

CHANGE AS A MODERATOR OF INTER-FIRM COMMUNICATION AND CONFLICT MANAGEMENT IN RELATIONSHIP CONTINUITY

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ABSTRACT

The present study merges work in the buyer-seller literature to address how perceived buyer-side change interacts with supplier perceptions of communication and conflict resolution to impact relational continuity perceptions. Understanding this process is important given the significance of communication and the ubiquity of change in relationships and that conflict resolution is often related to relational investments, satisfaction, and commitment. Survey data from representatives of metal parts producers in the automobile supply chain was analyzed with hierarchical regression analysis. Results suggest that supplier perception of manufacturer use of disclosure influences relational continuity through the process of conflict resolution. Further, the combined influence of supplier conflict resolution and change perceptions is important in understanding relationship continuity from the supplier side. Findings hold implications for marketing researchers and practitioners interested in how to maintain effective collaborative business relationships.

INTRODUCTION

Effectively managing inter-firm relationships is essential to achieving desired outcomes. However, supply chain exigencies have been known to undermine even the most well-intended relationship. While many studies have productively focused on firm-level constructs and dynamics, ultimately, interpersonal dynamics are the foundation of inter-organizational processes and outcomes (Jap 1999; Narayandas and Rangan 2004; Piercy 2009; Gedeon, Fearn, and Poole 2009). Reinforcing this point, a survey of Fortune 100 firms lists boundary spanners relational skills as one of their companies' most critical resources (Giunipero et al. 2006). Not surprising are calls for more

systematic explorations of how constructs related to interpersonal relationships might impact inter-firm outcomes (Lian and Laing 2007).

Exactly what types of relational behaviors are important for understanding when and how desired outcomes accrue to business partners? First, the need for constant "give and take" has been identified as part of managing conflict which results from tensions experienced throughout all phases of business relationships (Bantham et al. 2003). Implied in this "give and take" is the use of collaborative communication by buyers and sellers. Indeed, communication has been characterized as the glue that binds relational partners (Mohr and Nevin 1990). This type of partnership-reinforcing communication has been linked to relational coordination, satisfaction, and commitment (Gultinan et al. 1980; Keith et al. 1990; Anderson and Weitz 1992; Morgan and Hunt 1994; Humphreys, Williams, and Goebel 2009).

A good deal of important work has examined the role of communication in conflict resolution, but questions have been raised as to the boundary conditions of effects in buyer-seller relationships. For example, Mohr, et al. (1996) note that the influence of collaborative communication on relational outcomes may be tied to the conditions in which partners use it. Hence, communication may have different effects on satisfaction or commitment depending on aspects of the organization or environment. Johnston and Hausman (2006) reinforce this point with a caution regarding under-representing complexity in inter-organizational relationships. They note the importance of accounting for contextual factors in understanding the role of relational variables. Thus understanding how communication interacts with usage conditions might be important to understanding when and why communication affects relational outcomes.

Environmental dynamism, the extent to which aspects of an environment change, has been posited to impact relational issues in the supply chain (Lewis 1995; Poirier 1999). Consensus is

strong regarding the construct's significance, but it's predicted and actual impact is ambiguous (Rindfleisch and Heide 1997; Sutcliffe and Zaheer 1998). For example, some researchers argue for weaker governance in dynamic environments (allowing for freedom to develop new partner relationships), while others argue for stronger governance in dynamic environments (allowing for greater development of existing partner competencies) (Porter 1985; Lewis 1995). This lack of clarity points to potential moderating relationships which may explain the contradictory theorizing and findings (Joshi and Campbell 2003).

Of relevance from the perspective of the present research is a particular aspect of dynamism, the extent of change occurring on the business partner side. The impact of changes with respect to technology, competitors, and end-users has been examined in the literature, but the influence of the degree of change in the immediate buying firm has received scant attention in business-to-business research (Bendapudi and Leone 2002). Recent research has found that, supplier-side perceptions related to the behavior of the immediate buying partner are particularly salient influencers of communication and conflict resolution perceptions in inter-firm relationships (Celuch et al. 2011). Further, Johnson, Sohi, and Grewal (2004) specifically note the need for more research related to the development and use of relational capabilities in turbulent conditions.

Based on the foregoing introduction, a key question relates to how change might impact the ability of firm partners to effectively manage conflict? Understanding this process is critical given that conflict resolution is often related to important business-to-business relational outcomes such as satisfaction and investments which are also implicated in relationship continuity. The present study addresses this question through an integration of buyer-seller relationship literature. Specifically, the study explores from, the suppliers perspective, how the perceived level of change on the manufacturer (buyer) side affects relationships among collaborative communication, conflict resolution, and relationship continuity. Given the significance of communication and the ubiquity of conflict and change in inter-firm exchange, this would appear to be an important area for marketing researchers and practitioners interested

in how to maintain effective collaborative business relationships.

