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Contracts, Norms, and Plural Form Governance

Joseph P. Cannon
Colorado State University

Ravi S. Achrol
George Washington University

Gregory T. Gundlach
University of Notre Dame

The organization of interfirm exchanges has become of critical importance in today's business environment. Many scholars have criticized the inadequacies of legal contracts as mechanisms for governing exchange, especially in the face of uncertainty and dependence. Other scholars argue that it is not the contracts per se but the social contexts in which they are embedded that determine their effectiveness. This study investigates the performance implications of governance structures involving contractual agreements and relational social norms, individually and in combination (plural form) under varying conditions and forms of transactional uncertainty and relationship-specific adaptation. Hypotheses are developed and tested on a sample of 396 buyer-seller relationships. The results provide support for the plural form thesis—increasing the relational content of a governance structure containing contractual agreements enhances performance when transactional uncertainty is high, but not when it is low. Implications for theory and future research are discussed.

Intense competition and management strategies such as relationship marketing, efficient consumer response, just-in-time delivery, total quality management, network organization, and strategic partnering are causing firms to rely increasingly on close relationships with customers and suppliers. Such exchange can offer participants a variety of benefits, including increased efficiency, greater flexibility, and more organizational learning. However, many of these benefits are not automatic. Close relationships also have shortcomings, such as greater vulnerability to opportunism. The challenge is to construct governance structures that safeguard the exchange while simultaneously maximizing benefits for the participants.

To address this challenge, the marketing literature has drawn heavily on theories of transaction cost economics and contract law. The transaction cost approach distinguishes between market, hierarchy, and hybrid (trilateral, bilateral) forms of governance (Williamson 1985). Contract theory focuses on contracting norms or shared expectations regarding behavior, ranging from discrete to relational (Macneil 1980). The two streams of theory have largely coexisted with little inquiry as to the interrelatedness of the governance forms unique to each. One opinion is that there is an underlying continuum along which these mechanisms may be arranged from markets at one end to hierarchies at the other, with relational norms in between (Williamson 1979, 1985). In contrast, Bradach and Eccles (1989) argue for a more pluralistic interpretation: "Price [i.e., market], authority [i.e., hierarchy], and trust [i.e., relational exchange] are independent and can be combined in a variety of ways" (p. 97).

The basis of the plural form argument is shared by a number of authors who argue that economic exchange is embedded in a matrix of economic, social, and political

dimensions (Bradach and Eccles 1989; Eccles 1981, 1985; Gundlach and Achrol 1993; Stern and Reve 1980; Stinchcombe 1985; Weitz and Jap 1995). Different control mechanisms serve as the building blocks for complex structures of governance that combine elements of markets, hierarchies, and relational exchange in complementary, supplementary, or alternative ways.

The focus for the current research concerns two common governance mechanisms—legal contract and relational norms. While some scholars (e.g., Macaulay 1963; Macneil 1980) have lamented on the shortcomings of legal contract for governing modern exchange, Rubin (1990) points out that there has been "no decrease in the commercial use of contracts, and no decrease in the length or complexity of the rather formidable documents that circulate in so many industries" (p. 108) (see also Lusch and Brown 1996; Stinchcombe 1985; Vincent-Jones 1989). A key question therefore is: How and under what conditions are contracts useful documents of governance? Drawing on the plural form thesis, we argue the answer lies in the conjunction of legal and social mechanisms of governance. As Hadfield (1990) puts it, "When a contract is embedded within an identifiable relationship, . . . contractual obligations are often modified, supplemented or completely supplanted by the norms of the ongoing relation" (p. 929).

Governance concerns are particularly salient in exchanges characterized by transactional uncertainty and relationship-specific adaptations. These variables define the context in which we study the effects of contracts and relational norms as independent mechanisms of governance, as well as together as a plural form. We first review the theoretical underpinnings of the literature leading to our hypotheses. Next, the article describes the methodology used to empirically test the hypotheses. The article concludes with a discussion of the results, their implications for theory and practice, and suggestions for future research.

BACKGROUND AND CONCEPTS

Uncertainty, when combined with some form of dependence, is a major factor affecting the organization and governance of exchange. As Pfeffer and Salancik (1978) note, "Uncertainty itself is not problematic. Uncertainty is only problematic when it involves an element of critical organizational interdependence" (p. 68). Likewise, in the language of transaction cost theory, "an increase in parametric uncertainty is a matter of little consequence for transactions that are nonspecific" (Williamson 1985:59). In this study, uncertainty and dependence are used to measure the contexts in which exchanges are embedded and to predict the effectiveness of alternative forms of governance. As described below, the former is conceptualized as

transactional uncertainty and the latter as *relationship-specific adaptations*.

Transactional Uncertainty

Uncertainty creates information problems in exchange (Aldrich 1979; Williamson 1985). External uncertainty caused by market dynamism makes it more difficult to predict future contingencies (Aldrich 1979; Child 1972). Internal uncertainty caused by task ambiguity makes it more difficult to specify outcomes and measure performance (Alchian and Demsetz 1972). Given that the setting of this study is supply markets, we define *market dynamism* as the degree of variability in a firm's supply market (Achrol, Reve, and Stern 1983). Market dynamism is the result of factors such as rapidly changing technology, frequent price changes, or variance in product availability and support services. *Task ambiguity* is defined as the difficulty of obtaining or understanding information regarding a supplier's tasks or functions (cf. Anderson 1985; Williamson 1985). This includes, for example, ambiguity associated with evaluating a supplier's product or service offerings, determining product and service standards, and rendering objective assessments of other tasks or functions.
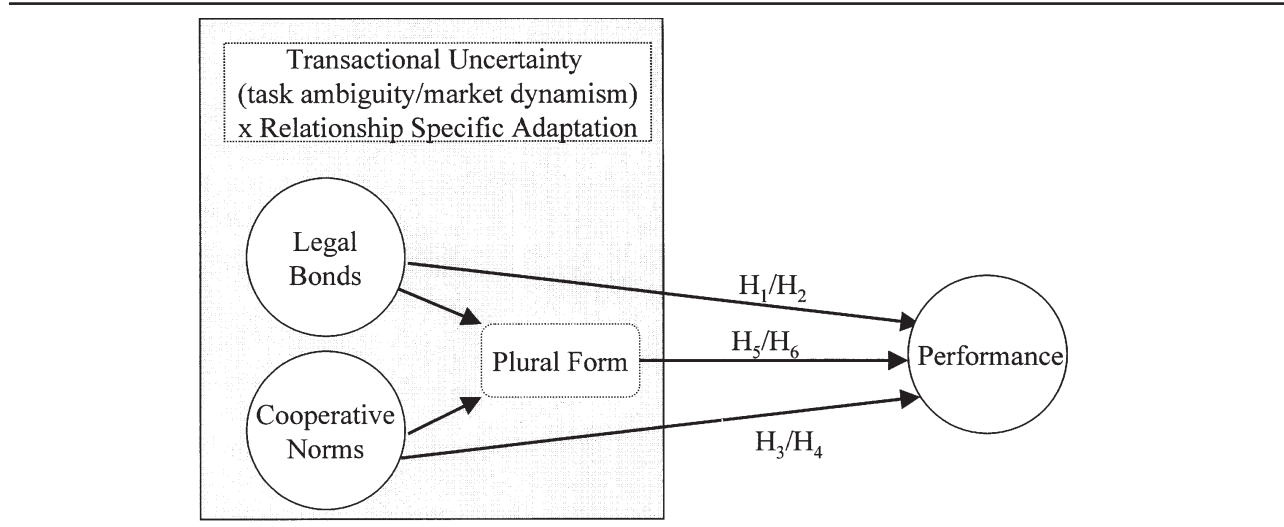
Relationship-Specific Adaptations

Relationship-specific adaptations are defined as investments made to modify processes, product technologies, or procedures to the specific needs and/or capabilities of an exchange partner (Hallen, Johanson, and Seyed-Mohamed 1991). For example, a firm may develop inventory practices to match that of a partner (such as a just-in-time system), redesign a product around a supplier's proprietary component, or invest in specific comarketing programs. Adapting to an exchange partner's unique needs and operations creates a dependency relationship and builds switching costs, since the adaptations have little value outside the relationship (Barney and Ouchi 1986). Governance concerns result because one firm faces the risk of expropriation of the rents from such adaptations by self-interested exchange partners (Rubin 1990).

