner 1986) or to homophily generated by ecological niches (Blau 1994; McPherson and Smith-Lovin 2002). Exchange and rational choice theories interpret these as different forms of incentive; here we use differential payoffs in the network to create the theorized preference rankings.

[3] Homans (1950) makes a related point. He argues that frequent interaction generates sentiment in relations primarily when actors have alternative partners and when exchange with those partners would generate lower payoffs. That is, the mere fact of an option is important, regardless of its quality. If actors have no options or are stuck with each other, sentiment will not develop or will be weaker (Homans 1950).

For theoretical and empirical purposes, we use the box network of Figure 1 to compare the effects of enabled and induced exchange relations on cohesion and commitment processes. We address the following questions: Can relational cohesion and commitment emerge in structurally induced relations? If so, are cohesion and commitment stronger when exchange relations are structurally enabled than when they are structurally induced? In the following sections we elaborate the properties of exchange networks that generate enabled and induced relations, using the relational cohesion and choice process theories of commitment.

THEORY

Enabled and Induced Network Relations

The work of Richard Emerson in the 1970s engendered a significant transformation in social exchange theorizing (Molm and Cook 1995). Before Emerson (1972, 1981), exchange theory focused primarily on dyads, as evident in the early work of Thibaut and Kelley (1959), Homans (1961), and Blau (1964). In contrast, Emerson put forth the notion that dyads are part of a larger set of potential and actual exchange relations—for example, an exchange network (Emerson 1972, 1981). Thus, in analyzing a dyad, he argued that it is important to consider its broader connection to other dyads: that is, the larger network in which it is embedded. This approach gave Emerson's theorizing a decidedly structural theme. This shift of focus to network structure has framed exchange theory and research for the past 25 years.

Research has demonstrated that exchange networks affect an array of phenomena including profit divisions (Bonacich and Bienenstock 1993; Cook and Whitmeyer 1992; Friedkin 1992; Skvoretz and Willer 1993; Willer 1999), exchange frequencies (Markovsky et al. 1993; Skvoretz and Lovaglia 1995), and differential responses to exchange and exclusion (Skvoretz and Zhang 1997; Thye, Lovaglia, and Markovsky 1997; Walker et al. 2000). In this corpus of research, several properties stand out as important to the formation of exchange relations. These also are important to an examination of enabled and induced relations. The most fundamental property is interconnectedness; that is, contingencies across possible exchange relations. The box network shown in Figure 1 illustrates this. The four relations are interconnected because each actor can exchange with only one other at any given point in time. That is, when A exchanges with B, G and D also can exchange, but A–G or B–D cannot. The interconnectedness of the A–B and D–G relations in the box network is the structural reason why D and G exchange with each other even though they do not prefer each other as exchange partners.

Another important property of exchange networks is the availability of an exchange partner (Cook et al. 1983; Markovsky et al. 1988). Modern exchange theory recognizes that availability is based on the configuration of alternative partners and on the value produced by exchanges (Emerson 1972, 1981; Willer 1999): that is, the alternatives of one's alternatives. In the box network, for example, G and D are available to A and B because D and G do not have alternative partners who provide more profit than is possible in A–G and B–D. In the Figure 1 network, each actor has two alternatives, but the differences in values across the relations make A and B less available to D and G than the converse.[4]

Within each focal dyad (A–B, D–G) connectedness, availability, and value are held constant in the Figure 1 box structure. That is, A and B have access to relations of equal value and availability; thus the two are equal in power relative to one another. The same is true for actors D and G. Given these conditions, exchange theories of power such as exchange network theory (Willer 1999), power dependence theory (Emerson 1972), and the core (Bienenstock and Bonacich 1992) would not distinguish between enabled and induced relations; all of these theories

[4] The differential profit potentials across A—B and D—G in the box network may be construed as a confound, but this confound is necessary and justified theoretically. Our concept of induced relations is multidimensional; by definition it entails the conjunction of partner preferences based on more profit potential in some relations than in others, and a structural opportunity to achieve or actualize these preferences. Without a difference in profit potential, the enabled/induced phenomenon in exchange networks could not be isolated and tested.

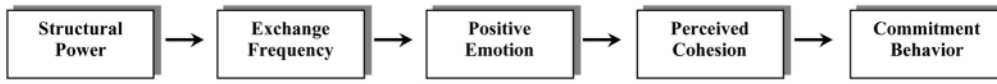

Figure 2. Theoretical Model of Relational Cohesion

predict equal exchange frequencies and equal divisions of profit in A–B and D–G.[5] We theorize an important difference between enabled and induced relations created by the overall distribution of relational value.

