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# Supply Chain Contagion

Drawing on research from the interfirm relationship, marketing channels, operations management, and network theory literature and on the basis of qualitative depth interviews, the authors identify a new phenomenon they call “supply chain contagion.” Supply chain contagion is the propagation of interfirm behaviors from one dyadic relationship to an adjacent dyadic relationship within the supply chain. Contagion can occur inadvertently and with or without the knowledge of the affected parties. Using institutional theory, the authors develop a conceptual model that predicts the conditions under which contagion is likely to occur. Although contagion may take the form of any number of interfirm behaviors, operationally, the authors focus on whether the downstream influence strategies that manufacturers use with their dealers are imitated by these same dealers with end customers. They conduct conclusive research using a sample of 151 vertically linked manufacturer–dealer–customer supply chain triads and explain a large variance ( $R^2 = .30$ ) in the use of downstream influence strategies in terms of supply chain contagion. Given extensive prior empirical support for alternative antecedents to influence strategy usage, the explanatory power of supply chain contagion is impressive and suggests that how intermediaries treat end customers is explained, to a large degree, as the intermediaries simply imitating how their suppliers treated them. In addition to the identification of a new theoretical concept, the study provides empirical support for the effects of both macro- and microinstitutional factors on interfirm behavior. Specific factors that are positively related to the level of manifest contagion are environmental uncertainty and the perceived similarity and frequency of contact between boundary personnel; dependence asymmetry has a negative effect on manifest contagion. Managers and boundary-spanning personnel who are aware of supply chain contagion effects should be better able to influence strategically the behavior of channel partners and may be better inoculated against their own unintended imitation of other organizations within their supply chain.

**Keywords:** supply chain, institutional theory, network theory, operations management, influence strategies

**R**esearch on interfirm governance and supply chain management highlights the importance of interpersonal relationships and factors such as trust, cooperation, and relational norms (Granovetter 1985; Heide and John 1992; Lee, So, and Tang 2000). Network theorists suggest that the entire network of organizations within which firms and individuals are embedded is a social network (e.g., Grewal, Lilien, and Mallapragada 2006; Ibarra, Kilduff, and Tsai 2005). Firms in these networks of relationships provide examples of behavior that is often imitated by other network members (Henisz and Delios 2001). Institutional theory proposes that extensive noneconomic motivations exist that strongly shape the form and behavior of firms (Dacin, Oliver, and Roy 2007). Together, this implies that a strong motivating force behind firm behavior is socially based and that it is embedded within personal relationships, institutions, and interconnected organizational

relationships (Anderson, Håkansson, and Johanson 1994; Moran 2005).

As Grewal and Dharwadkar (2002, p. 82) note, however, “researchers have largely overlooked the ubiquitous influence of the institutional environment and how inter-organizational relationships such as marketing channels are embedded in [the] larger social context.” Wathne and Heide (2004) note that prior research has focused predominantly on individual dyads when developing theory for business-to-business relationships, with a *ceteris paribus* assumption for all other relationships. In expanding our view of the supply chain beyond dyadic interactions and explicitly incorporating social contextual motivations for firm behavior, we identify a phenomenon we call “supply chain contagion.” Supply chain contagion is the propagation of interfirm behaviors from one dyadic relationship to an adjacent dyadic relationship within the supply chain.

Supply chain contagion can occur without the knowledge of affected firms. This may be particularly problematic when firms imitate behaviors that are inappropriate or even detrimental to their relationships with other firms. In the exploratory stage of this study, we found that contagion is common. However, it appears that supply chain members are acting on the assumption that the effects of their actions with each other are confined to the dyad and do not spill over into other relationships. Thus, for example, manufacturers and suppliers may unwittingly be influencing the downstream behaviors of organizations that handle and market their products in ways that are detrimental to achieving their goals.

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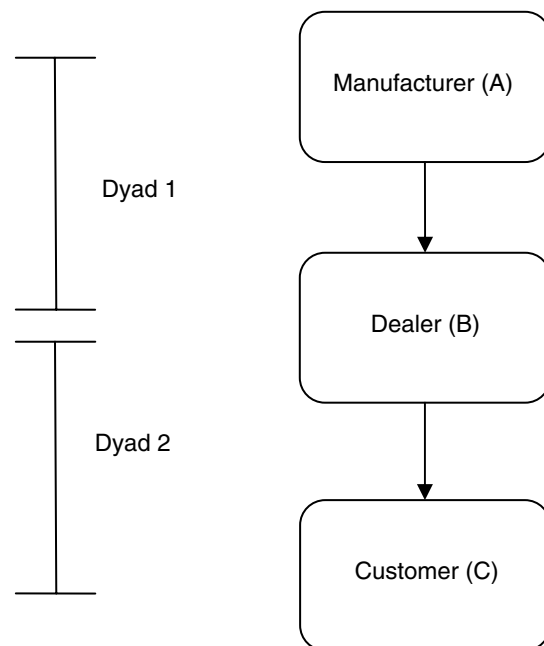
Our theoretical framework, which predicts the conditions under which supply chain contagion is likely to occur, is guided by institutional theory. Grewal and Dharwadkar (2002) develop a rich theoretical model that highlights the important role of institutions in both the structure and the behavior of organizations. They demonstrate the linkage between institutional theory and the political economy in explaining firm-level behavior within dyadic channel relationships. Specifically, their model develops propositions that examine how institutional pressures “facilitate or hinder transactions that occur within [channel] dyads” (p. 89). Although institutional theory originates primarily from a macroenvironmental perspective (e.g., national culture, regulatory institutions), we argue that it is important to consider both macro- and microinstitutional pressures in explaining convergence in interfirm behaviors within the supply chain.

Because contagion effects can have both positive and negative outcomes in the supply chain, firms that are aware of these effects should be better able to control the downstream interactions between their intermediaries and end customers. Thus, the primary purpose of this article is to identify and confirm the existence of supply chain contagion and to examine its theoretical basis through the lens of institutional theory. Operationally, we focus on whether the downstream influence strategies that manufacturers use with their dealers are imitated by these dealers with end customers. In the following sections, we discuss the background for this study and the in-depth field interviews that we initially conducted to identify the contagion phenomenon. Next, we review the literature and formulate our conceptual framework and hypotheses. This is followed by the presentation of the empirical study, including a discussion of the triadic sample and data collection, a test for measurement invariance across groups, and the results of hypotheses testing. Finally, we discuss the theoretical and managerial implications of the study and offer directions for further research.

## Background

Figure 1 depicts a vertical supply chain that involves dyadic relationships at two levels. The first-level dyad involves the relationship between the manufacturer and the dealer (A → B), and the second-level dyad involves the relationship between the dealer and the end customer (B → C). We examine whether specific actions the manufacturer takes with dealers are imitated by the dealers with their end customers. In our empirical study, operationally, we focus on whether the downstream influence strategies that manufacturers use with specific dealers result in imitative influence strategy usage by the same dealers with their downstream customers. Thus, contagion is present when the influence strategies used by B with C can be partially explained as mirroring the influence strategies used by A with B. Our study uses data from the agricultural farm equipment industry, in which dealers sell both products and services to companies and consumers. The data are matched on a one-to-one basis, in which, for example, a specific dealer reports on the downstream actions of the manufacturer in

**FIGURE 1**  
**Triadic/Dual Dyadic Supply Chain Configuration**



Notes: Arrows indicate the direction of influence strategy behaviors examined in this study.

the first dyad and, in turn, a customer of that same dealer reports on the dealer’s downstream actions in the second dyad (i.e., non-self-reported measures).

## Field Interviews

Because the supply chain contagion phenomenon has not been identified previously, we initially conducted 23 in-depth field interviews with dealers and wholesalers from 14 industries in different regions of the United States to find out more about this phenomenon (see Table 1). We focused primarily on product-based wholesalers and, to a lesser extent, on retailers; however, in addition, we included several service providers to have a broadly diversified sample. We found that intermediaries frequently imitate the downstream behaviors of manufacturers/suppliers (e.g., Dyad 1 in Figure 1) in their interactions with end customers (e.g., Dyad 2 in Figure 1). This occurs even when there appears to be little economic rationale for these actions, which raises the question, “Why do firms engage in these behaviors, particularly if there is no economic benefit for doing so?”

As an example of this phenomenon, a liquor manufacturer used a noncoercive influence strategy approach when dealing with a downstream distributor, highlighting the value of its product as having an exclusive image (which would presumably provide the distributor with a positive way to distinguish itself from competitors). In turn, the distributor used this same “exclusive image” argument when dealing with its customers, even when some customers did not view this exclusivity as particularly valuable and, in some cases, even when customers considered it detrimental

**TABLE 1**  
**Characteristics of In-Depth Field Interviews**

Industry	Number of Respondents in Category
Agricultural equipment dealers	2
College furniture dealer	1
Construction supply wholesaler	2
Copier machine dealer	1
Farm supply wholesaler	3
Fastener, nuts, and bolts suppliers	4
Financial services broker	1
Industrial equipment rentals	1
Industrial equipment dealer	1
Liquor and wine dealers	2
Prison supply company	1
Retail boat dealer	1
Retail furniture dealer	1
Tool supply company	2

(e.g., consumers who want to fit in rather than be different). One owner/manager in the financial services industry even coined a term for supply chain contagion: “the matching principle.” She noted that financial planners often use the same strategies and messages with their clients that their broker dealers (in this case, analogous to their suppliers) used with them. In some cases, this occurred even when it appeared that the messages relevant to the financial planner were not relevant for the financial planner’s customers. She could only guess why this imitation occurred. One guess was that the broker was considered credible, and the planner may have thought that he or she could obtain credibility with his or her own clients by imitating the broker’s strategies and messages.

## Theory

### *Institutional Theory*

We examine the antecedents of supply chain contagion using an institutional theoretical framework. Researchers have increasingly acknowledged the importance of institutional theory in explaining firm behavior (e.g., Grewal, Comer, and Mehta 2001; Handelman and Arnold 1999; Homburg, Workman, and Krohmer 1999; Srinivasan, Lilien, and Rangaswamy 2002), whereas others have called for empirical research examining key aspects of institutional theory in marketing channels (Grewal and Dharwadkar 2002). Because firm behaviors and interactions occur within a social arena, a theoretical perspective that accounts for the impact of the social environment, rather than one that applies an economically rational perspective alone, is critical for a more complete understanding of the causes and effects of organizational behaviors within supply chain systems (Scott 1995).

