139
27

THE CRITICAL SOURCE OF UNCERTAINTY AND THE DOMINANT SENTIMENTS OF MARKETING CHANNEL DYADS: A BARGAINING SIMULATION

by

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DISSERTATION submitted to the Faculty of the

Virginia Polytechnic Institute and State University

in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

in

Business (Marketing)

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September, 1987

Blacksburg, Virginia

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(ABSTRACT)

Proponents of the political economy framework for comparative analysis have recently proposed that one of the important variables that influences the way in which uncertainty affects focal organizations is its critical source. This dissertation investigates the relationship between the critical source of perceived environmental uncertainty and the political processes of the channel dyad. Political processes are operationalized as the dominant sentiments or relations of conflict and cooperation which characterize the negotiation process.

It was hypothesized that uncertainty as perceived in the lateral (competitive) environment increases cooperation and decreases conflict among bargainers in a mixed-motive setting. Conversely, uncertainty as perceived in the vertical (input-output) environment increases conflict and decreases cooperation.

It was found that lateral uncertainty affected dyadic sentiments as expected. However, vertical uncertainty had no affect on the dominant sentiments of bargainers. The amount of uncertainty as perceived in the external environment as a whole, affected the dominant sentiments of those bargainers who perceived the outcome to not be in their favor. Here a

moderate amount of perceived uncertainty led to cooperation, but a high amount led to conflict. Thus it was concluded that perceived environmental uncertainty affects the dominant sentiments of bargaining dyads differently, depending upon: a) its critical source, and b) the amount.

ACKNOWLEDGEMENTS

It would have been difficult to complete this dissertation if it were not for the quality of the Ph.D. program in Marketing here at Virginia Tech. This program provided a solid foundation in theory, methodology, and statistics. I would like to first thank those individuals who were part of this program and helped me to develop as a researcher and teacher.

Special thanks go to Dr. John T. Mentzer. Tom was able to pay close attention to detail without losing sight of the dissertation project as a whole. He helped in so many ways it would be difficult for me to list them all here. One of Tom's primary strengths as a chairperson is that each student is advised differently depending upon their academic strengths, weaknesses, and research style. I value my professional relationship with Tom, as well as our friendship.

I would like to thank Dr. Janet E. Keith for helping me to think hard about the theoretical issues of my dissertation. Janet is a rigorous and talented scholar. I sincerely believe that her questions improved the quality of my dissertation, especially the operationalization of the theoretical constructs. I have no doubt that I will be hearing about her and reading her research in the future.

I would like to thank Dr. Edward F. Fern for requiring Stern and Reve (1980) and Achrol, Reve, and Stern (1983) in his doctoral seminar. I remember walking out of his class in the fall of 1984 thinking: "I'm going to write a dissertation in channels from the political economy

perspective." It was this class that first introduced me to the important issues in marketing channels.

I would like to thank Dr. Kenneth D. Bahn for helping with some of the multivariate analysis issues involved in this dissertation. Ken also had a particular skill at getting me to relax at a time when I was up-tight and nervous. Ken has a knack at making doctoral students feel like colleagues, this was appreciated.

I would like to thank Dr. James E. Littlefield for helping me to get in touch with the marketing network. Jim knows everybody in marketing and did not hesitate to introduce me or to write a letter of recommendation. I keep one of his letters in my desk and read it when I feel under-confident. Jim helped me set a high standard for myself and convinced me that with hard work, I might reach it.

Other people in the department helped me at one point or another. I would like to thank Camille Schuster, Ruth Smith, Steve Clopton, Laurel Hudson, Noreen Klein, Janet Oglethrope, Roger Gomes, Dhruv Grewal, and Nimish Gandhi. Special thanks go to Dr. Tridib Mazumdar. I will never forget our many conversations in the white house. Special thanks also go to Dr. Julie Ozanne for keeping my sociology of science feet to the fire. One of the most important people in the production of this dissertation was Ms. Wanda Belcher. I have never worked with a more capable and genuinely nice person. Wanda, I will miss you, thank you for all you have done.

A number of people outside the department helped me along the way. These people include

. Thank you all for your support, I hope to see all of you very soon.

In conclusion, the most important thing in my life is my family. My gratitude reaches out to my best friend, Her love and support nourishes my spirit and kindles my zest for life. I hope I can return to her everything that she has given to me. This dissertation is lovingly dedicated to .

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I: INTRODUCTION AND OVERVIEW

THE PROBLEM

Marketing channels can be defined as systems of interdependent organizations that, through negotiation and exchange, are involved in the process of making a product or service available for consumption. These interorganizational networks are held together by a division of labor designed to encourage economic efficiency. Early research in this field was economic in orientation. Its focus was on how to design the distribution system to be efficient and effective in supplying goods and commodities.

More recently, a significant stream of research has developed which views the distribution channel as a network of behavioral relationships involving coordination, competition, cooperation, conflict, and power. It is clear that marketing channels are political, as well as economic institutions. That social science which deals with the interrelationship of economic and political structures and processes is generally referred to as "political economy."

Marketing scholars began to adapt the political economy approach to the study of marketing channels in 1980. Since then a stream of conceptually oriented research has developed. An important strength of this approach is its integrative potential. It offers a unifying, programmatic framework by encompassing major economic and sociopolitical constructs.

The approach conceives of the distribution channel as a political economic unit, characterized by internal economic and political processes and structures, and an external economy and polity. The external political economy can be referred to as the organizational environment in general. The effect of this environment on a focal dyad is unpredictable, decision making therefore becomes uncertain. From this perspective, uncertainty is the important problem the environment poses. Thus, many of the theoretical propositions which have emerged from this approach propose relationships between environmental uncertainty and dyadic structures and processes.

Tensions resulting from perceived environmental uncertainty may have varying effects on dyadic structures and processes. Organization theorists usually propose that these effects will be negative for the organization. For example, environmental uncertainty may pose problems for interorganizational coordination leading to system disintegration. However, under some circumstances it would be reasonable to propose that uncertainty may lead to a willingness to coordinate and therefore result in increased efficiency.

It has been recently proposed that one of the important variables that influences the way in which uncertainty affects focal organizations is its critical source. Thus, does uncertainty affect interorganization processes differently depending upon its environmental source? If so, what are the specific relationships between the critical source of uncertainty and dyadic structures and processes?

This dissertation investigates the relationship between the critical source of perceived enviornmental uncertainty and the political processes of the channel dyad. Political processes from this perspective are operationalized as the dominant sentiments or relations of conflict and cooperation which characterize the negotiation process.

OVERVIEW OF THE CONCEPTUALIZATION

The political economy approach emphasizes the importance of the whole field of relations surrounding the formal channel. Relative to a focal dyad, the external political economy can be understood as generally consisting of an input, output, competitive, and regulatory sector. These sectors can be grouped into those that are external to the formal channel, referred to as the lateral environment (competitive/regulatory), and those that are internal to the formal channel, referred to as the vertical environment (input/output). The lateral and vertical environments can be understood as different sources of uncertainty. For example one could refer to "lateral uncertainty," meaning uncertainty as perceived in the competitive/regulatory sectors. Or, one could refer to "vertical uncertainty," meaning uncertainty as perceived in the input/output sectors.

A review of literature suggests that there is some empirical evidence of a positive correlation between perceived environmental uncertainty and perceived conflict. Close examination of this finding reveals that this was uncertainty as perceived in the output sector of the environment, or vertical uncertainty. This finding has some theoretical support. As-

suming that vertical uncertainty will be perceived to affect members of a focal dyad differently, channel members will tend to blame each other for problems that stem from this uncertainty. For example, if a retailer is faced with shortages in the supply of demanded manufactured products, they may accuse their suppliers of not properly forecasting demand. Similarly, during a period of variable demand or lagging sales, the supplier and manufacturer may accuse the retailer of not properly marketing the products. In short, under conditions of high vertical uncertainty, coordination is more likely to fail, leading to perceptions of incompatibility, interference, and tensions.

This positive correlation between uncertainty and conflict may be true only when uncertainty is perceived to exist in the vertical environment. Assuming that lateral uncertainty will be perceived to effect members of a focal dyad in a similar way, it does not make theoretical sense that dyad members should blame each other for problems that stem from this uncertainty. In fact, if lateral uncertainty is perceived by the focal dyad to be a common problem, it may lead to an exchange of information and cooperation. For example, if there is uncertainty about whether or not the government is going to regulate certain kinds of advertising, this uncertainty will affect channel members similarly. It could be that only the retailer is promoting the product to the final consumer, or it could be that both the retailer and the producer are advertising extensively to the ultimate consumer. In either case, a change in how they advertise will affect them both. If the producer and retailer work together to find out what the government is going to do, this type

of uncertainty will lead to cooperation. In other words, anything external to an organization which is uncertain may very well lead to tension, however this tension does not necessarily lead to conflict.

This discussion culminates with three research questions:

1) Will perceived environmental uncertainty affect the dominant sentiments of the dyad differently, depending upon its critical source?

2) What effect will varying levels of lateral perceived environmental uncertainty have on the level of perceived dyadic conflict and cooperation?

3) What effect will varying levels of vertical perceived environmental uncertainty have on the level of perceived dyadic conflict and cooperation?

Since it is the political economy framework which highlights the whole field of relations surrounding the channel dyad, it is this perspective which emphasizes the varying effects of different environments. It is also this perspective which suggests that these relationships are important for the efficient and effective operation of dyadic exchanges.

OVERVIEW OF THE METHODOLOGY

The aim of this research is to empirically test theoretical relationships. Thus, emphasis is given to the correspondence between empirical indicators and theoretical constructs. In order to develop a sensitive test of the theory, comparisons between treatment groups should be made in a controlled setting using a homogeneous sample. Added control

has the advantage of providing the opportunity to: a) decrease error variance and thus increase the sensitivity of the test, b) establish temporal sequence, c) rule out alternative explanations, and d) clarify abstract relationships. On the fourth point, Weick (1965) suggests that natural events are often cryptic or vague. Added control enables the experimenter to produce a setting in which the natural event can be rearranged and simplified, making its essence more apparent. The appropriate method given these goals is the organizational experiment. Specifically, that type of organizational experiment which will be used to test the research hypotheses is referred to as a dyadic negotiation simulation.

At least seven different traits characterize dyadic negotiation simulations (Rubin and Brown 1975; Schurr and Lessne 1983). First, negotiations take place between two individuals. Second, individuals are motivated to engage in negotiation because they perceive that it is in their own best interest to do so. This means that the individual will engage in negotiation if they perceive that satisfaction or utility can be increased by an agreement with another individual. The third and fourth characteristics represent possible hindrances to agreement: competing interests and uncertainty. Negotiation is needed since a mixed-motive setting and lack of information stand in the way of an easy or automatic agreement. The last three characteristics are central to the process of negotiation. Communication between individuals must involve an exchange of offers, counter-offers, and other information; the negotiation dyad must have alternative agreements to choose from; and the

individuals must have the option of withdrawing from the negotiation. These last three characteristics are important since they determine an individual's freedom to pursue self-interest.

The organizational context to be simulated by the dyadic negotiation experiment is a bilateral monopolistic structure involving one manufacturer and one retailer. These firms are usually described as having been in business for a number of years and being roughly equal in size, financial performance, stability, and profitability. The theoretical underpinning of this research called for a simulation which includes both the lateral and vertical environments. This was accomplished by designing the experimental task to stimulate a concern for the transaction as well as for how the lateral environment will affect the process and outcome of negotiation. The type of information distributed to negotiation dyads was manipulated in such a way as to produce relevant levels of vertical and lateral environmental uncertainty.

This research utilizes a fully-crossed 2 x 2 factorial between-subject design, thus there are four treatments. There are two independent variables: lateral perceived environmental uncertainty and vertical perceived environmental uncertainty. Each of these variables was dichotomized into high and low and then fully-crossed. There are two dependent variables: conflict and cooperation. It is assumed that conflict and cooperation are distinct concepts even though the hypotheses suggest that they will vary inversely. Dependent measures were administered after agreement or the time limit was reached in negotiation.

Analysis of the results obtained from the rating scales proceeded with multivariate and univariate analysis of variance and covariance. Since communication between dyad members was written, the hypotheses were retested using the frequencies obtained from a content analysis. Thus, two different types of measures of conflict and cooperation resulted in two different types of statistical techniques used to test the hypotheses.

CONTRIBUTIONS

According to Arndt (1983), the most important limitations of the political economy paradigm relate to the methodological problems and the incompleteness of the framework: "the paradigm specifies many constructs and relationships which are difficult to capture through conventional tools such as cross-sectional surveys" (p. 52). In an empirical application of the political economy framework to marketing channels, Dwyer and Welsh (1985) state that to "establish the efficacy of the political economy framework for empirical analysis of marketing channels will require the translation of abstract concepts into operationalizable constructs of relevance and interest" (p. 398). It is conceivable that the conceptual process of applying the political economy framework to marketing channels has reached a plateau. Since it is generally recognized in marketing that empirical testing determines the truth content of theory (Hunt 1976), it is important that researchers begin the process of operationalizing political economy relationships. Thus, this dissertation extends the political economy stream of research in channels of

distribution by adding a neglected dimension: empirical testing. Empirical testing contributes to this stream in two ways: 1) it will help to establish which aspects of the framework are credible; and 2) the results will serve as a useful guide in refining specific aspects of the framework.

A second contribution is the measurement and manipulation of perceived environmental uncertainty. According to Brown, Lusch, and Koenig (1984, p. 27): "environmental uncertainty has not been investigated to a large extent in the marketing channels literature... thus, there is very little guidance in developing measures of this construct." Yet, uncertainty has been an important theoretical and methodological point of focus for organizational analysis ever since Thompson wrote Organizations in Action in 1967:

> For purposes of this volume, then, we will conceive of complex organizations as open systems, hence indeterminate and faced with uncertainty, but at the same time as subject to criteria of rationality and hence needing determinateness and certainty (p. 10).

It is the unpredictability of the environment which makes systems "open." Thus, the effect of uncertainty is part of what makes channels what they are: interorganizational open systems. From this perspective, uncertainty should play a central role in the study of marketing channels.

A third contribution is to the conflict stream of research in channels of distribution. This stream of research is rather well developed. However, there have been few studies of the effect of uncertainty on conflict and cooperation and no studies testing the varied effects of

uncertainty as perceived in different organizational environments (e.g. the vertical vs. lateral).

A final contribution of this stream of research is managerial in that the results will have implications for strategic issues. Understanding the nature of organization-environment dependencies is crucial to understanding the strategic options available to channel members. According to Achrol, Reve, and Stern (1983), these dependencies represent constraints on strategic choice. Channel transactional relations are structured by managerial decisions, these in turn are based on environmental perceptions. Uncertainty about the environment will thus influence the structuring and functioning of marketing channel dyads. The long range goal of the political economy paradigm is to suggest more effective ways to manage marketing channel relationships (Stern and Reve 1980; Achrol, Reve and Stern 1983). Thus, this research can be viewed as another step toward the important task of linking dyadic structure and process to performance.

OVERVIEW OF CHAPTERS

The purpose of Chapter II: Literature Review and Conceptualization, is to review that literature which imparts historical, theoretical, and empirical support to the proposition relating the critical source of perceived environmental uncertainty and the internal sociopolitical processes of the channel. This conceptualization was constructed by reviewing selected articles from three separate streams of research: the

political economy framework for the comparative analysis of marketing channels, contingency theory, and the channel conflict area. This literature is discussed in three major sections: marketing channels, a behavioral perspective; the political economy framework; and proposed relationships. The political economy framework encompasses the main body of the chapter. This section is divided into three subsections, including intellectual and conceptual foundations, the external political economy, and the internal political economy.

The purpose of Chapter III: Research Design and Methodology, was to outline an appropriate methodology from which the research hypotheses could be empirically tested. This chapter is divided into three major sections: methods used to evaluate channel theories, types of organizational experiments, and experimental procedures. The experimental procedures section outlined the specifics of the dyadic negotiation simulation which was used in this dissertation. This section is organized in terms of the following subsections: organizational context, type of dyad, background of subjects, experimental task, exchange of information, experimental design, and the data collection plan. The experimental design subsection is further divided in terms of: lateral uncertainty induction, vertical uncertainty induction, manipulation checks, statistical model, dependent measures, and tests of hypotheses.

Chapter IV: Results and Analyses, contains the interpretation of the results obtained from the rating scales. After a brief discussion of the sampling procedure, the chapter is organized in terms of three broad topics: pre-testing results, simulation results, and a concluding

discussion. Analysis of simulation results provides the bulk of the chapter. This section is organized in terms of: the empirical attributes of the measurement scales, the strength of the manipulations, descriptive statistics, the results of hypothesis testing, and the analysis of potential confounds. The concluding discussion focuses on interpretation of the results relative to the directly relevant literature as presented in chapter two.

Chapter V: Results and Content Analysis of the Bargaining Simulation Communication, focuses on the interpretation and analysis of the written record. The written record consists of messages which were hand written and exchanged, allowing the bargainers to communicate. This chapter is organized in terms of: a description of the content analytic system, the procedures which were taken to code and enumerate the messages, the presentation of an example taken from the bargaining simulation, the results of retesting the hypotheses, and a concluding discussion relating the results found in this chapter to the results as summarized in Chapter IV.

The purpose of Chapter VI is to summarize the dissertation project as well as focus on some specific conclusions. The chapter centers on interpretation of findings; conceptual, methodological, and substantive contributions; limitations; and an agenda for future investigations.

CHAPTER II: LITERATURE REVIEW AND CONCEPTUALIZATION

INTRODUCTION

The purpose of this chapter is to review that literature which imparts theoretical and empirical support to the relationship between environmental uncertainty and the internal sociopolitical processes of the channel. This literature can be grouped into three research traditions: the political economy framework for the comparative analysis of marketing channels, contingency theory, and the channel conflict area.

The political economy approach to marketing channels began in 1980 with Stern and Reve's reformulation of Zald's (1970) comparative framework. This approach suggests that channels of distribution consist of interorganizational networks encompassing the regulatory, competitive, input, and output subenvironments of a focal dyad. Applying the political economy framework to marketing channels is relatively new and so far researchers have emphasized conceptual development. Empirical studies have started to appear however (Dwyer and Welsh 1985; Dwyer, Oh, and Hoelter 1986; Dwyer and Oh 1987) and other researchers have suggested a number of testable propositions (Stern and Reve 1980; Achrol, Reve, and Stern 1983).

The propositions offered by Achrol, Reve, and Stern (1983) focus on the presumed effects environmental dimensions have on uncertainty. "The more task environments move away from being rich, homogeneous, stable,

dispersed, and placid (as opposed to turbulent), the more uncertainty can be expected to increase" (Achrol, Reve, and Stern 1983, p. 62). Since it is difficult to measure organizational environments in total, uncertainty is used as an indicator of different types of environments (Pfeffer and Salancik 1978). Environmental uncertainty, in turn, affects the internal economic and sociopolitical structures and processes of the channel. Contingency theory provides some theoretical and empirical support for this relationship. This perspective is logically consistent with the political economy framework since they both are concerned with environmental influences and the importance of uncertainty.

"Internal sociopolitical processes" are defined as the dominant sentiments which characterize the interactions between channel members (Stern and Reve 1980). Dominant sentiments are defined as behaviors of cooperation and conflict which characterize dyadic exchange (Stern and Reve 1980; Achrol, Reve, and Stern 1983). That stream of research in channels investigating conflict and cooperation is rather well developed. Thus, this literature will be used to develop conceptual definitions and empirical measures.

There has been very little research in channels on the relationship between uncertainty and conflict (see Brown, Lusch, and Koenig 1984 for the exception), and nothing written on the relationship between uncertainty and cooperation. In fact, the significance of a channel's environment is not well-documented in the channels literature (until very recently, the only reported empirical study was Etgar 1977). Thus, reviewing the literature in this area needs to take a more indirect ap-

proach. It is the political economy paradigm that suggests that the relationship between uncertainty and conflict/cooperation is (a) likely, and (b) important. It is contingency theory which provides a theoretical and empirical history of defining and measuring environmental uncertainty. Lastly, it is the channels conflict area which provides theoretical and empirical knowledge pertaining to conflict and cooperation. Important research from each of these areas will be used in forming the background and theoretical explanation for the focal proposition.

Before these specific areas are discussed, it is important to define what is meant by a "channel" or an "interorganization system." Thus, the next section discusses briefly the behavioral perspective in marketing channels.

MARKETING CHANNELS: A BEHAVIORAL PERSPECTIVE

Channel theorists started to argue against using economic models to explain channel relationships in the 1950s (Palamountain 1955). The problem with economic models was that they assumed a closed system. Since the effect of the organizational environment on channels is clearly unpredictable, this was inappropriate. By the late 1960s, a behavioral orientation was firmly rooted in the channels field (Stern 1969). From a behavioral perspective, channels are conceived as open systems, characterized by goal attainment, interdependency, and coordination. This orientation has produced significant streams of research in the politics

of distribution. Most specifically, research in conflict, power, and the relationship between conflict and power (Reve and Stern 1979).

CHANNELS AS INTERORGANIZATIONAL SYSTEMS

Marketing channels can be defined as sets of interdependent organizations that, through negotiation and exchange, are involved in the process of making a product or service available for consumption (Stern and El-Ansary 1977). Understanding channels as systems of interorganizational relationships corresponds to what organization theorists refer to as a "social action system" (Aldrich 1979), an "organized behavior system" (Alderson 1965), or a "organizational network" (Pfeffer and Salancik 1978). Channels as "systems" exhibit the basic elements of any organized form of collective behavior: activities are aimed at goal attainment (Simon 1964; Gross 1969); a division of labor exists which results in a symbiotic interdependence (Hawley 1950; Mentzer and Murray 1985); and structural coordination exists as a response to an unpredictable environment (Thompson 1967; Pfeffer and Salancik 1978).

Parsons (1961) views goal attainment as an important aspect of all social systems: all systems, in order to survive, must attain some of the goals they set for themselves. Since collective goals cannot be achieved by individual organizations, channel members will perform specialized functions and, through the exchange process, act to attain a common goal (Cook 1977). According to Gross (1969), it is the organization of effort so as to maximize the probability of attaining the goal

which characterizes modern organizations. Simon (1964, p. 1) defines organizational goals as "sets of constraints, imposed by the organizational role, that have only an indirect relation with the personal motives of the individual who fills the role." Since individual organizations within the channel system are connected by boundary personnel representing their respective firms, Simon's definition is appropriate here. Of course, organizations within a marketing channel will also have individual goals which characterize their strategic orientation. At times, these goals may need to be compromised for the common goal of the channel. This "mixed-motive" setting produces an organizational environment in which coordination, competition, cooperation, and conflict are all simultaneously present.

Interdependence can be defined from the perspective of a focal organization, or from the perspective of the channel as a whole. From the perspective of a focal organization, dependence is "the product of the importance of a given input or output to the organization and the extent to which it is controlled by a relatively few organizations" (Pfeffer and Salancik 1978, p. 51). Interdependence, as defined from the perspective of the channel, refers to the level of system connectedness. If every organization where dependent on every other organization, the channel would be tightly interconnected. Any disturbance entering the system at any point would quickly affect every element (Pfeffer and Salancik 1978). If the system were loosely coupled, disturbances would have more chance of being localized, and the system would be more stable and certain (Pfeffer and Salancik 1978). Interdependence therefore poses problems

for organizations in that the exchanges required for maintaining operations are uncertain and potentially unstable.

Coordination is defined as the extent to which work activities of organizational parts are logically consistent and coherent (Cheng 1983). Thus, coordination concerns the degree of functional articulation among organizational components. That is, the various work activities are performed in such ways that they supplement and complement one another (Cheng 1984). Thus, coordination implies complementary roles in the sense that the rights of one role are the duties of the adjacent role. This also implies that coordination is a social structural concept: Coordination becomes structured by norms which are produced within the channel to allow exchange to take place, rather than require the cooperation of individuals in the form of exchange (Bates and Harvey 1975). It should be noted that cooperation is distinct from coordination in that it is a social psychological concept. Cooperation is defined as a "willingness" to coordinate (Robicheaux and El-Ansary 1976) or the "expectation" of a balanced exchange (Childers and Ruekert 1982). Thus, theoretically a well coordinated channel could be characterized by cooperation and/or conflict. In fact, assuming balanced power, as interdependency and coordination increase, it is conceivable that both conflict and cooperation could increase.

Goal attainment, interdependency, and coordination together define the basic elements of channels as interorganizational systems. These concepts therefore serve as building blocks for the important behavioral issues in channels research.

BEHAVIORAL ISSUES: FLOW VS. NETWORK

Most researchers agree that the behavioral approach to marketing channels has produced three developed streams of research: conflict, power, and the relationship between conflict and power (Reve and Stern 1979; Gaski 1984). A number of different theoretical perspectives have been borrowed from sociology and psychology to explain different aspects of these phenomena. Power and conflict are important behavioral constructs since they are closely related to resource acquisition, goal attainment, coordination, satisfaction, performance, and survival.

Research in channels is generally viewed as an application field. However, there has been some conceptual work compelling us to think about channels research as a programmatic model of science (Mentzer, Murray, and Gomes 1986). This research identifies fundamental paradigms as constructed by guiding assumptions. This approach is useful in that it identifies the common denominators of the power and conflict streams. In terms of theoretical assumptions, both streams adopt an open-system orientation. Thus, uncertainty, interdependency, coordination, and satisficing objectives become important concerns. In terms of "level" of analysis, both streams are guided by the "flow" concept. "Level" of analysis is that description of social structure which is used in the theoretical framework (Pfeffer 1982). In the context of this research, social structures are defined as "recurrent transactions" (Aldrich 1982). The flow concept is used by Rosenbloom (1983) as a basis for separating channel members from non-channel members. This level emphasizes the

technological links and social contacts in the input and output sectors of the focal organization's environment. Thus, the power and conflict streams generally use an open systems perspective to focus on vertical dyadic exchange.

It is conceivable that the organizational environments outside the input and output sectors may influence dyadic structures and processes differently. In order to take the whole field of relations surrounding the dyad into account, the researcher would need to switch the level of analysis from "flow" to "network." This level emphasizes the input, output, regulatory, and competitive sectors in the primary, secondary, and macro environments (Achrol, Reve, and Stern 1983). The many perspectives in organizational theory emphasizing interorganizational "sets" (Evan 1972), "fields" (Warren 1967), or "nets" (Hasenfeld 1972) define this level. It is this fundamental difference in level of analysis that defines the essential difference between the more traditional perspectives in the behavioral channels field and the political economy framework.

THE POLITICAL ECONOMY FRAMEWORK

The purpose of this section is to discuss the meaning of "political economy." As stated in the introduction, the emerging view of political economy, as applied to channels of distribution, is closely aligned with contingency theory. Thus, this stream of research will also be included where appropriate. Parts of the conflict stream will also be reviewed

since the internal sociopolitical processes are operationalized as conflict and cooperation.

In general, this section will concentrate on the intellectual and conceptual foundations of political economy, the external political economy, and the internal political economy. Attention will focus on the conceptual background and importance of the relationship between uncertainty and conflict/cooperation.

INTELLECTUAL AND CONCEPTUAL FOUNDATIONS

The social science entitled "political economy" has a wide variety of interpretations and meanings. In sociology, this area relates to the work of writers who study the accumulation of economic surplus, as well as the attendant problems of determination of prices, wages, and employment (Desai 1983). This strand of political economy is mainly associated with the works of Adam Smith, Ricardo, Malthus, J. S. Mill, and McCulloch (Desai 1983). Recently, academic economists sympathetic to Marxism have used the label political economy for radical economics, hoping to distinguish it from the neo-classical model. Yet another strand in academic economics, which is also called political economy, studies the interaction of democratic political processes and market determined economic relations (Desai 1983). It is this strand that eventually led to the perspective which was borrowed by the channels theorists. In general this perspective has evolved into a framework emphasizing the interaction between the external political economy (organizational environment) and the

internal political economy (focal organization or dyad). The appropriateness of this perspective for marketing areas is readily apparent. Marketing's emphasis of the interaction between uncontrollable variables (organizational environment) and controllable variables (product, price, promotion, place) is consistent with this framework. "The tools usually available to a marketing executive in his task of creatively adjusting to a dynamic environment, are product variation, market channels, price, advertising, and personal selling" (Howard 1957, p. 7). Thus this strand of political economy was already very consistent with the marketing discipline, as it was evolving in the early 1960s. The direct antecedent to Stern and Reve's (1980) application was Zald's (1970) "Political Economy: A Framework for Comparative Analysis."

Zald's approach to political economy represents a blending of two perspectives, the institutional approach and social systems theory (Bates 1970). The institutional approach assumes that society can be understood by focusing on dominant organizational structures (e.g. family, religion, education, government, economy, science). Social system theory assumes that chains of relationships occurring in any part of society will have an affect on all other parts of society (Bates and Harvey 1975). According to Zald (1970), a general social system approach is too diffuse and abstract. Zald remedied this problem by concentrating investigation on two key processes and structures and their interrelation: the political and economic institutions (see Figure 1). Applying this perspective to channels involves clarifying the relationship between the internal political economy (focal dyad) and the external political economy (or-

	Environment Structure and Process	Internal Structure and Process
POLITY	Associations of similar organizations (trade associations)	Power-distribution and major value constellations
	Relationship with major suppliers and buyers of factor inputs	Demand-aggregation
	Regulatory agents	Succession system
	Indirect parties	
ECONOMY	Characteristics of factor "markets" (labor, capital, etc.)	Allocation rules, Accounting-information systems
	"Raw materials" supply	Incentive system
	Characteristics of demand and clientele "Industry structure"	Task-and technology-related unit differentiation

FIGURE 1: Zalds' Major Components of Political Economy (1970, p. 231)

ganizational environment). For example, the regulatory environment (external political structure) imposes certain constraints on terms of trade (internal economic process). Or, uncertainty (organizational environment) affects the dominant sentiments of the bargaining dyad (internal sociopolitical processes).

This perspective has been applied directly to channels both conceptually (Stern and Reve 1980; Achrol, Reve, and Stern 1983), and empirically (Dwyer and Welsh 1985; Dwyer, Oh, and Hoelter 1986; Dwyer and Oh 1987). The most important conceptual antecedent of this research is Zald (1970). The political economy approach has also been applied to marketing in general (Arndt 1983; Hutt, Mokwa, and Shapiro 1986), the most important antecedent to this research is Benson (1975). See Appendix A for a detailed integrative review of this literature.

Level of the Conceptual Macro-Structure

Most philosophers of science agree that when reflecting on an entire stream of research, the crucial unit of analysis is not at the level of the proposition, hypothesis, or theory, but at the level of the "macro-structures" in which these concepts are embedded (Anderson 1986, p. 12). These macro-structures are referred to by various authors as "paradigms" (Kuhn 1970), "research programs" (Lakatos 1974), "research traditions" (Laudan 1984), or "comparative frameworks" (Zald 1970).

Arndt (1983) states that the political economy approach should be defined as a "paradigm" in the Kuhnian sense. By "paradigm," Kuhn (1970, p. 10) meant a model or pattern made up of guiding assumptions, laws, and

techniques for their application that the members of a scientific community adopt. From Kuhn's perspective, calling the political economy approach a paradigm is premature since the methodological techniques for its application are still being worked out. Arndt's interpretation of Kuhn however is very general, his use of the word paradigm is really closer to what Zald (1970) refers to as an integrative framework. "The value of the political economy paradigm rests partly on its generality and partly on its integrative potential... paradigms should be viewed as the foundations of theory, as they give theory building in a field direction and meaning" (Arndt 1983, pgs. 44-45). Thus, if the word paradigm is used loosely, it is appropriate.