Theory of Relational Cohesion

Relational cohesion theory posits an emotional/affective process through which structurally enabled exchange should promote the development of cohesion and commitment (Lawler et al. 2000; Lawler and Yoon 1996; Thye, Yoon, and Lawler 2002). The emotional/affective impact of frequent exchange is the centerpiece of the theory; this distinguishes it from uncertainty reduction and trust explanations of commitment (see Cook and Emerson 1984; Kollock 1994, 1999). The theoretical model outlining this endogenous process is shown in Figure 2. Relational cohesion theory does not suggest or address the "enabled versus induced" comparison. It assumes that actors develop partner preferences and select potential exchange partners in the context of structural constraints and opportunities. In fact, it is a scope condition of the theory that actors have alternatives, but that these alternatives are less good than those in a focal relation, which the box network creates for the A–B relation but not for the D–G relation (also see Homans 1950). The scope of relational cohesion theory presumes a structurally enabled exchange relation. One aim of the current research is to examine relational cohesion theory in a context where this condition is violated; that is, in a structurally induced relation.

Relational cohesion theory makes four fundamental points. First, structural power shapes who is likely to exchange with whom. A distinction is made between the total and relative power in a relationship (Bacharach and Lawler 1981; Molm 1990). Total power is the average difference in prospective payoffs between a focal relation and alternative relations; it captures the degree of interdependence across relations. Relative power is the difference in power between any two actors (Markovsky et al 1988; Willer 1999). Although the structurally enabled (A–B) and the structurally induced (D–G) relations in the box structure are both equal power relations, they differ in total or average power: the A–B relation can generate more value for its members than the D–G relation. In systems of social stratification, for example, relations of disadvantaged people tend to generate less value for them than do the relations of advantaged people. Bacharach and Lawler (1981) offer "total power" as a way to conceptualize differences in value across relations (also see Molm's [1987] concept of average power). The concept of enabled/induced relations extends this notion.

Second, successful exchange generates emotions or feelings along a positive/negative dimension (Lawler and Yoon 1996; Russell 1980). All other things being equal, actors "feel good" when they achieve an exchange with another and they "feel bad" when they do not. An emotion is defined as a short-term positive or negative evaluative state that involves both physiological and cognitive components (Izard 1991; Kemper 1978; Lazarus 1984). Two everyday emotions are emphasized: pleasure/satisfaction and interest/excitement (Lawler and Yoon 1996).[6] The theory indicates that exchange is an accom-

[5] Early work in exchange theory explicitly studied similar networks. Stolte and Emerson (1977) examined networks in which some relations offered 13 resources while others offered three. Cook and Emerson (1978) examined networks in which some relations were worth 24 resources and others only eight. Neither study found theoretically important differences across such relations. More recently, Bonacich and Friedkin (1998) reintroduced exchange theorists to networks with unequally valued exchange relations.

[6] These reflect the two dimensions of the circumplex model, but also Izard's contrast of joy and interest as fundamental everyday emotions (Izard 1991).

plishment; when it is achieved, actors feel pleased and satisfied while also becoming interested and excited about the prospects for future exchange (see Izard 1991). In the box network, successful exchange in A–B represents such an accomplishment; thus repeated exchange should produce positive emotions in A–B. We test whether this also extends to a structurally induced relation, D–G, which technically falls outside the scope of relational cohesion theory.

Third, feelings and emotions are attributed partially to social units such as exchange relations. This occurs because emotions have ambiguous sources, and actors want to reproduce positive emotions and avoid negative emotions. With repeated exchange, the relation or group becomes more salient for actors; in the process, a group boundary and a sense of togetherness emerge (also see Collins 1981, 1989; Durkheim 1915). Lawler and colleagues have construed this as a group formation process wherein the relation or group becomes an expressive object for actors and something of value in itself (Lawler 2002; Lawler and Thye 1999).[7]

Fourth, as the exchange relation becomes cohesive, actors become more strongly committed to their relation as a unitary object. Several behaviors reflect commitment: staying with an exchange partner despite good alternatives, giving gifts unilaterally and without strings attached, and engaging in new joint ventures that involve a risk of exploitation or malfeasance. Various forms of altruistic or "forgiving" behaviors also could be included, as well as informal, negotiated understandings of what behaviors demonstrate a relational commitment (see Hochschild 1989).

[7] Lawler (2001) developed an "affect theory of social exchange," which elaborates the basis for the attribution of emotion to the social unit. Social unit attributions are traced to the fundamental "fact" that social exchange entails a joint task which neither actor can accomplish alone. According to the affect theory of social exchange, actors attribute emotions to the relevant social units (e.g., exchange relations) insofar as actors' contributions to the exchange task are nonseparable and when the task fosters a sense of shared responsibility for the results of efforts to exchange.

Repeated exchanges that are structurally enabled rather than induced may activate and enhance the strength of the commitment process—for example, the posited effects on positive emotion and perceived cohesion. Yet because the theory of relational cohesion assumes enabled exchange as a constant, we must supplement that theory in order to explain how these two types of relations differ with respect to the nature and degree of commitment. For this purpose, we turn to the choice process theory of commitment (Lawler 1992).