People rarely start from scratch when undertaking a new course of action; rather, they are influenced by the presence of symbols and habits that exist within the environment (March and Simon 1958). People look to others to see what

they have done or are doing under similar circumstances. This process leads to convergence within organizational fields and to the establishment of institutions. However, it is also important to note that these processes often do not occur consciously (March and Olsen 1984; Oliver 1991). After they are formed, institutions both empower and constrain the activities of organizations (Grewal and Dharwadkar 2002). To study these processes more deeply, it is important to distinguish between the pressures that compel convergence and the homogeneous forms or institutions that arise from these pressures (Frumkin and Kaplan 2006). In this study, the focus is on institutional pressures that lead to convergence in interfirm behaviors. Institutional pressures can arise from the presence of the regulatory environment, shared forms of cognitions, established relational norms, and so forth.

Institutional theory was first developed in the fields of sociology and political science with contributions from noted authors, including Peter Berger, Thomas Luckmann, Emile Durkheim, Karl Marx, and Max Weber (Scott 1995). Given its theoretical origins, institutional theory is often discussed and viewed from a macrosocietal level, and the management literature has primarily focused on the structure and form of firms. However, it is important to note that many authors have explicitly applied institutional theory to explain individual firm-level behaviors, firm-to-firm behaviors, and behaviors of individuals within firms (e.g., DiMaggio and Powell 1983; Jepperson 1991; Scott 1983). Grewal and Dharwadkar (2002) demonstrate the applicability of institutional theory in explaining firm-level behavior within dyadic channel relationships. Chatterjee, Grewal, and Sambamurthy (2002, p. 68) state that institutions affect technology assimilations within firms and note that institutions shape “the behaviors and cognitions of individuals within” firms. Nevertheless, much of this research, even that which uses institutional theory to explain firm-level and interfirm-level behaviors, views institutions and institutional pressures only at the macro level (e.g., national culture, regulations and laws).

Despite this, many prominent institutional theorists hold that institutions originate and function at a variety of levels (e.g., DiMaggio and Powell 1991; Jepperson 1991; Scott 1983). Thus, for example, the source of institutionalization can be an organizational field or a dyadic relationship. The *Academy of Management Journal* (in 2002, Vol. 45, Iss. 1) and *American Behaviorist Scientist* (in 2006, Vol. 49, Iss. 7) published special issues highlighting microinstitutional analysis. Henisz and Delios (2001) state that firms tend to imitate organizations with which they have social ties. Galaskiewicz and Wasserman (1989) find that though firms may mimic those they perceive as successful, it is more likely that firms will imitate organizations with which they have ties through boundary-spanning personnel. Zucker (1977) notes that macrolevel and microlevel institutions are “inextricably intertwined” and that the process of institutionalization occurs even at the interpersonal level. For this reason, in this study, we focus on both macroinstitutional pressures (e.g., environmental uncertainty) and microinstitutional pressures that can develop through the interpersonal interactions of boundary-spanning personnel (e.g.,

frequency of contact) and the effects of these pressures on interfirm behaviors.

### **Theoretical Framework**

We refer to the three forms of imitation pressures or motives identified by DiMaggio and Powell (1991) as reflexive imitation, compliant imitation, and normative imitation motives.<sup>1</sup> Each of these three motivations suggests testable hypotheses relevant to predicting the occurrence of supply chain contagion. Reflexive imitation is a firm's standard response to environmental uncertainty. As DiMaggio and Powell (1983) note, when faced with environmental uncertainty, firms may model their behavior on that of other firms. Organizations and individuals may also mimic similar organizations or similar individuals to enhance their own legitimacy. Thus, environmental uncertainty and similarity are two primary foci of reflexive imitation. Compliant imitation is a firm's response to interorganizational dependence. We focus primarily on the degree of cohesiveness stemming from dependencies between firms as the antecedent to this type of imitation. Although firms also comply with cultural and regulatory institutions, these institutions fall outside the domain of this study. Normative imitation stems from the high degree of socialization and interaction that often occurs between members of the same organizational environment; when these members interact, they reinforce and spread norms of behavior among themselves (Scott 1983).

Our theory holds that contagious behaviors can take many forms; thus, although several other variables could potentially have been used, we concentrate on influence strategies as the focal behaviors that may be imitated. Influence strategies are defined as the content of what is communicated between one channel member and another in an attempt to influence that firm's behaviors to achieve business objectives (Boyle et al. 1992; Payan and McFarland 2005). They are the communications through which channel coordination takes place (Frazier and Rody 1991). As such, influence strategies are ubiquitous and readily identifiable by supply chain members (Frazier and Summers 1984). When actions are observed, imitation may occur, even when organizations may not intend for this to happen (Greve 1998; Henisz and Delios 2001). Consequently, influence strategies provide a readily identifiable and rich source of behaviors that can be examined in an institutional context to determine the extent to which contagion occurs.

## **Hypotheses**

In this section, we develop hypotheses that predict conditions under which supply chain contagion is more or less likely to occur on the basis of reflexive imitation, compliant

imitation, and normative imitation motivations. We describe each of these in turn.

### **Reflexive Imitation**

Environmental uncertainty makes it difficult for firms to select appropriate actions because the potential risks and rewards of any actions are amplified by the uncertainty (Greve 1998; March and Simon 1958; North 1990) and "previous patterns of behavior are less informative" (Johnson, Sohi, and Grewal 2004, p. 24). In situations in which a firm's best course of action is unclear, imitating the behavior of other firms within their network provides a low-cost solution to that uncertainty (Henisz and Delios 2001). Firms are more likely to imitate other firms with which they have direct network ties and interpersonal contact through boundary-spanning personnel (Galaskiewicz and Wasserman 1989). In general, marketing tactics can be an important ingredient for obtaining higher customer-based performance (Zahay and Griffin 2004). Thus, imitating others' tactics may be considered a safe strategy in the presence of environmental uncertainty. Therefore, when environmental uncertainty is present, dealers are more likely to imitate a manufacturer's use of influence strategies with other parties.

Reflexive imitation can also occur under conditions of similarity. Perceived similarity among boundary-spanning personnel increases the likelihood that organizational practices are diffused among those individuals (Galaskiewicz and Wasserman 1989; Strang and Meyer 1994). Individuals who are similar are more likely to identify with one another and to form shared conceptions of social reality (Friedland and Alford 1991). Identity has increasingly been acknowledged as a salient attribute of organizations and organizational forms (Romanelli and Khessina 2005). Through interpretations of situations and events, individuals affect the behavior of their organizations (Lant and Baum 1995; Pfeffer and Salancik 1978). As a result, greater imitation is likely to occur with greater similarity between the firms' individual boundary spanners (Suchman 1995).

H<sub>1</sub>: Environmental uncertainty is positively associated with supply chain contagion in the form of dealers' imitation of the manufacturer's use of downstream influence strategies.

H<sub>2</sub>: Similarity between manufacturer and dealer boundary-spanning personnel is positively associated with supply chain contagion in the form of dealers' imitation of the manufacturer's use of downstream influence strategies.

### **Compliant Imitation**

DiMaggio and Powell (1983) suggest that interorganizational dependence can increase the likelihood of imitation between organizations. Their primary view, as well as those of other researchers (e.g., Pfeffer and Salancik 1978), is that organizations imitate those they are dependent on to increase their perceived validity by those organizations. We suggest that in the case of interorganizational relationships, cohesiveness between the organizations is paramount in determining the degree of compliant imitation (Galaskiewicz and Burt 1991). The marketing literature suggests that dependence is a bilateral construct that should be stud-

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<sup>1</sup>We use more straightforward terminology for what sociologists have referred to as "isomorphism." Specifically, we refer to "mimetic isomorphic" as "reflexive imitation," to "coercive isomorphic" as "compliant imitation," and to "normative isomorphic" as "normative imitation." We thank a knowledgeable reviewer for suggesting this terminology.

ied in terms of interdependence and dependence asymmetry (Heide and John 1988; Kumar, Scheer, and Steenkamp 1998).<sup>2</sup> Interdependence (sometimes referred to as “dependence magnitude”; see Gundlach and Cadotte 1994) is the sum of both organizations’ dependence on each other, and dependence asymmetry refers to the difference between the organization’s dependence on its partner and the partner’s dependence on the organization (Geyskens and Steenkamp 1995).

The more dependent two organizations are on each other (i.e., greater interdependence or magnitude), the more cohesive the relationship is (Emerson 1962). As a relationship becomes more cohesive, the partners make more investments with each other (Anderson and Weitz 1992) and form deeper common interests (Kumar, Scheer, and Steenkamp 1995), which leads to more cooperative interactions (Dwyer, Schurr, and Oh 1987; Gundlach and Cadotte 1994). As organizations increasingly cooperate with each other, they tend to conform to each other in an attempt to maximize the usefulness of that cooperation (Ostrom 2000). Consequently, the greater the interdependence, the more likely imitation is to occur.

In contrast to the cohesion associated with greater interdependence, higher levels of dependence asymmetry may cause relationships to become unstable and dysfunctional (Geyskens and Steenkamp 1995; Narayandas and Rangan 2004). According to Emerson (1962), the instability surfaces because the less dependent organization may exercise its power advantage in the relationship. Even without evidence of the exercise of power, in an unbalanced relationship, the more dependent organization may attempt to balance the relationship by becoming less dependent (Mindlin and Aldrich 1975). For example, the more dependent organization may seek out relationships with alternative organizations or attempt autonomous acts to reduce its dependency on the less dependent organization (Ulrich and Barney 1984). With increased potential for the disintegration of the relationship, the more dependent organization feels less need to be compliant; cohesiveness is lower, and imitation will be less likely to occur.