Most political economy researchers regard the approach as an "integrative framework" (Zald 1970; Stern and Reve 1980; Achrol, Reve, and Stern 1983; Dwyer and Welsh 1985; Dwyer, Oh, and Hoelter 1986; Hutt, Mokwa, and Shapiro 1986). The political economy framework is "programmatic" in the sense that it suggests concepts and propositions which can be used to study the organization in interaction with its environment. According to Stern and Reve (1980), the framework is "organizing," meaning that important variables are arranged in ways which produce significant research questions. As such, the framework does not purport to be a theory, it is more of a "road map" designed to facilitate social analysis. This is important in that an empirical test of a proposition generated by the political economy framework would not necessarily be a test of theory. The researcher must move beyond propositions

generated by the perspective in order to explain why the relationship exists.

Thus the political economy framework is a programmatic descriptive model generating concepts and propositions relating these concepts. However, it does not provide substantive explanation and understanding as to why these concepts relate as expected. Therefore, even when using the political economy perspective, other theories and ideas will still need to be borrowed in order to explain the why of these relationships.

> ... theorizing is the mental process of acquiring explanations about why certain variations occur and why they do not. It is not merely a matter of finding empirical relationships that happen to occur in the real world, but rather of learning the circumstances under which variation in variables brings about variation in other variables in a way that acquires multiple levels of generality (Zaltman, LeMasters, and Heffring 1982, p. 95).

Definition of Political Economy

Stern and Reve (1980, p. 53) define the political economy framework as an approach which views a "social system as comprising interacting sets of major economic and socio-political forces which affect collective behavior and performance." This definition was adapted directly from Zald (1970). It was in turn accepted and used by most others in this research stream (Achrol, et al. 1983; Dwyer and Welsh 1985; Hutt, Mokwa, and Shapiro 1986; Dwyer, Oh, and Hoelter 1986). The important concepts which outline the perspective center around the internal and external economy and polity (see Figure 2). "Internal" means within the channel flow, and "external" refers to organizational structures outside the flow (Stern and Reve 1980). The economy and polity are analyzed in terms of "struc-

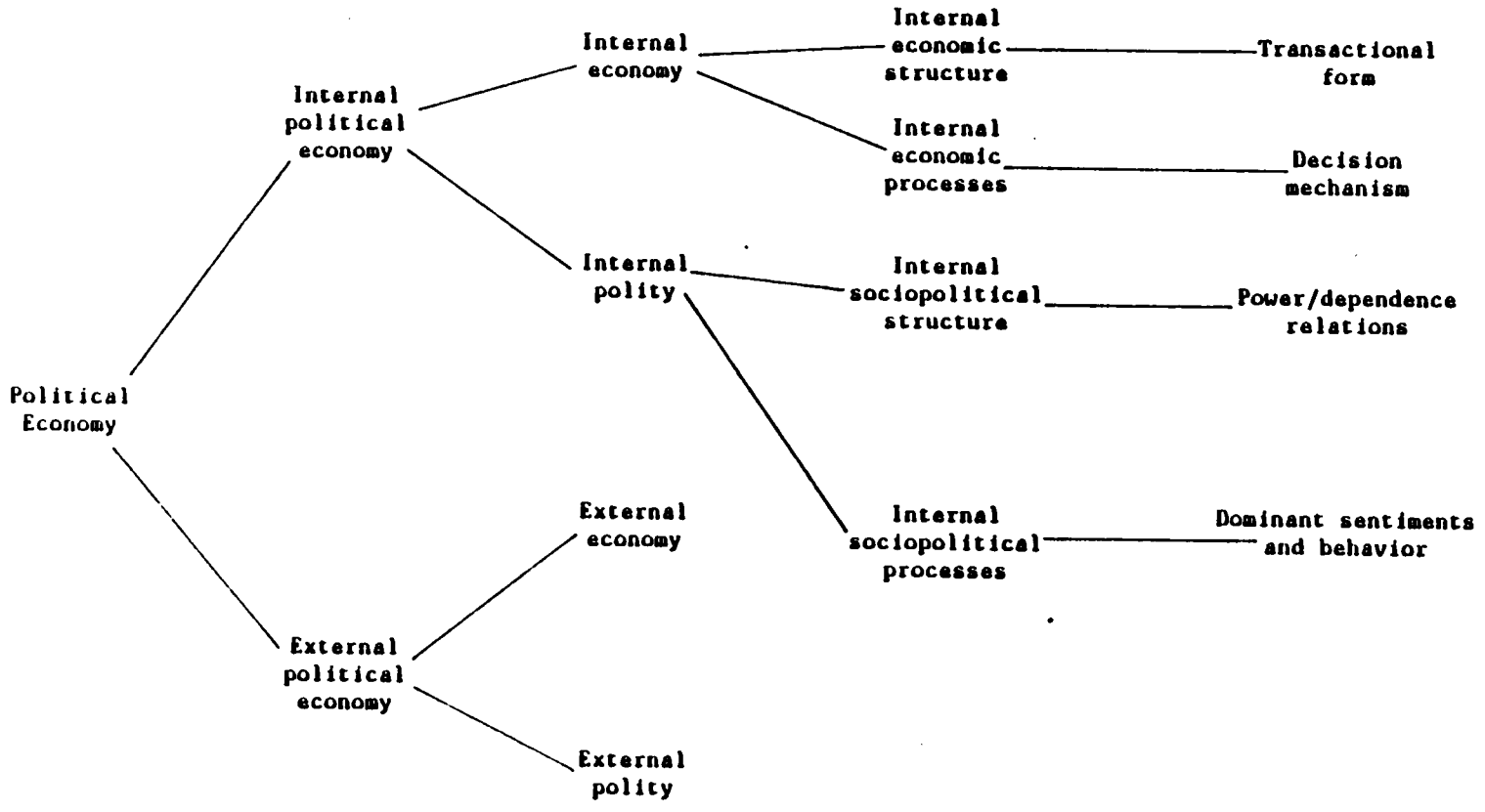

FIGURE 2: Stern and Keve's Key Concepts in the Political Economy Framework (1980, p. 62) (see Appendix B for definitions)

ture" and "process." As stated earlier, social structure refers to recurrent transactions, or enduring organizational forms or patterns (as structured by norms, rules, traditions, etc.). Social process refers to decision making and dominant sentiments.

This still leaves a reasonable definition for "political" and "economic." Throughout this research, these terms, when applied to channels will be used in the following ways:

> Political refers to matters of legitimacy and distribution of power as they affect: the propriety of an agency's existence; its functional niche; its collective institutional goals; the goals of the dominant elite faction; major parameters of economy, and in some instances its means of task accomplishment (Wamsley and Zald 1973, p. 18).
>
> Economic refers to the combination of factors of production, the arrangement of the division of labor, allocation of resources for task accomplishment, and maximization of efficiency (Wamsley and Zald 1973, p. 19).

The essential point is that politics refers to the structure and process of the uses of authority to affect definitions of goals, directions, and channel management. A channel's economy is its system for producing and distributing the output of the organizations involved. It is the combination of land, labor, capital, and management to produce desired output.

Achrol, Reve, and Stern (1983) made two fundamental changes in Stern and Reve's (1980) conceptualization of political economy. First, they conceived of the external political economy as the organizational environment in general. Thus they in many respects returned the perspective to what Zald (1970) was reacting against. Recall that Zald felt that taking the totality of environmental relations into account was too diffuse and abstract, therefore one should concentrate on the political and

economic institutions. Achrol, et al. (1983) dealt with this problem by turning to contingency theory. These theorists "dimensionalized" the environment in such a way that the totality could be understood according to a few abstract dimensions (with uncertainty being the important outcome of these dimensions).

Second, for methodological reasons, they conceived of the internal political economy as consisting of a focal dyad rather than the entire channel. Note the difference in Zald's approach (Figure 1) and the approach taken by Achrol, et al. (1983) (see Figure 3).

These changes also established a clear research agenda for the political economists working in the channels field (see Figure 4). Note that this dissertation is investigating the relationship between environmental uncertainty and the dominant sentiments of a focal dyad (relationship 4 in Figure 4).

THE EXTERNAL POLITICAL ECONOMY

Since the level of analysis used in the political economy framework is the entire organizational field, it is important to account for all meaningful interactions external to the dyad that may impinge upon it.[1] Since different segments of the organizational environment may affect the dyad in different ways, it is useful to partition it into meaningful

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[1] Note that the "unit" of analysis is a methodological question; see pages 12-18 of Pfeffer (1982) for an elaboration of the difference between "level" and "unit" of analysis.

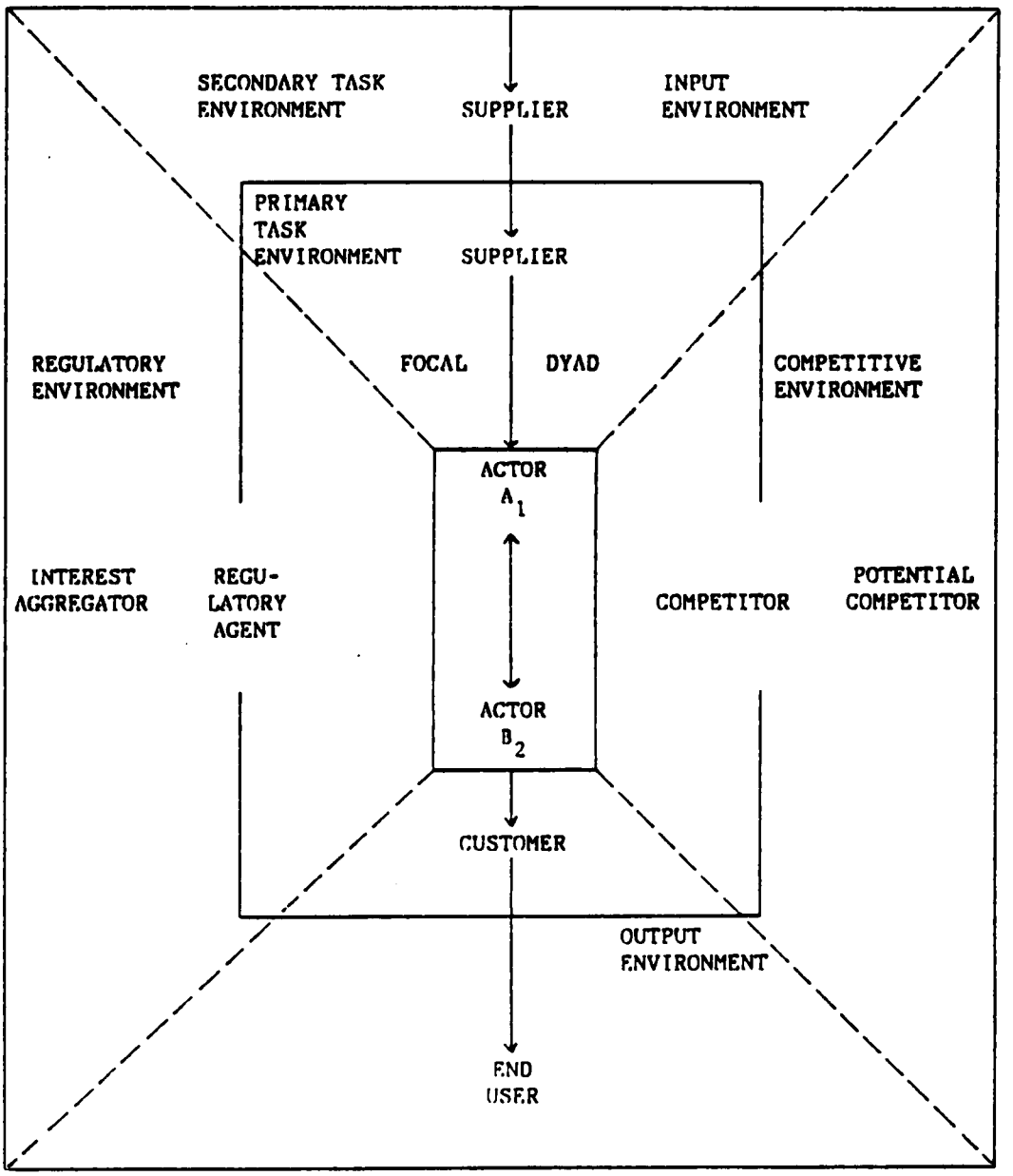

FIGURE 3: Achrol, Reve, and Stern's Environment of Marketing Channel Dyads (1983, p. 58).

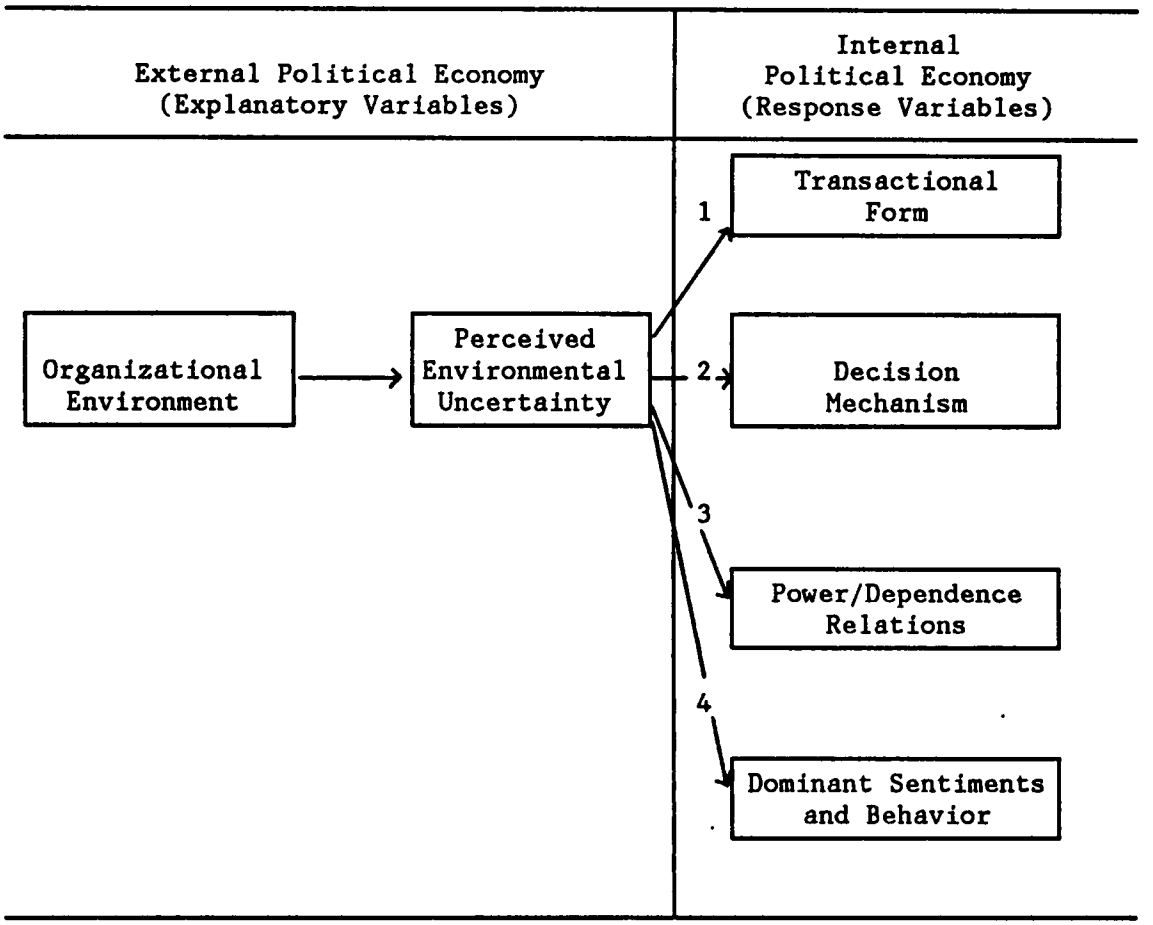

FIGURE 4: Research Program of the Political Economy Framework (author's interpretation).

sectors. Thus, the task environment of a focal dyad is partitioned into four sectors (Achrol, et al. 1983):

1) Input sector - consists of all direct and indirect suppliers to the dyad;

2) Output sector - consists of all direct and indirect customers of the dyad;

3) Competitive sector - actual and potential competitors of the channel dyad;

4) Regulatory sector - regulatory groups, including governmental agencies, trade associations, interest organizations;

These four sectors constitute the external political economy (Achrol, et al. 1983). The input and output sectors assemble the vertical flow in a marketing channel sense. Thus, these sectors will be referred to as the "vertical" environment. The competitive and regulatory sectors are qualitatively different from the input and output sectors since they lie outside the boundaries of the formal channel. These sectors together will be referred to as the "lateral" environment.[2] The most productive way of describing the vertical and lateral environments is by constructing a set of qualitative variables that "parsimoniously describe the major factors in the environment and are amenable to the development of theoretical propositions" (Achrol, et al. 1983, p. 61). This is the perspective that has been proposed by the contingency theorists (Thompson 1967; Terreberry 1968; Child 1972; Duncan 1972: Starbuck 1976; Pfeffer and Salancik 1978). For example, environmental homogeneity/heterogeneity is a popular dimen-

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[2] The domain of the lateral and vertical environments will be further defined and operationalized in Chapter III; see lateral and vertical perceived environmental uncertainty inductions.

sion with organizational theorists and was also used by Dwyer and Welsh (1985). Environmental capacity (rich/lean) was used by Dwyer, Oh, and Hoelter (1986). Duncan (1972) focused on the complex/simple and dynamic/static dimensions. Since this research is based on an open systems assumption, the most important outcome of different types of environments is environmental uncertainty (Pfeffer and Salancik 1978). The rationale here is that the organization will tend to be uncertain about its decision making in a heterogeneous (diverse), unstable (variable), or complex (numerous information inputs) environment. On the other hand, in a homogeneous, stable, or simple environment, decision making would be more certain. So in viewing environmental uncertainty as the important outcome of types of environments, Achrol, et al. (1983) suggest that this variable should be used when conceiving of the relationship between the external environment and internal processes.

The reason uncertainty is used as the independent variable rather than the environmental dimensions themselves is because uncertainty is generally viewed as a perceptual variable (Duncan 1972; Downey and Slocum 1975). Indeed, some researchers have not found a high correlation between actual environmental characteristics and level of perceived environmental uncertainty (Downey, Hellriegel, and Slocum 1975). This raises interesting questions as to whether uncertainty is an environmental attribute or a psychological trait (or both). The researcher's opinion on this subject depends on their theoretical stance taken toward the "environment."

Two Views of the Environment

There are two general models of the organization-environment interface which can be distinguished (Aldrich 1979; Evan 1980; Achrol 1986). The first conceives of the environment as a "pool of resources" (Benson 1975; Pfeffer and Salancik 1978), and the second understands the environment as a "flow of information" (Dill 1962; Duncan 1972). The two models are based on different ontological assumptions and therefore have different implications for the operationalization of uncertainty (Downey, Hellriegel and Slocum 1975; Achrol 1986).

The Resource Dependence Perspective. This perspective views the environment as consisting of scarce resources which organizations share and compete for (Benson 1975). To survive, organizations must acquire resources. Typically, acquiring resources means the organization must interact with other organizations. In this sense, organizations are dependent upon their environments. Since others who control resources may be undependable or opportunistic, especially when resources are scarce, resource acquisition may be problematic and uncertain (Pfeffer and Salancik 1978). "Survival of the organization is partially explained by the ability to cope with environmental contingencies; negotiating exchanges to ensure the continuation of needed resources is the focus of much organizational action" (Pfeffer and Salancik 1978, p. 258). Thus, the resource dependence perspective is driven by the power-dependence relations characterizing external exchanges.

Consequently, dimensionalizing the environment from this perspective focuses on environmental capacity (rich/lean). This is the relative abundance or scarcity of input and output resources available to an organization within its domain of operation (Aldrich 1979). Uncertainty is used here to describe a property of the environment itself. For example, uncertainty may be operationalized as a lean environment, as defined by the CMSAs[3] showing the very lowest sales per dealership. Thus uncertainty from this perspective is conceived to be an environmental attribute. The resource dependence perspective emphasizes relations in the vertical environment since resource scarcity in the lateral environment will manifest itself in the input and output sectors (Dwyer, Oh, and Hoelter 1986).

The Flow of Information Perspective. The information view of environments arises from a conceptualization of organizations as "problem solving" or "decision making" systems (March and Simon 1958; Dill 1962). Here the organizational environment is treated as information which becomes available to the organization, or to which the organization, via search activity, may obtain access. "It is not the supplier or the customer himself that counts, but the information that he makes accessible to the organization being studied about his goals, the conditions under which he will enter into a contract, or other aspects of his behavior" (Dill

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[3] Consolidated Metropolitan Statistical Areas. Note that major urban areas within CMSAs are called Primary Metropolitan Statistical Areas (PMSAs). Urban areas that stand alone are called Metropolitan Statistical Areas (MSAs) (Mentzer and Schwartz 1985, p. 117).

1962, p. 82). Of course, not all of the information that an organization has access to is relevant to its goals and programs. Attention should focus on those inputs which bear potentially on goal setting and goal attainment. These elements form, for the organization, its task environment (Dill 1962). In this sense, "tasks" are the organization's own statements of its goals and the means by which it hopes to achieve them (Dill 1962). The above discussion implies that the attentional, selectional, interpretive, and retentive faculties of organizational members becomes an important focus of the theory (Achrol 1986). In other words, the environment is "enacted" by relevant decision makers (Weick 1969).

Dimensionalizing the environment from this perspective focuses on those aspects of the environment which tend to make decision making less certain. For example, a dynamic (changing) and complex (diverse) environment would probably make decisions and problem solving more difficult. Uncertainty from this perspective becomes specific to the decision maker and the decision making process (Downey, Hellriegel and Slocum 1975; Achrol 1986).

> The view of environments as information directs our attention immediately to the role of perception (Aldrich 1979, p. 132).
>
> Noting that an organization's environment is enacted, or created by attentional processes, tends to shift the focus from characteristics of the objective environment to characteristics of the decision process (Pfeffer and Salancik 1978, p. 74).

From this approach, uncertainty is used to describe a property of the individual decision maker. Thus, it is conceived as a psychological trait rather than an environmental attribute. Unlike the resource dependence

view, the information flow perspective emphasizes relations in both the vertical and lateral environments. This is true since uncertainty about the lateral environment may affect the bargaining dyad directly if dyad members view this uncertainty as a common problem.

In conclusion, the information flow and resource dependence theories involve fundamental differences in their ontological assumptions about organizations and their environments (Achrol 1986). These assumptions lead to different ways of defining and measuring uncertainty. For example the criterion measures of Downey, et al. (1975), Etgar (1977), Hrebiniale and Snow (1980), and Bourgeois (1985) conceive of uncertainty as an environmental attribute. Their conceptualization and measurements are therefore more consistent with the ontology of the resource dependence perspective. On the other hand, the perceptual measures of Duncan (1972), Huber, et al. (1975), Leifer and Huber (1977), Spekman and Stern (1979), Kopp and Litschert (1980), Brown, et al. (1984), and Achrol (1986) conceive of uncertainty as a psychological trait. Their conceptualization and measurements are more consistent with the ontology of the information flow perspective (for a detailed integrative review of that literature consistent with each of these ontologies see Appendix C).

The political economy paradigm has conceived of the environment as a pool of resources (Arndt 1983) or a flow of information (Achrol, Reve, and Stern 1983). This dissertation defines the environment as a flow of information for two reasons. First, the research hypotheses are relatively straight forward extensions of Achrol, Reve, and Stern's conceptualization, thus it is important to be consistent with their ontology.

Second, it is hypothesized that lateral perceived environmental uncertainty will affect the dominant sentiments of the bargaining dyad directly, thus this environment must also be emphasized.[4] Environmental uncertainty will therefore be defined and measured as a perceptual variable.

Perceived Environmental Uncertainty

Behavior can be understood by reference to the environment as perceived and reacted to by individuals, rather than by reference to the objective physical environment (Koffka 1983). This view assumes that the environment is a set of stimuli which lacks meaning or information value until perceived by an individual (Downey and Slocum 1975). Perception refers to the process by which individuals organize and evaluate stimuli (Second and Backman 1964). Therefore... "uncertainty, as a counterpart to information, should be considered as perceptually based" (Downey and Slocum 1975, p. 567).

Understanding environmental uncertainty as a perceptual concept contains the inherent problem that variations in uncertainty may be related to characteristics of the individual. This problem does not preclude the expectation that the perception of uncertainty is also related to environmental attributes (Downey and Slocum 1975). Empirical evidence suggests that specific attributes of physical environments tend to elicit

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[4] Recall that from the resource dependence perspective the significance of the lateral environment has an indirect affect on the bargaining dyad by first affecting the input and output sectors.

similar perceptions of uncertainty by individuals (Duncan 1972; Downey and Slocum 1975; Bourgeois 1985).

Burns and Stalker (1961) were among the first to utilize the concept of uncertainty in a contingency theory context. Here the concept was operationalized by describing the environments of twenty British firms. These descriptions were based on unstructured interviews, observations, and general impressions. This study was exploratory in nature and is significant in that it led to further research.

Lawrence and Lorsch (1967) extended the work of Burns and Stalker by examining ten U.S. industrial firms. They state that uncertainty is composed of three elements: a) lack of clarity of information; b) general uncertainty about causal relationships; and c) time span of feedback about results. A single questionnaire item was used to measure top management's perceptions of these uncertainty dimensions for each of three subenvironments (sales, production, and research and development). The researchers accepted their operationalization of uncertainty based upon the face validity of the concept and instrument. The results of the measures tended to agree with the researcher's prior expectations, which were based on interviews.

Duncan (1972) believed that Lawrence and Lorsch's conceptual elements of uncertainty were too broad in scope, ambiguous, and vague. This lack of clarity in definition inhibited development of specific operational measures of uncertainty. On the other hand, Duncan believed that the decision theorists seemed to be too narrow in their definitions. Garner (1962), Knight (1921), Luce and Raiffa (1957), and other decision

theorists tended to focus on the more mathematical aspects of uncertainty. For example, Garner's definition is representative: "...the uncertainty of an event is the logarithm of the number of possible outcomes the event can have" (1962, p. 19). Duncan reasoned that although this was an important component of uncertainty, there were other elements that should be included. In addition, Duncan felt the definitions of the decision theorists were too abstract to be useful. Thus, Duncan defined uncertainty in terms of three components (1972, p. 318):

> (1) The lack of information regarding the environmental factors associated with a given decision-making situation;
>
> (2) Not knowing the outcome of a specific decision in terms of how much the organization would lose if the decision were incorrect;
>
> (3) Inability to assign probabilities with any degree of confidence with regard to how environmental factors are going to affect the success or failure of the decision unit in performing its function.

This is the definition of environmental uncertainty which will be used in this research. The first two components of Duncan's definition are similar to Lawrence and Lorsch's (1967) broad formulation. The third component is similar to the definitions of the decision theorists. At the same time, Duncan's third component differs from the decision theorists in a fundamental way. Decision theorists define uncertainty as a situation in which the individual cannot assign probabilities to the outcome of events (Knight 1921; Luce and Raiffa 1957). According to Duncan the issue is not whether individuals can assign probabilities, but "how sure or confident the respondent is in his probability assessment" (1972, p. 318).

This definition thus builds on both the wide and narrow formulations of uncertainty. It assumes a broader perspective and yet is still concerned with the individual's ability to assign probabilities. For these reasons a number of contingency theorists have used Duncan's definition directly (Huber, et al. 1975; Kopp and Litschert 1980; Bourgeois 1985; Achrol 1986).

THE INTERNAL POLITICAL ECONOMY

Recall that the political economy framework focuses on the relationship between the external and internal political economies. The external political economy is conceived as the organizational environment in general and is understood on the basis of abstract dimensions. The relevant outcome of these dimensions is environmental uncertainty. Theorists focus on uncertainty since this phenomena creates problems for decision making and problem solving.

The internal political economy is conceived as the processes and structures of interorganizational dyadic exchange. As illustrated earlier in figure four, these are: transactional form, decision mechanisms, power/dependence relations, and dominant sentiments and behaviors. This research examines the relationship between uncertainty and the dominant sentiments and behaviors of dyadic interaction.

Dominant sentiments and behaviors are defined as the "internal sentiments and behaviors of cooperation and functional or dysfunctional

conflict characterizing internal exchange" (Stern and Reve 1980, p. 62; my emphasis).

Thus, this section focuses on conflict and cooperation within an interorganizational dyadic exchange context. It is divided into two important sections. First, conceptual definitions of conflict and cooperation will be presented and discussed. Second, intergroup conflict and cooperation will be explained from the perspective of Sherif (1958).

Conceptual Definitions

Definitions currently used in the conflict stream of research were developed in a number of conceptual articles between 1955 and 1972. This literature concentrates primarily on conflict (Palamountain 1955; Pondy 1967; Fink 1968; Schmidt and Kochan 1972), however, some theorists focus on both conflict and cooperation (Mallen 1964; Alderson 1969). When both conflict and cooperation are discussed, the question arises as to when a situation of low cooperation becomes one of conflict. Some theorists resolve this problem by introducing a conflict -- cooperation continuum (Pearson and Monoky 1976), others view conflict and cooperation as distinct concepts (Robicheaux and El-Ansary 1976; Childers and Ruekert 1982; Dant 1985). If the researcher can conceive of a situation in which both conflict and cooperation would increase, then these concepts should be viewed as distinct. For example, in a situation of increasing interdependence and balanced power, one could provide the theoretical foundation to hypothesize that both conflict and cooperation would increase. The present research will construct a simulation in which both conflict and

cooperation will be simultaneously present. It will then be hypothesized that some treatments will result in more conflict and less cooperation, or less conflict and more cooperation. Thus, even though it will be suggested that conflict and cooperation will vary inversely, it will be assumed that they are distinct.[5]

Conflict Definition. Assuming an early version of the political economy perspective, Palamountain (1955, pgs. 114-116) isolates three forms of distributive conflicts: (1) Horizontal competition between middlemen of the same type; (2) Intertype competition between middlemen of different types on the same channel level; and (3) Vertical conflict between channel members who are at different channel levels. No theoretical distinction was made between conflict and competition. Conflict was defined primarily by example although Palamountain did state that conflict was characterized by: "...vertical struggle between different levels of distribution... in the plane of vertical conflict, power relationships are direct, obvious, and important to the extent that the market is imperfect" (1955, p. 117).

Mallen (1964) extends Palamountain's conceptualization by concentrating on his notion of "vertical conflict." Mallen writes about vertical conflict in the context of "opposing interests" or differences in

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[5] At this stage of empirical research, the author believes that this approach makes the most sense. An empirical study demonstrating that under certain circumstances both conflict and cooperation will increase is badly needed. A study such as this would settle the debate as to whether these variables are distinct or just different dimensions of the same construct.

the "primary business philosophy of channel members" (1964, p. 126). The basic source of conflict is the act of exchange within a dyadic relationship (Mallen 1964). However, conflict also finds its source in the gathering of information in preparation for exchange. In fact, Mallen presents a relevant example: "a manufacturer may wish to get information from his resellers on a certain aspect relating to his product, but his resellers may refuse to provide this information" (1964, p. 126). Thus, vertical uncertainty may serve as a source of tensions or antagonisms. Or, one could infer that the dissemination of information may be a source of cooperation.

Pondy (1967) provides a conceptualization of conflict which has become a cornerstone in the channels literature. According to Pondy, a conflictual relationship should be considered a dynamic process. This process is understood to be a sequence of "conflict episodes" (Pondy 1967, p. 299). A conflict episode is defined as a "gradual escalation to a state of disorder" (p. 299). An elaboration of each of the five stages characterizing a conflict episode provides the substance for a working definition of conflict (Pondy 1967, pgs. 300-306):

(1) Latent Conflict - There are three basic types of latent conflict: competition for scarce resources, drive for autonomy, and divergence of subunit goals (role conflict may be considered a fourth). These can be considered the "conditions" or "sources" of organizational conflict.