Choice Process Theory

The choice process theory draws attention to the fact that exchanges generate a sense of control for actors. The foundational idea is that actors develop stronger affective commitments to those relations or groups which give them a greater "sense of control" (Lawler 1992, 1997). This idea is supported by an array of theoretical and empirical literatures. Bandura (1997) treats control or efficacy beliefs as fundamental to human agency, motivating people to explore and manipulate their environment (also see White 1959). Gecas (1989) argues that efficacy is a core dimension of the self which motivates corresponding self-affirming behavior. A sense of control also produces positive emotional reactions (Bandura 1997; Izard 1991; Westcott 1988) and is a source of intrinsic motivation (Deci 1980; Reeve and Nix 1997). Overall, self-determination, autonomy, and sense of control have been important themes in research by psychologists and sociologists over the past few decades. Implicitly or explicitly, most of these approaches posit a positive emotional response to experiences that generate a sense of control (Bandura 1997; Giddens 1984; Kohn and Slomczynski 1990; Westcott 1988).

On the basis of this theory, sense of control is determined by the enabling and constraining dimensions of a social structure (Lawler 1992). Three propositions of the choice process theory are important to our analysis of commitment in enabled and induced relations. First, the positive emotions, generated by a sense of control, strengthen affective attachments to the social

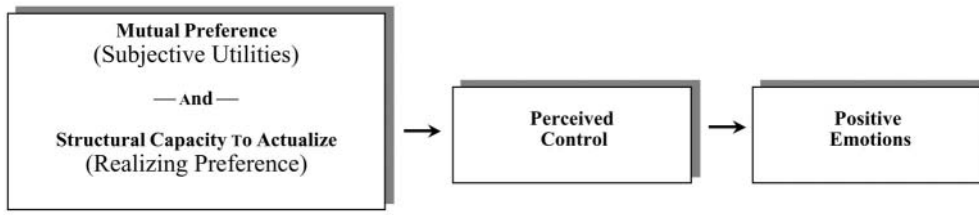

Figure 3. The Effects Of Structurally Enabled Exchanges

unit that is perceived as the source of control. Second, given multiple, nested social units, positive emotions strengthen affective attachments to the most proximal social unit (relation, group) more than to the larger social unit in which it is nested (network, organization). The theory applies to dyads in a network, cliques in a group, work teams within an organization, departments within a university, or communities within a state. In exchange networks, dyadic relations are the proximal unit, and the network is the larger unit of relevance. Third, repeated experiences of control enhance the value of the social unit as such. Exchange networks by definition entail repeated opportunities for social exchange.

The main implication is that exchange relations should be stronger objects of attachment in structurally enabled than in structurally induced exchange. Figure 3 depicts the principles that the choice process theory adds to relational cohesion theory. Structurally enabled relations unleash a simple causal chain; such relations generate greater perceived control than structurally induced relations; this, in turn, enhances the positive feelings from exchange. In terms of relational cohesion theory (Figure 2), perceived control heightens the positive emotions created by exchange. Thus, whereas cohesion and commitment may occur in both structurally enabled and structurally induced relations (from relational cohesion theory), the choice process theory predicts that the exchange-to-emotion-to-cohesion process will be stronger in structurally enabled relations.

Predictions

Our predictions and empirical test assume three basic contextual or scope conditions. First, the network is negatively connected meaning that each actor can consummate an exchange with only one other at a given point. Second, each actor has at least two alternative partners. Third, the structure creates clear preferences of partner based on the fact that profit or value is higher in some relations than in others.[8]

The main predictions for structurally enabled (A–B) and structurally induced (D–G) relations are as follows:

Hypothesis 1: A structurally enabled (A–B) exchange relation will produce stronger positive emotions than a structurally induced relation.

Hypothesis 2: A structurally enabled exchange relation will produce greater perceived cohesion than a structurally induced relation.

Hypothesis 3: A structurally enabled exchange relation will produce greater perceived relation value than a structurally induced relation.

Hypothesis 4: Commitment behavior (gift giving) will be greater in a structurally enabled exchange relation than in a structurally induced exchange relation.

[8] Three other noteworthy conditions are built into the experiment. First, the actors know the shape of the network, though not the nature of the agreements reached by others. Second, the exchanges take a negotiated form, which is the standard practice in research on exchange networks. We do not know whether the results would apply to reciprocal forms of exchange (see Molm, Peterson, and Takahashi 1999), but we see no theoretical reasons to presume otherwise. Third, both of the relations that form in the box are equal power relations, and thus we hold relative power constant; this is important because equal power is known to generate a stronger exchange-to-emotion-to-cohesion process (Lawler and Yoon 1993, 1996, 1998).

In addition, the choice process theory suggests the following difference between the exchange relations:

Hypothesis 5: Perceived control will be greater in a structurally enabled than in a structurally induced exchange relation.

We also test the theoretical model of relational cohesion theory, as in previous research (see Figure 2). This analysis will allow us to determine whether the predicted causal effects are present for (1) exchange frequency on positive emotion, (2) positive emotion on perceived cohesion, and (3) perceived cohesion on commitment. These effects could occur even if the differences predicted in Hypotheses 1 through 4 are present. The prediction implied is as follows:

Hypothesis 6: Within both structurally enabled and structurally induced exchange relations, there will be positive effects of exchange frequency on emotion, emotion on perceived cohesion, and perceived cohesion on commitment.

The choice process theory and our analysis of enabled and induced exchange relations lead to the following prediction:

Hypothesis 7: The effects predicted in Hypothesis 6, will be stronger in the structurally enabled relation than in the induced relation.