H<sub>3</sub>: Interdependence is positively associated with supply chain contagion in the form of dealers’ imitation of the manufacturer’s use of downstream influence strategies.

H<sub>4</sub>: Dependence asymmetry is negatively associated with supply chain contagion in the form of dealers’ imitation of the manufacturer’s use of downstream influence strategies.

### **Normative Imitation**

Because normative prescriptions of behavior develop between firms over time, imitation of behavior between organizations in a given environment increases as the level of their interactions and the interactions of their boundary-spanning personnel increases (DiMaggio and Powell 1983; Scott 2001; Strang and Meyer 1994). Firms and their personnel are motivated to achieve not only economic success but also social legitimacy (Carroll and Delacroix 1982). Specifically, collective beliefs and a common acceptance of

legitimacy standards tend to develop as interaction levels increase (Aldrich and Fiol 1994; Leblebici et al. 1991). Such standards are used to make judgments about “whether [a behavior] is ‘the right thing to do’” (Suchman 1995, p. 579). As a result, individuals who interact in the same organizational environment come to accept a narrower range of behaviors as the norm to attain or maintain legitimacy. As this range of legitimate behaviors narrows, firms whose personnel interact more frequently are increasingly likely to display matching behaviors (Romanelli and Khessina 2005).

In addition to legitimacy motivations that can arise from these straightforward interactions, the length of tenure of individuals in the same organizational environment will also prescribe behaviors for firms (Larson 1977). As industrial tenure increases, the promulgation of normative rules about organizational behavior that emerges from formal education and other organizational networks (e.g., professional and trade associations) increases. Key boundary-spanning personnel across a range of organizations that operate in the same environment often interact. These key employees tend to have more similar professional beliefs and are predisposed to accept the same organizational behaviors (Perrow 1974). Thus, the longer an employee’s tenure in an industrial field, the greater is the likelihood that the employee will follow prescriptive norms. In turn, these key employees influence the norms established in their own firms regarding organizational behavior (Levitt and Nass 1989). As the range of possible behaviors narrows, supply chain contagion is likely to occur to a greater extent.

H<sub>5</sub>: Frequency of contact between manufacturer personnel and dealer personnel is positively associated with supply chain contagion in the form of dealers’ imitation of the manufacturer’s use of downstream influence strategies.

H<sub>6</sub>: Industry tenure is positively associated with supply chain contagion in the form of dealers’ imitation of the manufacturer’s use of downstream influence strategies.

## **Sample Design**

The unit of analysis in this study is the vertical supply chain consisting of three members—that is, manufacturer–dealer–customer triads (see Figure 1). We gained the cooperation of a *Fortune* 500 agricultural equipment manufacturer that sells its products through a dealer network. In this setting, the dealer principal is the primary contact who interacts with the manufacturer’s territory manager (TM; each dealership deals with only one TM) and, at the same time, is characteristically the primary person who interacts with the customer (we only include data in the study in which this was the case). Business customers are typically represented by an individual buyer who is responsible for making all purchase decisions. Therefore, the key boundary spanner at each level of the supply chain could be identified and matched on a one-to-one-to-one individual basis.

We obtained contact information from the manufacturer for 400 dealers that were randomly selected within each of the manufacturer’s 100 territories (4 per territory) as well as the names and addresses of approximately three customers for each dealer, who were chosen at random from each

<sup>2</sup>We modified and improved this section with the helpful guidance of a knowledgeable reviewer.

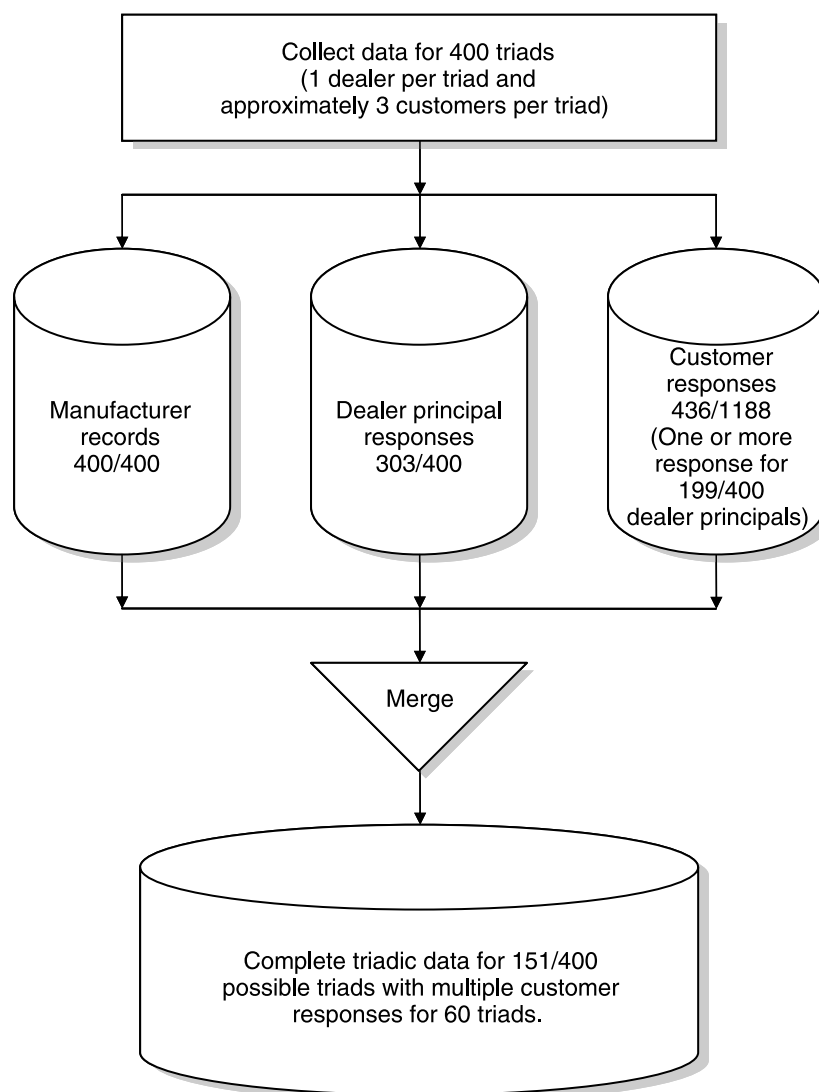
dealer's customer database (we had accurate contact information for 1188 customers). Each customer made at least one purchase over the previous year. In addition, the manufacturer reported on the territory sales accounted for by each dealership so that interdependence and dependence asymmetry could later be calculated. Dealer principals and customers were simultaneously mailed packets that contained a questionnaire, a postage-paid return envelope, and a signed cover letter that addressed the recipient by name. Figure 2 summarizes the data collection process.

After three waves of mailings, we received 307 dealer principal responses; we eliminated 4 because of missing data, which left 303 usable responses. We obtained 436 usable customer responses with complete data. In total, we received one or more customer response that named 199 of the 400 dealer principals. Matching of the manufacturer,

dealer principal, and customer responses resulted in 151 unique triads. Of these triads, we had two or more customer responses within 60 triads. As we discuss subsequently, when two or more responses were received for a single dealer principal, we took the average of these multiple responses within each triad. We tested nonresponse bias using a median split between early and late responders for each sample. There were no significant differences between early and late responders in any sample.

Our methodology and sample design are consistent with the recommendations of Podsakoff and colleagues (2003) for reducing common methods biases. They recommend (1) obtaining measures of the predictor and criterion variables from different sources; (2) offering anonymity/confidentiality to reduce the chances of responses that are socially desirable, lenient, acquiescent, and consistent with how

**FIGURE 2**  
**Triadic Data Collection Procedure**



respondents believe researchers want them to respond; and (3) informing the respondents that there are no correct or incorrect answers and that they should respond as honestly as possible to reduce evaluation apprehension. We followed these recommendations. In addition, our key variables are not self-reported. There are many benefits of non-self-reported measures, including the reduction of self-serving biases (McFarland, Challagalla, and Shervani 2006).

## Measures

Table 2 lists the summary statistics and the correlation matrix for all variables. The items, item reliabilities, and factor reliabilities for all multi-item measures appear in the Appendix.

### Dependent Variable

We examine supply chain contagion in the form of downstream influence strategy similarity between manufacturer and dealer ( $A \rightarrow B$ ) and between dealer and customer ( $B \rightarrow C$ ). We model manifest influence strategy contagion (or, more simply, manifest contagion) as a second-order composite latent variable composed of the first-order influence strategy similarity measures (Jarvis, Mackenzie, and Podsakoff 2003) (see Equation 1). We used the influence strategy measures that McFarland, Challagalla, and Shervani (2006) developed. These six measures are applicable to both channel coordination and sales settings. “Information exchange” is a communication process in which information about general business issues is exchanged but no specific requests are made. “Recommendations” are logical arguments that explain the benefits the target will achieve if the target complies with the request of the source of influence. With “promises,” the source of influence offers a specific reward or inducement that is contingent on the target’s compliance with the source’s request. “Threats” are implied or stated negative sanctions or consequences that will occur if the target does not comply with the source’s request. “Ingratiation” involves the use of behaviors that are designed to enhance interpersonal attractiveness to gain the approbation of others and includes actions such as praising, acting humble, and so forth. “Inspirational appeals” attempt to elicit an emotional response, such as enthusiasm, and strive to excite the target about the source’s request.

We scored all influence strategy items on a five-point scale anchored by never uses and always uses. To eliminate the problems associated with self-reported measures and to reduce common methods biases, we asked the dealers to rate the frequency with which the manufacturer used influence strategies with them (labeled ISM in Equation 1), and we asked the customers to rate the frequency with which the dealers used influence strategies with them (labeled ISD in Equation 1). We determined the similarity of use for each of the six influence strategies as illustrated in Equation 1. Higher scores indicate greater imitative use of influence strategies. Peter, Churchill, and Brown (1993) note that similarity scores should be used with caution because of problems such as the possibility of inflated reliability scores. However, for many research scenarios, their use is

appropriate and common in areas such as satisfaction research (e.g., Bohlman et al. 2006), measuring psychic distance and cultural distance in cross-cultural settings (e.g., Dow and Karunaratna 2006), and measuring an individual’s propensity to use coercive influence (e.g., Su, Fern, and Ye 2003). Before calculating these scores, we ensured that the influence strategy measures were invariant across groups; we followed the procedure that Steenkamp and Baumgartner (1998) recommend (we discuss this procedure in greater detail subsequently).

$$(1) \quad y_i = 5 - \left| \text{ISM}_{ij} - \left[ \left( \sum_{k=1}^n \text{ISD}_{ijk} \right) / n \right] \right|,$$

where

$i$  = influence strategy identifier, 1–6;

$j$  = triad identifier, 1–151; and

$n$  = number of consumer responses for each triad, 1–3.