(2) Perceived Conflict - This involves becoming aware or cognizant of the conditions underlying conflict.

(3) Felt Conflict - This is the subjective feeling of conflict. This often involves the personalization of conflict and leads to affective states such as anxieties.

(4) Manifest Conflict - This involves actual conflictual behavior, e.g., open aggression, physical violence, arguments, apathy, withdrawing support, etc.

(5) Conflict aftermath - This leads back to the conditions which characterize latent conflict. If the conditions which led to the conflict episode are not resolved, they will probably lead to further conflict until rectified.

Pondy (1967) emphasizes that not every conflict episode necessarily passes through every stage to open aggression. The empirical stream of research in channel conflict refers to these stages as conflict "states" (see Appendix D for a detailed integrative review of a sample of this literature). Researchers operationalize different states depending on their theory, aims, and methods. For example, researchers have operationalized and measured perceived conflict (Rosenberg and Stern 1971; Stern, Sternthal, and Craig 1973; Eliashberg and Michie 1984; Dant 1985), felt conflict (Pruden 1969; Pearson 1973; Hunger and Stern 1976; Pearson and Monoky 1976; Etgar 1979; Ross and Lusch 1982), and manifest conflict (Assael 1968; Foster and Shuptrine 1974; Lusch 1976a, 1976b; Kelly and Peters 1977; Brown and Frazier 1978; Brown and Day 1981; Schul, Lamb, and Little 1981). This dissertation will operationalize and measure "perceived conflict" in the Stern, Sternthal, and Craig (1973) tradition.

Pondy's conceptualization of conflict as a dynamic process does not eliminate the need for a comprehensive definition of "perceived conflict." Fink (1968) states that conflict is any "social situation or process in which two or more social entities are linked by at least one form of antagonistic psychological relationship or at least one form of antagonistic interaction" (p. 456). By "antagonism," Fink meant an affective state arising from incompatible goals, mutually exclusive interests, or value dissensus. Fink specified a range of "interactions" which are part of the domain of this definition: from the most subtle, indirect, and highly regulated forms of mutual interference to the most direct, violent, and unregulated struggle. Thus, Fink (1968) emphasizes an affective state of antagonism and a wide range of possible interactions.

Raven and Kruglanski (1970, p. 70) also provide a comprehensive definition: conflict is "tension between two or more social entities that arises from incompatibility of actual or desired responses." Notice that both Fink (1968) and Raven and Kruglanski (1970) emphasize the importance of incompatible interests, goals, values, or responses. According to Schmidt and Kochan (1972), this condition alone will not necessarily lead to conflict. Perception of incompatibility is a necessary precondition for either conflict or competition. The difference between competition and conflict is in the realm of interference or blocking activities (Seiler 1963). Thus, antagonism, tension, incompatible interests, and mutual interference are important elements specifying the domain of this construct. This discussion leads to the following definition:

> Conflict is a form of social interaction between two social entities which is characterized by tension and/or antagonism; this affective state arises from an incompatibility of interests and perceived interference.

For example, if bargainer A is holding out for a better deal, bargainer B may perceive bargainer A to be interfering with the process of joint striving toward a collective goal. At the same time, bargainer A may not be accepting B's proposals because they perceive them to be unfair. Tension and antagonism may arise from this social interaction. This definition will be used in this research.

Cooperation Definition. Since many researchers assume the conflict - cooperation continuum, cooperation is very often left undefined. These researchers assume that where there is lack of conflict, there is cooperation. When cooperation is defined, it is sometimes confused with interdependence (Aiken and Hage 1968) or coordination (Warren 1972). Whereas interdependence and coordination are social structural constructs (Bates and Harvey 1975), cooperation is a social psychological construct.

Robicheaux and El-Ansary (1976) capture the essence of this concept by defining it as a state characterized by a willingness to coordinate activities. Thus, from this perspective, if channel members were willing to strive jointly to achieve collective goals, they would be cooperating. Dant (1985) observes that a good definition of cooperation should have a psychological as well as a behavioral component. A definition which subsumes both of these elements is offered by Childers and Ruekert (1982, p. 117):

> Cooperation is, the expectation of a balanced exchange of the resources required to achieve both intraorganizational and interorganizational goals through joint action among two or more actors.

The psychological element of this definition is captured in the "expectation of a balanced exchange." The behavioral element is captured in the "through joint action" phrase. Another advantage to this definition is that it acknowledges the mixed-motive setting which characterizes channels: "achieve both intraorganizational and interorganizational goals through joint action." For example, if bargainers A and B are willing to coordinate their behavior in such a way as to find that agreement which maximizes joint return, as well as provide for a satisfactory individual return, they are cooperating. Childers and Ruekert's (1982) definition will be used in this research.

Intergroup Conflict and Cooperation

Most of the research on intergroup conflict and cooperation is based on the work of Sherif, et al. (1961) and Sherif and Sherif (1969). This research proposes three general themes (Harrison 1976): 1) win/lose situations produce a form of conflict in which competing groups interfere with each others attempts at goal attainment; 2) win/lose situations cause group members to raise their evaluation of their own group and lower their evaluation of competing groups; 3) if it were possible to get competing groups to pursue common goals, conflict would be reduced and cooperation would increase.

According to Hunger and Stern (1976), of all possible conflict resolution techniques, the superordinate goal appears to be the most ef-

fective. Conceptualized by Sherif, et al. (1961, p. 202), it is a goal of "high appeal value for conflicting groups, but whose attainment is beyond the resources and efforts of any one group alone." The theoretical explanation here is that a superordinate goal will encourage conflicting groups to reconceptualize the situation by working together and sharing information. The groups, in effect combine to become a new in-group. This altruistic understanding should reduce ethnocentric attitudes and unfavorable stereotypes. The result will be a reduction in conflict-oriented behavior and an increase in cooperation (Sherif et al. 1961).

Stern, Sternthal, and Craig (1973) investigated hypothesized empirical relationships between perceived conflict, goal incompatibility, superordinate goals, and exchange of persons programs. They found strong support for the hypothesis that perceived conflict varies directly with goal incompatibility. Some support was found for the hypothesis that perceived conflict varies inversely with the emergence of superordinate goals. Moderately strong support was found for the hypothesis that perceived conflict varies inversely with the exchange of persons program:

> Speculating about the findings relative to channel theory and management, it appears that uncertainty absorbing mechanisms might bring about more effective long-term problem-solving behavior among conflicting parties than an external shock to a system (Stern, Sternthal, and Craig 1973, pgs. 176-177).

This last finding is not inconsistent with Sherif's superordinate goal research. It could be that working toward a superordinate goal and an exchange of persons program, under some circumstances, might serve the same purpose of encouraging communication and exchange of information. In fact, Sherif suggested two other measures for reducing intergroup

conflict: disseminating information and increasing social contact (1958, p. 356).

Hunger and Stern (1976) furthered Stern, Sternthal, and Craig's research by testing a series of hypotheses relating goal incompatibility, superordinate goals and perceived conflict. They found partial support for the hypothesis that goal incompatibility will result in an attitudinal bias against the out-group, and a positive bias for the in-group. Support was found for the hypothesis that a superordinate goal will increase cooperation, even though the underlying cause of the frustration remained unchanged. Partial support was found for the hypothesis that an achieved superordinate goal will reduce more conflict than a non-achieved superordinate goal.

Two important conclusions can be drawn from the above research. First, there is empirical support for the theoretical proposition that a superordinate goal is able to contain intergroup conflict in a mixed motive setting (Stern, Sternthal, and Craig 1973; Hunger and Stern 1976). Second, working together to achieve a superordinate goal may reduce intergroup conflict, while failure to achieve a superordinate goal may increase intertype conflict (Hunger and Stern 1976). This research has important implications for the relationship between uncertainty and conflict/cooperation. For example, since vertical uncertainty originates from within the formal channel, bargainers may blame each other for problems which stem from this uncertainty. On the other hand, lateral uncertainty originates outside the boundaries of the marketing channel, thus bargainers may perceive this as a common threat or problem. This

indicates that uncertainty may have very different effects on the dominant sentiments of the dyad, depending upon its critical source.

SECTION CONCLUSION

This section on the political economy framework focused on the intellectual and conceptual foundations, the external political economy, and the internal political economy. The external political economy is conceived as the organizational environment in general. Since environments affect focal organizations in unpredictable ways, an important outcome for decision making is uncertainty. The internal political economy can be any focal organization. In this context, the framework suggests that channels research will proceed most fruitfully if it is understood to be the interorganizational dyad.

The political economy framework is a programmatic descriptive model highlighting important relationships between the external and internal political economies. One of these relationships is between environmental uncertainty and the dominant sentiments of a focal dyad. Descriptive models compel researchers to think in certain directions, however they do not provide theoretical explanations. Other theories and ideas still need to be borrowed to explain the "why" of relevant relationships. That theory which will be useful in explaining important aspects of the relationship between uncertainty and the dominant sentiments of the dyad is Sherifs' intergroup conflict and cooperation theory. The last section of this chapter will a) review literature that is directly related to this

relationship, and b) hypothesize specifically about the ways in which environmental uncertainty affects the dominant sentiments of the dyad.

PROPOSED RELATIONSHIPS

The purpose of this section is to propose a series of research hypotheses relating the external and internal political economies. This will be done by a) reviewing directly relevant literature, then b) proposing a series of hypotheses based on conclusions drawn from this literature. Attention will center on the ways in which environmental uncertainty affects the dominant sentiments of the dyad.

DIRECTLY RELEVANT LITERATURE

Dwyer and Welsh (1985) tested hypothesized relationships between the external political economy and the transactional form and decision mechanisms of the internal political economy (relationships 1 and 2 in Figure 4). Combining the resource dependence and flow of information perspectives, Dwyer and Welsh (1985) suggest that the environment poses two fundamental problems for decision makers: dependence and uncertainty. Dependence results from the objective qualities of the environment while uncertainty results from the subjective perceptions of the environment. Strategic and managerial action is driven by decision-maker perceptions, while the consequences of decisions are shaped by the actual environment

(Dwyer and Welsh 1985). Thus, social structures are both "constitutive and constituting" (p. 400).

Assuming the resource dependence view of the environment, Dwyer and Welsh (1985) hypothesize that variability in the output sector will result in increased dependence. Dependence should prompt suppliers to use less complex (i.e., more integrated) channel structures and consolidate their influence over downstream channel partners. Assuming the flow of information view, these authors also hypothesize that heterogeniety will result in increased uncertainty. To cope with this uncertainty, channel decision structures are expected to be decentralized and less formal. Some empirical support was found for both hypotheses.

Achrol (1986) states that the information and resource dependence theories involve fundamental differences in their ontological assumptions about organizations and their environments. "That the objective and enactment contexts of organizations have been shown to be divergent in some respects might be... that the two theoretical planes <u>should not be confused</u>" (Achrol 1986, p. 9; my emphasis). Thus, only Dwyer and Welsh's second hypothesis is consistent with the theoretical orientation of this dissertation. As stated earlier, from this perspective, environments are not uncertain in themselves. They are uncertain when contemplated by human actors, and such contemplation occurs usually in the context of decisions the actor wishes to make (Achrol 1986). Since strategic action is driven by decision-maker perceptions, this perspective is most relevant for a managerial orientation.

Dwyer, Oh, and Hoelter (1986) contribute to the political economy research tradition by studying the relationship between munificence and a number of channel member relations. The relevant aspect of this study is their second hypothesis: "Compared to their counterparts in lean environments, dealers' in munificent environments manifest relationships with suppliers characterized by less conflict with suppliers" (p. 11). This hypothesis is similar to the relationship being investigated in this research. Environmental capacity (rich/lean) is one of the dimensions highlighted by Pfeffer and Salancik (1978) and Aldrich (1979). Rich and lean environments were selected a priori from Standard Metropolitan Statistical Area's profiled in the 1982 Census of Retail Trade and Sales and Marketing Managements' 1984 Survey of Buying Power. Thus, these authors were not measuring perceptions of the environment (assuming the resource dependence view). Their theoretical explanation is consistent with Assael (1969): a channel member's inability to sell its outputs may increase the level of tension between channel members; this in turn would increase the frequency of disagreement over salient issues (Dwyer, Oh, and Hoelter 1986).

No empirical support for this hypothesis was found: "Environmental munificence has no significant direct effect on conflict within the context of our model" (Dwyer, Oh, and Hoelter 1986, pgs. 22-23). This study is still important however since it is the first study written specifically from the political economy perspective hypothesizing that environmental dimensions will affect the dominant sentiments of the dyad.

Brown, Lusch, and Koenig (1984) investigated the relationship between perceived environmental uncertainty and perceived conflict in a channel setting. This research was not positioned within the political economy program, as it is conceptualized in this dissertation. However, they do cite political economy literature as justification for using perceived environmental uncertainty rather than other facets of the environment. Their fourth hypothesis states: "the higher the degree of uncertainty that channel member R (retailer) perceives, the higher the extent of conflict he will perceive to exist in the R-S (retailer-supplier) channel relationship" (p. 23). The authors based the theoretical rationale for this hypothesis on the following axiom: "Whenever something external to an organism or organization is uncertain or unpredictable more tension is likely to result and this increased tension will likely impact on other behavioral processes in the organization or organism" (Brown, Lusch, and Koenig 1984, p. 20). This research views environmental uncertainty relative to inventory-ordering decisions. Thus, it is defined as perceived variability in the input and output sectors. These authors are therefore investigating the relationship between <u>vertical</u> perceived environmental uncertainty and conflict. This relationship was found to be statistically significant (LISREL estimate: 0.558; t-value: 3.353; standardized estimate: 0.475). Their conclusion: "...channel members tend to blame others in the system for failing to deal adequately with fluctuations in demand. One consequence, then, of increased uncertainty of demand is heightened channel conflict" (p. 31).

Several conclusions follow from this review of literature. First, there is some empirical evidence to suggest that dimensions of the organizational environment influence the internal political economy in hypothesized ways (Dwyer and Welsh 1985). Second, from a resource-dependence perspective, an empirical relationship between the environment and conflict <u>was not</u> established (Dwyer, Oh, and Hoelter 1986). However, from a flow of information perspective, an empirical relationship between the environment and conflict <u>was</u> established (Brown, Lusch, and Koenig 1984). One reason for the disparity could be the different approaches taken to measure the environment. Recall that Achrol (1986) stated that there was a weak form of incommensurability between the resource-dependence and flow of information perspectives. The ontological assumptions of the organization-environment perspective carry over into the methodological domain. This leads to the final conclusion: assuming the environment as a flow of information perspective, there is some evidence of a positive correlation between vertical perceived environmental uncertainty and perceived conflict.

The political economy framework takes more than just the input and output sectors of the environment into account (recall Figure 3). It does not make sound theoretical sense that dyad members would blame each other for problems stemming from lateral uncertainty since this originates from outside the boundaries of the formal channel. Thus, the positive correlation between uncertainty and conflict is true only when uncertainty is perceived to exist in the vertical environment. If uncertainty is perceived to exist in the lateral environment, it may not lead to conflict,

in fact if it is perceived to be a superordinate goal, it may lead to an exchange of information and cooperation. Therefore, it is proposed that perceived environmental uncertainty will affect the dominant sentiments of the dyad differently, depending upon its critical source.

RESEARCH HYPOTHESES AND RATIONALE

The level of lateral uncertainty can be defined in terms of environmental dimensions as discussed above. For example, contingency theory suggests that a complex and dynamic lateral environment will be perceived to be more uncertain than a simple and static lateral environment. The critical source of lateral uncertainty is external to the formal channel, thus dyad members will not view this uncertainty as originating from each other's actions. Since uncertainty affects decision-making and therefore goal attainment, dyad members will tend to view lateral uncertainty as a common problem. This common problem should promote communication and information exchange between dyad members. Lateral environmental uncertainty in this context, serves as a superordinate goal to the focal dyad. Recall that Sherif, et al. (1961) reasoned that if conflict develops from mutually incompatible goals, then common goals should promote cooperation. By working together and sharing information, uncertainty would be reduced more than if the dyad members dealt with the problem separately. Thus, lateral uncertainty may serve as a superordinate goal tending to reduce an in-group/out-group attitudinal bias favoring the

in-group and therefore encouraging cooperation and discouraging conflict. This discussion culminates in two research hypotheses:

H_1: The higher the level of lateral environmental uncertainty, as perceived by the focal dyad, the higher the level of perceived cooperation.

H_2: The higher the level of lateral environmental uncertainty, as perceived by the focal dyad, the lower the level of perceived conflict.

Certainly, gaining information about the vertical environment is important for both members of the dyad and therefore could be considered a common goal. However, this uncertainty is generated from within the formal channel, thus, dyad members are more apt to blame each other for its existence. Instead of serving as a superordinate goal, uniting dyad members, it serves as a source of frustration between dyad members. For example, if a retailer is faced with shortages in the supply of demanded manufactured products, they may accuse their suppliers of not properly forecasting demand. Similarly, during a period of variable demand or lagging sales, the supplier and manufacturer may accuse the retailer of not properly marketing the products (Assael 1969). This situation tends to increase an in-group/out-group attitudinal bias favoring the in-group and thus encouraging conflict while discouraging cooperation. This discussion culminates with hypotheses three and four:

H_3: The higher the level of vertical environmental uncertainty, as perceived by the focal dyad, the lower the level of perceived cooperation.

H_4: The higher the level of vertical environmental uncertainty, as perceived by the focal dyad, the higher the level of perceived conflict.

These four research hypotheses lead to some interesting questions about what would happen to perceived conflict and cooperation if both lateral and vertical environmental uncertainty were perceived to be high or low. Turning to the rationale for hypotheses one through four, if uncertainty was perceived to be high in both sectors of the environment, conflict would be high, but not as high as if lateral uncertainty were perceived to be low. If both lateral and vertical environmental uncertainty were perceived to be low, conflict would be low, but not as low as if only vertical uncertainty was perceived to be low and lateral uncertainty was perceived to be high. This discussion is summarized with hypothesis five:

H_5: If both lateral and vertical environmental uncertainty were perceived by the focal dyad to be:

(a) high, then perceived conflict will be high, but not as high as the high vertical/low lateral condition;

(b) low, then perceived conflict will be low, but not as low as the high lateral/low vertical condition.

Following this same line of reasoning, if both sectors of the environment were perceived to be highly uncertain, cooperation would be low, but not as low as if only lateral uncertainty were perceived to be low. On the other hand, if both types of uncertainty were perceived to be absent, the environment would be certain, thus cooperation should be high. It is proposed that this cooperation would not be as high as if only lateral uncertainty was perceived to be present, since it is the process of working toward the achievement of a superordinate goal that promotes cooperation. This discussion is summarized with the sixth hypothesis:

H_6: If both lateral and vertical environmental uncertainty were perceived by the focal dyad to be:

(a) high, then perceived cooperation will be low, but not as low as the high vertical/low lateral condition;

(b) low, then perceived cooperation will be high, but not as high as the high lateral/low vertical condition.

SECTION CONCLUSION

The purpose of this section was to propose a series of research hypotheses relating perceived environmental uncertainty and the dominant sentiments of the dyad. This was done by first drawing several conclusions from directly relevant literature. The most important of these was that assuming the environment as a flow of information perspective, there is some empirical evidence indicating a positive correlation between vertical perceived environmental uncertainty and perceived conflict. This assumes that vertical environmental uncertainty will be perceived to affect members of a focal dyad differently.

Assuming that lateral environmental uncertainty will be perceived to affect members of a focal dyad in a similar way, it does not make theoretical sense to propose that this type of uncertainty will lead to conflict. It is this rationale that led to the propositional statement that perceived environmental uncertainty will affect the dominant sentiments of the dyad differently, depending upon its critical source.

The second part of this section presented six research hypotheses. These hypotheses propose specific relationships between vertical and

lateral environmental uncertainty and conflict and cooperation. The superordinate goal research of Sherif, et al. (1961) was used as the theoretical rationale supporting these hypotheses.

CHAPTER SUMMARY

The purpose of this chapter was to review that literature which imparts theoretical and empirical support to the relationship between environmental uncertainty and the internal sociopolitical processes of the channel. The chapter was organized in terms of three general sections: a) marketing channels: a behavioral perspective, b) the political economy framework, and c) proposed relationships.

The purpose of the first section was to define basic concepts and introduce the channels field. From a behavioral perspective, channels are conceived as open systems, characterized by goal attainment, interdependency, and coordination. This orientation has produced significant streams of research in the politics of distribution.

The second section gave a conceptual overview of the political economy framework, as it has evolved from 1970 to the present. This was done by explaining the intellectual and conceptual foundations, the details of the external political economy, and what is meant by the internal sociopolitical processes. The political economy framework is a programmatic descriptive model generating concepts and propositions relating these concepts. One of these relationships states that the external political economy affects internal sociopolitical processes.

Given the conceptual evolution of the framework, one way of studying this relationship is to explore how uncertainty affects the dominant sentiments of the dyad.

The last section articulated a series of research hypotheses relating the critical source of perceived environmental uncertainty to conflict and cooperation. The superordinate goal research, first published in social psychology then later in the channels literature, was used as the theoretical rationale supporting these hypotheses. The next chapter outlines a methodology from which the hypotheses can be empirically tested.

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

Chapter two presented a number of hypotheses describing relationships between uncertainty and the dominant sentiments of the dyad. A theoretical explanation was also presented as a rationale for why these relationships should exist. Relevant literature was reviewed emphasizing relationships among theoretical constructs. The purpose of this chapter is to outline a methodology from which the hypotheses can be empirically tested.

The specific objectives of this chapter include the following: 1) a brief summary of methods that have been used in the past to evaluate channels theory; 2) a description of different types of laboratory experiments that have been done with organizations; 3) reasons for using a face-to-face dyadic negotiation simulation in this dissertation; 4) a description of the experimental procedures; and 5) a detailed discussion of the data collection plan.

METHODS USED TO EVALUATE CHANNEL THEORIES

The purpose of this section is to review briefly the research methods that have been used in the empirical study of marketing channels. These include various types of case studies, the sample survey, and experimental

research (Dwyer and Krieger 1983). Each of these methods emphasize different aspects of empirical research and therefore has a different strength. Selection of one of these methods involves the process of matching goals with strengths. For example, if the aim of the researcher is to generate hypotheses through thick description of an actual channel environment then the case method should be selected. The following sections outline the strength of each method, discussing when it would be appropriate to use it. Examples taken from the empirical channels research area will be used to help illustrate the use of each method.

CASE STUDY METHOD

The marketing discipline's emphasis on more sophisticated quantitative methods has led to the temporary cessation of the case study approach. Campbell and Stanley's (1963, p. 6) now infamous statement contributed greatly to this general trend:

> (Case) studies have such a total absence of control as to be of almost no scientific value... securing scientific evidence involves making at least one comparison.

Thus, many of the most insightful case studies in the channels literature were pre-1963. For example Palamountain's (1955) analysis of the automobile, drug, and grocery trades was instrumental to the development of today's notion of countervailing power. Ridgeway's (1957) case study of the auto, farm implement, and gasoline channels provided theoretical foundations for channel leadership. Many of the hypotheses generated by these studies, along with their descriptions of channel conflict, have

not been overturned by 30 years of empirical research. According to Dwyer and Krieger (1983, p. 165), studies such as these serve as "prima facie evidence of the potential richness of the case study method." The above studies were hypothesis-generating, this is the most accepted role of the case study. Case studies have also been used as a theory-confirming method (see Assael 1969). Theory-confirming is generally appropriate when the case is sufficiently extreme on one of the variables to be labeled a crucial test of the proposition.

The case method is consistent with William McGuires (1973) call for more attention to the hypothesis - formulation stage of research. McGuire urges more detailed observation of people, not data. It is scholars like McGuire that eventually led Campbell to reevaluate his own stance toward the case study:

> In a case study done by an alert social scientist who has thorough local acquaintance, the theory he uses to explain the focal difference also generates predictions or expectations on dozens of other aspects of the culture, and he does not retain theory unless most of these are also confirmed (Campbell 1975, pp. 181-182).

The rationale underlying case studies is closely aligned with what some researchers are calling the "interpretive" approaches (Hudson and Murray 1986; Hudson and Ozanne 1986). The objective here is to decrease N so that the richness of the phenomena becomes salient. The researcher becomes engrossed in the realism and complexity of the life situation. It is this emphasis of realism, complexity, richness, and context that can be considered the strength of the case study method. All background factors are allowed to vary at natural levels on all variables. In fact, the case studies emphasis of a small N and natural setting suggests that

all factors are brought to the foreground.

SAMPLE SURVEYS

By far the most popular methodological approach in the channels field is the sample survey. According to Dwyer and Krieger (1983, p. 168), reputation and custom have relegated the field survey to a position of "meat and potatoes" in channels research. In terms of emphasizing real-life context or statistical control, the field survey lies between the case study and the laboratory experiment. It is the survey's emphasis of representative context and some degree of statistical control that has become the strength of the method. Assuming that the heterogeneity of the sample and the setting parallel that found in the field, the researcher is studying real channels, in all their complexity. At the same time, assuming that the study is designed according to accepted methodological rules, including a large enough sample, some generalizations can be made. As N is increased, that which is idiosyncratic, unique, or deviant tends to wash-out. Other background factors that are not considered relevant to the hypotheses, can be statistically controlled. Thus, some of the contextual richness of the case study is lost. This disadvantage is offset by added control and the ability to generalize to the population of interest. Sample surveys are generally not used to generate hypotheses, so added richness is not usually needed. They are used to test hypotheses that are managerially relevant. In fact, "when immediate managerial insights are sought, the field study appears all but

mandatory" (Dwyer and Krieger 1983, p. 168). If the researcher's aim is to obtain findings that can be applied directly to the situation of interest, then the sample survey is an appropriate method. Note that the "effects" themselves are generalized rather than being linked by inference to the hypothesized theoretical network (Calder, Phillips, and Tybout 1981, p. 198). Thus, generalization of the effects to a specific population of interest is emphasized over the nomological network between constructs.

According to Dwyer and Krieger (1983) the potential of sample surveys to confirm theory is increased by sampling across industries, using multiple informants, and improving measures. Each of these issues has been dealt with in the channels field. For example, Etgar's (1978) study on channel leadership shows industry specific differences between retailers who rated levels of their supplier's control. Phillips (1981) and John and Reve's (1982) work represents significant breakthroughs in using multiple informants in dyadic channels research. Brown and Day's (1981) contributions to conflict measurement (frequency, intensity, and importance) is a good example of progress that has been made in construct measurement.

Even with the above improvements, it is still difficult to establish temporal sequence, or to rule out alternative explanations. Thus the establishment of causality with any degree of confidence is difficult. However, the control needed to establish causality would remove the correspondence between the research setting and the actual channel. If important contextual variables are removed, the ability to generalize the

effect to the actual channel is also removed.

EXPERIMENTAL METHOD

The experimental method has not been used extensively to study organizations (Weick 1965; Dwyer and Krieger 1983). According to Scott (1965): "Most of what we know today about organizations and the behavior of their members is known on the basis of field studies" (p. 261). Dwyer and Krieger (1983) suggest that we have only scratched the surface of what is to be learned from experimentation. Evan (1971) stated that the "reluctance to explore the potential utility of experimental designs is not unrelated to the skepticism long expressed about the feasibility of the experimental method in the social sciences" (p. 2). Price (1963, p. 122), acknowledging the superiority of experimentation as a method of verifying propositions on organizational phenomena, predicted that its use would not expand in the future. The source of this widespread skepticism can be traced to questions pertaining to whether or not organizational structure and process can be reproduced in the lab. Despite the skepticism, significant streams of research have been developed in channels and related fields utilizing various forms of simulations, bargaining games, and dyadic negotiations (Schurr and Lessne 1983).

Laboratory experiments utilizing organizational concepts take many different forms, thus they should not be defined in terms of a particular setting. Weick (1965) offers a good definition:

> ...this label identifies any situation in which the experimenter can determine the treatments to which groups will be

> exposed, in what order, and at what times. In addition, the experimenter can select the points at which measurements will be taken, by what means, and on whom. Where such decisions can be made and implemented by the experimenter, a laboratory experiment exists (p. 199).

Thus, relative to the case study and sample survey, the experiment emphasizes control. The purpose of the added control is to be able to systematically examine theoretically relevant aspects of the social phenomena of interest (Zelditch 1980). Added control has the advantage of providing the opportunity to: 1) decrease error variance and thus increase the sensitivity of the text, 2) establish temporal sequence, 3) rule out alternative explanations, and 4) clarify abstract relationships. On the fourth point, Weick (1965) suggests that natural events are often cryptic or vague. The laboratory experiment provides a setting in which the natural event can be rearranged and simplified, making its essence more apparent. Here again, the strength of the method needs to be matched with the aims of the researcher. Organizational experiments are appropriate when the goal is theory-testing. More specifically, theory-testing is appropriate when the purpose of the research is to examine the nomological network between constructs, without considering particularistic correspondence with marketing channel interactions (Anand and Stern 1985, p. 367).

The added control of the laboratory experiment produces a method which is less contextually realistic. However, if the aim of the researcher is theory - testing, a realistic setting is not as important. As Zelditch and Hopkins note, "the theoretical importance of events is not determined by their frequency in nature. It is determined by their

relevance to theoretical concepts" (1961, p. 466). This is consistent with Weick's (1965) comment that when experiments are theory-bound, they often involve rare events. More specifically, Weick notes that laboratory experimentation with organizations is appropriate for examining rare events, preserving interaction, or disentangling a complex environment. Dwyer and Krieger (1983) discuss that experimental simulations are artificial however: "As an abstraction of a socialization process, an analogy, it represents a good tool for testing theory with different populations and settings" (p. 167). Zigler (1963) presented a convincing argument for the reasons theory-testing seldom requires a natural setting:

> What the experimenter is saying is that if such and such holds in the real world because of the principles expounded in the particular theory under investigation, then such and such should hold in the world which the experimenter has created. This translatability is what gives theoretical import to experiments which involve phenomena which, taken in isolation, not only appear picayune but seem to have little relationship with what one observes in nature (p. 353).

Thus, the correspondence between empirical indicators and the real-life channel is not emphasized in theory testing. In fact the sociological complexity of the real environment may be such that it would be impractical to test directional hypotheses relating aspects of the environment to a focal dyad. Contextual richness and realism is compromised in favor of internal and statistical conclusion validity. This does not mean however that an experimental simulation cannot be realistic psychologically. In an organizational experiment, the subject is asked to complete a task, this task is designed to appear real to the subject and to encourage involvement. Some simulations have produced a high

degree of involvement and rather accurate predictions. For example, high-ranking military officers who visited Streuferts' Tactical and Negotiations Simulation acknowledged that the behavior of college sophomores was not unlike the strategic decision making that occurs in the real setting (Fromkin and Streufert 1970). Students participating in Streufert's Campus Uprising Simulation were at one point so involved they actually feared for their lives (Fromkin and Streufert 1970). High subject involvement along with a certain degree of psychological realism can be maintained in a well designed and pretested simulation.

A variety of different types of organizational experiments have been used in the channels and buyer behavior literature. Most of these studies focus on dyadic negotiations while manipulating the environment in theoretically meaningful ways. Examples of different types of organizational experiments taken from the literature include two-person, mixed-motive, non-zero-sum bargaining games (Green, Gross, and Robinson 1967; Mathews, Wilson, and Monoky 1972; Eliashberg, et al. 1986; McAlister, et al. 1986); negotiations within triadic structures (Walker 1971, Dwyer and Walker 1981); multiperson parasimulations (Stern, Sternthal, and Craig 1973; Angelmar and Stern 1978; Cadotte and Keyt 1980; Anand and Stern 1985); and negotiations with a programmed opponent (Clopton 1984, Schurr and Ozanne 1984).