THE CONTEXT OF BUSINESS-TO-BUSINESS RELATIONSHIPS AND THE NEED FOR COMMUNICATION AND CONFLICT RESOLUTION IN RELATIONSHIP CONTINUITY

The roles of boundary spanners in business-to-business relationships include both cognitive and behavioral complexity (Wu et al. 2010). For example, business partners are responsible for interactions between internal and external stakeholders within buyer and seller organizations (Knight and Harland 2005; Piercy 2009). These interactions may involve gathering, sharing, and communicating information as part of representing their own firm, negotiating with the partner firm, as well as relationship building within their own and the partner firm (Hallenbeck et al. 1999; Piercy 2009). Indeed, relational capabilities among employees, customers, and strategic partners have been found to extend the service profit chain in business-to-business environments (Theoharakis, Sajtos, and Hooley 2009). While operating in such complex environments, individuals are often confronted with ambiguity and competing demands which call for diverse and competing behavior within and between individuals (Kreiner et al. 2006; Denison et al. 1995). Clearly, conflict is inherent in inter-firm contexts as is the concomitant need to effectively manage conflict.

The nature of relational conflict in business-to-business contexts has been characterized as due to differences in expectations and/or performance (Emiliani 2003; Celuch et al. 2006) relating to economic/functional and/or social/relational domains (Wilson 1995; Celuch et al. 2006; Zerbini and Caslaldo 2007). In the context of the present study, the auto supply chain, economic issues often relate to price, quality, delivery, and payment issues. A typical scenario is when auto manufacturers look to improve competitiveness in the end-use customer markets. One of the first options of manufacturer management is to look for cost savings in their supply chain and/or to utilize layoffs or plant closings (Emiliani 2003). The manufacturer effort to reduce the price of its supply goods can result in economic conflict with suppliers. The way the issue is addressed (i.e., unilateral demands vs.

collaborative problem solving) can contribute to social/relational conflict. Further, downsizing resulting in loss of manufacturer personnel who are responsible for supplier contact can introduce instability into the supplier-manufacturer relationship.

Communication is recognized for its role in effective buyer-seller relationships and specifically for its role in conflict-conflict management (Assael 1969; Dwyer et al. 1987; Anderson and Narus 1990; Helper 1991; Ellram 1991; Mohr and Speckman 1994; Ellram and Hendrick 1995; Claycomb and Franckwick 2004; Humphreys et al. 2009; Celuch et al. 2011). Specific facets of communication that have been identified include: frequency or amount, direction (vertical and horizontal as well as unidirectionality and bidirectionality), modality (medium or personal/impersonal), and content (with information exchange and requests most commonly represented in supply chains) (Mohr and Nevin 1990). In addition to the above facets, several communication behaviors (i.e., active and nondefensive listening, disclosure, and editing-the ability to self-censor a focus on and overreaction to negative events and behavior) that are influential in interpersonal relationships have been applied to inter-firm relationships and found to be important enablers of relational effectiveness (Bantham et al., 2003; Kasouf et al., 2006).

Disclosure, defined as an open, sharing of information is a foundation for the development and maintenance of relationships. It is through disclosure that significant relationship expectations and needs can be surfaced. Unilateral disclosure requires elements of trust in that revealing important aspects of oneself leaves one vulnerable to opportunistic behavior by the relational partner. However, unilateral disclosure is often a first step to facilitating future honest bilateral communication (Bussod and Jacobson 1983; Fowers 1998).

Inter-firm disclosure as a communication behavior is important to the present research given its connection to the aforementioned facets of communication, namely, information exchange (content), bidirectionality (direction), and personal/impersonal (modality). An important dynamic in inter-firm exchange is the need for mutual adaptation related to product design, production processes and schedules, and information systems. Information exchange is one cornerstone of the inter-firm relational

process (Cannon and Perreault 1999). Indeed, a relationship is predicated on two-way sharing of each business partner's priorities, wants, and evolving issues (Dwyer et al. 1987). Reciprocal information sharing (disclosure) between firms creates information symmetry (Hart and Saunders 1997) and improves negotiation effectiveness (Currall and Judge 1995). This type of communication provides evidence of a partner's credibility and trustworthiness which facilitates relational development (Das and Teng 1998). More recently, Hansen (2009) notes the importance of information sharing in the evolving roles of inter-firm partners viewed through a service dominant logic lens. Disclosure is clearly important to relationships yet, specifically, how is disclosure (or a lack of disclosure) implicated in conflict resolution in inter-firm relationships?

Some evidence suggests that a lack of disclosure is a source of conflict between relational partners. For example, when relevant information is not shared with a relational partner, the partner feels excluded from the decision making process (Cooper 1988). This type of communication can result in conflict attributable to misunderstanding and frustration among business partners (Etgar 1979). Perceptions of communication behaviors and disclosure in particular have also been directly linked to conflict resolution perceptions. As noted by Mohr and Nevin (1990), among others, perceptions of interactions drive behavior in relational communication contexts. In the context of inter-firm exchange, conceptual and empirical work provides support for the prominence of relational partner perceptions tied to communication behavior in subsequent appraisals of the relationship (Celuch et al. 2006). Communication behaviors have been modeled as antecedents or mediators of conflict resolution or problem solving in supplier-manufacturer relationships (Kasouf et al. 2006; Celuch et al. 2011). Specifically, Kasouf et al., (2006), found supplier perceptions tied to adaptive and nondefensive listening and disclosure to mediate the effects of cooperative norms on problem solving efficacy perceptions in supplier-manufacturer relationships. Of the communication behaviors examined, disclosure was found to have the strongest effects and was positively related to problem solving efficacy. Open communication from one firm to another can be an important signal which motivates reciprocal behavior

(Johnston and Kristal 2008) which contributes to joint problem solving.