In the majority of cases, we had single informants for each of the three members of the triad; however, as we discussed previously, for 60 of the 151 triads, we had more than one customer response.<sup>3</sup> The customers report on only the dealers’ behaviors; thus, they can be viewed as key informants. As Equation 1 shows, in these cases, we followed convention and aggregated these responses using the mean (e.g., Bell, Menguc, and Stefani 2004; Homburg and Furst 2005; Kumar, Scheer, and Steenkamp 1995, 1998).<sup>4</sup> To ensure that aggregation is appropriate, the within-group variation should be smaller than the between-group variation; in other words, we expect that the data will exhibit a high degree of interrater reliability (James 1982). To explore this issue, we conducted several analytic tests (Bartko 1976; Bliese 2000; James 1982). As Table 3 depicts, the analyses of variance are significant for each of the variables the customers reported, and each eta-square ( $\eta^2$ ) exceeds the threshold of .20, indicating that within-group variation is smaller than the between-group variation (Bell, Menguc, and Stefani 2004; Bliese 2000). The interclass correlations (ICC) also support aggregation. The ICC(1) coefficient can be viewed as the consistency of the responses and, in general, should exceed .20. The ICC(2) can be viewed as the reliability of the within-group means (Bell, Menguc, and Stefani 2004; Bliese 2000). Together, this indicates strong support for the legitimacy of aggregating these responses.<sup>5</sup>

Manifest contagion is modeled as a composite latent variable specified as what Jarvis, Mackenzie, and Podsakoff (2003) describe as a Type II, reflective first-order, formative second-order model. The six first-order factors are mea-

<sup>3</sup>We thank a knowledgeable reviewer for suggesting this.

<sup>4</sup>As one reviewer noted, alternatives to data aggregation might include repeated measures methodologies. However, the reviewer noted that these techniques are unlikely to yield substantially different results than were achieved by data aggregation in our case.

<sup>5</sup>We conducted these tests with the helpful guidance of a knowledgeable reviewer.



**TABLE 2**  
**Descriptive Statistics, Correlation Matrix, and Manifest Contagion Factor Loadings**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Independent Variables</b>														
1. Environmental uncertainty														
2. Similarity	.06													
3. Interdependence	.09	-.05												
4. Dependence asymmetry	-.02	-.04	-.06											
5. Frequency of contact	-.02	.03	-.01	.01										
6. Industry tenure	.13	.13	-.01	.08	.01									
<b>Control Variables</b>														
7. Commitment	-.14	.21	.08	.07	.04	.20								
8. Continuance	-.26	.11	.14	.11	-.01	.07	.71							
<b>Influence Strategy Similarity Variables</b>														
9. Information exchange	-.01	.29	-.01	-.21	.31	-.07	-.10	-.06						
10. Recommendations	-.08	.15	.03	-.16	.01	-.05	-.06	-.07	.45					
11. Promises	.07	.04	-.05	.09	.00	.10	-.13	-.01	.00	-.03				
12. Threats	-.05	.22	.04	-.18	.18	-.20	.04	.02	.22	.06	.27			
13. Ingratiation	-.02	.21	-.03	-.10	.18	.07	-.03	-.05	.39	.31	-.14	-.12		
14. Inspirational appeals	.10	.22	-.17	-.16	.11	-.03	-.09	-.04	.48	.46	-.05	.02	.43	
<b>Manifest contagion<sup>a</sup></b>	.20	.29	.02	-.25	.30	-.09	-.16	-.04	<u>.70</u>	<u>.66</u>	<u>.33</u>	<u>.55</u>	<u>.60</u>	<u>.50</u>
M	3.86	4.10	.95	.34	3.89	19.44	3.60	4.12	4.04	3.78	4.32	4.68	4.03	3.94
SD	.80	.76	.38	.25	.71	11.38	.99	.80	.87	.91	.85	.69	.82	.89

<sup>a</sup>Influence strategy factor loadings onto manifest contagion are in italicized, underlined font based on the partial least squares confirmatory factor analysis. Notes:  $p \leq .05$  for all  $r > \pm .16$ ,  $p \leq .01$  for all  $r > \pm .21$ , and  $p \leq .001$  for all  $r > \pm .25$ .

**TABLE 3**  
**Tests for the Appropriateness of Aggregating Multi-Informant Customer Data**

Dealers Influence Strategy Usage Reported by Customer	$F_{(59, 70)}$ for Analyses of Variance	$\eta^2$	ICC(1)	ICC(2)
Information exchange	3.870**	.77	.59	.74
Recommendations	2.390**	.67	.41	.58
Promises	1.664*	.58	.25	.40
Threats	2.931**	.71	.49	.66
Ingratiation	1.728*	.59	.27	.42
Inspirational appeals	2.688**	.69	.46	.63

\* $p < .05$ .

\*\* $p < .01$ .

sured as in Equation 1. The manifest contagion construct meets the standard definition of a formative construct because it represents a combination of factors that are additive rather than reflective or caused by the latent factor (Fornell and Bookstein 1982). Thus, the model does not assume that similarity in the use of any one influence strategy is caused by a single underlying construct but rather that manifest influence strategy contagion is a linear combination of each influence strategy similarity factor (Diamantopoulos and Winklhofer 2001).

### **Independent and Control Variables**

*Environmental uncertainty.* This multi-item scale measures the difficulty that firms have in making predictions about future business conditions in their industry. We adapted our measures from Celly and Frazier's (1996) study, using a five-point semantic differential scale. This measure was based on the dealers' responses.

*Manufacturer–dealer similarity.* This variable measures the perceived similarity of the dealer with the TM from the dealer's perception. We adapted this multi-item scale from the work of Doney and Cannon (1997) and modified it slightly for context; we used a five-point Likert-type scale with scale anchors "strongly disagree" and "strongly agree."

*Interdependence and dependence asymmetry.* We asked the manufacturer to report the percentage of territory sales accounted for by each dealership in the sample. Similarly, we asked each dealer principal to report the percentage of total purchases made from the focal manufacturer. Following precedent (e.g., Gundlach and Cadotte 1994; Jap and Ganesan 2000; Lusch and Brown 1996) and in line with the condition that dependence should be judged from both sides of a dyad, we determined total dependence by summing these two values, and we determined asymmetry by taking the absolute difference between them (Geyskens and Steenkamp 1995; Kumar, Scheer, and Steenkamp 1995).

*Frequency of contact.* This variable measures the perceived frequency of contact between the dealer and the TM from the dealer's perspective. We adapted this multi-item measure from the work of Doney and Cannon (1997); we used a five-point Likert-type scale anchored by "strongly disagree" and "strongly agree."

*Industry tenure.* This is a single-item measure that asks the dealer principals to indicate in years and months the

length of time they have been working in their current profession.

*Control variables.* We measured commitment and expectations of continuing the relationship from the dealers' perspective with regard to the manufacturer. We included these relationship variables because of their potential impact on behaviors and perceptions in the supply chain. We based these multi-item scales on the work of Kumar, Scheer, and Steenkamp (1995). These measures use five-point Likert-type scales with scale anchors of "strongly disagree" and "strongly agree."

### **Measurement Analysis**

We analyzed one confirmatory factor analysis (CFA) model for all multi-item measures reported by dealers and one CFA for the customer respondents using maximum likelihood estimation in LISREL 8.54 (Jöreskog and Sörbom 1996). The models demonstrated good fit. For the first model,  $\chi^2 = 748$ , with 610 degrees of freedom; root mean square error of approximation (RMSEA) = .039; non-normed fit index (NNFI) = .96; comparative fit index (CFI) = .96; and incremental fit index (IFI) = .96. For the second model,  $\chi^2 = 367$ , with 184 degrees of freedom; RMSEA = .067; NNFI = .95; CFI = .96; and IFI = .96. We also conducted a CFA on the second-order formative measure, manifest contagion; we discuss these results subsequently.

For all multi-item measures, composite trait reliabilities exceeded the recommended cutoff criterion of .70, and the variance extracted for each factor exceeded the .50 cutoff criterion that Fornell and Larcker (1981) suggest (except for ingratiation, which had a variance extracted of .49), indicating that the measures are internally consistent. All item loadings were significant for each factor, demonstrating convergent validity (Anderson and Gerbing 1988). We demonstrated discriminant validity following the procedures of Fornell and Larcker (1981), and we demonstrated unidimensionality following the guidelines of Gerbing and Anderson (1988).

Grewal, Cote, and Baumgartner (2004) highlight the problems that the presence of multicollinearity can create when structural equation modeling procedures are used. They recommend checking for multicollinearity by examining the strength of correlations between constructs and conducting Fornell and Larcker's (1981) test for discriminant

validity. It does not appear that multicollinearity is a threat to the validity of the current results.