When the aim of the researcher is to identify cause - effect relationships, the wide variety of manipulative and statistical controls associated with experimental strategies are needed. Thus, when the aim is to test theoretically relevant, specific, and directional hypotheses,

an organizational experiment is appropriate.

SECTION CONCLUSION

The purpose of this section was to review the research methods that have been used in the empirical study of marketing channels. These included the case study, sample survey, and the experimental method. Each of these methods has strengths and weaknesses. Selection of a method involves matching strengths with the aims of the researcher. According to Laudan's "reticulated model of justification" (1984), the method is an important element in a research tradition. Research traditions consist of methods, theories, and aims, all mutually intertwined in a complex process of adjustment and justification (Laudan 1984). Methods exhibit realizability to aims and the aims justify the methods. If the aim of the researcher is theory construction or hypothesis - generation, the appropriate method would be the case study. The contextual richness of a single case provides a fertile ground for theorizing. If the aim of the researcher is managerial applications, parsimonious generalizations along with real-life context is needed. Here the sample survey would exhibit realizability to the aims. If the aim of the researcher is to establish theoretical cause-effect relationships, then the appropriate method would be the organizational experiment.

The aim of this dissertation is to test theoretical propositions that have been generated by the political economy framework. The purpose therefore is to seek evidence for the credibility of the nomological

network. Thus, emphasis will be placed on the correspondence between empirical indicators and their theoretical counterparts. Recall that Weick (1965) notes that laboratory experimentation is needed to disentangle a complex environment. Experimental control will be needed to test the hypothesized relationships between the critical source of uncertainty and the political processes of the dyad. The method which exhibits realizability to this aim is the organizational experiment.

The purpose of the next section is to discuss the different types of organizational experiments. Selection of a specific type of experimental simulation is again dependent on the aims and purposes of the researcher.

TYPES OF ORGANIZATIONAL EXPERIMENTS

Organizational experiments vary according to a large number of dimensions. The purpose of this section is to identify different types of organizational experiments, discuss the strengths and weaknesses of each, and identify when the use of a specific type would be most appropriate. There are potentially many different ways of categorizing these methodologies. If one uses degree of control as a criteria, three general categories can be identified: free simulations, parasimulations, and dyadic negotiations. The third category can be further broken down into negotiations using a programmed partner and negotiations using naive subject dyads (see Figure 5). These types of simulations share some common characteristics. For example subjects are most frequently ob-

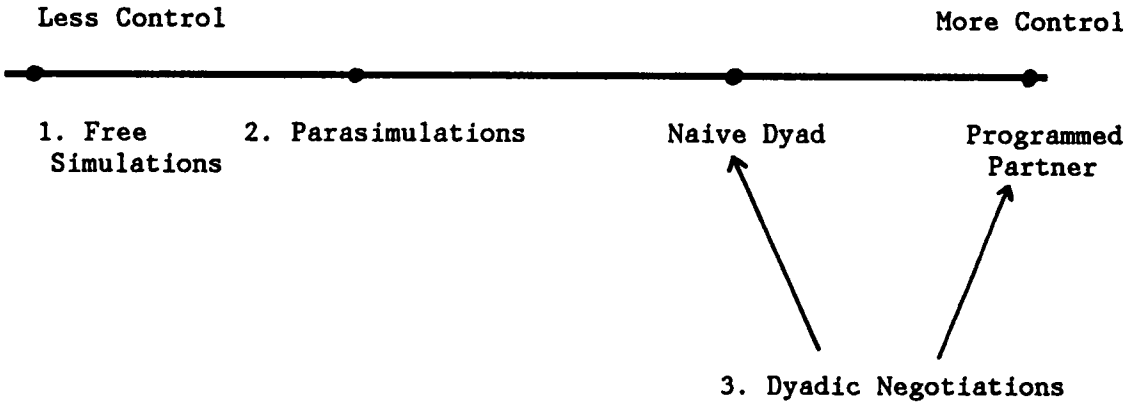

FIGURE 5: Three Types of Experimental Simulations

tained from a college student population. Since these methods are used for theory testing, a homogeneous, rather than a representative sample is sought. Subjects typically volunteer for one or two hours of research participation. The use of two or three independent variables is the most common practice (Fromkin and Streufert 1970). Two or three dependent variables are generally measured at one or two points in time during the experiment (Fromkin and Streufert 1970).

All of these simulation techniques expose participants to a number of "real-world-like" events. The research setting is artificial and contrived, however the experimental task is designed as an analogy of the real world. Again, this is done to encourage involvement and produce a psychological realism. Simulations should be distinguished from "parlor games" as discussed by Weick (1965). Parlor games define the rules and starting position of each player. As the game develops, the experimenter makes observations, being careful not to intrude on the natural outcome. Simulations exercise a greater degree of control, manipulating independent variables at theoretically meaningful levels (Fromkin and Streufert 1970, p. 420). Simulations should also be distinguished from role-playing experiments. In a role-playing task, subjects are asked to imagine that they are other people. Subjects participating in a simulation are not asked to behave as if they were in an imaginary situation. They are instructed to complete a task in the same way that subjects are asked to complete a task in the standard laboratory experiment.

These types of simulations share some common problems. These problems can be considered threats to internal validity and must be dealt with

head-on by the experimenter. First, Weick (1965) suggests that the complexity of an experimental simulation may produce apathy and confusion. Guetzkow (1968) and Streufert (1968) do not agree, suggesting that participants in simulations tend to experience high levels of involvement. Second, procedural error will return the subject to the realization that they are in an experiment, this realization will modify their behavior. Third, Weick (1965) suggests that an environment which appears realistic to the experimenter may not appear realistic to the subjects. Fromkin and Streufert (1970) suggest that these first three problems can be rectified by extensive pilot research, pretesting, and manipulation checks. One of the most important criticisms of experimental simulations is that the groups or dyads are short-lived, lacking a history, future, and corporate culture (Drabeck and Haas 1967). This problem can be dealt with in many ways, depending on the creative skill of the researcher. For example Eliashberg, LaTour, Rangaswamy, and Stern (1986, p. 103) dealt with this problem in two ways. First, perceived interdependence was induced by conducting a warm-up negotiation session using an abbreviated price-quantity matrix. By demonstrating in a warm-up session that both coordination and competition are necessary in order to reach an agreement (mixed-motive) the authors were able to establish the normative climate (corporate culture). Second, the notion of a long-term relationship was induced by informing each dyad that bargainers would be given the opportunity to negotiate a second time. Profits generated by each member would be the average of the profits obtained in the two bargaining sessions with the other member.

Different kinds of simulations are used for different purposes. Again, the strength of the method needs to be matched with the specific aims of the researcher. The specific characteristics and implications of the three most prominent simulation methods are discussed below.

FREE SIMULATIONS

Free simulations lie at the left end of the continuum illustrating different types of experimental simulations (see Figure 5). A free simulation does not afford much more experimenter control than a sample survey. In fact, some researchers have noted that experimenters who use this method are creating field research in the laboratory (Fromkin and Streufert 1970).

The defining characteristic of a free simulation is that events are shaped, in part, by the behavior of the participants themselves (Fromkin and Streufert 1970). This means that the subjects are "free" to modify the independent variables by their own behavior. More specifically, a free simulation is characterized by four elements (Fromkin and Streufert 1970, p. 425): 1) Participants are placed within a complex environment which represents the criterion environment as much as possible; 2) participants are free to behave within the boundaries of general rules or parameters; 3) participants interact with, and attempt to change, a complex environment; and 4) events are determined through the interaction of the free behavior of participants and experimenter-determined parame-

ters. Thus, this technique exposes participants to a large number of real-world-like events simultaneously.

Independent variables are introduced in one of two ways. First, the experimenter may select differential starting positions for different groups. Second, simulation rules and parameters can be varied systematically.

The strengths of the free simulation lie in its close relationship to criterion settings, and the involvement of the participants. When using the free simulation technique, there is not a strong concern for controlling confounds. Background factors are considered an important part of the setting that is being simulated. Thus, free simulations, even though they generally take place in a laboratory, may not be appropriate for theory testing. There is an emphasis on the correspondence between empirical indicators and the real world rather than theoretical constructs. Also, lack of concern for confounds makes cause-effect statements difficult.

Free simulations are most appropriate when two conditions exist. First, when the researcher's aim is more closely aligned with effects application, emphasizing a close correspondence between the simulated environment and a criterion setting. Second, when the researcher's aim is to intervene in an environment they normally would not have access to. For instance, intervention in the operations of an ongoing industrial organization or a nation is usually impossible. Thus, one recreates the setting in a laboratory, then places persons into the environment as decision makers.

It should be noted that many scientists do not regard the free simulation as a method, rather they view it as a theory.

> ...a simulation technique which produces the same outcome as a parallel event in the real world is an approximation of the world...the parameters of the simulation and their preprogrammed or specified interactions can be viewed as the simulator's 'theory' of the real world (Fromkin and Streufert 1970, p. 425).

PARASIMULATIONS

Parasimulations lie to the right of free simulations on the continuum (see Figure 5), thus the technique emphasizes more experimenter control. The term "parasimulation" was introduced by Stern, Sternthal, and Craig in 1973 (Cadotte and Keyt 1980). The methodological technique is positioned between a free simulation and a standard experiment in terms of control and realism. This assumes that the standard experiment tends to focus on a phenomenon by itself or in interaction with few other phenomena (Fromkin and Streufert 1970). The prefix "para", in this context, means "like or resembling." Thus, a parasimulation is like a free simulation however it shows a greater concern for controlling confounds.

In the channels literature, the term "parasimulation" has been used in a variety of ways, in fact there is some confusion as to exactly what the technique is and how it should be used. For example, Cadotte and Keyt's (1980) "poker chip market" is in essence a free simulation, however, they refer to it as a parasimulation: "The parasimulation appears to meet the criteria of channel formation and operation and also offers more realism than the Stern, Sternthal, and Craig model" (p. 289). Stern,

Sternthal and Craig (1973) purposely choose a method that was less realistic but offered more control. This control was needed since they were theory testing: "...a more refined theoretical base must be established before field experiments are warranted" (Stern, Sternthal, and Craig, p. 171). Thus, correct use of the parasimulation positions it as a compromise method, emphasizing control over the independent variables but also maintaining some of the complexities of the free simulation.

Relative to a free simulation, a parasimulation uses fewer subjects and subjects generally participate for shorter periods of time. For example the Stern, Sternthal, and Craig parasimulation involved two three-member firms (282 total subjects, note that this is still more than a standard experiment typically uses). These "firms" bargained over price and quantity for 70 minutes. All of the information reaching subjects in the Stern, Sternthal, and Craig (1973) parasimulation was preprogrammed. Thus, all independent variables were under complete control of the experimenter. Manipulation checks were used to assess whether or not the student groups perceived themselves as organizations, and whether or not the conflict induction was successful. In this way, the parasimulation is more like the standard laboratory experiment than like the free simulation. It is different from a standard experiment in that the subjects have more freedom. As long as their behavior does not violate the rules of the simulated environment, they are free to make any kind of decision they choose, or they may interact with each other in a variety of ways.

The strength of a parasimulation is that it maintains some of the realism characteristic of free simulations, but enables the researcher to have more control over confounds. The phenomena is not studied in complete isolation of other relevant background factors, however, the complexity of the simulated environment is simplified enough to enable the researcher to study specific relationships. This makes the technique appropriate when the aim of the researcher is theory testing.

The disadvantages of a parasimulation include both methodological and practical problems. Since a parasimulation does not share the simplicity of the standard laboratory experiment, it cannot eliminate all confounds based on extraneous variables equally well (Fromkin and Streufert 1970). When using a compromise method, the researcher must consider whether or not their specific design is taking the worst of both worlds or the best of both worlds. Since the weaknesses of a method can be considered inevitable and the strengths only potential, it could be that parasimulations assume the disadvantages of free simulations (confounding) and the disadvantages of the standard experiment (artificial). This will probably be the case if the researcher does not have access to the kinds of resources that are needed for a parasimulation: a large number of subjects, a behavioral lab, time, and incentives.

In sum, parasimulations are very similar to what Fromkin and Streufert (1970) refer to as "experimental simulations." These are defined as a research method: 1) where participants are placed in a complex environment in which they are partly free to behave as they like; 2) where participants attempt to cope with environmental characteristics; 3) where

all events are predetermined; and 4) where the number of independent variables are strictly limited (p. 425).

DYADIC NEGOTIATIONS

Dyadic negotiations lie to the right of parasimulations on the continuum (see Figure 5), thus these techniques enable the researcher to emphasize additional control. The fundamental difference between parasimulations and dyadic negotiations is that the former involve negotiation teams while the latter consist of two person dyads. Since dyadic negotiations involve only two persons, subject interaction is minimized, this enhances experimenter control. There are two general approaches to the design of two-person negotiation experiments: negotiating dyads consisting of two naive subjects, and dyads consisting of one naive subject and a programmed opponent (Clopton 1983). The appropriate approach depends upon the objectives of the researcher, and the research tradition. Before strengths and weaknesses of each approach are discussed, it is important to highlight characteristics of dyadic negotiations in general.

At least seven different traits characterize dyadic negotiations (Rubin and Brown 1975, Schurr and Lessne 1983). First, negotiations take place between two individuals. Second, individuals are motivated to engage in negotiation because they perceive that it is in their own best interest to do so. This means that the individual will engage in negotiation if they perceive that satisfaction or utility can be increased by an agreement with another individual. The third and fourth charac-

teristics represent possible hindrances to agreement: competing interests and uncertainty. Negotiation is needed since a mixed-motive setting and lack of information stand in the way of an easy or automatic agreement. The last three characteristics are central to the process of negotiation. Communication between individuals (i.e. channel members) must involve an exchange of offers, counter offers, and other information; the negotiation dyad must have alternative agreements to choose from; and the individuals must have the option of withdrawing from the negotiation. These last three characteristics are important since they determine an individual's freedom to pursue self-interest.

In negotiation simulations, the unit of analysis may be the bargaining dyad or each individual negotiator (Clopton 1983, p. 52). If the experiment is designed to assess the effects of manipulations on dyadic behavior, then a design which randomly assigns two naive subjects to be bargaining partners would be appropriate (Clopton 1983). In a design using two naive subjects, the behavior of each subject will influence the attitudes and perceptions of the other. The two individuals in the dyad are necessarily interdependent (Clopton 1983). Thus, when the unit of analysis is the dyad, data is aggregated across individuals in the dyad.

> In a research design where the relevant unit of analysis is the dyad, dependent variables measuring differences between dyads in different cells of the design are relatively free of confounding due to opponent behavior (Clopton 1983, p. 52).

On the other hand, if the experimenter is investigating individual level dependent measures, the use of two naive subjects as a negotiation dyad is not appropriate. If two naive subjects are used when the unit of analysis is the individual, the opponent's behavior will contribute to

error variance. The effect of the manipulation may be confounded with the unique influence exerted by the individual's opponent (Clopton 1983). Thus, if the unit of analysis is the individual, the appropriate technique would be to use a dyad consisting of one naive subject and a programmed opponent.

The choice of unit of analysis depends on the nature of the research tradition the scientist is attempting to extend. For example, if the researcher is interested in investigating face-to-face problem solving or decision making between channel members, then a crucial aspect of the method is to provide for direct communications between individuals. This will preserve important dimensions of a true marketing context in which discussion, eye contact, gestures, seating arrangements, appearance, tone of voice, and other factors are present (Duncan and Fiske 1977; Schurr and Lessne 1983). On the other hand, if indirect communications are the theoretical focus, say in a buyer behavior context, the researcher may use the individual as the unit of analysis. For example, if the researcher was interested in investigating negotiations with an overseas buyer by means of telex messages.

Assuming that dissertation research extends established research traditions, the researcher must stay within the normative boundaries of that tradition. The political-economy framework clearly selects the dyad as the unit of analysis:

> In this article, as in the previous article (Stern and Reve 1980), we adopt the perspective that the fundamental activity in marketing channels is the transaction, i.e, the act of exchange between two economic agents (Achrol, Reve, and Stern 1983, p. 56).

> Focusing on the transaction (and thus, on dyadic exchange) is likely to permit research in marketing channels to advance farther and faster than reliance on the rather nebulous generalities found in systems theory (Achrol, Reve, and Stern 1983, p. 57).

Since this research is theory - testing, in the Calder, et. al. tradition, that technique offering the most control but still using the dyad as the unit of analysis will be selected. Thus a dyadic negotiation simulation, using a two subject naive dyad represents that experimental technique most appropriate, given the normative boundaries of the research tradition.

SECTION CONCLUSION

The first purpose of this section was to review the different types of organizational experiments which have been used in the empirical study of marketing channels. These include free simulations, parasimulations, and dyadic negotiations. Since organization experiments are generally used for theory-testing, degree of control is a reasonable criteria from which to classify techniques. It was noted that not all simulations are appropriate for theory testing. Free simulations for example do not allow the researcher to rule out alternative explanations or establish temporal sequence. They are, in essence, field research in the lab. Parasimulations and dyadic negotiations are both appropriate for theory testing and have been used in the past to realize this aim.

The second purpose of this section was to justify the use of a dyadic negotiation simulation. This justification focused on the need to develop

a sensitive test of the nomological network and to stay within the normative boundaries of the research tradition. Past researchers who have used two-person dyadic negotiation simulations have organized the experiment in a number of different ways. Thus, there is some degree of variance within this specific type of organizational experiment. The following section reviews the literature which has used this type of methodological technique, emphasizing differences in design, type of dyad, organizational context, exchange of information, etc. Only the methodological aspects of these studies will be reviewed so that the specifics of the current experimental procedures can be put into context.

EXPERIMENTAL PROCEDURES

The purpose of this section is to discuss how a dyadic negotiation simulation will be used to test the research hypotheses as presented in chapter two. These procedures stem from how this technique has been used in the past, thus literature will be included where appropriate (see Appendix E for a detailed integrative review of this literature). Procedures will be explained in terms of: the organizational context, type of dyad, background of subjects, experimental task, exchange of information, and experimental design. After the design has been outlined in detail including inductions, manipulation checks, model, and dependent measures, procedures for tests of hypotheses will be discussed. These procedures will include both statistical tests as well as Angelmar and

Stern's (1978) "Content Analytic System." This section will conclude by setting the stage for the data collection process.

ORGANIZATIONAL CONTEXT

As stated earlier in this chapter, the laboratory simulation provides a setting in which the natural environment can be rearranged and simplified, making its essence more apparent (Weick 1965). That aspect of the real world which is simulated can be termed the "organizational context" of the experiment. The organizational context stems from the theoretical interests of the researcher. Most researchers using dyadic simulations are interested in some aspect of the negotiation process between boundary persons. This organizational context can be simplified in the laboratory by constructing a bilateral monopolistic structure involving one manufacturer and one retailer. This context has been used by a number of researchers to test a variety of theoretical propositions (Green, Gross, and Robinson 1967; Mathews, Wilson, and Monoky 1972; Stern, Sternthal, and Craig 1973; Pruitt and Lewis 1975; Dwyer and Walker 1981, condition I; Eliashberg, et al. 1986). Here both the retailing and manufacturing firms are said to be major companies. These firms are usually described as having been in business for a number of years and being roughly equal in size, financial performance, stability, and profitability. This organizational context is made clear to the participants early in the simulation so they do not attribute unequal situational power to the firms at the outset. Thus, in terms of organizational context, this type of

simulation emphasizes the vertical flow of resources and dyadic transactions, given a symmetrical distribution of power.

When level of power is used as an independent variable, a different aspect of the real world needs to be simulated. Here an asymmetric triadic negotiation structure is used to simulate unequal power relationships (Cummings and Harnett 1969; Walker 1971; Dwyer and Walker 1981, condition II; Schurr and Ozanne 1984). The typical situation here is a monopolistic manufacturer negotiating with two competing retailers. Again, the product flow within the formal channel is emphasized. Rarely are environments outside the boundaries of the formal channel simulated. An exception to this is the Free Market Simulation by McAlister, Bazerman, and Fader (1986) (see Appendix E for details). These authors incorporated the competitive environment in a dyadic negotiation simulation.

The theoretical underpinning of this dissertation calls for a simulation which emphasizes both the vertical (input-output) and lateral (competitive-regulatory) sectors. Thus, the organizational context which needs to be simulated for this experiment is one in which the participants feel involved in more than just the vertical sector. In order for this to happen, the experimental task must stimulate a concern for the transaction as well as how the lateral environment will affect the process and outcome of negotiation. A traditional bilateral monopolistic structure involving one manufacturer and one retailer will be used as the organizational context for this dissertation. In addition, problem solving activities involving the lateral sector will be directly linked to the negotiation process and outcome. Thus subjects will be actively engaged

with both a vertical and lateral organizational environment. This is consistent with the factors and components comprising the organization's internal and external environment as conceived by Duncan (1972) and Achrol, Reve, and Stern (1983).

TYPE OF DYAD AND BACKGROUND OF SUBJECTS

The negotiation dyad has been labeled differently depending on the organizational context and the research tradition. Some researchers, in an effort to avoid role playing, refer to the dyad as "individuals" who will be completing a task (Green, Gross, and Robinson 1967). Other researchers, in an effort to be consistent with the organizational context, refer to the negotiation dyad as "manufacturer-retailer" (Walker 1971; Dwyer and Walker 1981; Eliashberg, et al. 1986), "buyer-seller" (Mathews, Wilson, and Monoky 1972; Pruitt and Lewis 1975; McAlister, Bazerman, and Fader 1986), or "industrial salesperson-purchasing agent" (Stern, Sternthal, Craig 1973). The terms which will be used in this dissertation are "buyer" and "seller". As discussed in an earlier section of this chapter, it is important that subjects do not feel as though they are participating in a role-playing exercise. It is believed that these terms will not encourage role playing and at the same time are consistent with the organizational context.

Students are almost always used as subjects in dyadic negotiation simulations. MBA students have been used by a number of different researchers (Green, Gross, and Robinson 1967; Dwyer and Walker 1981; Schurr

and Ozanne 1984; McAlister, Bazerman, and Fader 1986); undergraduate business students have been used (Cummings and Harnett 1969; Walker 1971; Mathews, Wilson, and Monoky 1972); and researchers have used a combination of undergraduate and graduate business students (Stern, Sternthal, and Craig 1973). The most important reason that students are selected from business schools is that they are generally interested in the context of the simulation, this interest becomes involvement once the experiment begins. Some researchers have used non-business students, for example Pruitt and Lewis (1975) used undergraduate psychology students. Authors have also used combinations of MBA students and actual executives (Eliashberg, et al. 1986).

Students are used in these simulations for both epistemological and practical reasons. First, this stream of research is positioned as theory-testing and students provide a relatively homogeneous group of subjects. Homogeneity is valued since this will decrease error variance, which in turn increases the reliability or precision of the results. This produces a situation in which the phenomenon under test can manifest itself against the background of experimentally irrelevant variability (Cohen 1977; Sawyer and Ball 1981).

This research implies that a) business majors should be used in order to encourage involvement, and b) undergraduate students, MBA students, <u>or</u> executives should be used. These groups should not be combined however since this would violate the theory-testing aim of homogeneity. The second reason that students are used in these simulations is practical. If the dyad is used as the unit of analysis, depending on the number of

treatments, a large number of subjects may be needed. The articles which are used as illustrations in this section used between 24 (Green, Gross, and Robinson 1967) and 300 (Mathews, Wilson, and Monoky 1972) students. The mean number of subjects was 141 indicating that relatively large samples are needed.

Consistent with the above research tradition, this dissertation will use undergraduate business students as subjects in the dyadic negotiation simulation. Approximately 192 subjects will be needed to complete the experiment.[6] Additional subjects will be needed for pre-testing and pilot studies.

EXPERIMENTAL TASK

As discussed early in chapter two, channel systems are characterized by both individual and collective goals. A channel member may need to settle for a less than optimal (but satisfactory) agreement so that the channel as a whole can reach a collective goal. It is this type of mixed-motive situation that needs to be simulated with the experimental task:

> Channels of distribution conform to the common 'image' of the generalized bargaining problem addressed by developers of the theories, that is, bargainers need to reach some mutually acceptable settlement but also wish to settle on terms favorable to themselves (Eliashberg, et al. 1986, p. 101).

As stated above, it is the combination of competing interests and a lack

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[6] Assuming medium effects; $\alpha = .05$; $n_1 = 48$, power equals .70, as tabled in Rosenthal and Rosnow (1984, p. 360).

of information that necessitates negotiation. Thus, the experimental task needs to be designed so that each bargainer has different preferences yet they need to reach agreement in order to individually survive. This illustrates the dilemma of channel members... "how can they maximize the joint utility of the two parties while simultaneously obtaining as much of the joint pool of resources as the market forces allow" (McAlister, Bazerman, and Fader 1986, p. 236). In most dyadic negotiation simulations, the experimental task involves bargaining over a price-quantity matrix (also called a payoff table or a profit schedule). This matrix is designed to simulate an actual mixed-motive situation. The specifics of these matrices vary a great deal from experiment to experiment. For example, some involve more than one product (Schurr and Ozanne 1984; Pruitt and Lewis 1975), some are based on more than one factor (McAlister, Bazerman, and Fader 1986; Dwyer and Walker 1981), some are relatively straight forward and simple (Stern, Sternthal, and Craig 1973 used a 6 x 5 matrix producing 30 possible points of agreement), and some are elaborate and complex (Cummings and Harnett 1969 used a 21 x 24 matrix producing 504 possible points of agreement).

As an illustration as to how a price-quantity matrix produces a mixed-motive task, consider Eliashberg, et al's. (1986) warm-up negotiation exercise. Assume in this example that participants will be individually rewarded for high profits and that the dyad is competing with other dyads for high joint-profits:

> Preliminary Instructions-- The simulation will consist of several short phases. In order to acquaint you with the negoti-

ation process, the first phase will involve a short 'warm-up' negotiation using the matrices similar to those shown below. You should treat the 'warm-up' session as seriously as the negotiations to follow (Eliashberg, et al. 1986, unpublished instruments).

Manufacturer's Profits				
	Selling Price			
Units	$3.75	$4.00	$4.25	$4.50
60,000	42,000	48,000	56,000	60,000
70,000	44,000	50,000	55,000	67,000
80,000	50,000	60,000	66,000	72,000

Retailer's Profits				
	Purchase Price			
Units	$3.75	$4.00	$4.25	$4.50
60,000	70,000	64,000	56,000	52,000
70,000	66,000	60,000	55,000	45,000
80,000	66,000	56,000	50,000	44,000

Keep in mind that for this particular exercise, subjects did not see each others' profit schedules although this information could be obtained through negotiation. If the bargainers were directed toward self-gain, the manufacturer would bargain for the 80,000 unit/$4.50 agreement while the retailer would bargain for the 60,000 unit/$3.75 agreement. Notice that there are two points of agreement in which profits are equally shared, resulting in $112,000 and $110,000 respectively in joint profits. Since it is possible to earn $116,000 in joint profits, the 60,000

unit/$4.25 agreement is fair but should be considered less than optimal. The most "integrative" agreement in this example would probably be the 80,000 unit/$4.00 agreement since this option results in the smallest possible difference between the manufacturer's and the retailer's profits for the maximum joint profit options:

Joint Profits				
	Price			
Units	$3.75	$4.00	$4.25	$4.50
60,000	112,000 (28,000)*	112,000 (16,000)	112,000 (0)	112,000 (8,000)
70,000	110,000 (22,000)	110,000 (10,000)	110,000 (0)	110,000 (24,000)
80,000	116,000 (16,000)	116,000 (4,000)	116,000 (16,000)	116,000 (28,000)

*Number in parentheses is the difference between manufacturer and retailer profit for that particular agreement.

Note that the above information would only be made available to the bargainers through information exchange during the negotiation. The term "integrative" is often used in this literature to characterize cooperative behavior directed toward finding ways to satisfy the objectives of both the buyer and the seller in a bargaining situation (Pruitt 1981).

The work of McAlister, et al. (1986) underscores the importance of a warm-up exercise or even a series of warm-up exercises. These authors speculate that channel members... "can absorb only a limited amount of information about a negotiation at one time -- first they learn to com-

pete, then to problem-solve, then to evaluate the power situation" (p. 235). Thus, the importance of experience cannot be overlooked in a dyadic negotiation simulation. The number and kind of warm-up exercises can be determined through pre-testing. By the end of the warm-up, the subjects should no longer feel that they are part of an unfamiliar environment, they should feel involved, interested, comfortable, and secure in their understanding of the experimental task.

The warm-up exercise for this dissertation involved a simplified version of the actual task. Subjects negotiated to agreement using a price-quantity matrix, in addition, they were instructed to read short scenarios pertaining to the lateral and vertical environments (the ways in which these environments were linked to the negotiation are discussed in detail when the Perceived Environmental Uncertainty Inductions are presented). The matrix that was used for the actual simulation contains minimum costs rather than profit (see Appendix F). The details of this matrix, and its use, are be discussed when the inductions are presented.

EXCHANGE OF INFORMATION AND INTRADYAD UNCERTAINTY

Exchange of information between buyer and seller is organized in a variety of ways. The method of information exchange depends on the theoretical propositions as well as the philosophical orientation of the individual researcher. Early research restricted communication to written messages, the experimenter served as messenger enabling the identi-

ties of the bargainers to be hidden (Green, Gross, and Robinson 1967; Cummings and Harnett 1969; Walker 1971; Stern, Sternthal, Craig 1973). There are two advantages to this approach. First, written communication provides a permanent record of the negotiation process, this can be content analyzed and used in a variety of ways. Second, not revealing the identities of the participants controls for a whole host of possible confounds (appearance, tone of voice, general manner, sex roles, etc.). More recent dyadic negotiation research has used face-to-face verbal communication (Pruitt and Lewis 1975; Eliashberg, et al. 1986; McAlister, Bazerman, and Fader 1986). The advantage here is that direct communication between dyad members preserves important dimensions of a true marketing context (Duncan and Fishe 1977). If the theory addresses issues relating to face-to-face problem solving, then a crucial aspect of the method is to provide for direct communication between individuals.

The theoretical propositions being tested in this dissertation suggest that face-to-face communication may be needed in order to facilitate joint decision making and problem solving. Thus, face-to-face communication will be used in this dissertation. This should also serve to encourage involvement and interest. At the same time, establishing a written record of the negotiation process would provide an opportunity to use Angelmar and Stern's (1978) "Content Analytic System" to retest the hypotheses. This research will therefore combine the early and more recent approaches and use face-to-face <u>written</u> communication. This preserves some aspects of a true marketing context while providing a permanent written record (it should be noted that tape recording the ne-

gotiation sessions brings its own set of problems: the practical problems of obtaining enough tape recorders, understanding voices, subjects talking at the same time, long periods of silence, transcribing voices, etc., as well as potential demand artifacts such as evaluation apprehension).

If amount of information or intradyad uncertainty is not manipulated as an independent variable, then it must be held constant across treatments. Once again researchers approach this problem differently. Most researchers do not let dyad members see each other's matrices. They are instructed that the information contained in their matrix is private and proprietary (Walker 1971; Mathews, Wilson, and Monoky 1972; Pruitt and Lewis 1975; Schurr and Ozanne 1984; McAlister, Bazerman, and Fader 1986). However, these studies usually do not restrict information exchange. This means that a bargainer could obtain information about an opponent's matrix through negotiation. This is the approach that will be used in this research. Amount of information will be controlled by instructing the bargainers that the information contained in their matrix is private. This is consistent with the Stern, Sternthal, and Craig (1973) tradition of not letting dyad members see each other's price - quantity tables.