Finally, the significance of conflict management to inter-firm relational continuity has long been recognized (Frazier 1983; Dwyer et al. 1987). Gedeon et al., (2009) note the link between interpersonal or affective conflict and task or cognitive conflict in the dissolution of business relationships. Not surprisingly, concepts related to managing oppositional tensions in relationships (e.g., conflict resolution and problem solving) have been included in many models explaining important inter-firm relational outcomes such as investments, satisfaction, and commitment (cf., Dant and Schul 1992; Anderson and Narus 1994; Mohr and Speckman 1994; Bantham et al. 2003; Welch and Wilkinson 2005).

Relational continuity, the expectation that the relationship will continue into the foreseeable future, is an important outcome as it embodies the very notion of longer-term collaboration rather than a purely transactional approach (Heide and John 1990). Ganesan (1994) and Morgan and Hunt (1994) offer related but distinct constructs related to relational continuity. In the work of Ganesan (1994), long-term orientation embodies the time horizon of business-to-business partners and is a function of mutual dependence and trust. Morgan and Hunt (1994) conceive of relationship commitment as an exchange partner's belief in the importance of the relationship which drives maximum effort to maintain the relationship. The

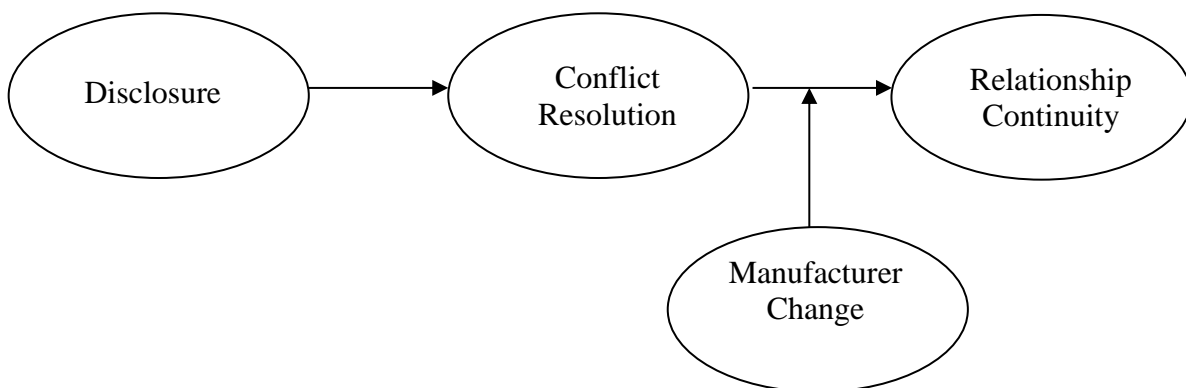
conception of relationship continuity used in the present research is more akin to an expectation of time horizon with the relational partner without any assumption of satisfaction or trust. As noted in Bantham et al., (2003), based on investment theory, a relational partner may be committed in the absence of satisfaction or trust given a lack of relational alternatives. However, without relationship continuity, firms are unlikely to invest the time and effort in the development of tangible and intangible relationship-specific assets (Williamson 1993).

Based on the preceding discussion, if a supplier believes that a manufacturer openly shares their requirements, information, ideas, and feelings with the supplier, this should be positively related to the supplier believing that conflict with the manufacturer can be productively resolved. Further, if a supplier believes that conflict with the manufacturer can be productively resolved this should positively influence supplier expectations of the relationship with the manufacturer continuing into the future. Therefore it is formally proposed that:

H1: Supplier perceptions of manufacturer disclosure will work through (be mediated by) supplier conflict resolution perceptions to influence supplier expectations of relationship continuity (please refer to Figure 1).

FIGURE 1

Hypothesized Supplier-side Mediating and Moderating Relationships



THE MODERATING ROLE OF SUPPLIER PERCEPTION OF MANUFACTURER CHANGE AMONG SUPPLIER PERCEPTIONS OF COMMUNICATION, CONFLICT RESOLUTION, AND RELATIONSHIP CONTINUITY

Recall that while the notion of collaborative communication influencing relationship continuity through conflict resolution is intuitive and has some empirical basis, questions have been raised as to the boundary conditions of effects in buyer-seller relationships (Mohr et al. 1996). Thus understanding how communication and conflict management interacts with context might be important to understanding when and why communication affects inter-firm relational continuity.

The context of the present study, the automotive industry supply chain, has undergone a well-documented share of adaptation in response to change over the past two decades (Mudambi and Helper 1998; Mukerji and Francis 2008). Over this period, the supply chain literature has increasingly recognized the importance of relational partners that can effectively respond to conditions of change or volatility (Swafford et al. 2006). For example, Bendapudi and Leone (2002) note that vendor customer contact employee turnover may destabilize a relationship with a customer and explore strategies to address these situations. Further, changing conditions relating to the end-user and competition have been modeled as part of an interaction term in explaining both inter and intra-organizational processes (Joshi and Campbell 2003). Ganesan (1994) also noted that relational time horizons are related to environmental uncertainty among other factors. Not addressed by prior research is the question of how changes relating to the immediate buyer are likely to affect supplier relational responses? Understanding this process is both relevant and important given the ubiquity of change in the auto supply context, particularly relating to change on the auto supply customer-side (i.e., change relating to customer streamlining and downsizing manufacturing processes).

This study focused on metal processing firms in three industries: aluminum casting, powder metallurgy parts, and heat treating. These are fragmented industries in mid-supply chain, whose dominant applications are automotive.