### Test of Measurement Invariance Across Response Groups

When difference scores between groups are calculated, the results are meaningful only if the measures are invariant across groups (Steenkamp and Baumgartner 1998). Thus, we tested for measurement invariance for the influence strategies across groups. Steenkamp and Baumgartner recommend testing for both configural invariance and metric invariance when similarity scores are calculated. Configural invariance exists when the measures have the same factor structure across groups. Testing this involves an examination of the degree to which the observed variables fit the latent constructs in each group, allowing factor loadings to vary freely within each group. Metric invariance exists when both the factor structure and the scale of each observed variable are equivalent. Testing metric invariance involves an examination of the equality of a construct's metrics across groups through the use of hierarchical nested multigroup CFA models, in which the fit statistics of the baseline unconstrained configural invariance model are examined and then compared with the fit statistics of the constrained metric invariance model. For the baseline configural invariance model,  $\chi^2 = 703$ , with 388 degrees of freedom; CFI = .9562; and gamma hat = .9080, which indicates that the model has acceptable fit and meets the test for configural invariance. For the constrained metric invariance model,  $\chi^2 = 728$ , with 404 degrees of freedom; CFI = .9510; and gamma hat = .9067. The differences in the fit indexes for the hierarchical nested models are  $\Delta\chi^2 = 25$ , with 16 degrees of freedom (nonsignificant at  $p = .05$ );  $\Delta\text{CFI} = -.0052$ ; and  $\Delta\text{gamma hat} = -.0069$ . This indicates that the null hypothesis of metric invariance should not be rejected (Steenkamp and Baumgartner 1998). Thus, the influence strategy measures demonstrate both configural invariance and metric invariance across the dealer and the customer samples, and difference scores are meaningful.

## Results

### Test of Hypotheses

We tested the hypotheses using partial least squares (PLS) structural equation modeling with PLS-Graph 3.0 (Chin 2001). Partial least squares is a non-covariance-based structural equation modeling procedure (Fornell and Bookstein 1982) commonly used in the marketing literature (e.g., Hennig-Thurau et al. 2006; Johnson, Herrmann, and Huber 2006; Smith and Barclay 1997). A strength of PLS is its ability to incorporate formative scales, as does our model (see Dellande, Gilly, and Grahm 2004; Ulaga and Eggert 2006; White, Varadarajan, and Dacin 2003). Because PLS is a nonparametric procedure (Wold 1985), the structural model is assessed using the R-square for dependent constructs and the size, t-statistics, and significance level of the structural path coefficients. Standard errors and t-statistics are estimated using the bootstrap resampling procedure with a resample size of 200, as Chin (1998) recommends.

Initially, we conducted a CFA for the higher-order formative construct manifest contagion, using the six influence strategy similarities factors as first-order constructs with PLS. We used the hierarchical component procedure that Wold (1985) recommends for estimating the second-order factor (Chin 1998). The composite reliability is .73. All first-order factors load significantly on the higher-order construct ( $p < .001$ ), indicating convergent validity (see Table 2). We indicate discriminant validity following the procedures of Fornell and Larcker (1981).

Next, we estimated the structural model. Table 4 lists the path loadings and their t-statistics. Because the promises influence strategy did not load significantly on manifest contagion in the full structural model, we dropped this factor from the model. For each multi-item factor, the composite reliability is  $\geq .86$ , and the average variance extracted is  $\geq .61$ . The R-square for the model is .30. Four of the six hypotheses are supported. H<sub>1</sub> predicted a positive relationship between environmental uncertainty and manifest contagion; the standardized path coefficient (SPC) was .202

**TABLE 4**  
**Results of PLS Analysis on the Dependent Variable Manifest Contagion**

	Hypothesis	Imitation Motivation	Predicted Direction	Standardized Path Loading	Hypothesis Supported?
<b>Independent Variable</b>					
Environmental uncertainty	H <sub>1</sub>	Reflexive	+	.202*	Yes
Manufacturer-dealer similarity	H <sub>2</sub>	Reflexive	+	.286**	Yes
Interdependence	H <sub>3</sub>	Compliant	+	-.001	No
Dependence asymmetry	H <sub>4</sub>	Compliant	-	-.233*	Yes
Frequency of contact	H <sub>5</sub>	Normative	+	.270**	Yes
Industry tenure	H <sub>6</sub>	Normative	+	-.097	No
<b>Control Variable</b>					
Commitment	Control			-.021	N.A.
Continuance	Control			-.061	N.A.

\* $p < .05$ .

\*\* $p < .01$ .

Notes: N.A. = not applicable.

( $p < .05$ ), indicating support for the hypothesis.  $H_2$  predicted a positive relationship between manufacturer–dealer similarity and manifest contagion; this hypothesis is also supported ( $SPC = .286, p < .01$ ). Interdependence ( $H_3$ ) was not significantly related to manifest contagion; however, dependence asymmetry ( $H_4$ ) was negatively related to manifest contagion, as we hypothesized ( $SPC = -.233, p < .05$ ).  $H_5$  predicted a positive relationship between the frequency of contact between manufacturer–dealer and manifest contagion; this hypothesis is also supported ( $SPC = .270, p < .01$ ). Industry tenure ( $H_6$ ) was not significantly related to manifest contagion.

### **Summary of Findings**

The results of the conclusive study support the conclusions we drew from our in-depth field interviews. That is, although the literature has not discussed the idea of supply chain contagion, we show that intermediaries often imitate the behaviors of their suppliers. One interviewee even referred to this as the “matching principal.” A large variance ( $R^2 = .30$ ) in the use of downstream influence strategies is explained as supply chain contagion. An implicit assumption that firms are likely to make is that the effects of influence strategy behaviors are confined to the dyadic relationship. Given the extensive and sustained attention in the literature on marketing influence strategies (e.g., Boyle and Dwyer 1995; Boyle et al. 1992; Frazier and Rody 1991; Frazier and Summers 1984; McFarland, Challagalla, and Shervani 2006; Payan and McFarland 2005), the explanatory power of supply chain contagion is impressive and suggests that this newly identified phenomenon is important. This phenomenon may also occur with other firm behaviors in addition to influence strategies.

In addition to supporting the existence of supply chain contagion, there is solid support for our conceptual framework. The two reflexive imitation hypotheses were supported, and one of two hypotheses were supported for both compliant and normative imitation pressures. To reiterate,  $H_1$  (environmental uncertainty) and  $H_2$  (similarity) were tests of reflexive imitation,  $H_3$  (interdependence) and  $H_4$  (dependence asymmetry) were tests of compliant imitation, and  $H_5$  (frequency of contact) and  $H_6$  (industry tenure) were tests of normative imitation. Each of these factors might influence contagion. However, the influence of these factors may vary depending on situational conditions. As we predicted, in our sample, environmental uncertainty and similarity characteristics (reflexive imitation) as well as frequency of contact (normative imitation) had a positive influence on dealers imitating manufacturers, whereas dependence asymmetry (compliant imitation) had a negative influence.

## **Discussion**

Management of the supply chain continues to receive increasing attention as organizations look for ways to improve the creation, production, distribution, and marketing of products (e.g., Lambert and Cooper 2000; Lee, So, and Tang 2000; Schroeder, Bates, and Junttila 2002). Supply chains may contain many organizational levels, but

research has predominantly focused on individual dyads when developing theory for supply chain relationships (Wathne and Heide 2004). Although a dyadic focus is important in the process of theory development, the limitation of taking a purely dyadic focus is that critical factors within the system or network in which organizations operate are not in a researcher’s consideration set. A strength of this study is the use of data from all three levels of the supply chain. Our research approach enables us to identify a unique phenomenon that would not be possible without the triadic study design. Focusing on the supply chain, instead of the status quo of dyadic, reciprocal interactions between firms, enables us to identify and support empirically the existence of supply chain contagion (i.e., the spread of interfirm behaviors from one dyad to an adjacent dyad in the supply chain). Our model suggests that how intermediaries treat end customers is explained to a great extent as the intermediaries simply imitating how they were treated themselves by their suppliers.

Our theoretical framework, which predicts the antecedents that make supply chain contagion more or less likely to occur, has an institutional theoretical foundation. Institutional theory explicitly acknowledges that the effects of firm behavior are not confined to dyadic relationships and that the behaviors of organizations are influenced by their larger social context. Recognizing the importance of the institutional environment as a determinant of channel behaviors, processes, and structures, Grewel and Dharwadkar (2002) call for empirical research on key aspects of the institutional environment in channels of distribution. Our research is consistent with and builds on Grewel and Dharwadkar’s theoretical article. Institutional theory has been increasingly acknowledged as important in explaining firm behavior (e.g., Grewal, Comer, and Mehta 2001; Handelman and Arnold 1999; Homburg, Workman, and Krohmer 1999; Srinivasan, Lilien, and Rangaswamy 2002), and it has particular relevance in the context of this study; it suggests that organizations operate within a social network and that imitation between organizations occurs under (1) reflexive conditions of environmental uncertainty and similarity and (2) normative conditions of contact frequency but is less likely to occur under (3) compliant (or noncompliant) conditions of dependence asymmetry.

This study makes several contributions. First, this study develops the supply chain contagion concept, which, to the best of our knowledge, is a novel concept. As a result, this study contributes to the understanding of how firm behaviors become imitated in the supply chain. Second, through the use of institutional theory, we described these effects as stemming from direct interactions between firms. Notably, these interactions can stimulate the participants to imitate one dyadic partner when dealing with other partners in future interactions. Our field interviews suggest that this imitation is typically not part of the planned response by dyadic partners; nonetheless, it may have both positive and negative implications. Thus, contagion may occur inadvertently, and it may occur both with or without the knowledge of the involved party. Our field interviews also suggest that supply chain contagion can occur with wholesalers, retailers, and service providers. Third, we highlight the impor-

tance of institutional theory in providing a more complete understanding of the behavior of firms in the supply chain. From our sample, we found that supply chain members' behavior was influenced by institutional pressures. Specifically, in some cases, the manufacturer's interactions with dealers induced dealers to imitate its behaviors. Institutional theory provides a convincing explanation for the social environmental effects on firm behavior. Because firm behavior occurs in a social environment, institutional theory can advance the understanding of firm behavior in the supply chain beyond simple dyadic-based explanations. Fourth, we focus on the importance of considering both macroenvironmental and microenvironmental institutions in explaining behaviors within the supply chain. The results of our empirical study lend support to this approach. Finally, we used influence strategies as a proxy for determining the level of contagion within a supply chain, so our results have important implications for influence strategy researchers. Until now, influence strategy research has focused largely on bilateral or unilateral antecedents of influence strategies. Our model suggests that effects beyond the dyad are critical determinants of the use of influence strategies within channels of distribution. In summary, these contributions demonstrate the importance of looking outside the focal dyad when examining certain phenomena.