Transactional Uncertainty and Relationship-Specific Adaptations

According to resource dependence and transaction cost theory, governance concerns are heightened when dependence is accompanied with uncertainty. Our study focuses on two sources of uncertainty, and thus it has two contextual conditions: (1) *market dynamism* combined with *relationship-specific adaptations* and (2) *task ambiguity* combined with *relationship-specific adaptations*.

FIGURE 1
Conceptual Model

Market dynamism and relationship-specific adaptations combine to create governance concerns because market dynamism frustrates the prediction of future contingencies, and relationship-specific adaptations increase switching costs, making it difficult to replace an exchange partner. Absent appropriate safeguards, the partner can demand concessions or engage in costly haggling over future transactional contingencies. Task ambiguity poses similar governance concerns because it causes problems in planning, specification, and measurement/evaluation of behavior and performance. These concerns can be greatly magnified when combined with the risks of expropriation associated with relationship-specific adaptations, unless appropriate safeguards are present.

Performance

A strong test of theoretical predictions for governance mechanisms should include their effect on performance. This study focuses on buyer-supplier relationships, with purchasing professionals reporting on their exchange relationships with a supplier. The literature and informant interviews suggested that four aspects of supplier performance are of concern under conditions of uncertainty and dependence—price or value received, delivery performance, product quality, and after-sale service and technical support (cf. Lehmann and O'Shaugnessy 1974; Wilson 1994).

HYPOTHESES

The basic presumption is that the effects of governance on performance are contingent on the characteristics of the

exchange (e.g., Noordewier, John, and Nevin 1990). Figure 1 provides a conceptual model that overviews the research and hypotheses we subsequently develop. We propose that the effects of contracts and relational norms on performance are moderated by the level of transactional uncertainty combined with relationship-specific adaptation. We study the independent and joint (plural form) effects on performance of each of these governance modes under different transactional conditions. We argue that these two modes of governance offer complementary benefits and, under certain conditions, combine to enhance relationship performance.

Legal Contract

In this study we are interested in the extent to which contractual agreements formally incorporate the expectations and obligations of parties in an exchange relationship. We use the term *legal bonds* to refer to the extent to which detailed and binding contractual agreements are used to specify the roles and obligations of the parties. To the extent contracts are characterized in this way, they are less flexible and therefore more constrained in their adaptive properties. Highly detailed contracts are also less likely to possess the kinds of general safeguards that are more effective in thwarting self-interest-seeking behavior under circumstances of ambiguity.

Various perspectives on the nature of contracts as a mechanism of governance may be found in the literature (cf. Macneil 1980; Williamson 1985). According to the original transaction cost framework (Williamson 1985), formal contingent claims contracts (i.e., classical contracts) are inefficient mechanisms of governance in the face of uncertainty because organizations are bounded in their

rationality and find it impossible to contemplate all possible future contingencies. For exchanges involving high levels of idiosyncratic investments and characterized by uncertainty, internal organization or hierarchy is predicted to be a more efficient form of governance than the market.

However, neoclassical contract law argues that contracts can provide useful governance in exchange relationships even in the face of uncertainty and risk. This tradition of contract law is marked by doctrine and rules that attempt to overcome the difficulties posed by the classical tradition's emphasis on discreteness and "presentation" of exchange (Macneil 1980). The new doctrines enable parties to respond to unforeseen contingencies by making adjustments to ongoing exchange and ensuring continuity in their relationships. For example, concepts such as "good faith" and "reasonable commercial standards of fair dealing in the trade" are recognized under the *Uniform Commercial Code* (UCC) (1978) as general provisions for contracting behavior that also help to ensure continuity in exchange relationships. Similarly, "gap filler" provisions of the UCC rely on "prior dealings" between parties and "customary practices" across an industry or trading area for completing contract terms intentionally left open or omitted, thus allowing for adjustments to contingencies.

However, "neoclassical contracts are not indefinitely elastic" (Williamson 1991:273), and many scholars remain skeptical of how effective even the most carefully crafted contracts can be (Macneil 1980; Williamson 1985, 1991). These scholars argue that the scope for drafting rules in contracts to address changing or ambiguous conditions, or the ability to rely on general legal safeguards for controlling commercial conduct, is limited by both practicality and the law itself.

Drawing on these views, we argue that when a transaction involves relationship-specific adaptations and is (1) subject to dynamic forces and future contingencies that cannot be foreseen or (2) involves ambiguous circumstances where tasks are ill-defined and prone to exploitation, the difficulty of writing, monitoring, and enforcing contracts is increased and their overall governance effectiveness weakened. In each case, efforts to govern the relationship on the basis of detailed and formal contracts—without the benefit of some additional apparatuses—are not likely to enhance performance. We predict the following:

Hypothesis 1: When an exchange involves relationship-specific adaptations and is characterized by a high level of transactional uncertainty, increases in the specificity and detail of contractual agreements (i.e., legal bonds) alone will not lead to enhanced performance on the part of an exchange partner.

Alternatively, for transactions involving relationship-specific adaptations and subject to stable and less ambiguous circumstances, participants can more readily visualize potential contingencies and devise appropriate safeguards. Expectations and requirements can be more clearly specified, lessening the need for modifications or general safeguards. A governance structure relying on the specific details and terms of a formal contract is likely to provide adequate referents and safeguards for high-performance governance—even in the absence of other governance apparatuses. We therefore predict the following:

Hypothesis 2: When an exchange involves few relationship-specific adaptations and is characterized by a low level of transactional uncertainty, increases in the specificity and detail of contractual agreements (i.e., legal bonds) will lead to enhanced performance on the part of an exchange partner.

Social Norms

Social or relational norms are defined generally in the literature as shared expectations regarding behavior (Axelrod 1986; Bendor and Mookherjee 1990; Gibbs 1981). The norms reflect expectations about attitudes and behaviors parties have in working cooperatively together to achieve mutual and individual goals. The spirit of such sentiments is captured in some 28 overlapping types of relational contracting norms suggested by Macneil (1980). These can be reduced to a core set of five:

Flexibility. The attitude among parties that an agreement is but a starting point to be modified as the market, the exchange relationship, and the fortunes of the parties evolve.

Solidarity. The extent to which parties believe that success comes from working cooperatively together versus competing against one another. It dictates that parties stand by one another in the face of adversity and the ups and downs of marketplace competition.