Their management of customer relationships is critical because these customers are much larger than their firms. They are under continuing price pressure, but, at the same time, are also expected to provide higher service in the form of part or development and developing global capabilities (Kasouf and Celuch 1997; Kasouf, Apelian, and Gummesson 2002). This tension makes understanding buyer-seller conflict especially interesting.

Of relevance to the present research, Mohr and Nevin (1990), in their contingency framework, posit that conditions characterized by relational exchanges and supportive climates should evidence more bidirectional communication (information sharing). Others have also argued that in more closely linked relationships where partner integration is greater, increased needs for information sharing drives requirements for more collaborative communication (Anderson and Weitz 1989; Krapfel et al. 1991). Instability related to the turnover in personnel as well as context complexity (associated with volatile environments) has also been found to be negatively related to aspects of relationship quality. For example, an environment with high job turnover has been found to be associated with lower role competence perceptions given the likelihood that under such conditions questions are raised about the knowledge and preparation of personnel in these less stable environments (Smith and Barclay 1997). Wu et al. (2010) found more differentiated behavior due to greater role complexity to be negatively associated with relational trust, satisfaction, and commitment in a supply chain.

Extending this line of thinking to the present context, under conditions where a supplier perceives low change in the manufacturer (buyer) side, disclosure from the manufacturer should be more strongly associated with the supplier perceiving that conflict resolution can enhance relationship continuity. This type of context, with the supplier perceiving less personnel and procedural changes on the manufacturer side, should reflect higher relational integration and trust which should increase the perceived effectiveness of disclosure working through conflict resolution to positively enhance the expectation of relationship continuance by the supplier side. In contrast, with the supplier

perceiving less stability in personnel and procedures on the manufacturer side, reflective of less relational integration as new players require new learning and time to develop trust, disclosure working through conflict resolution should not be as influential in the supplier's expectation of relationship continuity.

In summary, we argue that it is an understanding of the joint influence of supplier perceptions relating to being able to resolve conflict with the manufacturer as well as perceptions tied to manufacturer-side change that is posited to be important in understanding supplier-side expectations of relationship continuance. Thus, when manufacturer conditions are viewed to be relatively stable, manufacturer disclosure should be strongly associated with the supplier's view that resolving conflict will contribute to the relationship continuing into the future. However, when manufacturer conditions are unstable, manufacturer disclosure associated with efforts at conflict resolution will not be as influential in the supplier's expectation of relationship continuance. Based on the preceding discussion, it is proposed that in the inter-firm dyad:

H2: Supplier conflict resolution perceptions will interact with (be moderated by) supplier perceptions of the level of manufacturer change to influence supplier expectations of relationship continuity (please refer to Figure 1).

METHOD

Sample

Interesting dynamics characterize the automobile supply industries which make it ripe for researchers of inter-firm relationships. For example, fewer suppliers combined with longer-term mutually beneficial relationships often resulting in customized investments (Dyer 1996; Mudambi and Helper 1998) require close communication and conflict management.

As noted previously, the sample for this study consisted of managers in three separate metal forming technologies: powder metallurgy part manufacturing (NAICS code 33284), aluminum die casting (NAICS code 331521), and metal heat treating (NAICS code 332811). Although distinct, these technologies are metal forming industries that are in the mid-point of the supply chain and deal with a common set of

management issues and competitive problems. These industries typically deal with large customers who are able to exert considerable power if inclined, especially price pressure. Even though the companies in these industries are often small, they are expected to be innovative, and often deal with the pressure of supplying engineering service to customers, often developing new parts, while containing costs.

The sampling frame was a composite of lists of firms in each industry maintained by the Metal Processing Institute at Worcester Polytechnic Institute. This resulted in a total of 247 firms, whose scope was national in geographic representation. At each firm, an individual was identified who was centrally engaged in an ongoing customer relationship. If the firm listed a key marketing position, such as a vice president of marketing, director of marketing, or director of sales, that person was included in the study. For some smaller firms that did not list a marketing manager, the president was selected. As such, respondents would be a single individual representing a supplier's perspective with one or more customer representatives.

Procedure

Following the Dillman Tailored Design Method (1999), a preliminary letter was sent to each potential respondent outlining the project, explaining the study's importance to them, and the importance of their participation. Participants were assured that they would not be identified in any dissemination of results. Each individual received a cover letter, survey, and a postage paid return envelope. Individuals were promised a summary of results if they participated in the study. One week later a reminder post card was sent, and a follow-up survey package was sent to each non-respondent three weeks later. Data collection was terminated after another four weeks. Ninety-seven completed questionnaires were used in subsequent data analysis. The responding firms represent 39.3% of the industry sampled and compare favorably to industry distribution on firm size with a majority of firms having 200 or fewer employees (55%) and a relatively small number having more than 5000 employees (8%). Respondents represented a range of titles including top management (i.e., president 34% and vice president 19%), middle management (24%), engineering (10%), and sales

(10%) positions (please refer to Tables 1 & 2). Respondents for smaller firms tended to be higher positioned employees. For example, 29 of 32 respondents holding the title president were associated with firms employing 200 employees or less. While middle management, engineering, and sales positions tended to respond for larger

firms employing more than 200 employees. This pattern is in keeping with the nature of this supplier industry where, for smaller firms, top management tends to be more directly involved in customer relationships.