### ***Limitations and Further Implications for Research***

Several limitations of this study may affect the generalizability of its results. The characteristics of the market in which our study participants operate may not be equivalent in other industries. The particular mix of influence strategies used likely varies across industries; therefore, our findings may not generalize to other industries. Continued research in a variety of industries might help determine industry-specific effects. Although influence strategies are perhaps the strongest and most logical choice for examining supply chain contagion, other dependent variables might prove useful in the assessment of these effects in the supply chain.

We used a general measure of environmental uncertainty in this study (e.g., Celly and Frazier 1996). However, although we found support for the effect of environmental uncertainty on contagion, environmental uncertainty has also been identified as a multidimensional construct in the literature. Some examples include demand or volume uncertainty, technological uncertainty, goal ambiguity, and performance ambiguity (see, e.g., Grewal and Tansuhaj 2001; Heidi and John 1990). To provide additional clarity, further research should examine the effects of these different forms of uncertainty on contagion. In addition, a more direct measure of professionalism than industry tenure might be more appropriate. Although we found frequency of contact to be a significant normative imitation pressure, its companion measure, industry tenure, was not. DiMaggio and Powell (1983) discuss professionalism in the context of membership in associations, participation in industry-sponsored training programs, and so forth. Future studies should examine whether alternative variables for professionalism are antecedents to contagion. Some scholars have also

pointed to problems associated with similarity/difference scores; thus, examining the phenomena of supply chain contagion without the use of difference scores is important to provide additional empirical support for our findings.

We reiterate that we chose the six factors investigated in this study as predictors of supply chain contagion on the basis of institutional theory. We must also acknowledge that other, noneconomic factors might influence the extent of contagion within the supply chain. For example, a potential environmental characteristic could be the percentage of other firms that already engage in imitated behaviors (Greve 1996; Henisz and Delios 2001). Firm characteristics, such as age, size, and strategy, may influence relationships, as institutional theory posits (Guillén 2002). Older firms might be able to rely more on experience and might be more prone to habitual behavior than newer firms. Larger firms might be less likely to imitate smaller firms. In addition, there may be an array of interactions among these factors that could shed light on supply chain contagion.

Outcomes of supply chain contagion are also of interest. Supply chain contagion may occur for various reasons and without the recognition of organizations or the resultant performance implications. To assess the nature of the relationship between supply chain contagion and organizational performance, researchers could examine multiple industries with a variety of different characteristics. In addition, attention could be given to the specific types of organizations being imitated. For example, competitors, suppliers, and government organizations could all be sources of behavior subject to imitation. Just how far contagion carries is also of importance to researchers. Potentially, both multilevel contagion and contagion in lateral and network relationships may exist. Researchers may find a reduction in supply chain contagion at each additional level of the supply chain in some industries and a stable or increased rate in other industries. In addition, although this study examined supply chain contagion down the supply chain, a similar process may occur moving upstream. A notable implication of the study is the importance of placing dyadic encounters within a larger context. Dyadic interactions are still worthy of study because factors within the dyadic interaction still directly influence the outcomes of the interaction. However, examination of the effects beyond the dyad has shown the existence of more complex phenomena than is frequently assumed.

### ***Managerial Implications***

Our findings should be of some assistance to managers as well. In general, managers should attend more to the long-term outcomes of their organizations' actions, which can have ongoing effects by influencing other organizations to act similarly. Whether or not managers desire their organizations' actions to be imitated and passed on, these actions may occur nonetheless. By acknowledging that supply chain contagion might occur, managers should be better able to structure their behaviors to provide the best chance for imitation when it is desired and the least chance for imitation when it is not. For example, by increasing exposure of their organizations' behaviors to other organizations,

managers can assist other organizations in copying the behaviors. Alternatively, hiding the behaviors can help prevent them from being imitated. Manufacturers and suppliers may be more hesitant to use coercive influence strategies if they will propagate down the channel because their use may be detrimental to downstream relationships (Payan and McFarland 2005).

Our in-depth field interviews lead us to the conclusion that when contagion occurs, it may lead to suboptimal actions. Institutional theory suggests that contagion can occur without firms' knowledge, and our field interviews appeared to confirm this. There are several notable issues that arise when the behaviors firms engage in within a dyadic interaction are passed on by their dyadic partner. An obvious issue is that firms may need to evaluate the likelihood that they themselves are engaging in inappropriate imitation of channel partner behaviors. Because firms may lose control of the spread of behaviors, they should consider in advance whether it is in their best interests for the behavior to spread in this manner. Managers and boundary-spanning personnel who are aware of supply chain contagion effects may be better inoculated against their own unintended imitation of other organizations within their

supply chain. Competitors may also be able to capitalize on an increased awareness and understanding of this process.

## Conclusions

This study answers Grewal and Dharwadkar's (2002) call for research that examines firm behavior in the supply chain due to institutional environmental effects. In doing so, this study breaks new ground in several areas and sheds light on some important topics. We found that there are indeed contagion effects from the manufacturer–dealer dyad to the dealer–customer dyad. Manufacturers and dealers should make themselves aware of these effects and more carefully monitor the influence strategies (and other behaviors) they use. For example, manufacturers may believe that it is appropriate to use coercive influence strategies, such as threats, with their dealers, but it is unlikely that manufacturers will desire their dealers to use these same strategies with the final customer (Gundlach and Cadotte 1994). Acknowledging that supply chain contagion occurs in a manner that is consistent with the principles of institutional theory provides important implications for further supply chain research and practice.

## APPENDIX Multi-Item Scales

	Standardized Item Factor Loading		Composite Reliability (Variance Extracted)	
	Dealer	Customer	Dealer	Customer
<b>Influence Strategies Scale Items<sup>a</sup> (Manufacturers' TMs' Use of Influence Strategies with Dealers Reported by Dealers/Dealers' Use of Influence Strategies with Customers Reported by Customers)</b>				
<i>Information Exchange</i>				
The TM/dealer ...			.86 (.62)	.84 (.57)
1. Asked about your long-term purchasing goals.	.64	.71		
2. Presented information related to your various purchase options.	.87	.67		
3. Asked if there were any problems or needs he or she could help address.	.79	.71		
4. Talked about the possible applications of his or her products or services.	.82	.90		
<i>Recommendations</i>				
The TM/dealer ...			.89 (.67)	.89 (.67)
1. Made it clear that by following his or her recommendations, your business would benefit.	.75	.85		
2. Outlined the evidence for expecting success from his or her suggestions.	.73	.88		
3. Provided a clear picture of the positive impact on your business a recommended course of action would have.	.88	.80		
4. Made a logical argument supporting his or her specific suggestions.	.91	.73		
<i>Promises</i>				
The TM/dealer ...			.88 (.65)	.85 (.59)
1. Made promises to give something back for complying with his or her request (e.g., discounts, quicker delivery).	.69	.76		
2. Offered additional benefits for your business after you had been initially reluctant to agree to his or her terms.	.90	.88		
3. Offered to provide incentives to your business for agreeing to his or her purchase requests.	.90	.90		
4. Offered a specific deal for your business to change your position on certain issues.	.72	.45		

**APPENDIX**  
**Continued**

	Standardized Item Factor Loading		Composite Reliability (Variance Extracted)	
	Dealer	Customer	Dealer	Customer
<i>Threats</i>				
The TM/dealer ...			.93 (.76)	.89 (.67)
1. Stated that you would stop receiving preferential treatment if his or her proposals were ignored.	.66	.98		
2. Advised that he or she would stop doing business with you/your company if his or her requests were not followed.	.92	.92		
3. Threatened to become uncooperative if you failed to agree to his or her demands.	.96	.75		
4. Indicated he or she could “make things difficult” for your business if his or her requests were not met.	.92	.56		
<i>Ingratiation</i>				
The TM/dealer ...			.74 (.49)	.75 (.50)
1. Complimented and praised your achievements.	.73	.72		
2. Discussed shared interests and/or hobbies prior to discussing sales issues.	.64	.75		
3. Made you feel good about yourself before making his or her sales pitch.	.72	.64		
<i>Inspirational Appeals</i>				
The TM/dealer ...			.82 (.61)	.76 (.51)
1. Described the use of his or her products or services with enthusiasm and conviction.	.86	.78		
2. Tried to get you excited about what he or she was selling.	.88	.75		
3. Appealed to your values and ideals when asking for your business.	.56	.61		
	Standardized Item Factor Loading		Composite Reliability (Variance Extracted)	
<b>Independent and Control Variable Scale Items</b>				
<i>Environmental Uncertainty</i>				
(Five-Point Semantic Differential Scale. Dealer Responses.)			.80 (.50)	
How would you describe the <i>market</i> environment in which <i>your</i> business operates?				
1. “Predictable/unpredictable”	.71			
2. “Easy to monitor trends/difficult to monitor trends”	.58			
3. “Sales volume is stable/sales volume is volatile”	.80			
4. “Sales forecasts are quite accurate/sales forecasts are quite inaccurate”	.71			
<i>Manufacturer–Dealer Similarity<sup>b</sup></i>				
(Five-Point Likert-Type Scale. Dealer Responses.)			.88 (.70)	
The TM ...				
1. Shares similar interests with me.	.86			
2. Is very similar to me.	.84			
3. Has similar values to mine.	.81			
<i>Frequency of Contact with Manufacturer<sup>b</sup></i>				
(Five-Point Likert-Type Scale. Dealer Responses.)			.86 (.67)	
The TM ...				
1. Often visits my place of business.	.71			
2. Makes more calls than other suppliers.	.74			
3. Frequently makes sales calls.	.98			
<i>Commitment to the Manufacturer<sup>b</sup></i>				
(Five-Point Likert-Type Scale. Dealer Responses.)			.92 (.78)	
1. Even if we could, we would not drop this supplier because we like being associated with them.	.82			
2. We want to continue as a customer of this firm, because we genuinely enjoy our relationship with them.	.94			
3. Our positive feelings toward this company are a major reason we continue to work with them.	.89			

## APPENDIX Continued

	Standardized Item Factor Loading	Composite Reliability (Variance Extracted)
<i>Expectations of Continuing the Relationship with the Manufacturer<sup>b</sup></i> (Five-Point Likert-Type Scale. Dealer Responses.)		.79 (.56)
1. We expect the relationship with this company to continue for a long time.	.85	
2. Renewing the relationship with this company is virtually automatic.	.79	
3. In the next two years, we are likely to terminate this relationship. (reverse coded)	.59	

<sup>a</sup>Items were measured on a five-point Likert-type scale anchored by 1 = "never" and 5 = "always."