METHOD

Experimental Design

The box network of Figure 1 is used to generate the two dyadic exchange relations: structurally enabled (A–B) and structurally induced (D–G). In accord with our theorizing, this box structure creates both a mutual preference for exchange between A and B and a structural capacity to actualize this preference (see Figure 3). These conditions do not exist for G and D.[9]

Subjects

Subjects were undergraduate students at a large eastern university. A total of 48 same-sex groups of four (24 female, 24 male) were assigned randomly to positions in the box network. Thus the analysis involved 48 A–B dyads and 48 D–G dyads. No subjects were excluded from the analysis.

Procedures

Upon their arrival, subjects were ushered into separate cubicles, where they received written instructions. These explained that each person in the study would represent one of four organizations, termed Alpha, Beta, Gamma, and Delta. Each of the organizations purportedly developed specialized computer products for sale to other corporations. The instructions indicated that because of an increasingly competitive and uncertain market, each company could benefit from joint research projects with other organizations to develop new competitive products.

The cover story explained that their joint efforts would produce pools of profit that would be divided among them; some joint efforts would produce larger pools than others. The subjects were shown a diagram depicting the four people in the experiment connected in a box network. Subjects, however, knew only the amount of profit available with their two prospective partners. Thus actors in the network could not make comparisons between A–B and D–G relations. All subjects were told that their task in the study was to negotiate on behalf of their organization with two other companies. Their goal was to secure as much profit as possible for their company.

The instructions explained that because of changing market conditions, the profit divisions from the joint venture must be negotiated anew each year. More specifically, the subjects were told that the study would simulate up to 20 negotiation episodes, defined as "years." The experiments actually ended after the fourteenth episode (year) to preclude end effects. If a subject could not reach an agreement with one of the others in

[9] Within the structurally induced relation (D–G), to explore whether loss aversion (negotiating losses rather than gains) would attenuate the commitment process, we included a variation in which the actors were negotiating costs (–100) rather than benefits (400). The results suggest some attenuation, but it was not strong. We have combined these variations in order to increase statistical power and focus on our primary concerns.

a given year, they would earn nothing for that episode. Each representative had information only on the profits he or she earned from an agreement, a condition that is consistent with related work (Lawler and Yoon 1993, 1996). When the experiment was complete, the assistant explained the research, answered questions, and paid the subjects using a standard formula that converted profit points to money.

In the negotiations, each actor claimed a portion of the profit from the joint venture. These claims were lodged simultaneously, so no subject knew what claims currently were being made by the other individuals. The actual bargaining took place on microcomputers connected to each other from separate cubicles. Each episode (year) consisted of a maximum of five bargaining rounds. Each round consisted of a single claim by each person (see Figure 1). To make a claim, each person simply indicated (in multiples of 1) how many profit units his or her company wished to claim. For any given round, the subjects could repeat their previous claim or make a concession by lowering their claim. They could not retract earlier concessions, that is, subjects could not raise their claims. An agreement occurred when the two claims for any relation were equal to or less than the total profit available on that relation. The negotiation continued until an agreement was reached or until the end of the fifth round, whichever came first. If an agreement was not reached by round 5, each subject earned zero points for that episode.[10]

Measures

Computerized questionnaires were administered after episodes 8 and 14. Measures of positive emotion, predictability, perceived cohesion, and partner preferences were based on questions administered after episode 8. All measures are at the dyadic level, and most have consistently yielded good measurement properties (see Lawler et al. 2000; Lawler and Yoon 1993, 1996, 1998).[11] The hypotheses are tested by contrasting the enabled (A–B) and the induced (D–G) relations on questionnaire (emotion, predictability, cohesion, partner preferences) and behavioral (exchange frequency, gift giving) measures.

Exchange frequency is the proportion of negotiation episodes in which a given dyad reaches agreement during the first eight episodes of negotiation. Previous research indicates that this is sufficient time for the effects of exchange on emotion to develop (see Lawler and Yoon 1996). Moreover, because an episode contains five rounds of offers and counteroffers, there can be as many as 40 behavioral exchanges by episode 8.

Total profit and *profit difference* were control variables in the analysis. Total profit was the average sum of the profits earned by the actors, in each relation, across the first eight episodes. The maximum total profit is constant within any given relation, but it differs across the four relations, as shown in Figure 1. Profit difference was the sum of the absolute profit differences between any two actors across the first eight episodes, divided by the number of times they reached agreement. Because the profit available on each of the four relations differs, we standardized this average score so it could range between 0 (the minimum average profit difference for any relation) and 1,200 (the maximum profit difference for the relation with the largest pool).

To measure *positive emotions,* subjects reported their feelings about the negotiations along a series of nine-point bipolar adjectives. The pleasure/satisfaction index was based on the sum of scores on four items: displeased/pleased, unhappy/happy, not satisfied/satisfied, and discontented/contented.

[10] The procedures integrated features from research on network exchange theory (Markovsky et al. 1988; Willer 1999) and on relational cohesion theory (Lawler and Yoon 1996). Drawn from the former is the fact that subjects divide a pool of profits and make simultaneous demands on that pool; drawn from the latter is a negotiation process involving offers and counteroffers within a transaction period or episode.