Mutuality. The attitude that each party's success is a function of everyone's success and that one cannot prosper at the expense of one's partner. It expresses the sentiment of joint responsibility.

Harmonization of conflict. The extent to which a spirit of mutual accommodation toward cooperative ends exists.

Restraint in the use of power. Forbearance from taking advantage of one's bargaining position in an exchange. It reflects the view that the use of power not only exacerbates conflict over time but undermines mutuality and solidarity, opening the door to opportunism.

Together, these *cooperative norms* define relational properties that are important in affecting adaptations to dynamic market conditions and safeguarding the continuity of exchanges subject to task ambiguity.

Norms represent important social and organizational vehicles of control in exchange where goals are ill-defined or involve open-ended performance. They provide a general frame of reference, order, and standards against which to guide and assess appropriate behavior in uncertain and ambiguous situations. In such situations contracts are often incomplete, and legal remedies can undermine relationship continuity. In contrast, norms motivate performance through focusing attention on the shared values of the partners to safeguard and rely on peer pressure and social sanctions to mitigate the risk of shirking and opportunistic expropriation. Because they involve expectations rather than rigid requirements of behavior, they create a cooperative as opposed to a confrontational environment for negotiating adaptations, thus promoting continuity in exchange.

Of course, the governance capabilities of norms are not unequivocal. To be effective, they require the acceptance and commitment of both parties and usually the consensus of the larger social network in which the exchange is embedded. Social networks take time to develop and can involve inefficiencies due to significant slack resources often incorporated to buffer against unexpected contingencies. Finally, the fact that norms are based on general expectations rather than specific rules and obligations can create role ambiguity and ineffective coordination in stable exchange environments (Weitz and Jap 1995).

It follows that governance via norms may not be an ideal solution in every circumstance. Empirical tests by Noordewier et al. (1990) suggest that relational norms may be important behavioral frameworks only in the face of uncertainty. The authors postulate that increasing the relational aspects of governance structures serves to enhance the adaptive capabilities of the structure. Since problems of maladaptation are especially severe in uncertain (dynamic) markets, the authors contend that enhancing the adaptive abilities of a governance structure positively affects performance in such environments, but not necessarily in others (e.g., more certain environments). The same logic can apply to uncertainty arising from task ambiguity. Thus, increasing the relational content of a governance structure is likely to result in positive performance implications in uncertain environments, but not in more certain environments:

Hypothesis 3: When an exchange involves relationship-specific adaptations and is characterized by a high level of transactional uncertainty, increases in the relational content (i.e., cooperative norms) of the governance structure will lead to enhanced performance on the part of an exchange partner.

Hypothesis 4: When an exchange involves few relationship-specific adaptations and is characterized by a low level of transactional uncertainty, in-

creases in the relational content (i.e., cooperative norms) of the governance structure will not necessarily lead to enhanced performance on the part of an exchange partner.

Plural Form

The plural form thesis contends that exchange is best understood as embedded in a complex matrix of economic, social, and political structures and that the governance of exchange relations more often relies on combinations of market, social, or authority-based mechanisms than on any one category exclusively (Bradach and Eccles 1989).[1] While the plural form thesis is that the various mechanisms in fact work together to reinforce or complement one another in some way, little attention has focused on exactly how these mechanisms actually complement one another. For example, the question can be asked, if exchanging partners share a highly developed social structure, what good is an elaborate contract or any contract at all?

First, contracts are important because they help flush out unspoken assumptions and create a genuine meeting of the minds at the outset of the relationship (Smitka 1994). Failure to work through the pros and cons; definition of domains; commitment of resources; and the division of functions, responsibilities, and gains/losses can leave parties with implicit assumptions and divergent expectations. The process of articulating the contract can clarify the "whys" and "why-nots" of the relationship, helping to establish a realistic basis for the development of shared expectations, that is, norms.

Second, contracts are important because governance via social norms is not without its limitations. Because norms are not formally codified, ambiguous expectations and misunderstandings can arise undermining coordination (Weitz and Jap 1995) and even resulting in opportunism. Norms also require a history of interaction and reinforcement for their development (Gundlach 1994), and in the absence of a solid foundation this interaction can just as easily head toward conflict, suspicion, and self-interest as it can to cooperation, trust, and mutuality. Finally, norms rely on reputational capital and the potential for long-term gains as the means for motivating compliance. Thus, a carefully negotiated contract can serve as an important foundation for, and complement to, social mechanisms of governance.

A second question can be asked about the reverse relationship; that is, how exactly do norms work with contracts to govern an exchange relationship? Even economists such as Williamson (1993) who are skeptical of the role of social mechanisms for governing exchange recognize that pure contracting fails to provide effective governance in exchanges characterized by a high degree of asset

specialization and uncertainty. One solution specified by these scholars (other than hierarchy) is obligational contracting *coupled* with bilateral governance incorporating "some way for declaring admissible dimensions for adjustment such that flexibility is provided under terms in which both parties have confidence" (Williamson 1979:251). Williamson also notes, "The spirit within which adaptations are effected is equally important" (p. 251).

The basis for effecting these adjustments and spirit of such sentiments is captured in the various relational contracting norms suggested by Macneil (1980) and, in particular, the core norms of flexibility, harmonization of conflict, restraint in the use of power, solidarity, and mutuality.

Together, these cooperative norms provide the working environment in and by which contracts may be administered and adaptations effected in the face of market dynamism and task ambiguity. Contracts serve the important functions of structuring expectations and obligations and, in the event required, as an enforcement mechanism, while norms provide the flexible apparatus and protection against opportunism needed for efficient adaptation in uncertain environments. We, therefore predict the following:

> *Hypothesis 5:* When an exchange involves relationship-specific adaptations and is characterized by a high level of transactional uncertainty, increases in the relational content (i.e., cooperative norms) of a governance structure containing contractual agreements (i.e., legal bonds) will lead to enhanced performance on the part of an exchange partner.

In contrast, where transactional uncertainty is low, increasing the relational content of a governance structure containing contractual agreements may be redundant, adding few additional performance-enhancing benefits (cf. Noordewier et al. 1990). Under more certain conditions exchange partners are able to project their future needs and identify exchange requirements with a higher degree of accuracy. Terms and obligations can be clearly specified, and there is little need for significant modifications, thus lowering the prospect for conflict and self-interest seeking. Governance via contracts may be sufficient to obtain desired performance and outcomes. Thus, we expect the performance advantages of plural form governance to obtain mainly under conditions of high transactional uncertainty:

> *Hypothesis 6:* When an exchange involves few relationship-specific adaptations and is characterized by a low level of transactional uncertainty, increases in the relational content (i.e., cooperative relational norms) of a governance structure containing contractual agreements (i.e., legal bonds) will not necessarily lead to enhanced performance on the part of an exchange partner.

METHOD

Sample and Data Collection

Data were collected from a sample of buying organizations reporting on their relationship with a particular supplier. The sample of respondents was drawn from across a variety of business-to-business exchange relationships to minimize the effect of industry-specific practices and to enhance the generalizability of the results.