<sup>b</sup>Scale anchors are 1 = "strongly disagree" and 5 = "strongly agree."

## REFERENCES

- Aldrich, Howard E. and C. Marlene Fiol (1994), "Fools Rush In? The Institutional Context of Industry Creation," *Academy of Management Review*, 19 (4), 645–70.
- Anderson, Erin and Barton Weitz (1992), "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," *Journal of Marketing Research*, 29 (February), 18–34.
- Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: Review and Recommended Two-Step Approach," *Psychological Bulletin*, 103 (May), 411–23.
- , Håkan Håkansson, and Jan Johanson (1994), "Dyadic Business Relationships Within a Business Network Context," *Journal of Marketing*, 58 (October), 1–15.
- Bartko, John J. (1976), "On Various Intraclass Correlation Reliability Coefficients," *Psychological Bulletin*, 83 (5), 762–65.
- Bell, Simon J., Bulent Menguc, and Sara L. Stefani (2004), "When Customers Disappoint: A Model of Relational Internal Marketing and Customer Complaints," *Journal of the Academy of Marketing Science*, 32 (1), 112–26.
- Bliese, Paul D. (2000), "Within-Group Agreement, Non-Independence, and Reliability: Implications for Data Aggregation and Analysis," in *Multilevel Theory, Research, and Methods in Organizations*, Katherine J. Klein and Steve W. Kozlowski, eds. San Francisco: Jossey-Bass, 349–81.
- Bohlman, Jonathan D., José Antonio Rosa, Ruth N. Bolton, and William J. Qualls (2006), "The Effect of Group Interactions on Satisfaction Judgments: Satisfaction Escalation," *Marketing Science*, 25 (4), 301–321.
- Boyle, Brett F. and F. Robert Dwyer (1995), "Power, Bureaucracy, Influence, and Performance," *Journal of Business Research*, 32 (3), 189–201.
- , ———, Robert A. Robicheaux, and James T. Simpson (1992), "Influence Strategies in Marketing Channels: Measures and Use in Different Relationship Structures," *Journal of Marketing Research*, 29 (November), 462–73.
- Carroll, Glen R. and Jacques Delacroix (1982), "Organizational Mortality in the Newspaper Industries of Argentina and Ireland: An Ecological Approach," *Administrative Science Quarterly*, 27 (2), 169–98.
- Celly, Kirti Sawhney and Gary L. Frazier (1996), "Outcome-Based and Behavior-Based Coordination Efforts in Channel Relationships," *Journal of Marketing Research*, 33 (May), 200–210.
- Chatterjee, Debabroto, Rajdeep Grewal, and V. Sambamurthy (2002), "Shaping Up for E-Business: Institutional Enablers of the Organizational Assimilation of Web Technologies," *MIS Quarterly*, 26 (June), 65–89.
- Chin, Wynne W. (1998), "The Partial Least Squares Approach to Structural Equation Modeling," in *Modern Methods for Business Research*, G.A. Marcoulides, ed. Mahwah, NJ: Lawrence Erlbaum Associates, 295–36.
- (2001), *PLS-Graph User's Guide: Version 3.0*. Houston: Software Modeling Inc.
- Dacin, M. Tina, Christine Oliver, and Jean-Paul Roy (2007), "The Legitimacy of Strategic Alliances: An Institutional Perspective," *Strategic Management Journal*, 28 (2), 169–87.
- Dellande, Stephanie, Mary C. Gilly, and John L. Graham (2004), "Gaining Compliance and Losing Weight: The Role of the Service Provider in Health Care Services," *Journal of Marketing*, 68 (July), 78–91.
- Diamantopoulos, Adamantios and Heidi M. Winklhofer (2001), "Index Construction with Formative Indicators: An Alternative to Scale Development," *Journal of Marketing Research*, 38 (May), 269–77.
- DiMaggio, Paul J. and Walter W. Powell (1983), "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review*, 48 (April), 147–60.
- and ——— (1991), "Introduction," in *The New Institutionalism in Organizational Analysis*, Walter W. Powell and Paul J. DiMaggio, eds. Chicago: University of Chicago Press, 1–38.
- Doney, Patricia M. and Joseph P. Cannon (1997), "An Examination of the Nature of Trust in Buyer–Seller Relationships," *Journal of Marketing*, 61 (April), 35–51.
- Dow, Douglas and Amal Karunaratna (2006), "Developing a Multidimensional Instrument to Measure Psychic Distance Stimuli," *Journal of International Business Studies*, 37 (5), 578–602.
- Dwyer, F. Robert, Paul H. Schurr, and Sejo Oh (1987), "Developing Buyer–Seller Relationships," *Journal of Marketing*, 51 (April), 11–27.
- Emerson, Richard M. (1962), "Power-Dependence Relations," *American Sociological Review*, 27 (1), 31–41.
- Fornell, Claes and Fred L. Bookstein (1982), "A Comparative Analysis of Two Structural Equation Models: LISREL and PLS Applied to Market Data," in *A Second Generation of Multivariate Analysis*, Vol. 1, C. Fornell, ed. New York: Praeger, 289–324.
- and David F. Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 19 (February), 39–50.
- Frazier, Gary and Raymond Rody (1991), "The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels," *Journal of Marketing*, 55 (January), 52–69.



- and John Summers (1984), "Interfirm Influence Strategies and Their Application Within Distribution Channels," *Journal of Marketing*, 48 (Summer), 43–55.
- Friedland, Roger and Robert R. Alford (1991), "Bringing Society Back in: Symbols, Practices, and Institutional Contradictions," in *The New Institutionalism in Organizational Analysis*, Walter W. Powell and Paul J. DiMaggio, eds. Chicago: University of Chicago Press, 232–63.
- Frumkin, Peter and Gabriel Kaplan (2006), "Institutional Theory and the Micro-Macro Link," working paper, Kennedy School of Government, Harvard University.
- Galaskiewicz, Joseph and Ronald S. Burt (1991), "Interorganizational Contagion in Corporate Philanthropy," *Administrative Science Quarterly*, 36 (1), 88–105.
- and Stanley Wasserman (1989), "Mimetic Processes Within an Interorganizational Field: An Empirical Test," *Administrative Science Quarterly*, 34 (3), 454–79.
- Gerbing, David W. and James C. Anderson (1988), "An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment," *Journal of Marketing Research*, 25 (May), 186–92.
- Geyskens, Inge and Jan-Benedict Steenkamp (1995), "An Investigation into the Joint Effects of Trust and Interdependence on Relationship Commitment," in *Proceedings of the 24th Conference of the European Marketing Academy*, Vol. 24, M. Bergadaa, ed. Paris: European Marketing Academy, 351–71.
- Granovetter, Mark (1985), "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology*, 91 (3), 481–510.
- Greve, Henrich R. (1996), "Patterns of Competition: The Diffusion of a Market Position in Radio Broadcasting," *Administrative Science Quarterly*, 41 (1), 29–60.
- (1998), "Managerial Cognition and the Mimetic Adoption of Market Positions: What You See Is What You Do," *Strategic Management Journal*, 19 (10), 967–88.
- Grewal, Rajdeep, James M. Comer, and Raj Mehta (2001), "An Investigation into the Antecedents of Organizational Participation in Business-to-Business Electronic Markets," *Journal of Marketing*, 65 (July), 17–33.
- , Joseph A. Cote, and Hans Baumgartner (2004), "Multicollinearity and Measurement Error in Structural Equation Models: Implications for Theory Testing," *Marketing Science*, 23 (4), 519–29.
- and Ravi Dharwadkar (2002), "The Role of the Institutional Environment in Marketing Channels," *Journal of Marketing*, 66 (July), 82–97.
- , Gary L. Lilien, and Girish Mallapragada (2006), "Location, Location, Location: How Network Embeddedness Affects Project Success in Open Source Systems," *Management Science*, 52 (7), 1043–1056.
- and Patriya Tansuhaj (2001), "Building Organizational Capabilities for Managing Economic Crisis: The Role of Market Orientation and Strategic Flexibility," *Journal of Marketing*, 65 (April), 67–80.
- Guillén, Mauro F. (2002), "Structural Inertia, Imitation, and Foreign Expansion: South Korean Firms and Business Groups in China, 1987–1995," *Academy of Management Journal*, 45 (3), 509–525.
- Gundlach, Gregory T. and Ernest R. Cadotte (1994), "Exchange Interdependence and Interfirm Interaction: Research in a Simulated Channel Setting," *Journal of Marketing Research*, 31 (November), 516–32.
- Handelman, Jay M. and Stephen J. Arnold (1999), "The Role of Marketing Actions with a Social Dimension: Appeals to the Institutional Environment," *Journal of Marketing*, 63 (July), 33–48.
- Heide, Jan B. and George John (1988), "The Role of Dependence Balancing in Safeguarding Transaction Costs," *Journal of Marketing*, 52 (January), 20–35.
- and ——— (1990), "Alliance in Industrial Purchasing: The Determinants of Joint Action in Buyer–Supplier Relationships," *Journal of Marketing Research*, 27 (February), 24–36.
- and ——— (1992), "Do Norms Matter in Marketing Relationships?" *Journal of Marketing*, 56 (April), 32–44.
- Henisz, Witold J. and Andrew Delios (2001), "Uncertainty, Imitation, and Plant Location: Japanese Multinational Corporations, 1990–1996," *Administrative Science Quarterly*, 46 (3), 443–75.
- Hennig-Thurau, Thorsten, Markus Groth, Michael Paul, and Dwayne D. Gremler (2006), "Are All Smiles Created Equal? How Emotional Contagion and Emotional Labor Affect Service Relationships," *Journal of Marketing*, 70 (July), 58–73.
- Homburg, Christian and Andreas Furst (2005), "How Organizational Complaint Handling Drives Customer Loyalty: An Analysis of the Mechanistic and the Organic Approach," *Journal of Marketing*, 69 (July), 95–114.
- , John P. Workman, and Harley Krohmer (1999), "Marketing's Influence Within the Firm," *Journal of Marketing*, 63 (April), 1–17.
- Ibarra, Herminia, Martin Kilduff, and Wenpin Tsai (2005), "Zooming In and Out: Connecting Individuals and Collectivities at the Frontiers of Organizational Network Research," *Organizational Science*, 16 (4), 359–71.
- James, Lawrence R. (1982), "Aggregation Bias in Estimates of Perceptual Agreement," *Journal of Applied Psychology*, 67 (2), 219–29.
- Jap, Sandy D. and Shankar Ganesan (2000), "Control Mechanisms and the Relationship Life Cycle: Implications for Safeguarding Specific Investments and Developing Commitment," *Journal of Marketing Research*, 37 (May), 227–46.
- Jarvis, Cheryl Burke, Scott B. Mackenzie, and Philip M. Podsakoff (2003), "A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research," *Journal of Consumer Research*, 30 (September), 199–218.
- Jepperson, Ronald L. (1991), "Institutions, Institutional Effects, and Institutionalism," in *The New Institutionalism in Organizational Analysis*, Walter W. Powell and Paul J. DiMaggio, eds. Chicago: University of Chicago Press, 143–63.
- Johnson, Jean L., Ravi Sohi, and Rajdeep Grewal (2004), "The Role of Relational Knowledge Stores in Interfirm Partnerships," *Journal of Marketing*, 68 (July), 21–36.
- Johnson, Michael D., Andreas Herrmann, and Frank Huber (2006), "The Evolution of Loyalty Intentions," *Journal of Marketing*, 70 (April), 122–32.
- Jöreskog, Karl G. and Dag Sörbom (1996), *LISREL 8: User's Reference Guide*. Chicago: Scientific Software International Inc.
- Kumar, Nirmalya, Lisa Scheer, and Jan-Benedict E.M. Steenkamp (1995), "The Effects of Perceived Interdependence on Dealer Attitudes," *Journal of Marketing Research*, 32 (August), 348–56.
- , ———, and ——— (1998), "Interdependence, Punitive Capability, and the Reciprocation of Punitive Actions in Channel Relationships," *Journal of Marketing Research*, 35 (May), 225–35.
- Lambert, Douglas M. and Martha C. Cooper (2000), "Issues in Supply Chain Management," *Industrial Marketing Management*, 29 (1), 65–83.
- Lant, Theresa K. and Joel A.C. Baum (1995), "Cognitive Sources of Socially Constructed Competitive Groups: Examples from the Manhattan Hotel Industry," in *The Institutional Construction of Organizations*, W. Richard Scott and Søren Christensen, eds. Thousand Oaks, CA: Sage Publications, 15–38.
- Larson, Magali Sarfatti (1977), *The Rise of Professionalism: A Sociological Analysis*. Berkeley: University of California Press.