[11] For reasons outlined in Thye (2000b), we conducted separate reliability analyses on the dyadic questionnaire measures from A–B and D–G. For A–B, the reliability estimates for pleasure/satisfaction, interest/excitement, relational cohesion, and perceptions of control were r_{xx} = .90, .73, .88, and .76 respectively. For D–G, the reliability estimates for these scales were r_{xx} = .88, .78, .85, and .80 respectively.

The interest/excitement index summed the following four items: not interesting/interesting, boring/exciting, unenthusiastic/enthusiastic, and unmotivating/motivating.

Partner preference was measured just before episodes 8 through 14. Each subject was asked to indicate the person "with whom they would most prefer to reach an agreement" (see Thye 2000a). We constructed dyadic index by calculating the number of mutual partner choices (cases in which A selects B and B selects A) for each dyad. These responses provide a measure of the degree to which subjects preferred to exchange with one another.

Perceptions of control were measured after episode 8, to capture a key variable of relevance to the choice process theory (Lawler 1992). The measure summed subjects' responses to questions asking the extent to which subjects (1) believed they had choice over the deals they made, (2) had been able to control what happened, (3) had been able to reach agreements with each partner, and (4) believed they had an impact on the bargaining outcome. All items were measured on Likert scales (1 = "not at all"; 9= "very much").

Perceived cohesion was measured after episode 8 with the following items: distant/close, coming apart/coming together, fragile/solid, and divisive/cohesive.

Relational value also was measured after episode 8, with the following series of bipolar adjectives: not valuable/valuable, not precious/precious, insignificant/significant.

Gift behavior is the propensity of actors to give one another gifts. As in related research (Lawler et al. 2000; Lawler and Yoon 1996), the gifts in this study were token (worth very little monetarily), unilateral (given without knowing whether the other would reciprocate), and noncontingent (with no implied expectations of reciprocal gifts). In short, the gifts were expressive rather than instrumental or strategic.

Beginning in episode 9 and continuing through the end of episode 14, each subject could provide gift vouchers to one or both of the others to whom they were connected. The instructions, administered between episodes 8 and 9, explained: "The gift option is a chance to express how you feel about your relationship with the other two members; whether or not you decide to give a gift is completely up to you and the gift vouchers you do not give become yours to keep." Two gift vouchers were given to the subjects at the close of negotiation for each gift episode. The subjects then could give these gifts to the others or keep them for themselves by pressing the appropriate key on their keyboard. Subjects did not learn whether others had given them gifts until the end of all negotiations; at that time the experimenter exchanged a piece of candy for each gift voucher held by each subject. The lack of knowledge about others' gift behavior ensured that subjects did not treat gifts as an explicit part of the focal exchange.

Gift giving was measured at the dyad level. We used the ratio of gift-giving frequency over the total number of possible gifts (2 actors $\times$ 2 gifts $\times$ 6 episodes = 24 total gifts) to index the aggregate level of gift giving for each dyad. This measure could range from 0 to 1.

RESULTS

The analysis is divided into three parts. First, we test Hypotheses 1 to 5 by comparing the mean values of key variables for A–B and D–G dyads. Second, to test Hypotheses 6 and 7, we examine and compare the key moments of the theoretical model (see Figure 2) separately for A–B and D–G dyads. This analysis tests the chain logic of relational cohesion theory for each exchange relation. Finally, we examine the impact of perceived control on positive emotion to examine the logic underlying the effects posited by the relational cohesion and choice process theories.

Establishment of the Enabled-Induced Manipulation

Responses to both behavioral and cognitive measures indicate that our enabled-versus-induced manipulation produced the intended order for partner preference and structural capacity to consummate exchange across dyads. First, the partner preference data revealed that the members of the A–B dyad chose one another as mutually preferred exchange partners in 70 percent of the episodes, while D and G chose one another

only 8 percent of the time (delta = 62%, one-tailed $t = 14.59$, $p < .001$). Thus the network produced the ordinal ranking of partner preferences, as required by the theory.

Second, the theory asserts that when actors have mutual preferences which are actualized, they experience a greater sense of autonomy or perceived control (see Figure 3). To examine this point, we tallied the proportion of episodes in which two actors selected one another as preferred partners and then consummated exchange. This measure captures whether or not actors' partner preferences are realized episode by episode (across episodes 9 to 14). In the analysis we regressed perceived control (in this case, using the measure after episode 14) on this index, controlling for all other variables (including profits). As expected, when A and B expressed a preference for exchanging with one another, and then consummated exchange, subjects reported a greater sense of control; the same was true for actors D and G, though they realized their preferences less often (for A–B, beta = .35, $p < .025$; for D–G, beta = .33, $p < .05$). In sum, these results indicate that the box network produced the conditions necessary to test the main hypotheses.