Sample frame and key informants. Preliminary interviews ascertained that purchasing professionals met the criteria of being knowledgeable about the phenomenon under study (Campbell 1955). Typically, purchasing professionals have responsibility for understanding the supply market, negotiating and completing contractual agreements with suppliers, managing supplier relationships, and monitoring supplier performance. The sampling frame comprised 2,014 members of the National Association of Purchasing Management. Its members are purchasing professionals engaged in procurement for organizations that have a primary business in manufacturing, distribution, services, and government. The questionnaire directed these informants to select and report on a particular supplier relationship. Informants were asked to report on the "main supplier your firm chose for the last purchase" with which they were involved. This procedure avoided potential selection bias and assured respondent familiarity with the supplier.

In all, 443 completed questionnaires were received for a response rate of 23% (77 mailings were returned due to incorrect addresses or because the addressee no longer had contact with suppliers). Seventeen responses were eliminated due to excessive missing data on the theoretical constructs. The quality of informants was evaluated by a series of questionnaire items that assessed each informant's confidence in his or her ability to respond to the questionnaire items, level of involvement with the supplier, and knowledge of his or her firm's dealings with the supplier. Two respondents were eliminated after indicating low levels of knowledge of the supplier. The remaining responses to the informant qualification items were uniformly high, as suggested by mean ratings of 6.5, 6.5, and 6.4 on a 7-point scale. Thus, 424 qualified responses were obtained and subsequently used for assessing nonresponse bias and for the measure analysis.

Nonresponse bias. Potential nonresponse bias was assessed using three separate subgroup analyses.[2] First, during the measure development pretest, responses were compared between two different methods of questionnaire distribution. Second, one pretest group was compared with the final sample. Finally, early and late respondents in the final sample were compared. No significant differ-

TABLE 1
Scales, Items, Adjusted Item-to-Total Correlations, and Item Reliabilities for Measures[a]

Scale and Items (response cues)	Coefficient Alpha	Adjusted Item-to-Total Correlation	Item Reliability[b]
Supply market dynamism (minor changes—major changes)	.77		
Pricing		.40	.18
Product features and specs		.60	.51
Vendor support services		.61	.61
Technology used by suppliers		.56	.51
Product availability		.51	.38
Task ambiguity (strongly agree—strongly disagree)	.66		
This type of product is difficult to fully evaluate.		.45	.37
We can be certain that this type of product always meets our needs. (R)		.42	.38
Some aspects of this supplier's performance are difficult to evaluate objectively.		.38	.20
Evaluating this type of product is straightforward. (R)		.58	.61
Relationship-specific adaptations (not at all—very much)	.82		
Just for this supplier, we changed our product's features.		.58	.59
Just for this supplier, we changed our personnel.		.66	.80
Just for this supplier, we changed our inventory and distribution.		.54	.51
Just for this supplier, we changed our marketing.		.64	.72
Just for this supplier, we changed our capital equipment and tools.		.64	.71
Legal bonds (strongly agree—strongly disagree)	.85		
We have specific, well-detailed agreements with this vendor.		.68	.57
We have formal agreements that detail the obligations of both parties.		.81	.85
We have detailed contractual agreements with this supplier.		.82	.86
Cooperative norms (very inaccurate description—very accurate description)	.81		
We must work together to be successful.		.62	.61
Both sides are concerned about the other's profitability.		.66	.59
Both sides are willing to make cooperative changes.		.73	.75
One party will not take advantage of a strong bargaining position.		.59	.51
We do not mind owing each other favors.		.43	.32
No matter who is at fault, problems are joint responsibilities.		.45	.30
Performance (needs improvement—superior performance)	.85		
Product quality		.62	.53
Delivery performance		.61	.48
Sales, service, and/or technical support		.70	.68
Total value received		.80	.89

NOTE: (R) = reverse-scored items.
a. Fit statistics for confirmatory factor analysis: chi-square with 309 df = 978.74 ($p < .01$); Goodness-of-Fit Index (GFI) = .86; Adjusted Goodness-of-Fit Index (AGFI) = .83; Incremental Fit Index (IFI) = .89; Comparative Fit Index (CFI) = .89.
b. Item reliabilities are the squared multiple correlation of the standardized measurement parameter and reflect variance in the item shared with the latent construct.

ences were found in any of the comparisons and hence it is unlikely that nonresponse bias is a significant concern in this study.

Measures and Measurement Analysis

Measures were developed following standard psychometric scale development procedures (Churchill 1979). Multi-item scales were generated based on the conceptual definitions, review of the literature, and interviews with marketing and purchasing personnel.[3] The scales were refined through a series of pretests. The statistical procedures used included assessment of item and scale reliability, unidimensionality, and convergent and discriminant validity. The psychometric properties of the final measures were assessed by employing confirmatory factor analysis using LISREL VIII as well as traditional methods (i.e., coefficient alpha and adjusted item-to-total correlations). Table 1 reports the measures used in the study. Standard 7-point Likert-type scales were employed using the scale anchors shown in the table.

Measure development. Two pretests were used to develop and refine the wording of scale items. Initially, a pilot study involving 25 purchasing managers (6 of whom participated in extended personal interviews) was conducted. Next, a larger mail pretest employed the responses of 157 purchasing managers for standard psychometric evaluation (and refinement) of scale items. At each stage instructions and the wording of individual items were modified and refined.

Table 1 reports summary statistics for the retained items, including adjusted item-to-total correlation, item

reliability, and measures of coefficient alpha for each scale. The reliabilities of the scales as measured by coefficient alpha are generally within acceptable standards, ranging from .77 (supply market dynamism) to .85 (legal bonds and performance), with the exception of the four-item scale measuring task ambiguity ($\alpha = .66$).

For scale validation, confirmatory factor analysis using structural equation models was employed. For purifying scale measures, both improved fit and the conceptual properties of the measures were assessed. Some marginal items were retained that were important to the conceptual content of the construct and when no alternative item adequately captured that aspect.

Convergent and discriminant validity. Fit statistics for the LISREL confirmatory factor analysis are reported at the bottom of Table 1. Each indicator is statistically significant with parameter estimates ranging from 7 to 20 times as large as the standard errors. Given the relatively large sample size and use of the polychoric correlation matrix, Bollen (1989) suggests the Incremental Fit Index (IFI) and Comparative Fit Index (CFI) provide more consistent evaluation than traditional measures of fit (i.e., chi-square, Goodness-of-Fit Index [GFI], and Adjusted Goodness-of-Fit Index [AGFI]). The large number of indicators (27) tempers all of the fit measures. Considering all the factors, the measurement model fits the data reasonably well and provides evidence of convergent validity for the measures.

Evidence of discriminant validity was assessed through two methods. First, the estimated correlations in the phi matrix were examined to determine if the 95 percent confidence intervals contain correlations less than 1. In addition, nested confirmatory factor models were analyzed with correlation parameters constrained to 1.0 (Anderson and Gerbing 1988). The results provide evidence of discriminant validity between all pairs of constructs.

Control variables. Including controls in a field study strengthens the test of the proposed relationships by accounting for competing explanations. Previous research on buyer-supplier relationships in business markets suggests that the importance and age of a relationship may influence its management and performance. Effective performance is more critical in important relationships and the age of a relationship is likely to influence performance, with more enduring relationships reflecting higher performing participants.

Single-item measures were employed as indicators of each of four control variables (three for importance and one for age). Respondents were asked to report their annual dollar purchase volume for the main product purchased from the supplier. The number of alternative suppliers available was measured by asking respondents to estimate the number "of other suppliers that could provide substitutes for the main product your firm buys from this vendor." Whether the supply relationship represents a single or multiple source relationship was indicated by a yes/no response to the question, "Does your firm buy the product this firm supplies from other suppliers?" The age of the relationship was self-reported by respondents. To attenuate skewness in the data, a log transformation was performed on responses to the first two questions. Due to missing data on the control variables for 30 cases, 394 responses were employed for analysis of the hypotheses.