- Leblebici, Huseyin, Gerald R. Salancik, Anne Copay, and Tom King (1991), "Institutional Change and the Transformation of Interorganizational Fields: An Organizational History of the U.S. Radio Broadcasting Industry," *Administrative Science Quarterly*, 36 (3), 333–63.
- Lee, Hau L., Kut C. So, and Christopher S. Tang (2000), "The Value of Information Sharing in a Two-Level Supply Chain," *Management Science*, 46 (5), 626–43.
- Levitt, Barbara and Clifford Nass (1989), "The Lid on the Garbage Can: Institutional Constraints on Decision Making in the Technical Core of College-Text Publishers," *Administrative Science Quarterly*, 34 (2), 190–207.
- Lusch, Robert F. and James R. Brown (1996), "Interdependency, Contracting, and Relational Behavior in Marketing Channels," *Journal of Marketing*, 60 (October), 19–38.
- March, James G. and Johan P. Olsen (1984), "The New Institutionalism: Organizational Factors in Political Life," *The American Political Science Review*, 78 (September), 734–49.
- and Herbert A. Simon (1958), *Organizations*. New York: John Wiley & Sons.
- McFarland, Richard G., Goutam N. Challagalla, and Tasadduq A. Shervani (2006), "Influence Tactics for Effective Adaptive Selling," *Journal of Marketing*, 70 (October), 103–117.
- Mindlin, Sergio E. and Howard Aldrich (1975), "Interorganizational Dependence: A Review of the Concept and a Reexamination of the Findings of the Aston Group," *Administrative Science Quarterly*, 20 (September), 382–92.
- Moran, Peter (2005), "Structural vs. Relational Embeddedness: Social Capital and Managerial Performance," *Strategic Management Journal*, 26 (December), 1129–51.
- Narayandas, Das and Kastuti Rangan (2004), "Building and Sustaining Buyer–Seller Relationships in Mature Industrial Markets," *Journal of Marketing*, 68 (July), 63–77.
- North, Douglass Cecil (1990), *Institutions, Institutional Change, and Economic Performance*. New York: Norton.
- Oliver, Christine (1991), "Strategic Responses to Institutional Processes," *Academy of Management Review*, 16 (January), 145–79.
- Ostrom, Elinor (2000), "Collective Action and the Evolution of Social Norms," *Journal of Economic Perspectives*, 14 (Summer), 137–58.
- Payan, Janice M. and Richard G. McFarland (2005), "Decomposing Influence Strategies: Argument Structure and Dependence as Determinants of the Effectiveness of Influence Strategies in Gaining Channel Member Compliance," *Journal of Marketing*, 69 (July), 66–79.
- Perrow, Charles (1974), "Is Business Really Changing?" *Organizational Dynamics*, 2 (Summer), 31–44.
- Peter, J. Paul, Gilbert A. Churchill Jr., and Tom J. Brown (1993), "Caution in the Use of Difference Scores in Consumer Research," *Journal of Consumer Research*, 19 (4), 655–76.
- Pfeffer, Jeffrey and Gerald R. Salancik (1978), *The External Control of Organizations: A Resource-Dependence Perspective*. New York: Harper & Row.
- Podsakoff, Philip M., Scott B. MacKenzie, Jeong-Yeon Lee, and Nathan P. Podsakoff (2003), "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology*, 88 (5), 879–903.
- Romanelli, Elaine and Olga M. Khessina (2005), "Regional Industrial Identity: Cluster Configurations and Economic Development," *Organizational Science*, 16 (4), 344–58.
- Schroeder, Roger G., Kimberly A. Bates, and Mikko A. Junttila (2002), "A Resource-Based View of Manufacturing Strategy and the Relationship to Manufacturing Performance," *Strategic Management Journal*, 23 (2), 105–117.
- Scott, W. Richard (1983), "The Organization of Environments: Network, Cultural, and Historical Elements," in *Organizational Environments: Ritual and Rationality*, John W. Meyer and W. Richard Scott, eds. Beverly Hills, CA: Sage Publications, 155–75.
- (1995), *Institutions and Organizations*. Thousand Oaks, CA: Sage Publications.
- (2001), *Institutions and Organizations*, 2d ed. Thousand Oaks, CA: Sage Publications.
- Smith, J. Brock and Donald W. Barclay (1997), "The Effects of Organizational Differences and Trust on the Effectiveness of Selling Partner Relationships," *Journal of Marketing*, 61 (January), 3–21.
- Srinivasan, Raji, Gary L. Lilien, and Arvind Rangaswamy (2002), "Technological Opportunism and Radical Technology Adoption: An Application to E-Business," *Journal of Marketing*, 66 (July), 47–60.
- Steenkamp, Jan-Benedict E.M. and Hans Baumgartner (1998), "Assessing Measurement Invariance in Cross-National Consumer Research," *Journal of Consumer Research*, 25 (June), 78–90.
- Strang, David and John W. Meyer (1994), "Institutional Conditions for Diffusion," in *Institutional Environments and Organizations*, W. Richard Scott and John W. Meyer, eds. Thousand Oaks, CA: Sage Publications, 100–112.
- Su, Chenting, Edward F. Fern, and Keying Ye (2003), "A Temporal Dynamic Model of Spousal Family Purchase-Decision Behavior," *Journal of Marketing Research*, 40 (August), 268–81.
- Suchman, Mark C. (1995), "Managing Legitimacy: Strategic and Institutional Approaches," *Academy of Management Review*, 20 (3), 571–610.
- Ulaga, Wolfgang and Andreas Eggert (2006), "Value-Based Differentiation in Business Relationships: Gaining and Sustaining Key Supplier Status," *Journal of Marketing*, 70 (January), 119–36.
- Ulrich, David and Jay B. Barney (1984), "Perspectives in Organizations: Resource Dependence, Efficiency, and Population," *Academy of Management Review*, 9 (3), 471–81.
- Wathne, Kenneth H. and Jan B. Heide (2004), "Relationship Governance in a Supply Chain Network," *Journal of Marketing*, 68 (January), 73–89.
- White, J. Chris, P. Rajan Varadarajan, and Peter A. Dacin (2003), "Market Situation Interpretation and Response: The Role of Cognitive Style, Organizational Culture, and Information Use," *Journal of Marketing*, 67 (July), 63–79.
- Wold, Herman (1985), "Systems Analysis by Partial Least Squares," in *Measuring the Unmeasurable*, P. Nijkamp, L. Leitner, and N. Wrigley, eds. Martinus Nijhoff: Dordrecht.
- Zahay, Debra and Abbie Griffin (2004), "Customer Learning Processes, Strategy Selection, and Performance in Business-to-Business Service Firms," *Decision Sciences*, 35 (2), 169–203.
- Zucker, Lynne G. (1977), "The Role of Institutionalization in Cultural Persistence," *American Sociological Review*, 42 (October), 726–43.