EXPERIMENTAL DESIGN

The number of independent variables used in dyadic negotiation simulations is usually between two and four. These variables are limited by the ability of the experimenter to interpret potential interactions among them (Fromkin and Streufert 1970). A popular design in the nego-

tiation literature is to fully-cross two levels of two independent variables (Mathews, Wilson, and Monoky 1972; Pruitt and Lewis 1975; Schurr and Ozanne 1984; Eliashberg, et al. 1986). Precedent has been set for more complex designs however. For example, McAlister, Bazerman, and Fader (1986) nested a 2 x 2 fully-crossed factorial within each of four market conditions producing 16 possible cell assignments. Within-subject designs have been used in this literature (Dwyer and Walker 1981) although this is not typical. Most dyadic negotiation simulations use between-subject designs due to sequence effects (Rosenthal and Rubin 1980) and hypothesis guessing (Cook and Campbell 1979).

This research utilizes a fully-crossed 2 x 2 factorial between-subject design. There are two independent variables: Lateral perceived environmental uncertainty and Vertical perceived environmental uncertainty. Each of these variables will be dichotomized into high and low and fully-crossed. There are two dependent variables: conflict and cooperation. Dependent measures will be administered after agreement has been reached in negotiation or upon completion of a specified time period. As stated in Chapter II, it is assumed that conflict and cooperation are distinct concepts, however the hypotheses suggest that these concepts will vary inversely. This indicates that a multivariate analysis of variance is appropriate. Thus, analysis will proceed with a MANOVA, as well as two separate univariate ANOVAs. A more detailed description of statistical tests, the laboratory setting, and the data collection process will be presented later in this chapter.

Vertical Perceived Environmental Uncertainty Induction

The vertical environment is conceived as the dyad's input - output sectors. Thus, the vertical environment is the formal channel of distribution. According to Vaile, Grether, and Cox (1952) the formal marketing channel can be conceived of as an input-output "flow." By flow, these authors meant a kind of interorganizational network as structured by recurrent transactions. More recent theorists refer to a number of different kinds of flows: product, negotiation, ownership, information, and promotion (Kotler 1980; Rosenbloom 1983). If these flows were superimposed, the tremendous complexity of even simple marketing channels would become apparent. This sociological complexity makes clear identification of organizational boundaries a difficult process. The following components of the external environment can be considered a working definition of the vertical environment (Duncan 1972, p. 315):

1. Suppliers component (input)
    a. new materials suppliers
    b. equipment suppliers
    c. product parts suppliers
    d. labor supply
2. Customer component (output)
    a. distributers of product or service
    b. actual users of product or service

Thus in general, vertical uncertainty is feeling unclear about the consequences of decision making due to perceptions of environmental conditions in the input and output sectors. The vertical perceived environmental uncertainty manipulation needs to induce a feeling of uncertainty regarding the vertical environment.

Vertical uncertainty has been induced in past literature by manipulating the amount of information bargainers have pertaining to each other's profit schedule (Cummings and Harnett 1969; Eliashberg, et al. 1986). For example, for the high vertical environmental uncertainty induction bargainers would typically have access to only their own price/quantity matrix. For the low induction, information contained in both the buyer and seller matrices would be made available to both members of the dyad.

Given the theoretical context of this dissertation, this manipulation is inappropriate since it produces intradyad uncertainty. In other words, the uncertainty is not originating in a complex/dynamic environment external to the dyad. Since the external environment is always defined relative to a focal organization or dyad, this is not "environmental" uncertainty. In order for there to be a correspondence between theoretical constructs and empirical indicators, bargainers must perceive uncertainty to exist external to the dyad, but internal to the formal channel. Clearly, an alternative to the traditional approach is needed in this situation.

As stated earlier in this section, the price-quantity matrix will reflect "costs" rather than profit. Using the matrices in Appendix F, bargainers will be instructed that their "only motivation during bargaining is to lower costs for yourself." Since there will be a cost associated with not reaching an agreement, a mixed motive setting has been established: bargainers will be negotiating to help themselves, as well as motivated to find an acceptable agreement.

For the high vertical uncertainty induction, dyad members read a scenario describing a complex and dynamic vertical environment. The scenario was designed to induce uncertainty regarding supply and demand. From the buyer's perspective, a demand history characterized by a large variance (see Figure 6) will induce uncertainty in the output sector (see Appendix H for a copy of the scenarios). This uncertainty will make it difficult for the buyer to predict how much will be demanded, and therefore how much should be purchased from the seller. If the buyer reacts to the uncertainty conservatively, they will probably concede in terms of price. For example, the buyer may begin at $1/10 units, concede to $2/10 units, concede again to $3/10 units, and finally reach agreement at $4/30 units. Assuming that, in general, any cost over $305 will probably be defined as unacceptable (the mean cost of not reaching an agreement), acceptable points of agreement will probably be the top two rows.

From the seller's perspective, a supply history characterized by a large variance (see Figure 6) will induce uncertainty in the input sector (note that the seller's scenario is written such that the amount that they predict will be supplied will be the amount they have available to sell to the buyer, see Appendix H for details). Thus, it will be difficult for the seller to predict how much should be sold. If the seller reacts to the uncertainty conservatively, they would make concessions in terms of quantity. For example, the seller may begin at $5/90 units, concede to $5/70 units, concede again to $5/50 units, and finally reach agreement at $4/30 units. Assuming again that any cost over $305 will probably be

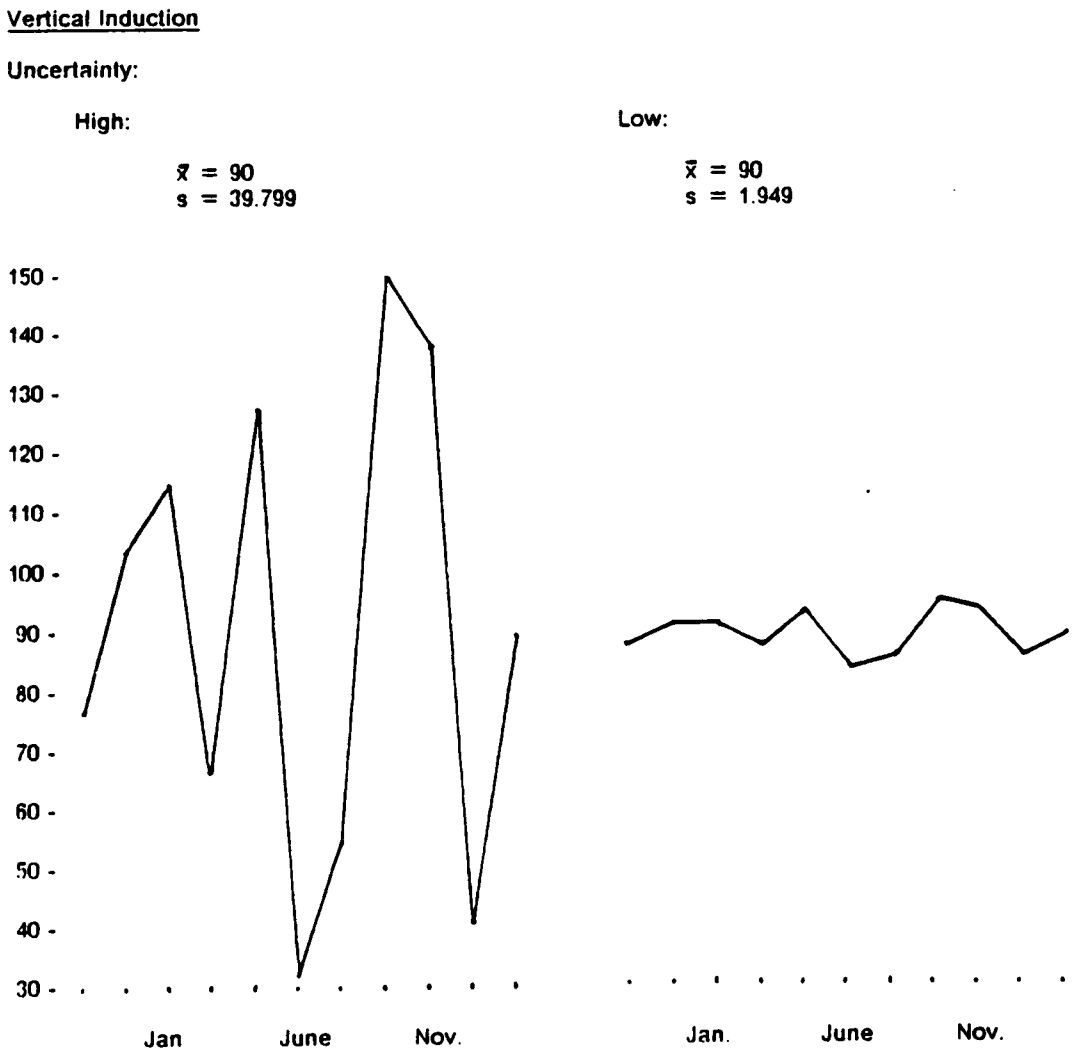


FIGURE 6: Comparison of Variances for the High and Low Vertical Uncertainty Induction

defined as unacceptable (the mean cost of not reaching an agreement), potential points of agreement will probably be the last two columns.

Thus, acceptable points of agreement for a dyad negotiating under high vertical uncertainty would be those points which overlap between the first two rows and the last two columns. This is given the hypothetical situation of both dyad members reacting conservatively to the uncertainty as well as using the $305 cut-off as a upper limit. Since there are only three alternatives under high vertical uncertainty, coordination will be more difficult (keeping in mind that bargainers do not have access to the information in each other's matrix). Dyad members negotiating in this type of environment will feel constrained as to what is an acceptable alternative. Thus, in an effort to buffer their own organization from the uncertainty, dyad members will be more resistant and less likely to concede. It could be the case that dyad members will react differently to the uncertainty. In this situation, bargainers may find themselves at opposite ends of the matrix. For example if the buyer predicts that they need to buy 90 units and the seller predicts that they will be supplied 30 units, the high uncertainty will have induced an incompatibility. This is more likely to happen under conditions of high rather than low uncertainty. Again, coordination will be more difficult as a result of the uncertainty.

For the <u>low</u> vertical uncertainty induction, each dyad will read a scenario describing a simple and static vertical environment. The scenario was designed to induce certainty regarding supply and demand. From the buyers perspective, a demand history characterized by a small variance

(see Figure 6) will induce certainty in the output sector. Thus, it will be less difficult for the buyer to predict how much will be demanded and therefore how much should be purchased from the seller. When the buyer concedes under conditions of low uncertainty, it can be in terms of price or quantity. Thus acceptable points of agreement, given the low uncertainty, would be any alternative less than $305 (16 possible alternatives).

From the seller's perspective, a supply history characterized by a small variance (see Figure 6) will induce certainty in the input sector. Thus it will be less difficult for the seller to predict how much will be supplied and therefore how much should be sold. Here the most attractive agreement for the seller is $5/90 units. When the seller concedes, it can be in terms of price or quantity. Again, acceptable points of agreement, given the low uncertainty, would be any alternative less than 305 (16 possible alternatives).

Since eight possible alternatives overlap between the sixteen potential choices for the buyer and seller, coordination will be less difficult. Dyad members negotiating in this type of environment will feel less constrained as to what is an acceptable alternative. Since the buyer and seller share more certain information about the input-output sectors, decision making is less difficult. This makes coordination easier and therefore less likely to fail.

This manipulation emphasizes the correspondence between theoretical constructs and empirical indicators. The simulation constructs a setting in which uncertainty is perceived to exist in an environment which is

external to the dyad but internal to the formal channel.

In the high vertical uncertainty condition, boundary-spanners need to protect their organizations from an uncertain environment. This results in the bargainers being more resistant, making coordination more difficult, and therefore more likely to fail. At the same time, chances are higher that dyad members will adopt incompatible strategies for coping with the uncertainty.

In the low uncertainty condition, boundary-spanners are making decisions in a certain envirnment. This results in an increased latitude of acceptable since it is no longer necessary to buffer their organizations from a turbulent environment.

Lateral Perceived Environmental Uncertainty Induction

The lateral environment is conceived as the organizational environment outside the boundaries of the formal channel. As stated in the last section, sociological boundaries are often difficult to delineate. The following components of the external environment can be considered a working definition of the lateral environment (Duncan 1972, p. 315):

I. Competitor component

   a) competitors for suppliers
   b) competitors for customers

II. Socio-political component

   a) government regulatory control over the industry
   b) public political attitude towards industry and its particular product
   c) relationship with trade unions with jurisdiction in the organization

III. Technological component

a) meeting new technological requirements of own industry and related industries in production of product or service
b) improving and developing new products by implementing new technological advances in the industry

Thus lateral uncertainty is not knowing how the competitive, socio-political, or technological components of the organizational environment external to the formal channel will affect the consequences of decision making.

Before bargaining begins over the price-quantity matrix, dyad members will read a short scenario describing the lateral environment. This scenario focuses on actions taken by hypothetical competitors. In this context, competitors are defined as other wholesaler - manufacturer combinations. The scenario describes a situation in which a competitor channel will capture additional market share if the buyer-seller dyad is unable to reach agreement (see Appendix H for a copy of these scenarios). In other words, if dyad members are unable to reach agreement, the retailers will have no products to sell, losing therefore a certain amount of business to a competitor channel. In order to help dyad members forecast the magnitude of this opportunity cost, nine different firms belonging to their industry association provide a prediction.

For the <u>high</u> uncertainty induction the scenario describes a complex and dyanamic lateral environment. The variance therefore characterizing the industry association predictions is high (see Figure 7). The only way dyad members can off-set the potential negative consequences of the competitive environment is to negotiate a balanced exchange. A balanced exchange minimizes risk for both members of the dyad.

Lateral Induction

Uncertainty:

High:

$\bar{x}$ = 305
s = 72.2841

Low:

$\bar{x}$ = 305
s = 2.7386

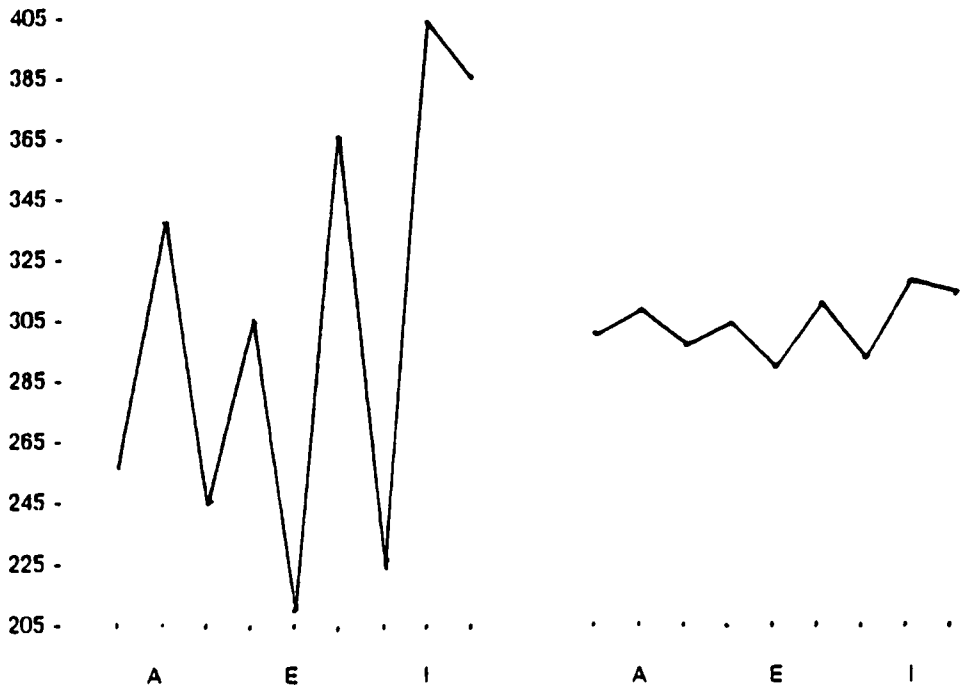


FIGURE 7: Comparison of Variances for the High and Low Lateral Uncertainty Induction

For the low uncertainty induction the scenario describes a simple and static lateral environment. The variance therefore characterizing the industry association predictions is low (see Figure 7). A low variance will enable dyad members to more clearly compare the cost of not reaching an agreement with the cost associated with an agreement. Given this information, dyad members will be more certain as to when they should hold out and bargain for a better alternative. Thus, lower lateral uncertainty may make the bargainers more resistant and less flexible.

This manipulation emphasizes the correspondence between theoretical constructs and empirical indictors. The simulation constructs a setting in which uncertainty is perceived to exist in an environment external to both the dyad and the formal channel. In the high uncertainty condition, boundary-spanners need to buffer their interests from a turbulent environment. This can be done by increasing the expectation of a balanced exchange. In the low uncertainty condition, boundary-spanners will be more certain as to how the lateral environment will affect their cost structure. This will make them less flexible regarding alternative agreements. Clearly, if the alternative is not lower than the cost of not making an agreement, they will negotiate for a better alternative.

Manipulation Checks

There are potential differences between the "objective reality" of the experimental situation and the "subjective reality" as constructed by the subjects' interpretation of the situation (Aronson and Carlsmith 1968). For this reason, it is important to check the impact and success

of an attempted experimental induction. In the context of this simulation, this will involve measuring perceived environmental uncertainty directly after subjects have analyzed the scenarios.

Researchers measuring perceived environmental uncertainty have used a variety of pencil and paper techniques such as Likert scales (Duncan 1972; Spekman and Stern 1979; Brown, et al. 1984), bi-polar numerical rating scales (Leifer and Huber 1977), or semantic differential scales (Etgar 1977). Most perceptual measures use a version of the Duncan instrument. Recall that Duncan (1972) defined uncertainty in terms of three dimensions (see page 40 of this disseration).

Duncan's (1972) first dimension was measured with a Likert system containing six scale items. The following is an example of one item:

> "How often do you believe that the information you have about this factor is adequate for decision making?"

The second dimension was measured similarly and was also composed of six items of which the following is an example:

> "How often do you feel that you are able to tell if the decisions you make will have a positive or negative effect on your organization's overall performance?"

Response categories for both dimensions consisted of a five-point scale: (1) never, (2) seldom, (3) occasionally, (4) fairly often, (5) always. Environmental factors taken into consideration in decision making were identified by an interview prior to administering the questionnaire (Duncan 1972). The respondent was asked to answer each question for the first two dimensions for each factor. An average score was computed for each question on the basis of the number of factors taken into consideration.

The third dimension was measured by two components. The first component asked respondents to indicate on a scale how sure they were that certain factors were going to affect the success or failure of their work group. Duncan used a semantic differential scale with numerical anchors:

Completely Unsure										Completely Sure
0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0

The assumption here is that even in uncertain situations, the individual will be able to assign a probability estimate (Duncan 1972). The second component asked respondents to indicate the range of numbers they were considering when answering the first. This component measures how confident the respondent was in their initial estimate. A wide spread indicates less confidence. These two components were then combined by the following formula:

$$Z = (Y)(1-X)$$

Where:

Z = ability to assign probabilities

Y = certainty of effects factor

X = range of certainty estimate

The respondent's total score for this question is then averaged according to the number of factors taken into consideration. According to Duncan (1972) all three components represent a general lack of information about the environment. Thus, the scores of all three dimensions are added to

form a total uncertainty score.

Downey, Hellsiegel, and Slocum (1975) investigated specifically the reliability and validity of the Duncan (1972) perceived environmental uncertainty measure. According to these authors, because subscale scoring was highly dissimilar, it is inappropriate to sum all three components of uncertainty without some form of prior standardization. Duncan's conceptualization implies that all three subscales should contribute equally to uncertainty perceptions. However... "scores on the first subscale can range from a +6 to a +30, while scores on the third subscale can range form 0 to a +1" (Downey, et al. 1975, p. 615). Consequently, Downey, et al. (1975) standardize the subscale scores, using sample means and sample standard deviations, prior to their addition (the ability to assign probabilities was given a negative weight) to form a total uncertainty score. These researchers found that two of Duncan's three subscales and his total uncertainty scale met Nunnally's suggested criterion for research instruments (r = .50):

Scale (after standardization)	**Reliability Coefficient**
Lack of information	.59
Lack of effect knowledge	.26
Ability to assign probabilities	.66
Total scale	.67

These reliability coefficients are slightly higher than those found with the original Duncan instrument. Kopp and Litschert's (1980) review found that when the Duncan instrument was employed in its original form, reliabilities ranged from 0.12 to 0.62. Other modifications of the original instrument have produced higher reliability coefficients. For example, if the information, predictability, and confidence subcomponents are

combined into a composite measure, reliabilities ranged from 0.68 (Spekman and Stern 1979) to 0.81 (Sathe 1974). Leifer and Huber (1977) also used a composite scale, here reliability was not reported but the factor composition indicated reasonable unidimensionality.

A version of the Duncan instrument was be used in this research to assess the effectiveness of the vertical and lateral environmental uncertainty inductions (see Appendix H). The subcomponents of the original instrument was combined into a composite measure and the construct was understood theoretically to be unidimensional. The reliability of the revised scale was assessed by coefficient alpha and the number of distinct dimensions confirmed by factor analysis (Churchill 1979).

Statistical Model

A convenient way to describe the behavior of a dependent variable is by providing a linear model. This is an expression or equation which explains the response of the variable in terms of its component parts (Lentner and Bishop 1986). The adjective "linear" is used in ANOVA, as well as in regression models, to indicate that the parameters appear in the equation in a linear manner (Lentner and Bishop 1986). The elements of the appropriate model will be useful when setting up the statistical tests. For a two factor factorial, assuming fixed effects, the linear model is (Lentner and Bishop 1986; see Figure 8 for a graphic representation of the statistical model):

$$Y_{ijk} = \mu + \alpha_i + \beta_j + (\alpha\beta)_{ij} + \varepsilon_{ijk}$$

where:

Y_{ijk} = dependent measure.

μ = overall mean value of conflict or cooperation.

α_i = $\mu_{i.} - \mu$ = effect due to the ith level of vertical environmental uncertainty

β_j = $\mu_{.j} - \mu$ = effect due to the jth level of lateral environmental uncertainty.

$(\alpha\beta)_{ij} = \mu_{ij} - \mu_{i.} - \mu_{.j} + \mu$ = component to measure the interaction resulting when the ith level of vertical environmental uncertainty and jth level of lateral environmental uncertainty are combined.

ε_{ijk} = random component explaining all extraneous variation of (i, j, k)-th observation.

Here, μ_{ij} denotes the mean in the (i,j)th cell, and $\mu_{i.}$ and $\mu_{.j}$ denote marginal means. Thus, $\mu_{.1}$ and $\mu_{.2}$ represent the main effect of lateral environmental uncertainty; and $\mu_{1.}$, $\mu_{2.}$ represent the main effect of vertical environmental uncertainty. The interaction component $(\alpha\beta)_{ij}$, measures the discrepancy in the (i,j)th cell over and above the amount contributed by the sum of the two main effects (Lentner and Bishop 1986).

The assumptions of this model are as follows:

(1) μ is a fixed constant, common to all observations.

(2) The ε_{ijk} are normally and independently distributed with mean zero and variance σ_ε for all populations (treatment groups).

(3) In the fixed effects model:

β_j

Lateral

Vertical α_i	Low	High	
Low	μ_{11}	μ_{12}	$\mu_{1\cdot}$
High	μ_{21}	μ_{22}	$\mu_{2\cdot}$
	$\mu_{\cdot 1}$	$\mu_{\cdot 2}$	

Dependent variable: Conflict

β_j

Lateral

Vertical α_i	Low	High	
Low	μ_{11}	μ_{12}	$\mu_{1\cdot}$
High	μ_{21}	μ_{22}	$\mu_{2\cdot}$
	$\mu_{\cdot 1}$	$\mu_{\cdot 2}$	

Dependent variable: Cooperation

FIGURE 8: Graphic Representation of the Statistical Model

$$\sum_i \alpha_i = 0 \qquad \sum_j \beta_j = 0$$

$$\sum_i (\alpha\beta)_{ij} = 0 \qquad \sum_j (\alpha\beta)_{ij} = 0$$

Dependent Measures

This section outlines the development of a content valid and reliable measure for conflict and cooperation. Measurement of conflict depends upon the conflict state, dimension, and method used in the research. One problem with operationalizing Pondy's conflict states is that separating them is a very difficult task (Schmidt and Kochan 1972). For example, constructing a measure that can differentiate between a cognitive state (perceived conflict) and an affective state (felt conflict) may be problematic. Clearly, if a measure for felt conflict was based on self reports or perceptions of a bargaining partner, it would also be capturing part of the domain of perceived conflict.

Instruments used to measure felt or perceived conflict consist of a variety of pencil and paper techniques. By far the most popular approach is the Likert system (Pruden 1969; Rosenberg and Stern 1971; Foster and Shuptrine 1974; Lusch 1976; Brown and Frazier 1978; Brown and Day 1981; Eliashberg and Michie 1984). Stapel scales have also been used (Pearson 1973), as well as semantic differentials (Stern, Sternthal, and Craig 1973). Lusch (1976) notes that manifest conflict usually takes the form

of written exchanges. Thus, when a written record of dyadic interaction is available, the researcher can measure manifest conflict by content analysis. The most popular content analytic systems are Bales (1976) schema or Angelmar and Stern's (1978) system.

The process of scale construction includes: reviewing the conceptual definitions, generating a sample of relevant items, then discussing plans for purifying the measures. Recall from chapter two that perception of goal incompatibility is a necessary precondition for either conflict or competition (Schmidt and Kochan 1972). The difference between competition and conflict is in the realm of interference, or blocking activities (Seiler 1963). "Thus, competition is independent, parallel striving toward a goal or object, while conflict is behavior typified by mutual interference" (Stern, Sternthal, and Craig 1973, p. 169). Other important elements of conflict include "antagonistic interaction" (Fink 1968, p. 456) and "tension between two or more social entities" (Raven and Kruglanski 1970, p. 70). Thus, incompatible interests (latent conflict), mutual perceived interference (perceived conflict), and antagonistic interaction or tension (felt conflict) are important elements specifying the domain of this construct. Scale items need to be written which tap the core of this general domain.

Also recall from chapter two that Childers and Ruekert (1982, p. 117) define cooperation as the "expectation of a balanced exchange of the resources required to achieve both intraorganizational and interorganizational goals through joint action among two or more actors." Thus, if bargainers are willing to coordinate their behavior in such a way as to

find that agreement which maximizes joint return, as well as provide for a satisfactory individual return, they are cooperating. Here scale items need to be written which measure the degree to which bargainers are acting jointly to further the interests of both parties.

Stern, Sternthal, and Craig (1973) measured perception of conflict by asking subjects to rate the "other firm" on 23 bipolar adjectives using a 7-point semantic differential scale. The content of this scale is relevant for this research since these items were constructed to measure conflict resulting from bargaining over a mixed-motive price/quantity matrix. The Stern, Sternthal, and Craig (1973) scale will be used as a frame of reference in the construction of the scales to be used in this experiment. Since these authors were assuming the continuum view of conflict and cooperation, bipolar adjectives were appropriate. Recall that this research assumes that most interorganizational situations are characterized by the simultaneous presence of cooperation and conflict. Thus, these concepts are assumed to be distinct. The structure of the scales for this research took the "distinct concepts" assumption into account. In other words, it needs to be possible for subjects to score the negotiation session as both highly conflictual and highly cooperative. This was accomplished by constructing two separate multi-item scales using a 5-point Likert system. See Appendix H, dependent measures, for a copy of the conflict and cooperation scales. Items 1, 2, 4, 5, 8, 11, 12, 15, and 17 measure conflict; and items 3, 6, 7, 9, 10, 13, 14, 16, and 18 measure cooperation. Of those items measuring conflict: 1, 2, and 4 measure perceived interference (perceived conflict); 5, 8, and

11 measure incompatible interests (latent conflict); and 12, 15, and 17 measure feelings of antagonism or tension (felt conflict).

Since the conflict and cooperation scales constructed for this research have not been used previously, the reliability of these measures needs to be assessed. The recommended measure of the internal consistency of a set of items is the coefficient alpha (Churchill 1979; Peter 1979). If coefficient alpha is high, all of the items are intercorrelated and are therefore tapping the same construct. Low interitem correlations indicate that some items are not drawn from the appropriate domain and are therefore producing error. If alpha is low, the researcher should calculate the correlation of each item with the total score (Churchill 1979). Items with low correlations should be eliminated, then coefficient alpha should be recalculated. This iterative process should continue until a satisfactory coefficient is achieved.

After a satisfactory coefficient alpha is achieved, factor analysis can be used to confirm whether the number of dimensions conceptualized can be verified empirically (Churchill 1979). If the conflict scale loads on three factors corresponding to Pondy's (1967) conceptualization, these dimensions can be used as separate dependent variables in the analysis. If the results of hypothesis testing indicate no difference between these dimensions, then the scale measuring overall perceived affective conflict will be used. The cooperation scale is conceptualized as unidimensional.

Content analysis was also used to measure the amount of conflict and cooperation in each treatment. This method measured the dependent variables by counting the number of conflictual and cooperative messages sent

during negotiations. All memos were first interpreted by the researcher, then categorized. Categories were then grouped as conflictual or cooperative.

Angelmar and Stern (1978) developed an appropriate set of categories from Bonoma and Rosenberg's (1974) social influence perspective. These categories were constructed for a mixed-motive bargaining context. They are: promises, threats, recommendations, warnings, rewards, punishments, positive normative appeals, negative normative appeals, commitments, self-disclosures, questions, and commands (see Appendix G for operational definitions of these categories). For example, the message "Your last offer of 60,000 units at $3.74 will mean a loss to us" would be placed in the self-disclosure category. The message "Give me a lower price." would be categorized as a command.

The process of categorization was dependent upon the interpretation of the coders. For instance the command "Give me a lower price," could imply "or else you will lose," indicating that the warning or threat categories could also be appropriate. For this reason, coders should concentrate on the explicit meaning of messages (Tedeschi 1970). After all interfirm messages have been categorized, the categories were labeled conflictual or cooperative:

Conflictual Categories	Cooperative Categories
Threats	Promises
Warnings	Recommendations
Punishments	Rewards
Negative Normative Appeals	Positive Normative Appeals
Commands	Self-Disclosures
	Questions

In an effort to assess the reliability of the categorization process, two coders were used. Reliability was computed in terms of the percentage of codings on which both coders agree for each category. If the coders disagree on the specific category (e.g. coder 1 interprets the message as a "threat" while coder 2 interprets the same message as a "warning") but agree on whether the message is conflictual or cooperative, this disagreement will not be resolved. However, if the coders disagree on whether the message is conflictual or cooperative, this disagreement will be resolved through discussion. The categories should therefore serve as guidelines, helping the coders to determine whether or not the specific unit was conflictual or cooperative.

It is assumed that each message is given equal weight with every other message, this implies a nominal scale. As discussed in the next section, these frequencies were used to retest the hypotheses via the statistical test for comparing two binomial proportions.

Additional Dependent Measures. Several other variables were measured after bargaining along with conflict and cooperation. These include: role (buyer/seller), was agreement reached, outcome perception, motivational orientation, degree of risk-taking, competitiveness by nature, trusting by nature, locus of control, tolerance to ambiguity, and sex of the subject. These variables can then be used as covariates later when analyzing potential confounds.