Enabled Versus Induced Relations

Table 1 compares key measures for the structurally enabled A–B relation and the structurally induced D–G relation, using *t*-tests (one-tailed). The mean values for A–B were significantly larger than those for D–G on each cognitive, emotional, and behavioral measure. Actors in the enabled relation found it easier to reach agreement, perceived more control, were more pleased and excited, perceived greater relational cohesion, ascribed more subjective value to their relationship, and were more likely to give one another small token gifts. Thus we find strong and consistent support for the main hypotheses (1 through 5). Next we ask whether the mediating emotional/affective process is present and equally strong across enabled and induced relations.

The Endogenous Process

The endogenous emotional/affective process contains two key links (see Figure 2): exchange-to-emotion and emotion-to-cohesion. The analysis tests for these effects within each dyad, and we compare the relevant coefficients. Profit differences and total profits in the relations are controlled statistically in these analyses.

Exchange-to-emotion effects. The results for exchange frequency and positive emotion reveal strong support for relational cohesion theory in both enabled and induced exchange relations. The first and second columns of Table 2 indicate that when actors in the A–B relation exchanged frequently, they experienced stronger feelings of pleasure/satisfaction (beta = .73, $p < .001$) and of interest/excitement (beta = .24, $p < .05$). The same basic results occur in the D–G dyads: again, significant effects emerged for pleasure/satisfaction (beta = 45, $p < .001$) and for interest/excitement (beta = .41, $p < .01$). Thus, in accord with Hypothesis 6, the emotional effects of exchange frequency are evident regardless of whether the relation is structurally enabled or structurally induced. This finding extends the scope of relational cohe-

Table 1. *T*-Test of Key Constructs Between A—B ($N = 48$) and G—D ($N = 48$).

Variable	Mean (SD) A—B		Mean (SD) G—D		Difference
Agreement Frequency (1–8)	.63	(.20)	.52	(.22)	.11***
Perceived Control	6.06	(1.23)	5.61	(1.40)	.45*
Pleasure/Satisfaction	5.89	(1.59)	4.70	(1.49)	1.19***
Interest/Excitement	5.83	(1.17)	4.91	(1.24)	.92***
Relational Value	6.88	(1.30)	5.40	(1.61)	1.48***
Relational Cohesion	5.84	(1.59)	4.94	(1.47)	.90***
Gift Exchange (9–14)	.33	(.17)	.25	(.22)	.08*

Note: All variables were measured after episode 8 except gift exchange, which was measured across episodes 9 through 14.
*$p \leq .05$; *** $p \leq .001$ (one-tailed test)

Table 2. Standardized OLS Estimates of Paths in the Theoretical Model

	A—B			G—D		
Independent	PS	IE	RC	PS	IE	RC
Total Profit (TP)	.10	.07	–.04	.06	–.08	.02
Profit Difference (PD)	.26*	.41**	.02	.04	.12	–.13
Agreement Frequency (AF)	.73***	.24*	.23*	.45***	.41**	.18*
Pleasure/Satisfaction (PS)	—	—	.77***	—	—	.67***
Interest/Excitement (IE)	—	—	.08	—	—	.09
N	48	48	48	48	48	48
R^2	.52	.16	.82	.21	.23	.68

Note: All variables were measured after episode 8.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$ (one-tailed test)

sion theory, and affirms the distinct and independent role of emotion.[12]

Comparing regression coefficients for A–B and for D–G dyads, we observe differences in the strength of coefficients that support Hypothesis 7. The impact of exchange frequency on pleasure/satisfaction is significantly stronger (beta = .73 vs. beta = .45; chi-square = 5.24, $p = .022$) in the structurally enabled relation (A–B). This pattern did not occur in the coefficients for interest/excitement (beta = .24 vs. beta = .41, ns).[13] Pleasure/satisfaction plays a stronger role than interest/excitement, a result consistent with previous findings (Lawler et al. 2000).

Emotion-to-cohesion effects. The third and sixth columns of Table 2 contain the regression coefficients for perceived cohesion in each relation. Results for the emotion-to-cohesion link in the enabled relation (beta = .77, $p < .001$) strongly affirm Hypothesis 6, as do the effects in the induced relation (beta = .67, $p < .001$), but the difference between these regression coefficients was not statistically significant (chi-square = .48, $p = .49$). These results suggest that positive emotions arising from exchange enhance actors' perception of a cohesive relation in both enabled and induced relations.

The Role of Perceived Control

We conducted three supplemental analyses to examine how perceptions of control interface with the above findings. First and most important, we tested whether more frequent exchange generated perceptions of control and, in turn, whether perceived control enhanced positive feelings (see Figure 3). The results indicated that, with controls for all other variables including profit differences, exchange frequency significantly increased the sense of control for both A–B and D–G dyads (betas = .53 and .60 respectively; $p < .001$ for each); and a heightened sense of control enhanced positive emotions in the form of pleasure/satisfaction (for A–B, beta = .37, $p < .01$; for D–G, beta = .70, $p < .001$). These results offer important support to the exchange-to-control-to-emotion links in our theorizing, and to our conception of how the theory of relational cohesion (Figure

[12] As a supplemental analysis we created a variable that measured the absolute difference between profits (unstandardized) earned for the A–B relation and for the A–G and B–D relations. This measure captures the relative profit advantage of the A–B relation. The results from a regression of pleasure/satisfaction on this profit advantage did not reveal a significant effect on positive emotions for profit in A–B versus D-G relations (beta = .13, ns); moreover, all other findings remained the same. Thus we find no indication here or elsewhere in the results that the total profits available, the profit differences within relations, or the profit differences between relations explain or alter other effects observed in the study.