TABLE 1
Frequencies for Job Titles of the Respondents

	Frequency
President	33
Vice President	18
Manager	23
Engineering	10
Sales	10

TABLE 2
Frequencies for Firm Size (Number of Employees) of the Respondents

	Frequency
0-50	21
51-100	21
101-200	11
201-300	12
301-500	8
501-1000	7
1001-5000	6
Greater than 5000	8

Questionnaire

Measures had been used in prior research and were based on literature reviews and knowledge of metal part producer industries. Industry representatives not included in the study reviewed an initial draft of the questionnaire. Participants in this pre-testing were members of a metal processing institute with deep knowledge of the industry's challenges and practices. The final questionnaire included measures of supplier-side perceptions of manufacturer disclosure, conflict resolution, manufacturer-side change, relationship continuity, as well as demographic descriptors (please refer to Table 3).

The context for questionnaire administration was a significant customer relationship that had been ongoing for at least the past year and in which the supplier respondent had recently experienced conflict. The respondent was not asked to identify the specific customer but was asked to hold this specific customer relationship in mind when responding to all questionnaire items. The researchers made a conscious decision to use actual conflicts from supplier respondents own experience rather than employing standardized conflict scenarios in order to maximize meaningfulness and realism.

TABLE 3
Construct Measures

Constructs and Items

Manufacturer Disclosure (*scaled: rarely/frequently*)

The customer...
Shares honest thoughts and feelings with our side.
Openly shares ideas and information with our side.
Directly communicates their point of view.
Specifically pinpoints their requirements and needs.
Helps identify specific ways we can change to improve the relationship.

Conflict Resolution (*scaled: strongly disagree/strongly agree*)

Overall, we can productively resolve conflict with this customer.

Manufacturer Change (*scaled: strongly disagree/strongly agree*)

With respect to this customer...

The way things are done keeps changing.
It seems like reorganizing is always occurring.
Personnel are always changing.
Job responsibilities keep changing.

Relationship Continuity (*scaled: strongly disagree/strongly agree*)

We expect to continue the relationship with this customer for several years.
I am certain the relationship with this customer will last a long time.
We may have to sever the business relationship with this customer soon.

Measures

Manufacturer disclosure was assessed via five, seven-point items relating to supplier respondents' perceptions of manufacturer representatives communication behavior. Items focused on sharing information and requirements as well as thoughts and feelings (Bantham et al., 2003). These items had been identified in prior research with disclosure items evidencing convergent and discriminant validity relative to other collaborative communication behaviors (i.e., adaptive and nondefensive listening and editing) (Kasouf et al., 2006).

The measure of conflict resolution assessed supplier respondents' global perception that conflict could be productively resolved with the manufacturer via a seven-point scale. Such

perceptions are consistent with expectations assessed in the perceived control literature as well as related research (Skinner 1995; Kasouf et al., 2006).

The manufacturer-side change measure consisted of four, seven-point items relating to supplier respondents' perception of changes associated with manufacturer personnel, responsibilities, and procedures. This operationalization is consistent with conceptions of change in the literature related to environmental uncertainty (Aldrich 1979; Achrol and Stern 1988).

Finally, relationship continuity consisted of three, seven-point items relating to supplier respondents' expectations of continuing the relationship into the future. This operationalization is consistent with conceptions of relationship continuity in the business-to-

business literature (Heide and John 1990; Krause 1999).

RESULTS

The primary purpose of this study is to test for moderated mediation, that is, from the supplier perspective, the mediational effect of conflict resolution perceptions on manufacturer disclosure and relationship continuity varying across levels of manufacturer-side change. As a precursor to the analyses, confirmatory factor analysis using structural equation modeling (AMOS 19) was used to assess the convergent and discriminant validity of measures before addressing the hypotheses. With respect to the measurement model, observed indicators were all statistically significant ($p < .05$) and evidenced large loadings on their corresponding factors. Fit statistics of the measurement model were $\chi^2(51) = 63.26$, $p = .116$, CFI = .97, RMSEA = .05 which suggest that the observed indicators are representative of constructs. The combination of

CFI and RMSEA are consistent with ranges recommended for the evaluation of model fit for small sample sizes with a small number of observed variables (Hu and Bentler, 1999; Hair et al. 2006).

A series of pair-wise confirmatory factor analyses were conducted to assess discriminant validity of the measures. For each pair of measures, trying to force measures of different constructs into a single underlying factor led to a significant deterioration of model fit in comparison to the two-factor model. These results provide support for the discriminant validity of the measures (Anderson and Gerbing 1988). Based on internal consistency and validity assessments of the measures, summated scores of the multi-item scales were used to address the research hypotheses. Table 4 provides the means, standard deviations, correlations, and reliabilities for the measures used in the study.

TABLE 4

Descriptive Statistics and Correlations for Manufacturer Disclosure, Conflict Resolution, Manufacturer Change, and Relationship Continuity

	Standard		X1	X2	X3	X4
	Mean	Deviation				
X1 Manufacturer Disclosure	4.8	1.02	.75			
X2 Conflict Resolution	5.0	1.40	.46**	--		
X3 Manufacturer Change	4.2	1.45	-.21*	-.32**	.85	
X4 Relationship Continuity	5.1	1.19	.39**	.54**	-.13	.79

*Correlation is significant at the .05 level.

**Correlation is significant at the .01 level.

Reliabilities are shown on the diagonal.