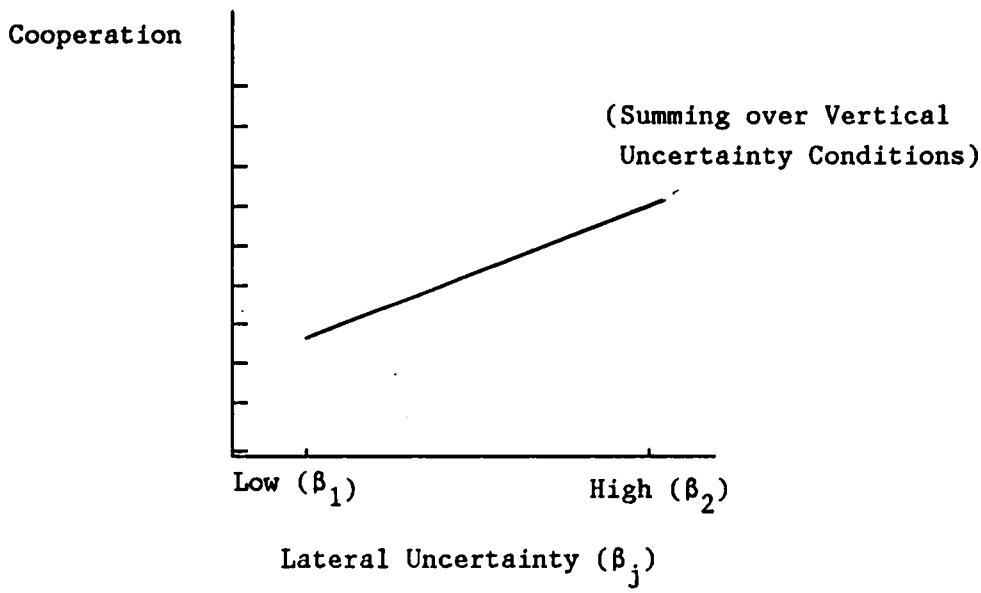
Covariates are typically included to remove extraneous influences from the dependent variables. The ideal covariate is that extraneous

variable which is highly correlated with the dependent variables but not correlated with the independent variables (Hair, Anderson, and Tatham 1987). This procedure helps to realize the aim of theory testing since it increases measurement precision.

Tests Of Hypotheses

The research hypotheses were tested by two procedures: 1) analysis of variance and multiple comparisons, and 2) comparing two binomial proportions. This section will first discuss specific tests in terms of the linear model presented earlier (refer back to page 113). Then procedures for retesting the hypotheses by comparing frequencies obtained from the content analysis will be outlined.

The first hypothesis states that the higher the level of lateral environmental uncertainty, as perceived by the focal dyad, the higher the level of perceived cooperation. Graphically, this hypothesis looks like:



Here the factor effects are additive, thus the first test was for interaction in the 2 x 2 design with cooperation as the dependent variable.

Test for interaction:

$$H_o: (\alpha\beta)_{ij} = 0$$

$$H_a: (\alpha\beta)_{ij} = 0$$

If the alternative hypothesis is accepted indicating that there is no interaction, then test for lateral uncertainty main effect:

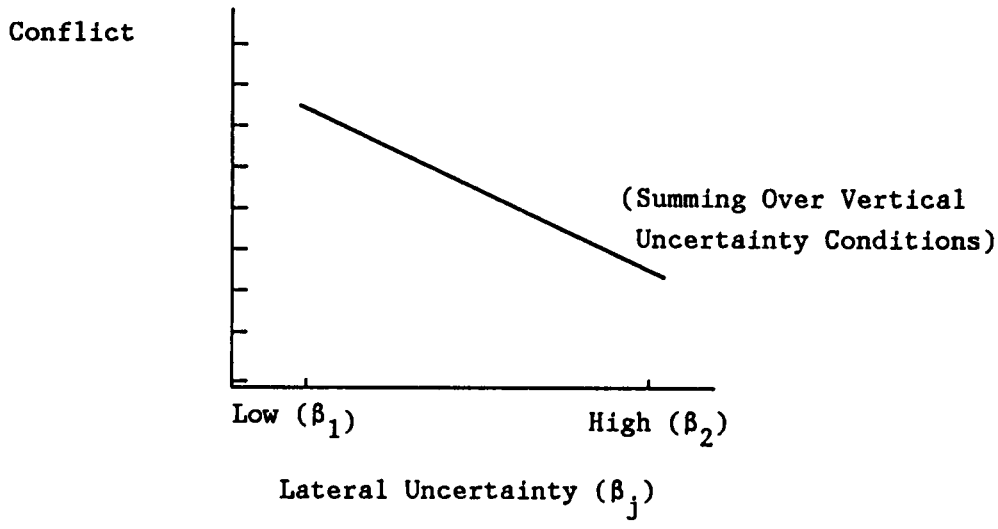
$$H_1: \mu_{.1} < \mu_{.2}$$

If there is interaction, simple effects tests should be done for each group separately, where group A is low vertical uncertainty and group B is high vertical uncertainty.

$$H_{1A}: \mu_{11} < \mu_{12}$$

$$H_{1B}: \mu_{21} < \mu_{22}$$

The <u>second hypothesis</u> states that the higher the level of lateral environmental uncertainty, as perceived by the focal dyad, the lower the level of perceived conflict. Graphically:



Here the factor effects are again additive making the first test one for interaction in the 2 x 2 design with conflict as the dependent variable.

Test for interaction:

$$H_o: (\alpha\beta)_{ij} = 0$$

$$H_a: (\alpha\beta)_{ij} = 0$$

If there is no interaction, then test for lateral uncertainty main effect:

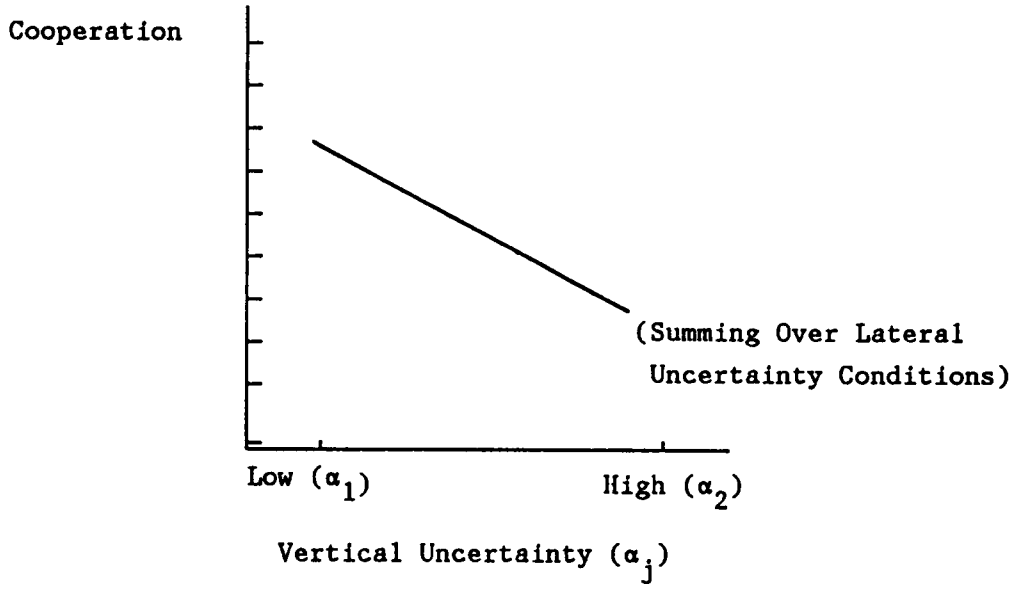
$$H_2: \mu_{.1} > \mu_{.2}$$

If there is interaction, do simple effects tests for each group separately:

$$H_{2A}: \mu_{11} > \mu_{12}$$

$$H_{2B}: \mu_{21} > \mu_{22}$$

The <u>third hypothesis</u> states that the higher the level of vertical environmental uncertainty, as perceived by the focal dyad, the lower the level of perceived cooperation. Graphically:



Since the test for interaction in the 2 x 2 design with cooperation as the dependent variable has already been performed, this was not repeated. If there is no interaction, then test for vertical uncertainty main effect:

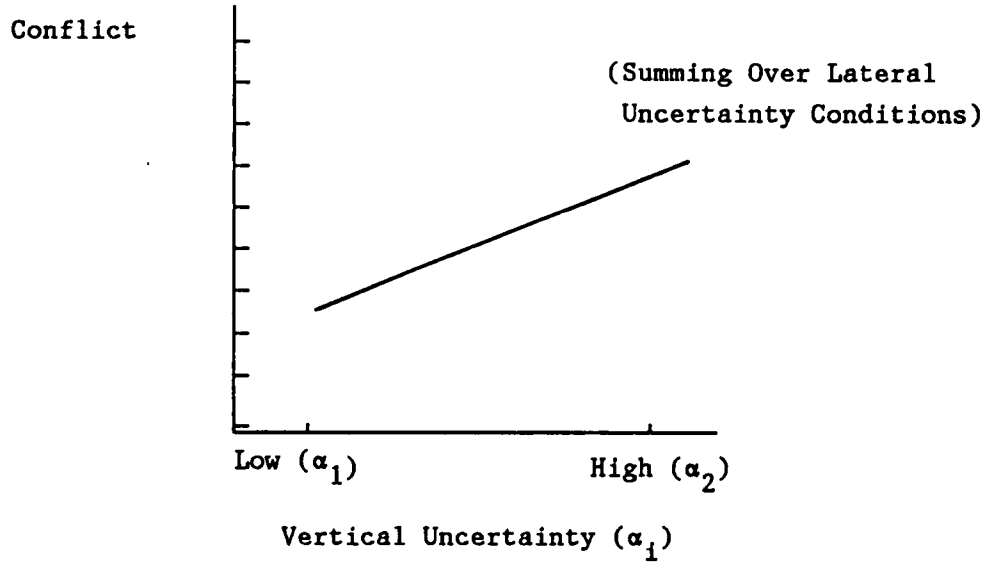
$$H_3: \mu_{1.} > \mu_{2.}$$

If there is interaction, do simple effects tests for each group separately:

$$H_{3A}: \mu_{11} > \mu_{21}$$

$$H_{3B}: \mu_{12} > \mu_{22}$$

The <u>fourth hypothesis</u> states that the higher the level of vertical environmental uncertainty, as perceived by the focal dyad, the higher the level of perceived conflict. Graphically:



The test for interaction with conflict as the dependent variable has already been performed. If there is no interaction, test for vertical uncertainty main effect:

$$H_4: \mu_{1.} < \mu_{2.}$$

If there is interaction, do simple effects tests for each group:

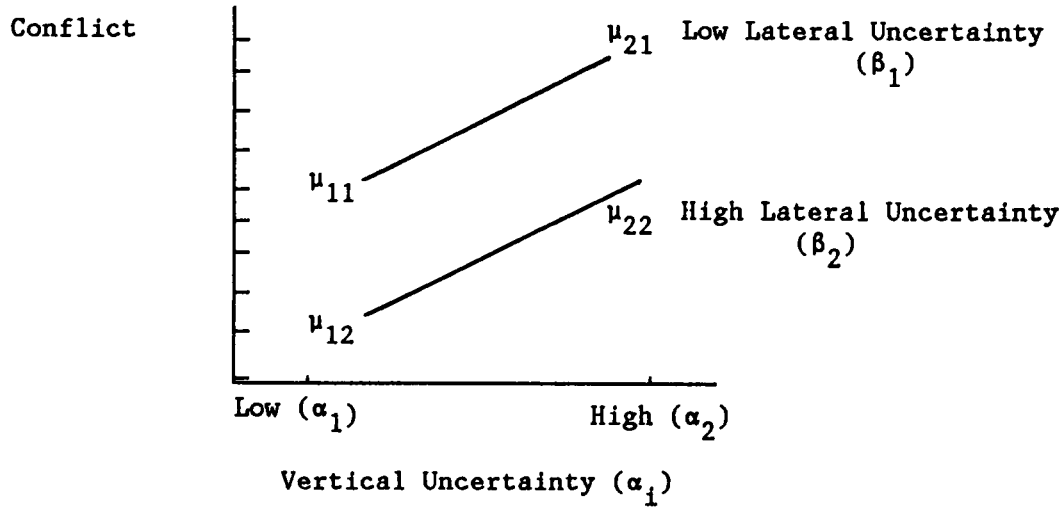
$$H_{4A}: \mu_{11} < \mu_{21}$$

$$H_{4B}: \mu_{12} < \mu_{22}$$

<u>Hypothesis five</u> states that if both lateral and vertical environmental uncertainty were perceived by the focal dyad to be:

(a) high, then perceived conflict will be high, but not as high as the high vertical/low lateral condition.

(b) low, then perceived conflict will be low, but not as low as the high lateral/low vertical condition.



Hypothesis 5(a) states that $\mu_{22} < \mu_{21}$ and that $\mu_{22} > \mu_{12}$ and μ_{11}. This implies the following ranking when conflict is the dependent variable (from low to high):

$$\mu_{12} \quad \mu_{11} \quad \mu_{22} \quad \mu_{21}$$

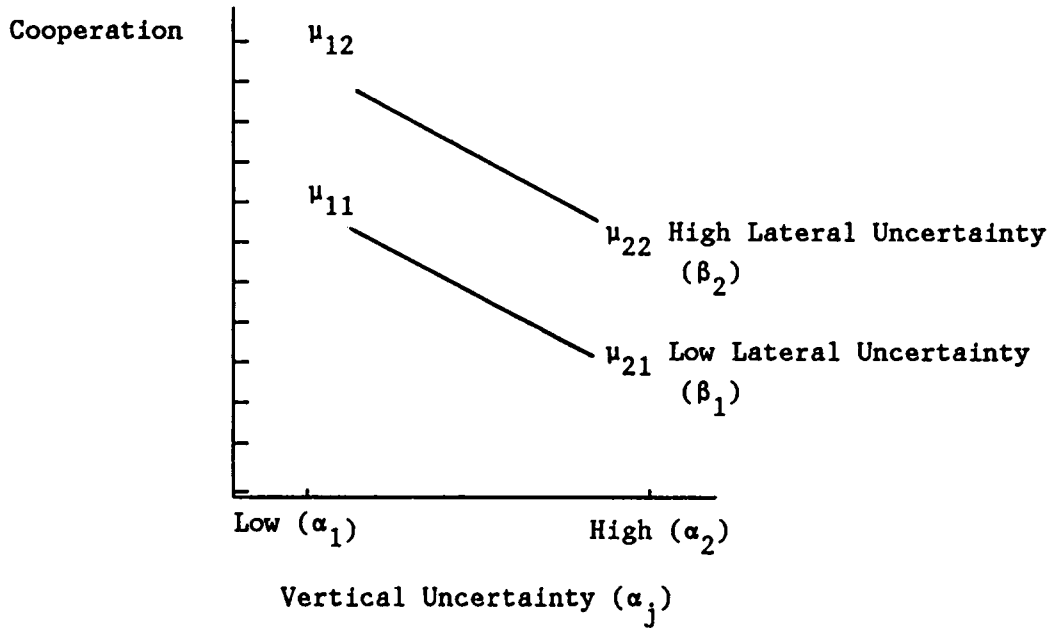
If the observed ranking equals the hypothesized ranking, multiple range procedures (LSD and Tukey's) should be used to test whether or not there is a significant difference between thse means. Hypothesis 5(b) states that $\mu_{11} > \mu_{12}$ and that $\mu_{11} < \mu_{22}$ and μ_{21} (same ranking as above).

The <u>sixth hypothesis</u> states that if both lateral and vertical environmental uncertainty were perceived by the focal dyad to be:

(a) high, then perceived cooperation will be low, but not as low as the high vertical/low lateral condition.

(b) low, then perceived cooperation will be high, but not as high as the high lateral/low vertical condition.

Graphically:



Hypothesis 6(a) states that $\mu_{22} > \mu_{21}$ and $\mu_{22} < \mu_{11}$ and μ_{12}. This implies the following ranking when cooperation is the dependent variable (from low to high):

$$\mu_{21} \quad \mu_{22} \quad \mu_{11} \quad \mu_{12}$$

Hypothesis 6(b) states that $\mu_{11} < \mu_{12}$ and $\mu_{11} > \mu_{21}$ and μ_{22} (same ranking). Again, multiple range procedures should be used to test whether or not there is a significant difference between these means.

These six hypotheses were retested using the frequencies obtained from the content analysis procedure. The appropriate test here is the statistical test for comparing two binomial proportions. Inferences about two binomial proportions are usually phrased in terms of their difference. The sampling distribution was approximated by a normal distribution with mean and standard error given by (Ott 1984):

$$\mu_{\pi_1 - \pi_2} = \pi_1 - \pi_2$$

$$\sigma_{\pi_1 - \pi_2} = \frac{\pi_1(1-\pi_1)}{n_1} + \frac{\pi_2(1-\pi_2)}{n_2}$$

where;

π_1 = population proportion

π_1 = sample proportion

n_1 = sample size for first population

n_2 = sample size for second population

The normal approximation to the distribution of $\pi_1 - \pi_2$ is appropriate if both $n\pi$ and $n(1-\pi)$ are 5 or more for each population (Ott 1984, p. 194).

The <u>first hypothesis</u> can be tested with the following data:

Cooperative Messages

Lateral	low	Y_1	n_1
	high	Y_2	n_2

where:

Y_1 = total number of cooperative messages sent in the low lateral uncertainty conditions (summing over vertical).

Y_2 = total number of cooperative messages sent in the high

lateral uncertainty conditions (summing over vertical).

n_1 = total number of messages sent in the low lateral uncertainty conditions.

n_2 = total number of messages sent in the high lateral uncertainty conditions.

To obtain sample proportions:

$$\frac{Y_1}{n_1} = \pi_1 \qquad \frac{Y_2}{n_2} = \pi_2$$

The statistical test was constructed as follows:

$$H_0: \pi_1 - \pi_2 = 0$$

$$H_1: \pi_1 - \pi_2 < 0$$

Test Statistic: $z = \dfrac{\pi_1 - \pi_2}{s}$

Where:

$$s = \pi\,(1-\pi)\ \frac{1}{n_1} + \frac{1}{n_2}$$

$$\pi = \frac{Y_1 + Y_2}{n_1 + n_2}$$

Decision: Reject H_0 if $Z < -Z\alpha$

The <u>second hypothesis</u> was tested with the same procedure, based on the following data:

Conflictual Messages

Lateral	low	Y_1	n_1
	high	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

H_2: $\pi_1 - \pi_2 > 0$

The <u>third hypothesis</u> was tested with the same procedure, based on the following data:

Cooperative Messages

Vertical	low	Y_1	n_1
	high	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

H_3: $\pi_1 - \pi_2 > 0$

The <u>fourth hypothesis</u> was tested with the same procedure based on the following data:

Conflictual Messages

Vertical	low	Y_1	n_1
	high	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

H_4: $\pi_1 - \pi_2 < 0$

<u>Hypothesis 5(a)</u> was tested with two separate binomial comparisons:

		Conflictual Messages	
Cell	High/High	Y_1	n_1
High Vertical/Low Lateral		Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{5(a)1}$: $\pi_1 - \pi_2 < 0$

		Conflictual Messages	
Condition	High/High	Y_1	n_1
	Low Vertical	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{5(a)2}$: $\pi_1 - \pi_2 > 0$

<u>Hypothesis 5(b)</u> was also tested with two separate binomial comparisons:

Conflictual Messages

Cell	Low/Low	Y_1	n_1
	High Lateral/Low Vertical	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{5(b)1}$: $\pi_1 - \pi_2 > 0$

Conflictual Messages

Condition	Low/Low	Y_1	n_1
	High Vertical	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{5(b)2}$: $\pi_1 - \pi_2 < 0$

Using the same procedure that was used for hypothesis five, <u>hypothesis 6(a)</u> was tested with two separate binomial comparisons:

Cooperative Messages

Cell	High/High	Y_1	n_1
	High Vertical/Low Lateral	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{6(a)1}$: $\pi_1 - \pi_2 > 0$

Cooperative Messages

Condition			
	High/High	Y_1	n_1
	Low Vertical	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{6(a)2}$: $\pi_1 - \pi_2 < 0$

Lastly, <u>hypothesis 6(b)</u> was tested with two binomial comparisons:

Cooperative Messages

Cell			
	Low/Low	Y_1	n_1
	High Lateral/Low Vertical	Y_2	n_2

H_0: $\pi_1 - \pi_2 = 0$

$H_{6(b)1}$: $\pi_1 - \pi_2 < 0$

Cooperative Messages

Condition			
	Low/Low	Y_1	n_1
	High Vertical	Y_2	n_2

$$H_0: \pi_1 - \pi_2 = 0$$

$$H_{6(b)2}: \pi_1 - \pi_2 > 0$$

This concludes the tests of hypotheses section. Hypotheses were tested via analysis of variance using the cooperation and conflict scales. As a confirmation procedure, hypotheses were re-tested using the written record of the negotiation process. Attention now turns to a more detailed discussion of the data collection plan.

DATA COLLECTION PLAN

The data collection process for this research began with preliminary tests. The objectives motivating these tests included: a) assessing the subjects understanding of and involvement in the simulation; b) checking their motivational orientation; c) establishing the strength of the manipulations; and d) evaluating the reliability of the lateral, vertical, conflict, and cooperation scales. Pre-testing provided the researcher with the opportunity to adjust the instruments in meaningful ways before the actual experiment began. This ensured a more sensitive and valid test of the hypotheses. Pre-testing was accomplished in phases until the results indicated that the instruments provided a reasonable test of the hypotheses.

The actual simulation was administered over a two week period in 15-20 sessions. Approximately 12 subjects were administered the simu-

lation per session. A chronological summary of the simulation is as follows:

1) **Orientation:** Subjects were randomly assigned to a dyad as a buyer or seller as they arrived at the research setting. By way of introduction, the experimenter delivered a short lecture over the simulation process and instructions.

2) **Cover Letter and Instructions:** After the orientation, subjects read a one page cover letter introducing the research. Following this, the simulation began with participants reading the initial instructions.

3) **Warm-Up Negotiation:** Subjects participated in a short warm-up exercise designed to teach them about the bargaining process. This involved bargaining with a simplified version of the price-quantity tables and exchanging messages via an interorganizational memo pad.

4) **Further Instructions:** After the warm-up, subjects read additional instructions explaining the importance of reading carefully and analyzing the scenario. These instructions reiterated important points such as motivational orientation and the organizational context.

5) **The Scenarios:** Each subject read and analyzed a two page scenario which discussed important economic and social factors. Included with this was a copy of their price - quantity table.

6) **Manipulation Check:** Subjects completed the perceived environmental uncertainty measures after they analyzed their scenario. This is a questionnaire involving 12 items (6 items pertaining to social factors and 6 items pertaining to economic factors).

7) **Bargaining:** After subjects finished analyzing their scenarios,

bargaining began. Bargaining continued until agreement was reached or until the 20 minute time limit elapsed.

8) **Dependent Measures:** Subjects filled out the questionnaire consisting of the dependent measures immediately following the negotiation process.

9) **Debriefing:** After the dependent measures were completed, the experimenter informally asked the subjects a number of questions regarding the experiment. It was important to find out if the subjects took the experiment seriously, understood the scenarios, and generally participated in good faith. Subjects also had an opportunity to ask the experimenter questions. The debriefing session was concluded by thanking the subjects for their participation. Total amount of time for the experiment: 1 1/2 hours.

SECTION CONCLUSION

The purpose of this section was to discuss how a dyadic negotiation simulation was used to empirically test the research hypotheses. Important decisions were made regarding the organizatinal context, type of dyad, subjects, experimental task, exchange of information, and experimental design. Included in the discussion over the experimental design were procedures for inducing lateral and vertical perceived environmental uncertainty, manipulation checks, the statistical model, dependent measures, and tests of hypotheses.

Decisions were made on the basis of developing a sensitive test of

the theory, as well as the normative boundaries of the political economy tradition (e.g. "dyad" should be the unit of analysis). Practical considerations were also taken into account in the decision making process. Relevant literature was included where appropriate illustrating how a dyadic negotiation simulation has been used in the past to evaluate theory. This literature was used as a point of departure or a frame of reference in constructing the present experiment.

CHAPTER SUMMARY

The purpose of this chapter was to design an experiment which could empirically test the research hypotheses. The chapter as a whole was divided into three fundamental sections: a) methods used to evaluate channel theories, b) types of organizational experiments, and c) experimental procedures.

The first section reviewed the research methods that have been used in the empirical study of marketing channels. These include the case study, sample survey, and experimental method. An important point of this section was that selection of a method for empirical testing involves matching strengths of the method with the aims of the researcher. Since the aim of this research is theory testing, the method that was selected was the organizatinal experiment.

The first purpose of the second section was to review the different types of organizational experiments. These include free simulations, parasimulations, and dyadic negotiations. The second purpose of this

section was to justify the use of a dyadic negotiation simulation. This justification focused on the need to develop a sensitive test of the nomological network as well as to stay within the normative boundaries of the research tradition.

The third section outlined how a dyadic negotiation simulation was used to empirically test the research hypotheses. This involved getting into the specifics of the experimental procedures. Relevant literature was included where appropriate illustrating how a dyadic negotiation simulation has been used in the past to evaluate theory. This section concluded by discussing the data collection plan. The next chapter focuses on data analysis and simulation results.

CHAPTER IV: RESULTS AND ANALYSES

INTRODUCTION

The purpose of this chapter is to interpret the results obtained from the dyadic negotiation simulation. After a brief discussion of the sampling procedure, the chapter is organized in terms of three broad topics: pre-testing results, simulation results, and a concluding discussion.

Preliminary testing is discussed in terms of two phases. In each phase the objectives are presented, problems revealed by the pre-test are described, and any ensuing changes in experimental procedures are noted.

Analysis and interpretation of the simulation results provides the thrust of the chapter. This section is organized in terms of: the empirical attributes of the measurement scales, the strength of the manipulations, descriptive statistics, the results of hypothesis testing, and the analysis of potential confounds. The concluding discussion focuses on interpretation of the results relative to the directly relevant literature as presented in chapter two.

SAMPLING PROCEDURE

A total of 272 upper division business students from Virginia Polytechnic Institute and State University volunteered to participate in the experimental simulation. Of these students, 12 participated in the

first pre-test, 52 in the second, and 208 participated in the actual experiment.

The simulation took approximately 1 1/2 hours to complete and all students received 3 points extra credit for participating. Since the simulation took place during the evening, outside of class time, the three points extra credit served as an incentive needed to increase attendance. The simulation was administrated to small groups of approximately 12 subjects apiece. Subjects were randomly assigned to a dyad as a buyer or seller as they arrived at the research setting. Pre-testing was completed over winter quarter 1987. The first pre-test was administered in a single session. The second pre-test was administered over a 1 week period in 5 sessions. The actual simulation was administered over a two week period during spring quarter 1987 in 16 sessions.

PRELIMINARY TESTING

PHASE ONE

The objectives of the first pre-test were to: a) assess the subject's understanding of the simulation instructions and scenarios; b) assess the subjects interest and involvement in the simulation; c) check their motivational orientation; and d) develop an initial understanding as to the strength of the uncertainty manipulation. Based on the results of this pre-test, a number of potential problems were isolated. These

concerns led to significant changes in the experimental materials and task.

Level of understanding, interest, and involvement were evaluated by self-reports as well as through discussions during the debriefing phase of the simulation. Table 1 summarizes the subjects evaluation of their understanding, interest, and involvement. Note that the means are relatively high. Table 2 presents the means after averaging over the seven items and controlling for role. This is appropriate since the internal consistency of the items is high (coefficient alpha = .75; N = 12). On the basis of this information, understanding, interest, and involvement did not seem to be a potential problem.

Information obtained during the debriefing phase of the simulation was somewhat more revealing. The participants were very interested and involved in the social interaction required during the experimental task. However, they seemed less interested in the reading of the instructions and scenarios before bargaining. It was suggested during debriefing that the simulation might be more stimulating if the scenarios were less technical and more real; for example, if the subjects could represent actual companies and exchange a fictitious product.

The instructions of the simulation were written to induce an "individualistic" motivational orientation. As a check, a single item on the dependent measures asked participants if they bargained to lower costs only for themselves or if they bargained to lower costs for both themselves and their bargaining partner. Table 3 suggests that the instructions failed to induce an individualistic motivational orientation.

TABLE 1

Means and Standard Deviations For Items Measuring Understanding, Interest, and Involvement (Pre-test 1) (N = 12)[a]

ITEM	Mean	S.D.
Understanding of Instructions	7.92	1.24
Understanding of Scenarios	7.67	1.07
Interest	8.08	0.67
Stimulated	7.75	1.36
Involvement	7.16	1.47
Seriousness	8.00	1.13
Valuable Experience	7.92	0.99

[a]Bipolar scale with 9 anchors, 1 = low, 9 = high

TABLE 2

General Understanding-Interest-Involvement Measure By Role (Pre-test 1)[a]

ROLE	N	MEAN	S.D.
Buyer	6	7.71	1.00
Seller	6	7.85	0.40
Overall	12	7.78	0.73

[a]Bipolar scale with 9 anchors, 1 = low, 9 = high

TABLE 3

Motivational Orientation (Pre-test 1)[a]

ROLE	N	MEAN	S.D.
Buyer	6	5.33	3.72
Seller	6	5.00	2.82
Overall	12	5.16	3.15

[a]Bipolar scale with 9 anchors, 1 = cooperative statements, 9 = individualistic statements

Not only was the mean too low but the standard deviation was way too high (the range on this item was 1-9; N = 12). Thus, it seemed that nearly every subject had a different motivational orientation.

With small samples, it is difficult to assess the strength of the manipulations. It is possible however to get an initial feel for how the inductions are being perceived by the subjects. The information in Table 4 suggests that at this early stage, the vertical induction was more successful at inducing low and high uncertainty than was the lateral induction. During debriefing it became clear that the mean cost of loosing an opportunity was too high ($\bar{x}$ = 440) relative to the other numbers in the price-quantity matrices. Thus participants tended to be less concerned about this dispersion.

These results highlight three potential problems. First, there was a lack of interest and involvement in reading the simulation instructions and scenario's. Second, the instructions failed to induce a uniform, individualistic motivational orientation across treatments. Third, the lateral uncertainty induction was working although it seemed weak relative to the vertical induction.

A number of changes were made in the experimental materials which were designed to remedy the above problems. First, mundane realism was written into the simulation scenarios. It was hoped that if participants perceived themselves to be representing the interests of a real company, and bargaining to exchange a real product, interest and involvement would increase. Increasing mundane realism is also compatible with the aims of theory testing since all subjects are now imputting a similar context

TABLE 4

Manipulation Check: Differences Between Low and High Uncertainty Inductions (Pre-test 1)[a]

UNCERTAINTY SOURCE	LOW	HIGH
Lateral	3.35 (1.46)[b]	5.05 (1.19)
Vertical	2.88 (1.26)	6.44 (0.79)

[a]Likert System with 8 anchors, 1 = low, 8 = high (N=12)

[b]Standard deviations

(this should serve to decrease error variance).

The second problem was dealt with by making three changes. First, subjects were reminded of their motivational orientation by a printed statement positioned directly underneath their price - quantity tables. Second, subjects were told to assume an individualistic motivational orientation during the verbal introduction to the simulation. Third, a scale of three items was added to the dependent measures, now a more reliable measure of motivational orientation was possible.

In order to deal with the third problem it was decided that the mean cost of loosing an opportunity should be lowered from 440 to 305. In addition, the difference between the variance surrounding this mean for the high and low conditions was increased.