Analysis Procedures

The two exogenous conditions that were hypothesized to give rise to governance concerns were defined as relationship-specific adaptations in combination with two sources of transactional uncertainty, market dynamism and task ambiguity. Therefore, multiplicative scales were formed to reflect these two conditions: (1) Market Dynamism × Relationship-Specific Adaptations and (2) Task Ambiguity × Relationship-Specific Adaptations. For testing the hypotheses, the sample was partitioned into high and low groups for each condition employing median splits on the two multiplicative transactional uncertainty scales.[4] Following this, equation 1 was used to estimate four regression models—one for each level of the two sources of transactional uncertainty.

$$Y_{jk} = \alpha_{jk} + \beta_{jk1}C_{jk2} + \beta_{jk2}N_{jk3} + \beta_{jk3}C_{jk2}N_{jk3} + \beta_{jk4}X_{jk4} \quad (1)$$
$$+ \beta_{jk5}X_{jk5} + \beta_{jk6}X_{jk6} + \beta_{jk7}X_{jk7} + \varepsilon_{jk},$$

where

Y_{jk}	=	supplier role performance, where subscript j = exogenous condition (Market Dynamism × Relationship-Specific Adaptations, Task Ambiguity × Relationship-Specific Adaptations) and k = exogenous condition level (high/low);
C_{jk2}	=	legal bonds;
N_{jk3}	=	cooperative relational norms;
$C_{jk2}N_{jk3}$	=	plural form governance (governance structures containing legal bonds and cooperative relational norms); and
X_{jk4-7}	=	control variables, where 4 = annual purchase volume, 5 = number of alternative suppliers, 6 = single/multiple sourcing, and 7 = age of relationship.

Further, j = 1 when exogenous condition is due to market dynamism and relationship-specific adaptations, and j = 2 when exogenous condition is due to task ambiguity and relationship-specific adaptations. In addition, k = 1 for high exogenous condition and k = 2 for low exogenous condition.

TABLE 2
Performance Implications of Legal Bonds and Cooperative Norms at High and Low Levels
of Transactional Uncertainty and Relationship-Specific Adaptations

	Source of Transactional Uncertainty and Relationship-Specific Adaptations			
	Market Dynamism ◇ Supplier Adaptation		*Task Ambiguity ◇ Supplier Adaptation*	
	High	*Low*	*High*	*Low*
Theoretical variables				
Legal bonds	$\beta_{111} = -.05$	$\beta_{121} = .15^{**}$	$\beta_{211} = -.03$	$\beta_{221} = .13^{**}$
Cooperative norms	$\beta_{112} = .61^{***}$	$\beta_{122} = .45^{***}$	$\beta_{212} = .65^{***}$	$\beta_{222} = .43^{***}$
Legal bonds × cooperative norms	$\beta_{113} = .11^{**}$	$\beta_{123} = .02$	$\beta_{213} = .13^{**}$	$\beta_{223} = .04$
Control variables				
Annual purchase \$[a]	$\beta_{114} = -.04$	$\beta_{124} = -.08$	$\beta_{214} = -.01$	$\beta_{224} = -.06$
Number of alternative suppliers[a]	$\beta_{115} = .11^{**}$	$\beta_{125} = .11^{*}$	$\beta_{215} = .17^{*}$	$\beta_{225} = .03$
Single/multiple sourcing	$\beta_{116} = .03$	$\beta_{126} = .13^{**}$	$\beta_{216} = .01$	$\beta_{226} = .07^{**}$
Age of relationship	$\beta_{117} = .08^{*}$	$\beta_{127} = .09^{*}$	$\beta_{217} = .03$	$\beta_{227} = .10^{*}$
F	18.86***	8.23***	22.47***	6.74***
Adjusted R^2	.38	.21	.43	.17
n	201	193	199	195

NOTE: Since all hypotheses were directional, *p* values reflect one-tailed tests. The table reports standardized parameter estimates.
a. Data for these variables were log-transformed to attenuate skewness.
*$p < .10$. **$p < .05$. ***$p < .01$.

The model of equation 1 was fitted to the data representing each of four conditions defined by the subscripts jk. The interaction terms for each model (β_{jk3}) specifically test the plural form thesis proposed in Hypothesis 5 and Hypothesis 6. The so-called main effect terms β_{jk1} and β_{jk2} for testing Hypotheses 1-4 are, however, more complex in interpretation as explained in the appendix. Together the four models permit a rigorous test of the underlying theory. First, the explanations are examined for the two exogenous conditions thought to give rise to governance concerns, thus replicating the hypothesis tests across different sources of transactional uncertainty. Second, support for the hypotheses across these two different conditions enhances the generalizability and validity of the theory underlying the model. Finally, because the predictions for the high and low conditions are substantively different (i.e., they are not mere linear differences), support for the predictions provides a robust test of the underlying logic.

RESULTS AND DISCUSSION

The results of the analyses are reported in Table 2. *F* tests for each of the four models estimated are significant ($p < .01$). The theoretical and control variables in the models explain from 17 to 43 percent of the variance in supplier performance. More variance is explained in the high Transactional Uncertainty × High Adaptation conditions, perhaps reflecting the more influential role of these

governance mechanisms under such conditions. Results for the tested hypotheses are discussed in this section in relation to the analytical models described earlier.

Legal Bonds

Hypothesis 1 hypothesized that when an exchange involves relationship-specific adaptations and a high degree of transactional uncertainty (due to market dynamism or task ambiguity), increasing the specificity and detail of contractual agreements (i.e., legal bonds) alone does not enhance performance. Thus, Hypothesis 1 predicted $\beta_{j11} \leq 0$. The results reported in Table 2 support Hypothesis 1 for both conditions of transactional uncertainty ($\beta_{111} = -.05$, $p = .41$ and $\beta_{211} = -.03$, $p = .65$). Both coefficients are negative and neither is significant. The presence of a significant interaction involving legal bonds and cooperative norms ($\beta_{113} = .11$, $p < .05$; $\beta_{213} = .13$, $p < .05$) indicates the effect (on performance) of governance structures relying on legal bonds is conditional on additional governance apparatuses; that is, the plural form thesis. This conditional effect is discussed under the plural form heading following discussion of the main effects of cooperative norms.

In contrast to Hypothesis 1, Hypothesis 2 predicted that for exchanges involving few relationship-specific adaptations and a low degree of transactional uncertainty (market dynamism or task ambiguity), specific and detailed contractual agreements enhance the performance of partners. Thus, Hypothesis 2 predicted $\beta_{j21} > 0$. The results in Table 2

provide support for the predicted relationship. Both the relevant coefficients are greater than zero and significant with $\beta_{121} = .15$ ($p < .05$) and $\beta_{221} = .13$ ($p < .05$). No significant interaction is present ($\beta_{123} = .02$, $p > .10$; $\beta_{223} = .04$, $p > .10$).