Hierarchical regression analysis, involving a series of models increasing in complexity, was used as a means of testing the hypothesized mediating and moderating relationships (Cohen and Cohen 1983). In the first series of models, to test for mediation, manufacturer disclosure is entered as a predictor of conflict resolution and then disclosure and conflict resolution are entered as predictors of relationship continuity. In the second series of models, to test the moderating effect of manufacturer-side change, change and the

interaction term (conflict resolution x change) are added to the first series model with disclosure and conflict resolution predicting relationship continuity.

In order to test whether conflict resolution mediates the effect of partner disclosure on relationship continuity, three conditions must be met: 1. Disclosure should have a significant effect on conflict resolution; 2. Disclosure should also have a significant effect on relationship continuity; and 3. As compared to condition #2, the impact of partner disclosure on relationship

continuity should significantly diminish when conflict resolution is included in a regression model with disclosure predicting relationship continuity (Baron and Kenny 1986).

With respect to H1, disclosure has a significant effect on conflict resolution, thus, condition #1 is met. Disclosure also significantly influences relationship continuity, thus, condition #2 is met. Lastly, the influence of disclosure is significantly diminished (with the standardized coefficient decreasing from .40 to .15) when conflict resolution is included in the regression model predicting relationship continuity, meeting condition #3. **In summary, consistent with predictions, for supplier-side personnel, perceived conflict resolution is found to mediate the relationship between perceived manufacturer-side disclosure and relationship continuity** (please refer to Table 5).

We next examine the moderating role of manufacturer-side change as perceived by the supplier-side (H2). In the first step, disclosure, conflict resolution, and change are entered as predictors of relationship continuity. In the second step, to test the moderating effect of change, the interaction term (conflict resolution x change) is added to the first step model. Mean centering was not employed, as recent evidence suggests that there is no advantage to mean centering in terms of addressing collinearity issues or stability of estimates (Echambadi and Hess 2007).

Table 5 presents results of the hierarchical regression analyses. Predictions receive support by the data given that the conflict resolution x change interaction significantly explains an additional amount of variance in relationship continuity (R^2 change = .06, significant at $p < .01$ level), after controlling for the direct effects of

TABLE 5

Hierarchical Regression Analyses Testing the Mediating Effect of Conflict Resolution and the Moderating Effect of Change on Conflict Resolution and Relationship Continuity

	Model Results				
	Adjusted R ²	R ² Change	F value	F value Change	VIF
<u>Mediation Test</u>					
Conflict Resolution = (.46**) Disclosure	.22		25.61**		
Relationship Continuity = (.40**) Disclosure	.15		17.39**		
Relationship Continuity = (.15) Disclosure + (.49**) Conflict Resolution	.32	.17	23.67**	26.54**	1.29
<u>Moderation Test</u>					
Conflict Resolution = (.16) Disclosure + (.52**) Conflict Resolution + (.07) Change	.32	.00	15.87**	.53	1.38
Conflict Resolution = (.12) Disclosure + (1.22**) Conflict Resolution + (.94**) Change + (-.96**) Conflict Resolution X Change	.38	.06	14.99**	8.44**	16.18

Note: Standardized coefficients appear in parentheses.

* $p < .05$; ** $p < .01$.

conflict resolution and change, with the influence of disclosure nonsignificant. This effect compares favorably with common ranges (R^2 changes .02-.03) reported for moderator effects in non-experimental studies (Champoux and Peters 1987).

As a precaution, variance inflation factors (VIF's) were examined to assess the effects of collinearity among the independent variables,

particularly when the interaction term is a function of the other independent variables. Note that the VIF for the interaction term is above the recommended 10.0 cutoff (Hair et al. 2006). As a further check, the authors also utilized the two-step procedure identifying condition indices above 30, and for any such indices, identifying multiple variables with variance proportions above 90 percent. The condition index for the interaction

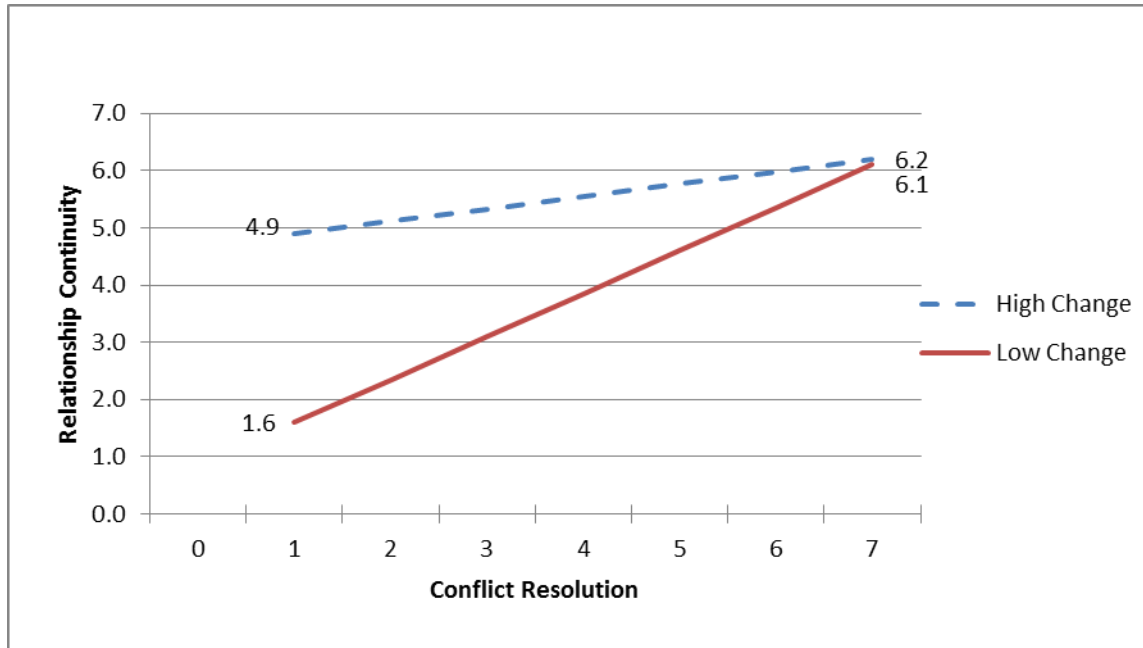
term was 49.55. However, the proportion of variance accounted for by this term did not exceed .90 for two or more variables (Hair et al. 2006). Thus, a collinearity problem is not indicated. **Taken together, results support the prediction of moderated mediation, that is, the mediational effect of conflict resolution between disclosure and relationship continuity varies across levels of manufacturer-side change.**