Other changes that were made after the first pre-test included rewriting the seller's vertical uncertainty scenario in order to increase the correspondence between the theoretical construct and its operationalization. Also, the Likert system used to measure the dependent variables was changed from an eight anchor scale to a five (it was decided that a five anchor scale could capture differences just as well as an eight plus have the advantage of being less ambiguous). With these changes made, a second pre-test was now needed, except this time with a larger sample.

PHASE TWO

The objectives of the second pre-test were to: a) reassess the subjects' understanding of and involvement in the simulation; b) recheck their motivational orientation; c) establish the strength of the manipulations; and d) evaluate the reliability of the lateral, vertical, conflict, and cooperation scales. The following results are based on a sample of 52.

Table 5 summarizes the subject's self-reports of their understanding, interest, and involvement in the second pre-test. Note that again the means are quite high. Information obtained during the debriefing phase of the simulation revealed that subjects were more interested and involved in the scenarios. Enriching the simulation materials with more realistic descriptions served to stimulate and enliven the participants.

Motivational orientation was now measured with a three item scale rather than a single item (coefficient alpha = .84). The information presented in Table 6 suggests that the changes made after the first pre-test were successful. The overall mean increased from 5.16 to 6.29 and the standard deviation decreased from 3.15 to 1.95.[7] Since any value over 5.00 can be considered an individualistic motivational orientation, it was decided that this level was sufficient.

Table 7 presents the results of the manipulation check. There is a

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[7] Since error variance decreases exponentially as N increases, the smaller S.D. may have been a function of the larger sample rather than a sign that subjects tended to be motivated similarly.

TABLE 5

General Understanding-Interest-Involvement Measure By Role (Pre-test 2)[a]

ROLE	N	MEAN	S.D.
Buyer	26	8.06	0.73
Seller	26	7.84	0.83
Overall	52	7.95	0.78

[a]Bipolar scale with 9 anchors, 1 = low, 9 = high

TABLE 6

Motivational Orientation (Pre-test 2)[a]

ROLE	N	MEAN	S.D.
Buyer	26	6.77	1.91
Seller	26	5.80	2.00
Overall	52	6.29	1.95

[a]Bipolar scale with 9 anchors, 1 = cooperative statements, 9 = individualistic statements

significant difference in the subject's perceptions of low versus high uncertainty for both the lateral and vertical environments. Even though the ratio of high to low variances for the lateral induction is larger than for the vertical induction, the vertical induction was still more successful.[8] The next step in assessing the strength of the manipulations is to aggregate lateral perceptions with vertical perceptions for each respondent. This provides a measure of the general perceived environmental uncertainty for each subject. This data can then be used as a continuous dependent variable in a ANOVA model. If the manipulations are working, both main effects should be highly significant, and the interaction should be nonsignificant. Table 8 presents the F-value and significance level for the main effects and the interaction. Note that again the vertical induction is slightly stronger than the lateral. Based on this information, it was decided that both the vertical and lateral inductions were similar enough in magnitude, and strong enough, to provide a test of the hypotheses.

Even if the manipulations are strong, scales for the dependent variables characterized by low reliability cannot be depended upon to sense differences or changes. This is because unreliability inflates standard

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[8] Vertical Induction:

$$\frac{\text{Variance from high scenario}}{\text{Variance from low scenario}} = \frac{39.799}{1.949} = 20.42$$

Lateral Induction:

$$\frac{\text{Variance from high scenario}}{\text{Variance from low scenario}} = \frac{72.284}{2.738} = 26.40$$

TABLE 7

Manipulation Check: Differences Between Low and High Uncertainty Inductions (Pre-test 2)[a]

SOURCE	N	LOW	HIGH	t-score
Lateral	52	2.31 (.56)[b]	3.19 (.45)	6.33 ($p<.001$)[c]
Vertical	52	2.08 (.27)	3.84 (.41)	15.39 ($p<.001$)

[a]Likert system with 5 anchors, 1 = low, 5 = high

[b]Standard deviations

[c]Probability of a Type I error

TABLE 8

Manipulation Check: ANOVA Table (pre-test 2) (N=52)

SOURCE	Df	F-VALUE	P-VALUE[a]
Lateral	1	3.65	0.0006
Vertical	1	7.54	0.0001
Interaction	1	0.39	0.2357

[a]Probability of a Type I error

errors of estimates and these play a crucial role in inferring differences (Cook and Campbell 1979). The recommended measure of reliability (internal consistency) is coefficient alpha (Churchill 1979; Peter 1979). The required value of alpha depends on the purpose of the research. According to Nunnally (1967), for early stages of basic research in the social sciences, reliabilities of .50 to .60 are acceptable. When the subcomponents of Duncan's (1972) uncertainty scale are combined into a composite measure, reliabilities have ranged from 0.68 (Spekman and Stern 1979) to 0.81 (Sathe 1974). Recent measures of reliability for conflict and cooperation scales have ranged from .86 (Dant 1985) to .90 (Dilts 1985). Clearly, reliabilities for this research should be well above Nunnally's suggested criteria. Table 9 presents coefficient alphas for the lateral, vertical, conflict, and cooperation scales. Note that these are well within the ranges of existing research streams.

The changes that were made after the first pre-test resolved the important problems highlighted in phase one. Given that the manipulations were strong and the scales reliable, sufficient statistical power should enable the research design to sense relationships, should they exist. On the basis of the above information, the decision was made to conduct the actual experimental simulation.

TABLE 9

Reliability of Uncertainty Source and Dominant Sentiments Scales (Pre-test 2) (N=52)

SCALE	COEFFICIENT ALPHA
A. Critical Source of Uncertainty (manipulation check):	
1. Lateral (6 items)	.86
2. Vertical (6 items)	.93
B. Dominant Sentiments (dependent variables):	
1. Conflict (9 items)	.84
2. Cooperation (9 items)	.87

A DYADIC NEGOTIATION SIMULATION: RESULTS AND ANALYSES

This section is organized in terms of: the empirical attributes of the measurement scales, the strength of the manipulations, descriptive statistics, the results of hypothesis testing, and the analysis of potential confounds. The first section consists of reliability analysis for all measures, the confirmation of the uni- or multidimensionality of the vertical, lateral, conflict, and cooperation scales, and the subsequent calculation of reliability for any conceptually relevant dimensions.

As stated earlier, 208 subjects participated in the actual simulation. All subjects were volunteers and were currently enrolled in an upper division business course. Since the simulation was administered to small groups, all subjects were closely monitored. This resulted in 208 usable questionnaires. The following results are thus based on a final N of 208.

EMPIRICAL ATTRIBUTES OF MEASUREMENT SCALES

Table 10 presents coefficient alpha for the source of perceived environmental uncertainty measures, the dominant sentiment measures, and measures of other variables which will be referred to later. Note that all coefficients are within the acceptable range. The only possible exception is the tolerance to ambiguity scale. If the first item of this scale was removed, coefficient alpha increased to .70. Thus, only the

TABLE 10

Coefficient Alpha for Measurement Scales (N=208)

SCALE	COEFFICIENT ALPHA	
A. Source of Perceived Environmental Uncertainty:		
1. Lateral (6 items)	.81	
2. Vertical (6 items)	.91	
B. Dominant Sentiments		
1. Conflict (9 items)	.88	
2. Cooperation (9 items)	.90	
C. Other Variables:		
1. Interest (7 items)	.84	
2. Motivational Orientation (3 items)	.89	
3. Tolerance to Ambiguity (4 items)	.67	[.70]

last three items will be used as a measure of this variable.

Establishing the Unidimensionality of The Environmental Uncertainty Scales

The unidimensionality of the lateral and vertical uncertainty scales is important to establish in order to ensure that the treatments are not inducing only a narrow dimension of uncertainty. To determine the empirical structure of these scales, the first step was to conduct a common factor analysis using communality estimates in the main diagonal of the correlation matrix (Hair, Anderson, and Tatham 1987). The solution that accounts for 60% of the total variance was selected for interpretation. The percentage of variance criterion for determining the number of factors to retain for further analysis and interpretation has gained wide acceptance (Hair, Anderson, and Tatham 1987). This criterion called for rotating two factors toward a clearer structure (see Table 11). The 12 items measuring the source of environmental uncertainty (lateral and vertical) are closely related. Thus the oblique rotational procedure was selected to retain the statistical interdependencies. The default value of delta = 0.0 (SPSSX) was used to control convergence of the oblique solution. Table 12 presents the factor loadings for the 12 items on two factors. Note that factor 1 can be interpreted as representing vertical uncertainty, and factor 2, lateral uncertainty. Since the factor loadings (in bold) for vertical uncertainty are similar in magnitude, it is likely that these items are measuring the same construct. This "flatness" suggests an internal consistency. The same can be stated for lateral uncertainty. The low correlations of the lateral items with the first

TABLE 11

Source of Uncertainty Factor Analysis: Eigenvalue, Percent of Variance, and Cumulative Percent for Two Factors

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	4.29	35.7	35.7
2	3.07	25.6	61.4

TABLE 12

Factor Loadings for Each Item (Oblique Rotation, N=208)

ITEM	FACTOR 1	FACTOR 2
Lateral Items:		
L1	01[a]	58
L2	02	79
L3	04	82
L4	08	76
L5	14	69
L6	13	67
Vertical Items:		
V1	80	10
V2	88	11
V3	89	06
V4	82	09
V5	81	05
V6	76	02

[a]Decimals have been removed

factor and vertical items with the second factor suggests an external consistency. Given the above results, the vertical and lateral scales will be assumed to be unidimensional.

Exploring the Dimensionality of the Conflict and Cooperation Scales

Factor analysis was also used to understand the underlying empirical structure of the dominant sentiments scales. Both PACKAGE (Hunter and Cohen 1969), a confirmatory factor analytic program, as well as common factor analysis, were used in determining the dimensional characteristics.

Conflict and Cooperation: Results of PACKAGE. Table 13 presents the factor intercorrelations and loadings matrix for conflict (items 1-9) and cooperation (items 10-18). The numbers in the matrices represent how the indicators relate to the construct they were intended to measure. An examination of the clusters (boxed in) reveals that the off-diagonal elements associated with each cluster are fairly similar in magnitude. These values are indicative of a "flat" matrix (Hunter and Gerbing 1982) and imply that the indicators are measuring the same construct. This suggests an internal consistency.

Table 14 presents the partial correlations between indicators with the effect of the construct partialled out. In this table, low values on the off-diagonal elements of the clusters suggest that, in the absence of the construct, the indicators correlate very little with each other. These low values also suggest an internal consistency, meaning that the

Table 13

Factor Intercorrelations and Loading Matrix For the Dominant Sentiments Scales

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	501	502
1	45	58	47	41	50	33	43	40	45	-46	-46	-49	-45	-47	-35	-53	-46	-49	67	-65
2	58	48	53	47	45	26	45	43	48	-55	-48	-52	-47	-43	-49	-50	-49	-53	69	-70
3	47	56	41	37	46	26	43	39	46	-60	-55	-55	-47	-44	-01	-48	-42	-41	64	-71
4	41	47	37	47	68	57	42	33	43	-31	-43	-36	-39	-36	-38	-50	-28	-43	69	-54
5	50	45	46	68	56	60	44	37	46	-36	-45	-39	-44	-34	-38	-57	-34	-46	75	-59
6	33	26	26	57	60	33	41	34	39	-20	-28	-26	-32	-32	-34	-39	-22	-29	58	-41
7	48	45	48	42	44	41	54	62	60	-42	-41	-34	-36	-41	-35	-45	-35	-36	73	-52
8	40	43	39	33	37	34	62	36	46	-38	-33	-33	-38	-37	-39	-36	-32	-36	61	-50
9	45	48	46	43	46	39	60	46	48	-41	-41	-35	-30	-39	-39	-39	-27	-42	69	-54
10	-46	-55	-60	-31	-35	-20	-42	-38	-41	45	53	64	40	41	60	41	55	43	-61	69
11	-46	-43	-55	-43	-45	-28	-41	-33	-41	53	56	61	58	58	52	56	38	47	-53	75
12	-49	-52	-55	-36	-39	-26	-34	-33	-35	62	61	62	52	45	64	50	56	51	-59	79
13	-45	-47	-47	-39	-44	-35	-36	-38	-30	40	58	52	52	64	50	57	37	51	-59	75
14	-47	-43	-44	-36	-34	-32	-41	-37	-39	41	58	45	64	48	43	61	31	51	-58	69
15	-35	-49	-01	-38	-38	-34	-35	-39	-39	60	52	64	50	43	52	49	45	46	-61	72
16	-53	-50	-49	-50	-57	-33	-45	-36	-39	41	56	50	57	61	48	53	36	60	-69	73
17	-46	-49	-42	-32	-34	-33	-35	-32	-27	55	38	56	37	31	45	39	36	48	-50	60
18	-48	-53	-41	-43	-46	-29	-36	-36	-42	43	47	51	51	51	44	60	48	49	-62	70
501	67	69	64	69	75	53	73	61	69	-61	-63	-59	-59	-58	-61	-69	-50	-62	100	-85
502	-65	-70	-71	-54	-59	-41	-52	-50	-52	69	75	79	72	69	72	73	60	70	-85	100

TABLE 14

Partial Correlations Between Indicators With The Effect of the Construct Partialled Out For The Dominant Sentiments Scales

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMONALITIES ON THE DIAGONAL

CONDITIONS WITH A 0.[illegible] INDICATES THAT THE COMMONALITY OF THE INDICATOR IS [illegible] THAN [illegible].

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
2	0.21[illegible]	[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
3	0.052	[illegible]	[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
4	-0.[illegible]	-0.[illegible]	-0.[illegible]	0.475	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
5	0.00[illegible]	-0.[illegible]	-0.[illegible]	0.[illegible]	0.[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
6	-0.103	-0.232	-0.175	0.293	0.318	0.335	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
7	-0.032	-0.116	0.030	-0.161	-1.215	-0.025	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
8	-0.025	0.015	-0.012	-0.155	-0.165	-0.030	0.323	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
9	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.[illegible]	-0.012	0.[illegible]	0.[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
10	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
11	-1.[illegible]	-2.[illegible]	-2.[illegible]	-1.[illegible]	-2.308	-1.[illegible]	-2.[illegible]	-1.[illegible]	-1.[illegible]	0.030	0.564	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
12	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-2.[illegible]	-1.[illegible]	-2.[illegible]	-1.[illegible]	-2.017	0.170	0.051	0.615	0.000	0.000	0.000	0.000	0.000	[illegible]
13	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.595	0.205	0.041	-0.115	0.519	0.000	0.000	0.000	0.000	[illegible]
14	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.676	0.142	0.128	-0.218	0.265	0.[illegible]	0.000	0.000	0.000	[illegible]
15	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.745	0.202	-0.040	0.169	-0.060	-0.135	0.570	0.000	0.000	[illegible]
16	-2.019	-2.[illegible]	-1.[illegible]	-2.030	-2.[illegible]	-1.[illegible]	-2.[illegible]	-1.[illegible]	-1.832	0.135	0.013	-0.171	0.101	0.218	-0.077	0.531	0.000	[illegible]
17	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-1.[illegible]	-0.[illegible]	-1.[illegible]	-1.[illegible]	-1.500	0.210	-0.131	0.175	-0.123	-0.160	0.023	-0.100	0.564	[illegible]
18	-1.742	-1.959	-1.[illegible]	-1.[illegible]	-2.061	-1.193	-1.[illegible]	-1.[illegible]	-1.755	0.103	-0.117	-0.030	0.020	0.058	-0.091	0.135	0.115	[illegible]

common factor among indicators is their measurement of a particular construct.

Table 15 presents the similarity coefficients. Since the matrix is symmetrical, only the lower half values are reported. The off-diagonal elements of each cluster indicate the degree to which the items correlate with a construct other than the construct being measured (Rao 1986). Ideally, the items should behave in a similar way when correlated with another construct. Further, the correlations of indicators within clusters should be higher than correlations of items between clusters. Such a pattern would indicate that items of the same cluster exhibit a greater similarity among themselves than they do with items of another cluster. Thus high intra-item values are desirable, and these values should be higher than inter-item values (Rao 1986). Note that correlations of the items measuring conflict and cooperation are similar, the only difference being the signs. This result supports the continuum view of conflict and cooperation. If the participant perceived conflict to be high, they were likely to perceive cooperation to be low.

The results of PACKAGE indicate that the conflict and cooperation scales are unidimensional, and that the constructs are inversely related.[9] The high coefficient alpha for these scales demonstrates an internal consistency, this also suggests unidimensionality. In order to further understand the empirical structure underlying these scales, com-

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[9] It should be noted that this is a subjective judgement. When using PACKAGE, it is difficult to tell how many separate factors will emerge and whether these factors can be interpreted as conceptually relevant.

TABLE 15

Similarity Coefficients For The Dominant Sentiments Scales

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMONALITIES ON THE DIAGONAL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
2	1.000	0.977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
3	0.955	0.987	0.911	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
4	[illegible]	0.955	0.951	[illegible]	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
5	0.973	[illegible]	0.943	0.991	0.958	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
6	[illegible]	0.916	0.925	[illegible]	0.977	0.115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
7	0.975	0.958	0.959	0.961	0.966	0.954	0.530	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
8	0.955	0.976	0.975	0.925	0.962	0.949	0.951	[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
10	-0.976	-0.935	-0.967	-0.952	-0.957	-0.882	-0.919	-0.943	-0.956	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
11	-0.946	-0.933	-0.951	-0.951	-0.954	-0.926	-0.951	-0.964	-0.951	0.931	0.564	0.000	0.000	0.000	0.000	0.000	0.000	[illegible]
12	-0.975	-0.985	-0.934	-0.975	-0.934	-0.932	-0.937	-0.947	-0.943	0.992	0.988	0.613	0.000	0.000	0.000	0.000	0.000	[illegible]
13	-0.942	-0.979	-0.977	-0.955	-0.954	-0.927	-0.965	-0.955	-0.957	0.970	0.995	0.979	0.519	0.000	0.000	0.000	0.000	[illegible]
14	-0.950	-0.959	-0.975	-0.953	-0.953	-0.922	-0.954	-0.965	-0.958	0.951	0.939	0.973	0.990	0.490	0.000	0.000	0.000	[illegible]
15	-0.930	-0.956	-0.935	-0.941	-0.939	-0.906	-0.949	-0.957	-0.956	0.955	0.931	0.957	0.979	0.975	0.570	0.000	0.000	[illegible]
16	-0.958	-0.935	-0.975	-0.975	-0.973	-0.954	-0.958	-0.965	-0.971	0.964	0.970	0.973	0.994	0.988	0.374	0.533	0.000	[illegible]
17	-0.975	-0.983	-0.983	-0.927	-0.932	-0.859	-0.930	-0.943	-0.965	0.933	0.979	0.990	0.969	0.963	0.937	0.967	[illegible]	[illegible]
18	-0.995	-0.939	-0.956	-0.963	-0.966	-0.940	-0.946	-0.967	-0.965	0.975	0.971	0.933	0.991	0.987	0.992	0.992	[illegible]	[illegible]

mon factor analysis was done for each scale separately.

Factor Analysis: Cooperation Scale. A common factor analysis was done with the 9 items measuring cooperation in order to isolate and interpret conceptually meaningful dimensions. Using the Guttman 1.0 eigenvalue criterion, two factors were rotated toward a clearer structure. The oblique rotational procedure was used in order to retain the statistical interdependencies (delta = 0.0). Table 16 presents the factor loadings for the cooperation scale. Note that the differences between the primary and secondary loadings for each item are relatively small, with four items loading highly on both factors. These loadings indicate that there are no clear, conceptually relevant, dimensions found within the overall cooperation scale. Thus, this scale is assumed to be unidimensional.

Factor Analysis: Conflict Scale A common factor analysis was done with the 9 conflict items. The conflict scale was constructed to measure three important elements specifying the domain of the construct: perceived incompatibility, perceived interference, and feelings of tension or antagonism. These elements correspond to Pondy's (1967) conceptualization of conflict episodes: latent, perceived, and felt conflict respectively. Expecting three conceptually relevant factors, the CRITERIA subcommand (SPSSX) was used to select and rotate three factors. Once again the oblique rotational procedure was used. Table 17 presents the factor loadings for the conflict scale. Three clear dimensions emerged confirming the conceptualized structure of the instrument (no item loaded

TABLE 16

Factor Loadings and Differences Between Primary and Secondary Loadings For Cooperation Scale

ITEM	FACTOR 1	FACTOR 2	DIFFERENCE
CP1	.50	.85	.35
CP2	.75	.63	.12*
CP3	.62	.84	.22*
CP4	.83	.50	.33
CP5	.85	.42	.43
CP6	.60	.77	.17*
CP7	.83	.51	.32
CP8	.40	.80	.40
CP9	.71	.60	.11*

*ambiguous items

TABLE 17

Factor Loadings, Percent of Variance, and Coefficient Alpha for Three Dimensions of Conflict

ITEM	DIMENSION		
Perceived Interference	Perceived Conflict	Latent Conflict	Felt Conflict
Item 1	78[a]		
Item 2	87		
Item 3	81		
Perceived Incompatibility			
Item 4		85	
Item 5		86	
Item 6		86	
Feelings of Tension			
Item 7			88
Item 8			87
Item 9			74
Eigenvalue	4.63	1.07	.83
Percent of Variance	51.5	12.0	9.2
Coefficient Alpha	.78	.82	.79

[a]decimals have been removed

highly on more than one factor). Since coefficient alpha for each dimension is acceptable (see Table 17), the hypotheses were tested using overall conflict, as well as each dimension, as the dependent variable. This is important since it is generally recognized that the process of conflict is episodic.

THE STRENGTH OF THE UNCERTAINTY INDUCTIONS

Table 18 presents the descriptive statistics resulting from the manipulation check for the negotiation simulation (N = 208). The "general" category was obtained by aggregating lateral and vertical perceptions for each respondent. Note that the cell means are all in the right direction, suggesting that the uncertainty inductions were working as intended.

As was done in the second pre-test, the results of the manipulation check can be used as a continuous dependent variable in a ANOVA model to assess significant differences. If the manipulations are working, main effects should be highly significant and interaction effects should be nonsignificant. Table 19 presents the results of three separate univariate ANOVAs. The first used only the results of the lateral scale as the dependent measure; the second used the results of the vertical scale; and the third used the aggregate score of uncertainty. Note that main effects are highly significant and interaction effects are nonsignificant. This indicates that subjects perceived the low inductions to be less uncertain, and the high inductions to be highly uncertain.

The next section presents descriptive statistics for overall con-

TABLE 18

Manipulation Check: Means and Standard Deviations By Treatment[a]

TREATMENT	N	SOURCE		
		LATERAL	VERTICAL	GENERAL
Low Lat Low Vert	52	2.13 (0.64)	2.19 (0.64)	2.16 (0.55)
High Lat Low Vert	52	3.12 (0.62)	2.09 (0.61)	2.61 (0.43)
Low Lat High Vert	52	2.29 (0.67)	3.71 (0.56)	3.00 (0.38)
High Lat High Vert	52	3.12 (0.69)	3.68 (0.60)	3.41 (0.52)

[a]Likert Scale: 1 = low, 5 = high

TABLE 19

Manipulation Check: ANOVA Tables

SOURCE	DF	F-VALUE	P-VALUE
Dependent Variable: Lateral			
Lateral	1	99.83	0.0001
Vertical	1	0.94	0.3336
Lat * Vert	1	0.81	0.3699
Dependent Variable: Vertical			
Lateral	1	0.53	0.4667
Vertical	1	347.89	0.0001
Lat * Vert	1	0.25	0.6184
Dependent Variable: General			
Lateral	1	41.64	0.0001
Vertical	1	156.96	0.0001
Lat * Vert	1	0.09	0.7607

flict, latent conflict, perceived conflict, felt conflict, and cooperation by treatment. The purpose of this section is to discuss the direction of means, relative to the hypotheses, for all main effects.

DESCRIPTIVE STATISTICS

Table 20 presents the means and standard deviations for overall conflict, the three dimensions of conflict, and cooperation for each treatment. Note that the level of cooperation was higher than conflict for all treatments. As hypothesized, the highest level of cooperation, and the lowest level of conflict, occurs in the high lateral/low vertical treatment. Latent conflict has the highest overall mean of the conflict dimensions, with perceived conflict second, and felt third. This pattern is consistent across all treatments. This result is compatible with Pondy's (1967) conceptualization of conflict as a sequential process. Subjects seemed to have sensed a divergence of individual goals (latent conflict), as well as becoming aware of incompatible actions or mutual interference (perceived conflict). However, the mean for felt conflict indicates that conflict had not yet reached an affective state. Following this line of reasoning, manifest conflict, as measured by written messages and discussed in the next chapter, should be even lower.

Table 21 presents the means for conflict and cooperation after summing over the vertical levels. As hypothesized, as lateral uncertainty increases from low to high, conflict decreases and cooperation increases. Thus for the lateral uncertainty main effect, the means are in the hy-

TABLE 20

Cell Means and Standard Deviations For Conflict and Cooperation[a]

		DOMINANT SENTIMENT				
TREATMENT	N	OVERALL CONFLICT	LATENT CONFLICT	PERCEIVED CONFLICT	FELT CONFLICT	COOPERATION
Low Lat Low Vert	52	2.73 (0.89)[b]	3.21 (1.06)	2.59 (0.98)	2.38 (1.01)	3.30 (0.83)
High Lat Low Vert	52	2.43 (0.54)	2.94 (0.86)	2.26 (0.67)	2.08 (0.51)	3.61 (0.57)
Low Lat High Vert	52	2.59 (0.64)	3.06 (0.79)	2.50 (0.80)	2.22 (0.77)	3.50 (0.51)
High Lat High Vert	52	2.60 (0.77)	3.08 (0.91)	2.51 (0.99)	2.21 (0.80)	3.44 (0.70)
Overall	208	2.59 (0.73)	3.07 (0.91)	2.46 (0.87)	2.22 (0.80)	3.46 (0.67)

[a]Likert scale: 1 = low, 5 = high

[b]Standard deviations

TABLE 21

Means For Lateral Uncertainty Main Effects

		DOMINANT SENTIMENT				
LATERAL UNCERTAINTY	N	OVERALL CONFLICT	LATENT CONFLICT	PERCEIVED CONFLICT	FELT CONFLICT	COOPERATION
Low	104	2.66	3.14	2.55	2.30	3.40
High	104	2.51	3.01	2.38	2.14	3.53

pothesized direction.

Table 22 presents the means for the dependent variables after summing over the lateral conditions. As hypothesized, as vertical uncertainty increases from low to high, overall and perceived conflict increase. The direction of the means for felt conflict, and cooperation are opposite of what was hypothesized. Note that there was no change in latent conflict as vertical uncertainty increased. Before these differences are examined in the context of univariate and multivariate tests, it is important to further discuss the distribution of the dependent variables relative to important assumptions.

Analysis of variance assumes that observations are drawn from normally distributed populations and that the variances of the p populations are homogeneous. The assumption of normality was assessed by using a normal probability plot. This was obtained by first ranking the observed values of the dependent variable from smallest to largest; then pairing each value with an expected normal value for a sample of that size from a standard normal distribution. Figures 9 and 10 are normal probability plots for conflict and cooperation respectively. If the observed scores are from normal distributions, the plots should be fairly linear. Figures 9 and 10 indicate that the distributions are from normally distributed populations. Note that the plot for cooperation indicates that the distribution is slightly skewed. Skewed populations have very little affect on either the level of significance or the power of the F test for the fixed-effects model (Pearson 1931; Lindquist 1953; Kirk 1982). Thus this slight skewness was not considered to be a problem.

TABLE 22

Means For Vertical Uncertainty Main Effects

		DOMINANT SENTIMENT				
VERTICAL UNCERTAINTY	N	OVERALL CONFLICT	LATENT CONFLICT	PERCEIVED CONFLICT	FELT CONFLICT	COOPERATION
Low	104	2.58	3.07	2.42	2.23	3.46
High	104	2.60	3.07	2.51	2.22	3.47

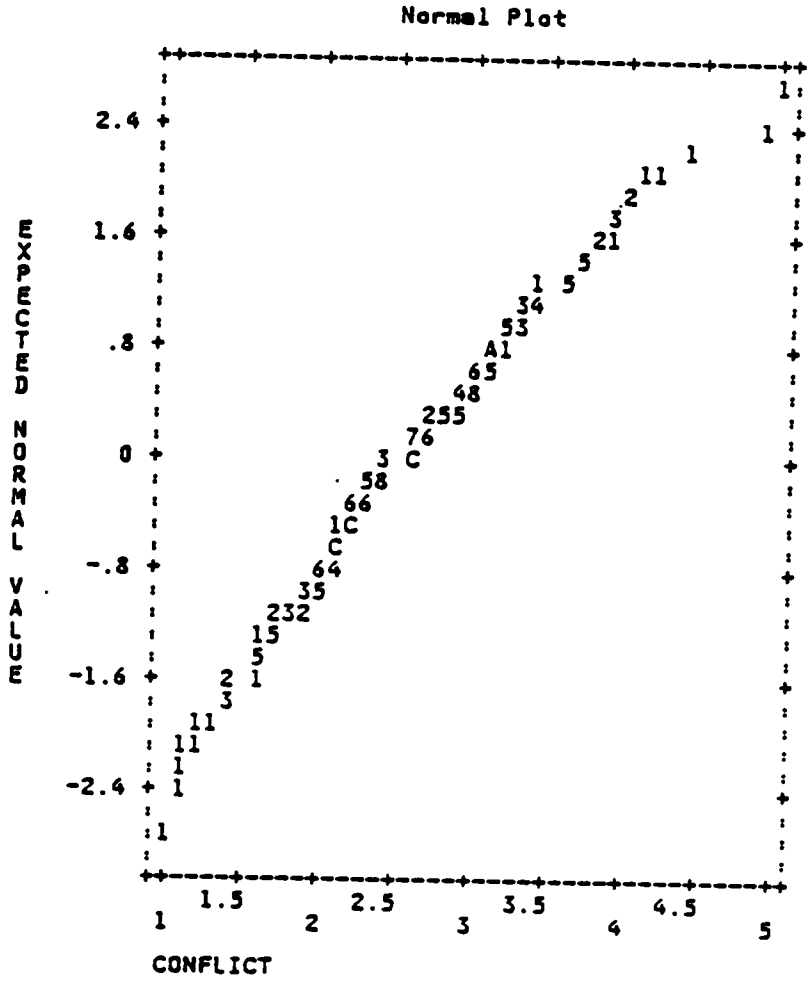


FIGURE 9

Normal Probability Plot For Conflict

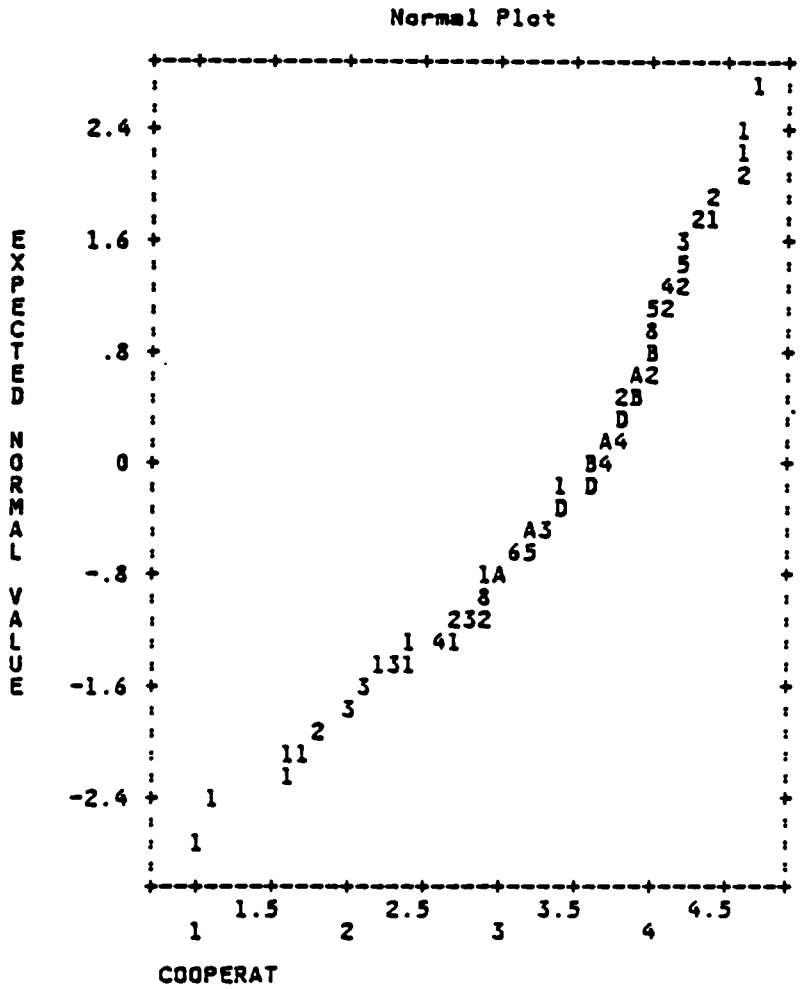


FIGURE 10

Normal Probability Plot For Cooperation

A subjective evaluation of the standard deviations in Table 20 indicates that the variances were not homogeneous across treatments. Univariate homogeneity of variance tests (Cochrans C and Bartlett-Box F) indicate that the homogeneity of variance assumption was violated. A multivariate test for the homogeneity of the variance-covariance matrices (Box's M) also indicates that this assumption was violated. If the sample sizes are equal, the F-test is robust with respect to violations of this assumption (Cochran 1947; Welch 1947; Lindquist 1953; Box 1954; Kirk 1982; Lenter and Bishop 1986). Since the sample sizes for each condition in this experiment are equal ($n_i = 52$), this violation is not a significant problem for hypothesis testing.