Cooperative Norms

Hypothesis 3 hypothesized that in exchanges involving relationship-specific adaptations and characterized by high transactional uncertainty due to either market dynamism or task ambiguity, increasing the relational content of the governance structure (i.e., cooperative norms) enhances supplier performance (e.g., $\beta_{j12} > 0$). The results reported in Table 2 provide support for this hypothesis across both conditions of transactional uncertainty: $\beta_{112} = .61$ ($p < .01$) and $\beta_{212} = .65$ ($p < .01$). In each case, the coefficients are positive and significant. The presence of a significant interaction term for each regression ($\beta_{113} = .11$, $p < .05$; $\beta_{213} = .13$, $p < .05$), however, indicates that the relationships are conditional on the level of other governance apparatuses, for example, legal bonds operating in the relationship. This conditional effect is explored fully in the discussion of plural form.

Hypothesis 4 hypothesized that increasing the relational content of a governance structure for exchanges involving few relationship-specific adaptations and low transactional uncertainty (market dynamism or task ambiguity) is not likely to result in performance-enhancing benefits ($\beta_{j22} \leq 0$). Our results reject this hypothesis. Both of the coefficients are positive and significant ($\beta_{122} = .45$, $p < .01$ and $\beta_{222} = .43$, $p < .01$). No significant interaction is present ($\beta_{123} = .02$, $p > .10$; $\beta_{223} = .04$, $p > .10$).

The results of Hypothesis 3 and Hypothesis 4 suggest that increasing the relational content of a governance structure alone (absent the effects of legal bonds) results in enhanced performance for relationships involving both high levels of transactional uncertainty as well as low levels of transactional uncertainty. It seems that while cooperative norms may not be costless to develop and maintain, they focus attention on the shared values of the partners and the well-being of the relationship as a whole. Thus, overall performance is enhanced regardless of the level of transactional uncertainty.

These findings partly contradict the results reported by Noordewier et al. (1990), who found relational norms improved performance only under high-uncertainty conditions. One explanation for the differences between the two studies may be the nature of performance and relational governance measures studied in each. Noordewier et al. (1990) focus on the efficiency aspects of performance and the adaptive capabilities of relational norms. In the current study, performance is defined to include both efficiency and effectiveness dimensions of performance. Likewise, cooperative norms are operationalized more comprehen-

sively to cover the construct's essential domain, including not only adaptive characteristics (flexibility) but also safeguarding ones (mutuality), and cooperative norms such as restraint in the use of power and harmonization of conflict. In this respect, our results suggest that explanations that focus exclusively on the adaptive properties of relational norms and their effect on performance efficiency may underestimate the overall effectiveness of cooperative norms of governance.

Plural Form Governance

High transactional uncertainty. It is argued in this article that specific and detailed contracts are an inadequate means of governance in the face of transactional uncertainty sans other safeguards and mechanisms for adaptation. Thus, Hypothesis 5 predicted that exchanges characterized by high levels of transactional uncertainty and governed via detailed contracting combined with greater relational content will deliver enhanced performance by exchange partners. As reported in Table 2, this hypothesis is supported for both sources of transactional uncertainty ($\beta_{113} = .11$, $p < .05$ and $\beta_{213} = .13$, $p < .05$).

An examination of the conditional effects of the interactions provides further insight into the nature of plural form governance. Figures 2 and 3 graphically illustrate the relationship between contractual agreements (i.e., legal bonds) and performance at three levels of cooperative relational norms (Aiken and West 1991; Cohen and Cohen 1983). The bottom line in Figure 2 shows the effect of contractual governance on performance when norms are low (for the condition High Relationship-Specific Adaptations × High Market Dynamism). The slope of the line ($t = -2.03$, $p < .05$) indicates that when the relational content of the governance structure is low, the use of contractual agreements is actually detrimental to supplier performance. On the other hand, the top line suggests that when the relational content of the structure is high, increased use of contractual agreements enhances supplier performance ($t = 1.27$, $p < .15$).

The results are replicated when the source of uncertainty is task ambiguity. The bottom line in Figure 3 shows that when the relational content of the governance structure is low, the use of contractual agreements detracts from supplier performance ($t = -2.22$, $p < .05$). Alternatively, as demonstrated by the top line, when the relational content is high, increased use of contractual agreements results in higher levels of supplier performance ($t = 1.68$, $p < .05$).

These results provide persuasive support for the plural form argument. While high transactional uncertainty makes writing and administering contracts difficult, detailed contracts become useful mechanisms of governance provided they are embedded in a highly developed social relationship. The processes of negotiating detailed contracts flushes out hidden assumptions and helps parties
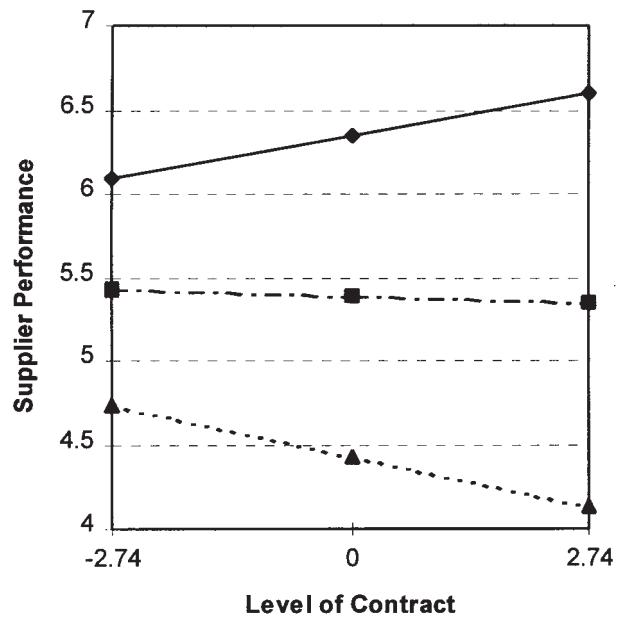
FIGURE 2
Conditional Effects of Contracts on
Performance at Three Levels of Cooperative
Norms (high market dynamism condition)
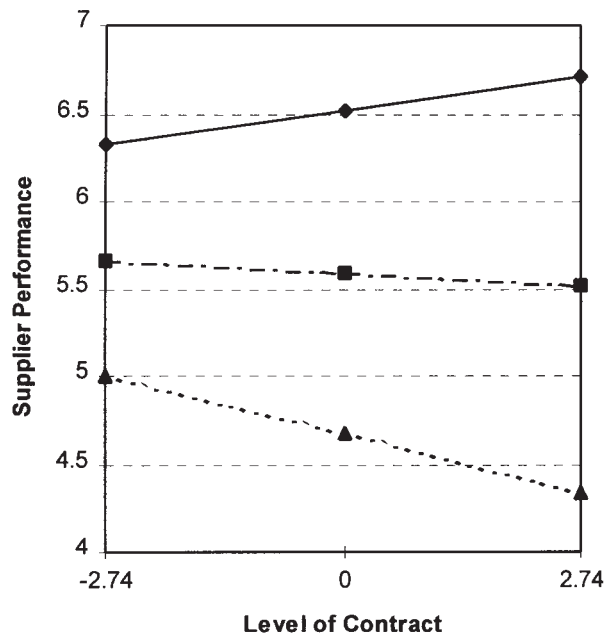
━━♦━━ high norms (+ 1.5 s.d.)[a]

–·■·– moderate norms (mean)

···▲··· low norms (+ 1.5 s.d.)[b]

[a] p < .15
[b] p < .05

FIGURE 3
Conditional Effects of Contracts on
Performance at Three Levels of Cooperative
Norms (high task ambiguity condition)

━━♦━━ high norms (+ 1.5 s.d.)[b]

–·■·– moderate norms (mean)

···▲··· low norms (+ 1.5 s.d.)[b]

[b] p < .05

to better understand each other's expectations and obligations. The contract itself serves as the broad structural framework for the relationship and the basis of negotiating modifications and affecting adaptations when the need arises. Cooperative relational norms, on the other hand, provide the complementary apparatus for dealing with unforeseen contingencies. They provide the flexibility, mutuality of interests, and harmony necessary for safeguarding the parties' interests when adapting to changing environments or when the tasks themselves are ambiguous.