To identify the nature of the interaction, slopes are plotted for individuals in the upper half

(Mean = 5.3) and lower half (Mean = 2.8) for perceived manufacturer-side change. Figure 2 displays the interaction effect on perceived relationship continuity. **As expected, under low change conditions, stronger conflict resolution perceptions significantly enhanced perceived relationship continuity ($F=62.60, p < .01$). In contrast, conflict resolution perceptions do not have this effect on relationship continuity under high change conditions ($F=4.05, p = .05$).**

FIGURE 2

Interactive Effects of Supplier-Side Perceptions of Conflict Resolution and Manufacturer Change on Relationship Continuity



In summary, consistent with predictions, supplier perceptions relating to being able to resolve conflict are found to mediate the effect of manufacturer disclosure on relationship continuity perceptions. Further, supplier perceptions of change relating to the manufacturer-side are found to interact with supplier conflict resolution perceptions which moderate the relationship between conflict resolution and supplier relationship continuity perceptions. Specifically, when changing conditions are not perceived to be prevalent in the manufacturer organization, the perception that conflict can be productively

resolved has a strong positive effect on supplier relationship continuity perceptions. In contrast, when the manufacturer is perceived to be experiencing changing conditions, the perception that conflict can be productively resolved does not greatly affect the supplier perception of relationship continuity.

DISCUSSION

While it has long been recognized that collaborative communication can provide the

impetus for conflict management and subsequent relational outcomes, the process has not been completely understood. Understanding the process is important given that conflict is inherent in inter-firm exchange and that conflict management is related to relational investments, satisfaction, and commitment (Frazier, 1983; Dant et al. 1992; Bantham et al. 2003). The present study merges work in the business-to-business literature to address how supplier side perceptions of change relating to the manufacturer interacts with supplier perception of conflict resolution to impact perceptions of relationship continuance.

These findings contribute to the extant literature in several ways. First, the research supports literature which suggests that collaborative communication affects important relational outcomes (Mohr et al. 1996; Anderson and Weitz 1992; Morgan and Hunt 1994; Johnson et al. 2004; Humphreys et al. 2009). The research also extends work which highlights the salience of partner communication behavior in inter-firm processes (Celuch et al. 2006). Specifically, the importance of manufacturer disclosure working through conflict resolution to impact supplier relationship continuity perceptions was supported. Communication behaviors that help to resolve conflict in relationships have been implicated in relational outcomes such as satisfaction (Selnes 1998). Future research could examine other communication behaviors beyond disclosure that might contribute to relational-enhancing (or inhibiting) outcomes. Would other partner communication behavior (e.g., listening, editing) work differently?

Another contribution is that we address the notion that the influence of collaborative communication on relational outcomes may be tied to the context in which partners communicate (Mohr et al. 1996). To this end, the research serves to extend the inter-firm relationship literature through an exploration of manufacturer change as a moderator of communication-conflict resolution processes in relationship continuance. Recall that while dynamism has received significant attention, empirical studies have generally included environmental imperatives and have not accounted for perceptions of changes related to the immediate business buyer. We believe this is detrimental to understanding inter-firm exchange given that organizational change has been prominent in many industries. This is a particularly serious omission considering the

importance of perceptions relating to the relational partner's behavior in inter-firm appraisal processes (Celuch et al., in press) which may be affected by changing conditions on the partner side. The notion that, for the supplier, perceptions of manufacturer-side change are implicated in relational continuity receives support and clarification given the observed interaction with conflict resolution perceptions. While these findings are consistent with the Johnson et al. (2004) observation that relational knowledge has weaker effects on relational effectiveness under higher turbulence, turbulence is operationalized at the industry level and not at the level of a relational partner as in the present study. Future research could explore the impact of the interaction of manufacturer-side change and conflict resolution perceptions on other relational outcomes such as supplier satisfaction and affective commitment.