[13] We tested the equality of effect sizes between A–B and D–G using LISREL's equality specification (Jöreskog & Sörbom 1993). First, we calculated a chi-square value under the assumption of equal effect size. Second, we estimated another chi-square value by freeing the equality assumption, which saved one degree of freedom. Third, we used the difference in the two chi-square values with one degree of freedom as the test statistic to test the equality of the two effect sizes.

2) connects with the choice process theory (Figure 3).

Second, to assess a "profit potential" interpretation for A–B versus D–G differences, we compared the effects of perceived control with profits on positive emotions. We created a dummy variable for relation (A–B = 1; D–G = 0; $N = 96$) and then regressed perceived control on that dummy. The results showed that structurally enabled relations generate greater perceived control (beta = .17, $p < .05$). Furthermore, a regression of pleasure/satisfaction on perceived control and profits indicates, as expected, that perceived control exerts a significant positive effect on pleasure/satisfaction (beta = .63, $p < .001$) net of total profits; the profits also show an effect (beta = .26, $p < .001$). Most important for our purposes, perceived control exerts distinct and substantial effects on pleasure/satisfaction.

Finally, we asked whether adding perceived control to the regression analysis alters the exchange-to-emotion-to-cohesion process specified by relational cohesion theory. The results indicate that the substantive effects reported in Table 2 do not change when perceived control is added as a covariate. The only new finding is that perceived control exerts positive effects on cohesion in the A–B relation (beta = .22, $p < .02$), but no effect in the D–G relation. If anything, this finding strengthens our argument that perceived control enhances cohesion in structurally enabled relations.

To summarize, the endogenous process of relational cohesion occurs in both exchange relations. More frequent exchange increases pleasure/satisfaction, and pleasure/satisfaction increases perceived cohesion. In addition, perceptions of control reveal predicted relationships with pleasure/satisfaction and cohesion without affecting the fundamental exchange-to-emotion-to-cohesion process posited by relational cohesion theory. The evidence also indicates that the endogenous process is stronger in the enabled than in the induced relation because of a stronger link between exchange and emotion. An induced, equal-power exchange relation is vulnerable to a breakdown at this particular "moment" in the relational cohesion process.

Gift-Giving Effects

The final step in the test of relational cohesion theory is to regress gift giving on all antecedent variables simultaneously to determine whether cohesion exerts the largest effect (as predicted). Table 3 shows the results for both exchange relations. In the case of the enabled relation (A–B), the largest positive coefficient is for relational cohesion, though this effect is not significant (beta = .27, $p = .46$). Yet the comparison of coefficients for structurally enabled (A–B) and structurally induced (D–G) exchange relations shows a significant difference (chi-square = 4.99, $p < .03$). The impact of perceived cohesion on gift giving was stronger in the enabled than in the induced exchange relation, despite the lack of a statistically significant effect in A–B. This pattern is consistent with Hypothesis 7.

The results for the D–G exchange relation are complex. Cohesion exerts a significant negative effect on gift giving (beta = -.53, $p < .05$), and we also find a sizable positive effect for pleasure/satisfaction on gift giving (beta = .72, $p < .01$). These findings suggest two countervailing pathways from exchange to gift giving in the induced relation: a positive path through emotion and a negative path through both emotion and cohesion. The former suggests an interpersonal

Table 3. Standardized OLS Estimates of Paths to Commitment Behavior

	Gift Giving	
Independent	A—B	G—D
Total Profit (TP)	.12	–.26
Profit Difference (PD)	.23	–.16
Agreement Frequency (AF)	–.07	.14
Pleasure/Satisfaction (PS)	–.27	.72**
Interest/Excitement (IE)	.05	.10
Relational Cohesion (RC)	.27	–.53*
N	48	48
R^2	.06	.32

Note: All variables were measured after episode 8 except gift giving, which was measured across episodes 9 through 14.
*$p \leq .05$; **$p \leq .01$ (one-tailed test)

process, the latter a relational or group process. The positive effect through pleasure/satisfaction may reflect the fact that actors still are responsive to each other's willingness to collaborate, and they blame the network for constraints on choice of partner. The negative effect may indicate that a cohesive relation is viewed in negative terms, because without a viable alternative partner, exchange in D–G strengthens each actor's sense of being "stuck" with the other.[14]

DISCUSSION

We theorized the effects of structurally enabled versus structurally induced exchange relations by integrating ideas from a choice process theory of person-to-unit commitment (Lawler 1992, 1997) and the theory of relational cohesion (Lawler et al. 2000; Lawler and Yoon 1996). From the former we take the idea that enabled exchange enhances actors' sense of control; this, in turn, fosters positive emotions and feelings (Lawler 1992). From relational cohesion theory we adopt the idea that repetitive exchange makes actors feel good; this, in turn, produces perceptions of a cohesive relation and commitment behavior. Relational cohesion theory predicts that in both structurally enabled and structurally induced relations, cohesion will emerge insofar as actors engage in repetitive exchange; the choice process theory predicts that the structurally enabled relations will enhance positive emotions and cohesion more strongly because of a greater sense of control. Thus, when a network produces two exchange relations(one enabled and the other induced) the effects on the commitment process are divergent.