The results also show that performance suffers when detailed contracts are used without a well-developed social relationship to govern exchanges involving high transactional uncertainty. Contracts attempt to "presentiate"

an uncertain future and are necessarily incomplete in this sense. Because parties feel their interests are not safeguarded, they are likely to price their risks into the exchange, hurting potential efficiency. As conditions change or become ambiguous, the absence of normative guidelines leaves parties to resort to strict "letter of the agreement"–type solutions. Conflicting interpretations and suspicions result regarding one another's motivations and bargaining position. Performance suffers, coordination suffers, and the costs of governing the exchange increase significantly. Ultimate remedies such as arbitration or litigation undermine the stability and longevity of the exchange.

Low transactional uncertainty. When environments are more certain or tasks involve little ambiguity and few

relationship-specific adaptations, future contingencies can be projected with greater accuracy and addressed more precisely in a written agreement. Under such conditions, there is little need to modify contracts or rely on other safeguards. Thus, Hypothesis 6 predicted that for exchanges involving low levels of transactional uncertainty, coupling contractual with cooperative norms governance does not lead to enhanced performance, that is, $\beta_{j23} \leq 0$.

The results from Table 2 support this prediction. For both sources of transactional uncertainty, the interaction parameters are not significantly different from zero ($\beta_{123} = .02$, $p = .82$ and $\beta_{223} = .04$, $p = .58$). Hence, the plural form combination of contracts and cooperative norms appears to be redundant, providing few if any governance synergies vis-à-vis supplier performance. The results of our tests of the plural form hypotheses are noteworthy. Not only are the coefficients for the interaction effects large and significant, but additional interpretation reveals the complex differences hypothesized between the main and interactive effects, and between the high and low transactional-uncertainty conditions. Moreover, these results are replicated for two different sources of uncertainty (dynamism and task ambiguity). Results of this kind provide robust and generalizable support for the theory underlying our model.

SUMMARY AND IMPLICATIONS

To summarize the findings of this study, contracts and social norms were both found to be effective in enhancing supplier performance individually and in combination. Although increasing contractual specificity and detail is ineffective in promoting supplier performance in exchanges involving a high level of transactional uncertainty, when transactional uncertainty is low, elaborate contracts yield an effective means of governance resulting in enhanced supplier performance. Cooperative norms have a positive effect on performance whether transactional environments are high in uncertainty or low. It seems because cooperative norms emphasize the shared values and mutual well-being of the parties, performance is enhanced regardless of the level of transactional uncertainty and regardless of the cost of developing and maintaining the norms.

The key contribution of the study has to do with the interaction of contracts and norms through plural form governance. In conditions of high transactional uncertainty, performance deteriorates if detailed contracts are used to govern without the support of cooperative norms. On the other hand, when cooperative norms are well developed, the use of contracts enhances supplier performance. Contractual agreements help to ensure the continuity of exchange through clarifying the obligations and expectations of the parties. They also provide the formal structure

within which adaptations can be made in response to unforeseen contingencies. When transactional uncertainty is low, contingencies may be more easily anticipated and performance requirements clearly specified with contracts written to cover both. Thus, cooperative norms are redundant and plural form governance does not enhance performance.

Of course, the findings reported in the study should be interpreted in the context of the practical constraints of the research setting and procedures employed. While the cross section of industries represented in the sample enhances the robustness of the results, our study is limited to buyer-supplier relationships as viewed from the buyer's perspective. Furthermore, the response rate suggests that caution should be used before generalizing to other populations. In addition, while considerable effort was expended to develop reliable and valid measures of the variables of interest, the results are the product of the measures employed. For example, our measure of contract emphasized the degree of specificity, formality, and detail contained in supplier agreements. No effort was made to capture the degree of enforcement of these contracts. Future research may seek to directly measure the nature and use of different dimensions of the contract.

The results of the control variables are also instructive for future research. For example, relatively little research has explored the use of multiple versus single sourcing as a governance mode. Our results indicate that the use of multiple sourcing enhances the performance of a supplier in conditions of low uncertainty/adaptation, but not when uncertainty and adaptation are high. Future research could further explore this and other modes of governance.

Overall, the results of our study have important theoretical and practical implications. Theoretically, they support the plural form argument that governance mechanisms such as contracts and social norms should be seen as building blocks of complex structures of governance and not as either/or alternatives. This study looked at only two, but the results encourage conceptual expansion of the domain to include other governance apparatuses such as authority, trust, ethics, incentives, commitment, reputation, reciprocity, monitoring, markets, dependence, power, and so forth. The important theoretical and empirical question is: Which of these provide synergies in governance, and under what circumstances? Some combinations act as complements and are likely to enhance exchange outcomes. Others are redundant and add needlessly to the costs of governance. Still others may act at cross-purposes and actually hurt performance.

Another area of future development is in terms of dependent effects. Besides the performance dimensions of efficiency and effectiveness, how do various combinations of governance mechanisms affect critical processes such as learning and innovation? Such questions are going to be

especially important in the emerging era of knowledge organizations and networks.

From a practical viewpoint, our study offers some important implications in how contracts should be negotiated and employed. First, if the lesson from contracting is that it clarifies assumptions and expectations, and should be used to broadly structure the relationship rather than as an instrument of implementation, then the spirit in which negotiations are conducted becomes crucial. Rather than seek to see how many favorable terms one can extract at the bargaining table, the negotiations should be oriented to learning about one another and encouraging one another to spell out one's assumptions and expectations more fully. Likewise, in the implementation stage, the terms of the contract should not be held over a partner's head as a threat but as a goal that the parties together want to achieve. To achieve certain goals, it may at times be necessary to modify other parts of the contract. Second, detailed contracts seem to be effective means of governance in more certain transactional environments, and there is little or no synergy with cooperative norms. Thus, the time, effort, and expense of building an elaborate social relationship may not be a productive investment in such conditions. However, the data also show that absent contracts, cooperative norms are an effective means of governance in both certain and uncertain transactional environments. Thus, relationships may be a worthwhile investment in any case, and the benefits will be greater when the environment turns uncertain as it often does. In that event, the synergy between contracts and cooperative norms promises to pay handsome dividends in terms of performance.

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APPENDIX

Analyzing multiple regression models with significant higher-order terms (such as an interaction effect) requires special procedures (Aiken and West 1991; Cohen and Cohen 1983). This is because an interaction between two predictors indicates, by definition, that the regression of the criterion on any of the predictors varies as a function of the value of the other predictor.