Findings of this study hold practical implications for the management of supplier-manufacturer relationships. First, the results clearly speak to the importance of developing manufacturer relational capabilities as part of a purchasing strategy that is supplier oriented for the purpose of developing collaborative relationships with suppliers (Theoharakis et al. 2009; Humphreys et al. 2009). As noted by Emiliani (2003), while not every business-to-business relationship need be highly collaborative, some are recognizing the longer-term strategic importance of price consciousness without making wholesale tradeoffs on quality and delivery. One specific relational capability that was emphasized in this research is the use of disclosure as a partner collaborative communication behavior. Given that conflict is likely to occur in inter-firm relationships, identification of behaviors coupled with an understanding of how they work can contribute to effective conflict management. The ability of a firm partner to be perceived as sharing requirements, information, ideas, and feelings is significantly related to addressing conflict which, in turn, contributes to relational continuity on the supplier side. Open communication, particularly associated with buyers who often hold power in industrial relationships, may act as an important signal motivating supplier reciprocal behavior (Johnston and Kristal 2008). Such "signaling" behavior may prevent opportunistic spirals whereby manufacturers place relentless price

pressure on their suppliers. In turn, similar opportunistic behavior is observed among suppliers when buyers return to former suppliers due to quality issues and then suppliers charge higher prices or impose expediting fees to renew the business (Emiliani 2003). Relative to formal governance, collaborative communication is inexpensive and flexible in its application and may serve as an informal integrating mechanism (Mohr et al. 1996) that helps bridge perceptual gaps between manufacturer and supplier firms (Barnes, Naude, and Mitchell 2007).

Second, the significance of manufacturer-side change is reinforced and clarified. Recall that a typical scenario in the context of the auto supply chain is when manufacturers look to improve competitiveness in the end-use customer markets. One option is to look for cost savings in their supply chain and another is to utilize layoffs or plant closings. The manufacturer effort to reduce the price of its supply goods can result in conflict with suppliers. In addition, downsizing resulting in loss of manufacturer personnel who are responsible for supplier contact can introduce instability into the supplier-manufacturer relationship. Even with the use of collaborative communication by the buyer, the perception of changing conditions associated with the manufacturer side appears to mitigate the effect of disclosure on relational continuity in that, for suppliers, continuity is not as greatly affected by resolving conflict. In contrast, the perception of more stable conditions associated with the manufacturer side seems to enhance the positive effects of disclosure and conflict resolution on relational continuity for suppliers. One interpretation of these effects is that with manufacturer-side changes, that is, conditions with less stability in personnel and procedures that are often associated with lower relational integration and trust, manufacturer use of disclosure to resolve conflicts is weighted and interpreted differently than under less volatile buyer-side conditions. Under unstable conditions, manufacturer use of collaborative communication may be viewed as suspect by suppliers as economic considerations (sales volumes) as opposed to social bonds are more likely to drive relational continuity. This would be akin to the notion of idiosyncratic loyalty characterized by continuity but not true commitment (Johnston and Hausman 2006). In contrast, under more stable manufacturer conditions characterized by higher

integration and trust employing manufacturer use of collaborative communication might be perceived as more genuine (and expected) which contributes to its greater influence on suppliers. This process is somewhat akin to the process proposed by Golicic et al. (2003) whereby relationship structure is proposed to moderate the relationship between satisfaction and relationship maintenance or deterioration in business-to-business contexts. Parallels can also be drawn with the work of Powers and Reagan (2007). In their stage conception of buyer-seller relationships, they note relationships moving through stages where mutual goals and adaptation are important initially, to later stages where cooperation and trust become more important. With buyer-side personnel changes, it is possible that supplier-manufacturer relationships revert to earlier stage dynamics whereby the use of disclosure would not be as effective as when cooperation and trust issues are salient.

The results clearly point to the importance of manufacturer-side personnel being aware of the differential effects and when to expect results. In low change contexts, not employing disclosure to address conflicts could have deleterious effects on relationship continuance. In contrast, for high change contexts, manufacturer disclosure as a means of addressing conflict is not as critical for relationship continuity with suppliers which opens the question as to what other informal and/or formal integrating mechanisms might be more important. Such nuanced understanding is in keeping with recent recommendations that key relationship personnel, particularly in the purchasing and marketing areas, be aware of important boundary spanning issues and roles (Piercy 2009; Theoharkis et al. 2009).

The present research employs cross-sectional, self-report measures of supplier respondent perceptions of constructs. Future research could certainly address design and measurement issues. Self-report limitations notwithstanding, it is important to note that common methods variance is not likely to account for interaction effects, an important focus of this study, as method variance should increase correlations consistently between construct measures (Aiken and West 1991). Consistent with approaches used in related research, a single item conflict resolution measure was used in the present study. Bergkvist and Rossiter (2007) found no differences in predictive validity

between single and multi item measures. Nevertheless, future research could expand measures to assess more dimensions of conflict such as frequency of occurrence as well as magnitude. The present study utilized supplier-side respondents. Capturing perceptions from both sides of the relational dyad could prove interesting, as the influence of constructs may not be the same for relational partners (Mukherji and Francis 2008). Longitudinal designs exploring relations among study constructs which extend thinking beyond dyadic inter-firm interaction to a network of actors could prove useful in understanding relationship adaptation and evolution (Welch and Wilkinson 2005; Schurr et al. 2008).

In conclusion, while there is still much to be learned about how and why business-to-business partners continue relationships, perceived change appears to play an important role in the process. Our study, which considers communication, conflict resolution, and relationship continuity, contributes to research that explores processes critical to successful inter-firm relationships.

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