Our findings support these predictions. The structurally enabled A–B relation increases (1) exchange frequency, (2) pleasure/satisfaction and interest/excitement from exchange, and (3) perceptions that the relation is coming together as a cohesive unit. (4) Also, as expected, such a relation enhances actors' perceptions of control in the exchange; (5) in turn, their perceptions of control enhance positive emotions and relational cohesion. The differences between enabled and induced relations occur at virtually every point in the commitment process specified by relational cohesion theory (Lawler and Yoon 1996).[15]

In tests for the endogenous process within each exchange relation, three theoretically important patterns emerge. First, the exchange-to-emotion-to-cohesion effect occurs in both enabled and induced relations, suggesting that relational cohesion theory can be generalized to exchange relations which are induced or forced by the social structure. Second, as predicted, this process is generally stronger in enabled than in induced exchange relations. Third, cohesion does not exert positive effects in structurally induced relations, although exchanges make individuals "feel good" and these feelings make them more prone to give each other gifts. The implication is that if relational cohesion is induced, it has no affect on or reduces commitment behavior in induced relations (for a related finding, see Lawler and Yoon 1998). Overall the findings support key elements of both relational cohesion and the choice process theory of commitment, and show how the complementary features of these theories explain effects of structurally enabled or induced relations.

An important implication of this research is that collectively oriented behavior emerges from structural conditions which connect an individual's sense of control (or self-efficacy) with a sense of collective efficacy. Bandura (1997, 2001) asserts that perceptions of collective efficacy—that is, the sense

[14] The negative sign of the relationship between perceived cohesion and gift giving dovetails with some results of Lawler and Yoon (1998). They found that an actor with no alternatives, who essentially is forced by the structure to exchange with a given other, perceives greater relational cohesion, but that this actor's perceived cohesion is related negatively to commitment behavior. Engaging in less commitment behavior may be a way for actors to establish or affirm some sense of control in the situation.

[15] The rate of agreement in the structurally enabled relation is 63 percent of the total opportunities. This demonstrates that the network incentives promote agreement, but exchange is not guaranteed. Instead the structural incentives provide an initial boundary within which subjects render offers, consider counteroffers, and choose (or not) to exchange. An important message of our theorizing is that a sense of control, positive emotions, and relational cohesion are the consequences of interaction and are not predetermined by structural incentives.

of control arising from joint activity with others—lead individuals to invest more fully in group activities, to persist in the face of difficulties or obstacles, and generally to perform at a higher individual level. Lawler (2001) argues further that perceptions of self- and collective efficacy are likely to become intertwined, especially when the social structure generates a joint activity that fosters a sense of shared responsibility for the results of that activity. A sense of shared responsibility leads actors to attribute their individual emotion to the relevant social unit. The results of our research are generally consistent with this notion: a joint activity (social exchange) exerts emotional effects that mediate the influence of structurally enabled relations on collectively oriented perceptions and behavior.[16]

More broadly, this research can be connected to the larger sociological literature on "voluntarism" as an integral aspect of human activity. Weber's ([1918] 1968) analysis of social action, Parsons' (1937) "voluntaristic theory of action," Giddens' (1984) analysis of social structure and social action, and Elster's (1986) portrayal of rational choice theory are only a few of the prominent approaches to voluntarism. A theme common to these approaches is that structures prohibit or give human actors the capacity to be agents in the social world, that is, to have demonstrable effects on their environment (Giddens 1984), and this situation exerts social psychological effects on actors and their relationships. Our comparison of structurally enabled with structurally induced relations suggests a somewhat subtle way in which voluntarism may have implications for the emotions and commitments generated in social networks.

To conclude, enabled and induced relations can be found in a variety of contexts, from neighborhood playgrounds to corporate boardrooms (Yoon 2001). Our results suggest that enabled relations promote the growth of commitment because such relations affect one's sense of control and generate more positive emotions and feelings. We also found the seeds of commitment in induced relations, where repeated exchange can foster some positive emotion. Commitment, however, does not blossom fully in the induced relations, as it does in the enabled relations. In general, these ideas and findings can help clarify how and when structural conditions give rise to relational commitments and collectively oriented behaviors in groups, organizations, and other social units.

[16] Future researchers may tease apart the conditions that produce structurally enabled exchange relations and may assess their distinct effects. In short, one could separate mutual partner preference based on profits available in different relations from the capacity to realize preferences. One way to do this would be to hold constant the available profits in all relations (and thus remove differential mutual preferences across those relations) and yet constrain whether and when actors make an exchange. This process isolates the effect of "completing exchange" from "preferring an exchange partner." Such a study would clarify how the components of enabled exchange alter the commitment process.

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