Consider the general case of $Y = a + b_1 Z_1 + b_2 Z_2 + b_3 Z_1 Z_2$. *Absent* an interaction, the slope (b_1) of the regression of Y on Z_1 is constant across the range of Z_2, and likewise for the regression of Y on Z_2, b_2 is constant for all values of Z_1. But when the $Z_1 Z_2$ in-

teraction is present (and b_3 is significant), the so-called main effects of the predictors become *conditional* effects and the coefficients b_1 and b_2 cannot be interpreted without further analysis. With a significant interaction, there are, in fact, a family of regression lines describing the regression of Y on Z_1 for each value of Z_2, and likewise a family for the regression of Y on Z_2 for values of Z_1, which can be expressed as follows:

$$Y = (b_2 Z_2 + a) + (b_1 + b_3 Z_2)Z_1 \qquad (2)$$

$$Y = (b_1 Z_1 + a) + (b_2 + b_3 Z_1)Z_2 \qquad (3)$$

Note that the slope of the regression of Y on X_1, $(b_1 + b_3 Z_2)$, combines the regression coefficient of Y on Z_1 (b_1) with the interaction coefficient (b_3) and is *conditional* on a particular value of Z_2. The interaction coefficient b_3 indicates the amount of change in the slope of the regression of Y on Z_1 for a unit change in Z_2. For evaluating *conditional* effects via equations 2 and 3, Cohen and Cohen (1983) recommend the use of three values corresponding to the mean, and plus and minus 1.5 standard deviation around the mean, for the "other" variable (Z_2 in equation 2 and Z_1 in equation 3).

A potential concern that occurs in multiple regression models containing interaction terms is multicollinearity due to scaling artifacts. When raw scores are employed to form the model, Z_1 and Z_2 will both be highly correlated with their cross product $Z_1 Z_2$. Whereas the estimate of the interaction coefficient b_3 and equations 2 and 3 are unaffected by this condition, the estimates of b_1 and b_2 and their standard errors can be affected (see Aiken and West 1991). To mitigate this potential, Aiken and West recommend centering the data (transforming to deviation scores Z_i-Z-bar), since the covariance between two centered, bivariate normal variables Z_1 and Z_2 and their product $Z_1 Z_2$ is zero.

For the analysis reported in the article, all the relevant data are centered. Likewise, following the procedures suggested by Cohen and Cohen (1983), equations 2 and 3 are employed to test the conditional effects of contracts and norms when an interaction effect is hypothesized, that is, under the high-uncertainty/adaptation conditions.

NOTES

1. Considerable anecdotal evidence has been advanced in support of the plural form thesis. Stinchcombe (1985) documents instances from weapons procurement to North Sea oil refining to franchise relationships in the automobile industry to illustrate the combination of market and authority (i.e., contract)-driven governance. See Abolafia (1984), Eccles (1981), and Mariotti and Cainarea (1986) for examples from the commodity exchange, homebuilders' market, and textile industry.

2. For the first test, information regarding two alternative methods for distributing the questionnaires was obtained at the pretest (measurement development) stage. As one form of distribution, the researchers contacted 45 purchasing professionals by phone and requested their participation in the study, and 34 (76% response) returned completed questionnaires. As a second form of distribution, 362 purchasing professionals were mailed questionnaires (without prenotification) and 123 (34%) responded. To test nonresponse bias, responding groups from the two pretest distribution methods were compared on a number of relevant variables including characteristics of the respondents (e.g., percentage in

managerial positions, involvement with supplier, etc.) and the business relationship (e.g., age of the relationship, number of seller representatives with contact, etc.). No significant differences were found between the groups. As a second test, responses in the final sample were compared with those from the high response rate, phone-prenotified, pretest group—again we found no evidence of differences between the two groups. Finally, early and late respondents in the final sample were compared on the same set of variables used in the previous tests, and no significant differences were observed (Armstrong and Overton 1977).

3. A brief explanation of the cooperative relational norms measure is in order and follows. Macneil discusses some 28 overlapping types of contractual norms that have been operationally reduced by researchers to a core set of three to seven dimensions (cf. Gundlach, Achrol, and Mentzer 1995; Kaufmann and Stern 1988; Noordewier, John, and Nevin 1990; Palay 1985). As discussed in the theory section, five norms are especially important social complements to contracts. The norms of exchange tend to be conceptually overlapping and are not empirically independent (Kaufmann and Dant 1992). Noordewier et al. (1990) talk of a "relational syndrome"—a second-order factor underlying selected norms and other indicators. Kumar, Stern, and Achrol (1992) show that complex constructs can be represented just as effectively in the form of global measures as they can in the form of multidimensional measures. Such an approach has been employed successfully in recent research on relational norms (Gundlach et al. 1995). Therefore, in this study, we use the term *cooperative norms* as a global concept measured by drawing items from the core norms of flexibility, solidarity, mutuality, harmonization of conflict, and restraint in the use of power to capture these closely related expectations regarding exchange behavior.

4. It is important to note that the predicted effects of legal bonds, cooperative norms, and the plural form for low versus high levels of transactional uncertainty are not simple linear extrapolations of one another. For example, increasing contractual complexity has a positive effect on performance under conditions of low transactional uncertainty, but no effect under conditions of high uncertainty. On the other hand, norms have a positive effect on performance under high transactional uncertainty, but no effect under the low condition. And the same is true for the plural form. Such hypotheses cannot be tested by fitting a single regression model to the entire data since the effects at the high and low ends of the exogenous conditions are likely to negate one another. In such circumstances, Sharma, Durand, and Gur-Arie (1981) suggest conducting multiple regression using subgroup analysis (cf. Futrell and Parasuraman 1984). Subgroup analysis also simplifies interpretation of the proposed model, which would otherwise include four-way interaction terms that are more or less uninterpretable given the level of theoretical development in the field (Aiken and West 1991; Cohen and Cohen 1983).

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ABOUT THE AUTHORS

Joseph P. Cannon (Ph.D., University of North Carolina) is an assistant professor of marketing at Colorado State University. His areas of research interest include the effective management of business-to-business buyer-seller relationships in domestic and international markets. His research has appeared in the *Journal of Marketing Research*, the *Journal of Marketing*, the *Academy of Management Review*, the *Journal of Public Policy & Marketing*, and other publications. He is a member of the Editorial Review Board of the *Journal of Marketing*.

Ravi S. Achrol (Ph.D., Northwestern University) is a professor of marketing and global management research professor in the School of Business and Public Administration at George Washington University. Prior to joining George Washington University in 1991, he served for 10 years on the faculty of the University of Notre Dame. His areas of research interests include interorganization theory and marketing strategy. His articles have appeared in the *Journal of Marketing*, the *Journal of Marketing Research*, *Social Science Research*, the *Journal of Business Strategy*, the *Journal of Public Policy and Marketing*, and various other publications. He is a member of the Editorial Review Board of the *Journal of Marketing*.

Gregory T. Gundlach (Ph.D., J.D., University of Tennessee) is an associate professor of marketing in the College of Business Administration at the University of Notre Dame. His areas of research interest include theories of exchange governance, industrial organization, and antitrust policy. His articles have appeared in the *Journal of Marketing*, the *Journal of Marketing Research*, *Marketing Science*, the *Journal of Public Policy & Marketing*, the *Journal of Business Research*, *Antitrust Bulletin*, and other publications. He is a member of the Editorial Review Board of the *Journal of Marketing*, the *Journal of the Academy of Marketing Science*, the *Journal of Public Policy & Marketing*, and the *Journal of Retailing*.