Results and analyses to this point reveal that: all scales are reliable as measured by coefficient alpha; the lateral and vertical uncertainty scales are unidimensional; the cooperation scale is unidimensional; and the conflict scale can be used as an overall measure or separated into three conceptually relevant dimensions. It was also established that the uncertainty inductions were strong and working as intended. Descriptive statistics indicated that all but three of the means were in the hypothesized direction for the lateral and vertical main effects. The next section evaluates the hypotheses in the context of statistical tests.

HYPOTHESIS TESTING: RESULTS AND ANALYSES

Relationships were evaluated by means of a MANOVA, univariate ANOVAs, and multiple comparisons. An overall summary of the results, without controlling for potential confounds, can be found in Table 28.

Although individual hypotheses cannot be tested via multivariate analysis of variance, this procedure can be used to assess the overall relationship between the explanatory and response variables. MANOVA has the advantage of controlling alpha more globally, as well as being able to test the linear combination of the dependent variables that provides the strongest evidence of overall group differences (Hair, Anderson, and Tatham 1987). Two MANOVAs were evaluated, one with conflict and cooperation as the dependent variables, and one with the three dimensions of conflict and cooperation as the dependent variables.

Individual hypotheses were tested with univariate ANOVAs and multiple comparisons. ANOVA is an appropriate technique to assist in the interpretation of multivariate effects when the research objective is hypothesis testing (Bray and Maxwell 1985; Spector 1977; Petroshius and Monroe 1987). Multiple comparison procedures were used to test the simple main effects. Two techniques were selected for these tests: Tukey's (less powerful but controls the experiment-wise error rate) and LSD (more

powerful but controls only the comparison-wise error rate) (Kirk 1982).

MANOVA Analyses

Table 23 presents the summary results of two separate MANOVAs. The first used overall conflict and cooperation as the dependent variables. The second used latent conflict, perceived conflict, felt conflict, and cooperation as the dependent variables. The first analysis indicates that the lateral uncertainty induction had a stronger effect on the dependent variables than the vertical although neither are significant. Since there is some evidence of an interaction ($p = 0.139$), it is possible that main effects could be masked. The same results were found in the second analysis although all three effects were less significant. This was due largely to the change in degrees of freedom.

ANOVA Analyses

The results of univariate ANOVA and multiple comparison analyses will be presented separately for each dependent variable. The results of testing hypotheses 2, 4, and 5 will be presented under the conflict subheading, and hypotheses 1, 3, and 6 under the cooperation subheading.

Conflict and It's Dimensions. Table 24 presents the univariate ANOVA summary for conflict and it dimensions. Hypothesis two states that the higher the level of lateral uncertainty, the lower the level of conflict. Recall that the conflict means for the lateral uncertainty main effect were all in the hypothesized direction (see Table 21). Although overall

TABLE 23

Summary of MANOVA

Dependent Variables:	Conflict Cooperation		
Source of Variation	DF	Wilks' Lambda Converted to F	P-Value
Lateral	(2,203)	1.14	0.321
Vertical	(2,203)	0.21	0.812
Interaction	(2,203)	1.99	0.139

Dependent Variables:	Latent Conflict Perceived Conflict Felt Conflict Cooperation		
Source of Variation	DF	Wilks' Lambda Converted to F	P-Value
Lateral	(4,201)	0.63	0.644
Vertical	(4,201)	0.49	0.745
Interaction	(4,201)	1.04	0.389

TABLE 24

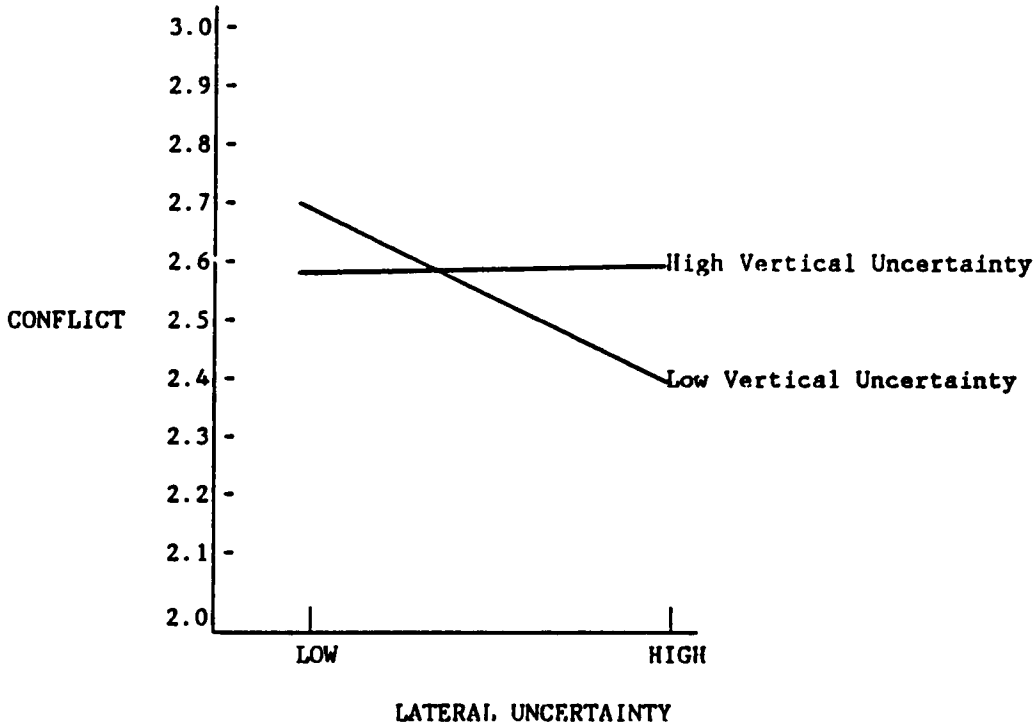
Univariate ANOVA Summary: Conflict and It's Dimensions

Source of Variation	DF	F-Value	P-Value
Dependent Variable: Overall Conflict			
Lateral	(1,204)	2.15	0.144
Vertical	(1,204)	0.05	0.832
Interaction	(1,204)	2.34	0.127
Dependent Variables: Latent Conflict			
Lateral	(1,204)	0.93	0.336
Vertical	(1,204)	0.00	1.000
Interaction	(1,204)	1.36	0.245
Dependent Variables: Perceived Conflict			
Lateral	(1,204)	1.76	0.186
Vertical	(1,204)	0.41	0.525
Interaction	(1,204)	1.90	0.169
Dependent Variables: Felt Conflict			
Lateral	(1,204)	2.12	0.147
Vertical	(1,204)	0.01	0.907
Interaction	(1,204)	1.74	0.182

and felt conflict provide some empirical evidence for the hypothesized relationship (p-value = .144 and .147 respectively), this main effect is not significant. Since there is some evidence to suggest an interaction ($p = 0.127$), the next step is to evaluate the simple effects. Referring to Figure 11, conflict does not decrease as lateral uncertainty increases for the high vertical conditions. However, conflict decreases significantly as lateral uncertainty increases for the low vertical conditions. This significant difference is based on a Least Significant Difference Test ($\alpha = .05$) (see Table 25). Thus hypothesis two is accepted for the low vertical simple effect only. Note that when the experiment-wise error rate is controlled, this difference is no longer significant (see Table 25). These relationships are generally consistent across the dimensions with felt conflict also establishing a significant difference for this simple effect.

Hypothesis four states that the higher the level of vertical uncertainty, the higher the level of conflict. Referring back to table 22, cell means are in the hypothesized direction for overall and perceived conflict. Table 24 indicates that this main effect is not significant. Analysis of simple effects reveals that as vertical uncertainty increases, conflict decreases for the low lateral conditions, and increases for the high lateral conditions (refer back to Figure 11). This is true for both overall and perceived conflict. Neither of these differences are significant at the $\alpha = .05$ level however (see Table 25). Thus hypothesis four is rejected.

Hypothesis five proposes that conflict will be highest in cell 3,



		Lateral	
		Low	High
Vertical	Low	2.726 (1)	2.425 (2)
	High	2.594 (3)	2.60 (4)

FIGURE 11

Cell Means For Overall Conflict

TABLE 25

Table of Differences For Conflict and It's Dimensions: Multiple Comparison Summary For Tukey's and LSD

DIFFERENCES[b]					CRITICAL VALUES[a] TUKEY'S	LDS
Overall Conflict:						
	2	3	4	1		
2	-	.17	.18	.30*		
3		-	.01	.13	.37	.28
4			-	.13		
1				-		
Latent Conflict:						
	2	3	4	1		
2	-	.12	.14	.27		
3		-	.02	.15	.45	.35
4			-	.13		
1				-		
Perceived Conflict:						
	2	3	4	1		
2	-	.24	.25	.33		
3		-	.01	.09	.44	.34
4			-	.08		
1				-		
Felt Conflict:						
	2	4	3	1		
2	-	.13	.14	.31*		
4		-	.01	.17	.39	.30
3			-	.16		
1				-		

*significant difference at $\alpha = .05$

[a]Tukey's = $q_{.05,\ 4,\ 204} \sqrt{\frac{MSerror}{n_i}}$

LSD = $t_{.05/2,\ 204} \sqrt{\frac{2MSerror}{n_i}}$

[b]low lat/low vert = 1
high lat/low vert = 2
low lat/high vert = 3
high lat/high vert = 4

followed by cells 4, 1, and 2. Figure 12 presents the rank order of hypothesized versus observed means.

As hypothesized, the mean from cell 4 had the second to the highest level of conflict and the mean from cell 2 had the lowest. Due to the interaction, the means from cells 1 and 3 were reversed. The observed rank order is consistent across dimensions with the exception of felt conflict (1, 3, 4, 2). Since the only significant difference was between the means from cells 1 and 2 (see Table 25), this hypothesis cannot be accepted.

Taken together, hypotheses 2, 4, and 5 reflected the proposition that the effect of lateral and vertical uncertainty on conflict would be additive (parallel interaction). The above results indicate that this is clearly not the case.

For those subjects who were uncertain about the cost of losing an opportunity, increasing vertical uncertainty increased conflict. This supports the conceptualization that coordination becomes more difficult as vertical uncertainty increases. On the other hand, for those subjects who were fairly certain about the cost of losing an opportunity, increasing vertical uncertainty actually decreased conflict. One explanation could be that for these subjects, increasing vertical uncertainty highlighted the need for coordination. Given a mixed-motive setting, only if the negotiation process went long enough for coordination attempts to fail would conflict ensue.

For those subjects negotiating in a certain vertical environment, increasing lateral uncertainty decreased conflict. This supports the conceptualization that lateral uncertainty will be perceived as a

Cell Numbers:

Vert \ Lat	L	H
L	1	2
H	3	4

	High Conflict			Low Conflict
Hypothesized Rank:	3	4	1	2
Observed Rank:	1	4	3	2

FIGURE 12: Rank Order of Hypothesized Versus Observed Means (Conflict)

superordinate goal. However, for those subjects negotiating in an uncertain vertical environment, as lateral uncertainty increased, there was no change in the level of conflict. Post hoc theorizing should proceed with caution since there is not a significant difference between most of these means. Indeed, these differences could be the result of sampling error. The only significant difference supported the conceptualization.

At any rate, the relationship between the critical source of uncertainty and conflict seems to be complex. Further interpretation of these findings will be presented in the discussion section at the end of this chapter.

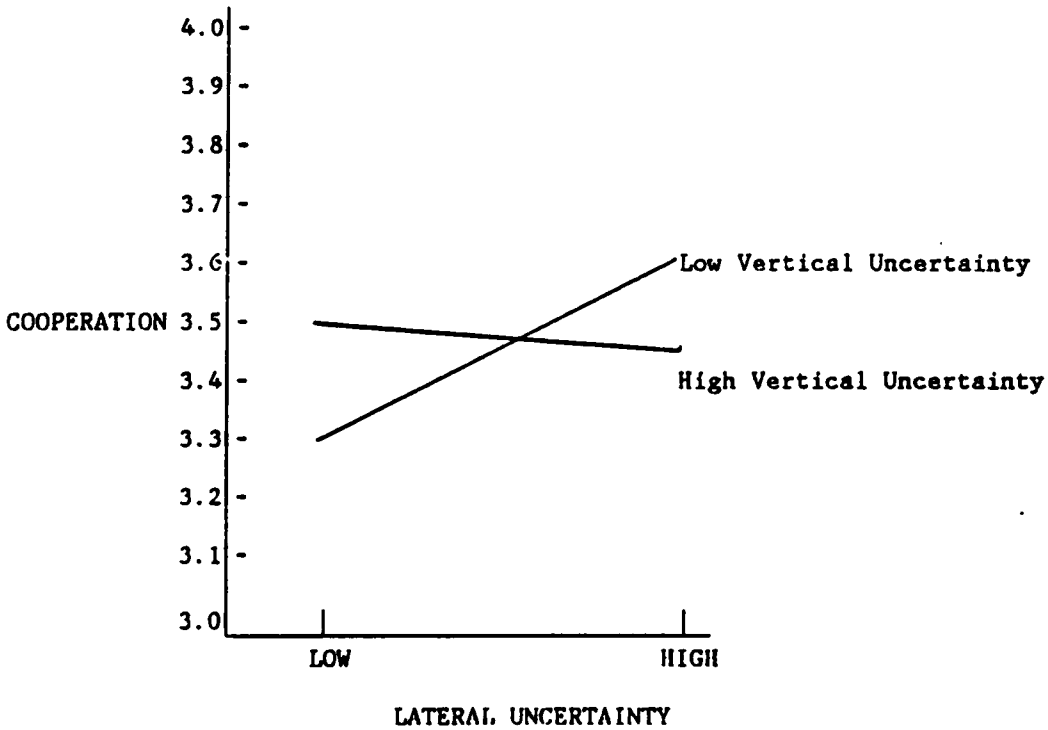
Cooperation. Table 26 presents the univariate ANOVA summary for cooperation. Since there is a significant interaction ($p = 0.047$), both main and simple effects will be interpreted. Hypothesis one states that the higher the level of lateral uncertainty, the higher the level of cooperation. Recall that the cooperation means for the lateral uncertainty main effect were in the hypothesized direction (see Table 21). Although there is some empirical evidence for the hypothesized relationship (p-value = 0.177), this main effect is not significant. Analysis of simple effects indicates that this hypothesis is accepted for the low vertical conditions only ($p < .05$) (see Figure 13 and Table 27).

Hypothesis three states that the higher the level of vertical uncertainty, the lower the level of cooperation. This main effect is not significant (p-value = 0.808). Analysis of simple effects reveals that as vertical uncertainty increases, cooperation increases for the low

TABLE 26

Univariate ANOVA Summary: Cooperation

Source of Variation	DF	F-Value	P-Value
Lateral	(1,204)	1.83	0.177
Vertical	(1,204)	0.06	0.808
Interaction	(1,204)	4.01	0.047



		Lateral	
		Low	High
Vertical	Low	3.30 (1)	3.61 (2)
	High	3.50 (3)	3.44 (4)

FIGURE 13

Cell Means For Cooperation

TABLE 27

Table of Differences For Cooperation: Multiple Comparison Summary For Tukey's and LSD

DIFFERENCES[b]					CRITICAL VALUES[a] TUKEY'S	LDS
	1	4	3	2		
1	-	.15	.21	.31*		
4		-	.06	.16	.34	.26
3			-	.10		
2				-		

*significant difference at $\alpha = .05$

[a]Tukey's = $q_{.05,\ 4,\ 204} \sqrt{\frac{MSerror}{n_i}}$

LSD = $t_{.05/2,\ 204} \sqrt{\frac{2MSerror}{n_i}}$

[b]low lat/low vert = 1
high lat/low vert = 2
low lat/high vert = 3
high lat/high vert = 4

lateral conditions, and decreases for the high lateral conditions. Thus, the means are in the hypothesized direction for the high lateral conditions. This simple effect is not significant however (see Table 27). Hypothesis three is therefore rejected.

Hypothesis six proposes that cooperation will be highest in cell 2, followed by cells 1, 4, and 3. Figure 14 presents the rank order of hypothesized versus observed cell means. As hypothesized, the mean from cell 4 had the second to the lowest level of cooperation and the mean from cell 2 had the highest. Since conflict and cooperation are negatively correlated, this ranking is the inverse of that for conflict. Again, since the interaction was not anticipated, the means from cells 1 and 3 are reversed. Since the only significant difference was between the means from cells 1 and 2 (see Table 27), this hypothesis cannot be accepted.

As discussed above, hypotheses 1, 3, and 5 also proposed that the effect of lateral and vertical uncertainty would be additive. Again, this is clearly not the case. For those subjects who were fairly certain about the cost of losing an opportunity, increasing vertical uncertainty actually increased cooperation. This is consistent with the above post hoc explanation that increasing vertical uncertainty may highlight the need for coordination. For those subjects who were uncertain about the cost of losing an opportunity, increasing vertical uncertainty decreased cooperation. This supports the conceptualization.

For those subjects negotiating in a certain vertical environment, as lateral uncertainty increased, so did cooperation. This supports the conceptualization. However for those subjects negotiating in an uncer-

Cell Numbers:

Vert \ Lat	L	H
L	1	2
H	3	4

	High Cooperation		Low Cooperation	
Hypothesized Rank:	2	1	4	3
Observed Rank:	2	3	4	1

FIGURE 14: Rank Order of Hypothesized Versus Observed Means (Cooperation)

tain vertical environment, increasing lateral uncertainty decreased co-operation. Again, since multiple comparison procedures do not reveal significant differences, post hoc theorizing should proceed with caution. The only significant difference is for a simple main effect which supports the conceptualization. Table 28 provides an overall summary of the above discussion.

ANALYSIS OF POTENTIAL CONFOUNDS

In any analysis of variance design, independent variables, referred to as "covariates," can be included. The design is then termed an analysis of covariance (MANCOVA or ANCOVA) design. Covariates are typically included to remove extraneous influences from the dependent variable (Hair, Anderson, and Tatham 1987). This procedure helps to realize the aim of theory testing since it increases measurement precision.

Since the variance in the dependent variable forms the basis of the error term in ANOVA, a relevant covariate is one which is highly correlated with the dependent variable. A covariate that is correlated with the dependent variable can explain some of the variance (through linear regression) leaving only residual variance (Hair, Anderson, and Tatham 1987). This residual variance provides a smaller error term for the F-statistic and thus a more powerful test of treatment effects.

In order for the analysis of covariance to be useful, the covariates and the explanatory variables should not be correlated. This is usually referred to as the homogeneity of regression slopes assumption: "The

TABLE 28

Hypothesis Testing Summary

HYPOTHESIS	TABLE	DECISION	TEST STATISTIC	P-VALUE
ONE:				
(a) main effect	Table 26	Reject	F	P = 0.177
(b) simple effect (low)	Table 27	Accept	LSD (t)	P < 0.05
(c) simple effect (high)	Table 27	Reject (wrong direction)	LSD (t)	P > 0.05
TWO:				
(a) main effect	Table 24	Reject	F	P = 0.144
(b) simple effect (low)	Table 25	Accept	LSD (t)	P < 0.05
(c) simple effect (high)	Table 25	Reject (wrong direction)	LSD (t)	P > 0.05
THREE:				
(a) main effect	Table 26	Reject (wrong direction)	F	P = 0.808
(b) simple effect (low)	Table 27	Reject (wrong direction)	LSD (t)	P > 0.05
(c) simple effect (high)	Table 27	Reject	LSD (t)	P > 0.05
FOUR:				
(a) main effect	Table 24	Reject	F	P = 0.832
(b) simple effect (low)	Table 25	Reject (wrong direction)	LSD (t)	P > 0.05
(c) simple effect (high)	Table 25	Reject	LSD (t)	P > 0.05
FIVE:				
A	Figure 12	Reject	LSD (t)	P > 0.05
B	Figure 12	Reject	LSD (t)	P > 0.05
SIX:				
A	Figure 14	Reject	LSD (t)	P > 0.05
B	Figure 14	Reject	LSD (t)	P > 0.05

point is when the slopes are unequal there is a covariate by treatment interaction" (Stevens 1986, pp. 299-300). If the covariates are significantly related to the treatment variables, the analysis of covariance will yield misleading results.

The purpose of this section is to test the hypotheses when controlling for relevant covariates. This will be done by: a) presenting descriptive statistics of ten extraneous variables which past literature has identified as important; b) identifying which extraneous variables are highly correlated with the dependent variables but not correlated with the independent variables; and c) retesting the hypotheses with the residual variance of the dependent variables.

The three dimensions of conflict revealed results very similar to, or less significant than, overall conflict. Thus only overall conflict, along with cooperation, will be used as the dependent variables.

Extraneous Variables

As both Blalock (1960) and Green (1978) have suggested, a dummy coded categorical or continuous variable can play the role of a covariate. Table 29 presents descriptive statistics of four categorical extraneous variables by treatment. These variables include the role of the participant (buyer, seller); whether or not dyad members reached agreement during the bargaining session (reached vs. stalemate); whether or not subjects perceived the final outcome to be in their favor (in my favor vs. not in my favor); and the sex of the participant (male, female).

Table 30 presents descriptive statistics of six continuous extrane-

TABLE 29

Descriptive Statistics For The Four Categorical Potential Confound Variables

VARIABLE		TREATMENT				
		Low Lat Low Vert	High Lat Low Vert	Low Lat High Vert	High Lat High Vert	Overall
ROLE						
Sellers		50%	50%	50%	50%	50%
	N	26	26	26	26	104
Buyers		50%	50%	50%	50%	50%
	N	26	26	26	26	104
AGREEMENT						
Reached		75%	80%	73%	65%	73%
	N	39[a]	42	38	34	153
Stalemate		25%	20%	27%	35%	27%
	N	13	10	14	18	55
OUTCOME PERCEPTION						
In my favor		63%	52%	60%	52%	57%
	N	33	27	31	27	118
Not in my		37%	48%	40%	48%	43%
	N	19	25	21	25	90
SEX						
Male		40%	44%	27%	44%	39%
	N	21	23	14	23	81
Female		60%	56%	73%	56%	61%
	N	31	29	38	29	127

[a]The reason there is an odd number for this cell is because for one dyad, subject A had just finished a message agreeing to B's offer. At the same time, the time limit had just expired and subjects were asked to fill out the questionnaire in their simulation packets (dependent measures). Thus subject B never received the message and filled out the questionnaire with the understanding that they had not reached agreement. Subject A on the other hand filled out the dependent measures with the understanding that they had reached agreement.

ous variables by treatment. These variables include: the motivational orientation of the subject; the degree to which the subjects consider themselves to be risk-takers by nature; the degree to which the subjects consider themselves to be competitors by nature; the degree to which the subjects defined themselves as trusting by nature; the degree to which the participant viewed accomplishments to be the result of internally motivated action versus the result of external circumstances; and the degree to which the subjects viewed themselves as tolerant or intolerant of ambiguity. These variables were measured with bipolar scales consisting of nine numerical anchors. The next step was to decide which of these extraneous variables would make useful covariates.

Extraneous Variables As Covariates

Table 31 presents the Pearson correlation coefficients for the ten extraneous variables with conflict and cooperation. Note that six of these are significantly correlated with the dependent variables. Agreement reached (0 = stalemate, 1 = agreement) and outcome perception (0 = not in my favor, 1 = in my favor) are negatively correlated with conflict and positively correlated with cooperation. Motivational orientation (1 = cooperative, 9 = individualistic) is positively correlated with conflict and negatively correlated with cooperation. Competitor by nature (1 = competitor, 9 = cooperator) is negatively correlated with conflict and positively correlated with cooperation. Trusting by nature (1 = suspicious, 9 = trusting) is negatively correlated with conflict and positively correlated with cooperation. Locus of control (1 = internal,

TABLE 30

Descriptive Statistics For The Six Continuous Potential Confound Variables

VARIABLE	TREATMENT				
	Low Lat Low Vert	High Lat Low Vert	Low Lat High Vert	High Lat High Vert	Overall
Motivational Orientation (1=cooperative; 9=individualistic)					
Mean	6.75	6.33	6.39	6.59	6.52
S.D.	1.71	2.13	1.89	1.76	1.88
Risk-Taking (1=high risk-taker; 9=low risk-taker)					
Mean	4.71	4.19	4.40	4.40	4.42
S.D.	2.16	2.00	2.06	2.18	2.09
Competitive Nature (1=competitive; 9=cooperative)					
Mean	4.35	3.48	4.23	4.46	4.13
S.D.	2.20	2.16	2.45	2.54	2.36
Trusting by Nature (1=suspicious; 9=trusting)					
Mean	5.42	4.94	5.44	6.04	5.46
S.D.	2.15	2.34	2.45	2.28	2.32
Locus of Control (1=internal; 9=external)					
Mean	2.82	3.07	3.40	2.98	3.08
S.D.	1.32	1.63	1.97	1.90	1.73
Tolerance to Ambiguity (1=low tolerance; 9=high tolerance)					
Mean	3.27	3.39	3.46	3.70	3.46
S.D.	1.32	1.04	1.29	1.32	1.25

TABLE 31

Pearson Correlation Coefficients: Potential Confounds With Dependent Variables

VARIABLE	CONFLICT	COOPERATION
Role	.04 (.61)	.03 (.69)
Agreement*	-.28 (.0001)	.35 (.0001)
Outcome Perception*	-.31 (.0001)	.38 (.0001)
Motivation*	.18 (.011)	-.15 (.031)
Risk-Taking	.01 (.87)	-.06 (.43)
Competitive*	-.17 (.012)	.13 (.058)
Trusting*	-.29 (.0001)	.25 (.0003)
Locus of Control*	-.12 (.08)	.08 (.22)
Ambiguity	-.08 (.22)	.02 (.72)
Sex	.03 (.63)	-.009 (.89)

*Extraneous variables which are significantly correlated with the dependent variables

9 = external) is negatively correlated with conflict and positively correlated with cooperation. These relationships are consistent with and support past research in bargaining and negotiation. All of the correlations are significant at the $\alpha = .10$ level with the exception of locus of control with cooperation ($p = .22$). This variable was retained as a covariate since its correlation with conflict was relatively high ($p = .08$). The next step was to assess the relationship between the covariates and the explanatory variables.

The potential covariates will be used as dependent variables in the 2 x 2 design to establish their association with the independent variables. If a covariate is significantly related to the treatment variables, it will be dropped from the ANCOVA model. Table 32 presents the results of chi-squares with the two categorical covariates. In the first, the number of subjects who reached agreement in each treatment were used as nominal data in the 2 x 2 design. Note that the chi-square was not significant. In the second, the number of subjects who perceived the outcome to be in their favor in each treatment were used as nominal data. Again note that the chi-square was not significant. In other words, agreement reached and outcome perception are not significantly related to lateral and vertical perceived environmental uncertainty. This, together with their high correlations with the dependent variables, makes them suitable for the ANCOVA model.

Table 33 examines the relationship between the four continuous covaritates and the independent variables. Again, the covariates were used as dependent variables in the 2 x 2 design. Note that the results

TABLE 32

Relationships Between Treatments and Categorical Covariates

COVARIATE	Df	CHI-SQUARE[a]	P-VALUE
Agreement Reached	1	.3268	.50 < P < .70
Outcome Perception	1	.0290	.80 < P < .90

[a] $x^2 = \frac{N(ad - bc)^2}{(a + b)(c + d)(a + c)(b + d)}$

of the MANOVA and univariate ANOVAs indicate that the covariates are not related to the treatment variables at the $\alpha = .05$ level of significance. Thus, it is appropriate to use these variables as covariates.

The usefulness of the covariates can be evaluated by comparing the model and error mean squares with and without the covariates. Table 34 presents the degrees of freedom, mean squares, and F-statistics for the univariate ANOVAs with and without the covariates. Ideally, model MS should increase and error MS should decrease, resulting in a higher F-ratio. Note that in all cases error MS decreases, model MS increases (except for cooperation under the vertical treatment), and the F-ratio increases (except for cooperation under the vertical treatment). This indicates that the six covariates are useful in establishing a more sensitive and powerful test of the hypotheses.

Hypothesis Tests When Controlling For Potential Confounds

Table 35 presents the summary of the multivariate and univariate analysis of covariance when controlling for potential confounds.[10] Table 36 provides a summary of the hypothesis tests when controlling for these six covariates. Note that the results improve for the lateral main effect. Since the means for this effect are in the hypothesized direction,

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[10] Overall conflict and cooperation were used as the dependent variables. See Appendix I for this same analysis with the three dimensions of conflict and cooperation used as the dependent variables. As stated on page 197, the three dimensions of conflict revealed results similar to although less significant than what was found for overall conflict.

TABLE 33

Relationships Between Treatments and Continuous Covariates

SOURCE OF VARIATION	DF	F-VALUE	P-VALUE
MANOVA			
Dependent Variables: Trusting, Motivation, Competitive, Locus of Con.			
Lateral	(4,201)	0.41	.800
Vertical	(4,201)	1.00	.405
Interaction	(4,201)	2.26	.064
ANOVAs			
Dependent Variable: Trusting			
Lateral	(1,204)	0.03	.857
Vertical	(1,204)	3.04	.083
Interaction	(1,204)	2.83	.094
Dependent Variable: Motivational Orientation			
Lateral	(1,204)	0.18	.668
Vertical	(1,204)	0.03	.873
Interaction	(1,204)	1.42	.235
Dependent Variable: Competitiveness			
Lateral	(1,204)	0.95	.330
Vertical	(1,204)	1.77	.185
Interaction	(1,204)	2.84	.093
Dependent Variable: Locus of Control			
Lateral	(1,204)	0.19	.659
Vertical	(1,204)	0.85	.357
Interaction	(1,204)	1.75	.187

TABLE 34

Differences Between Mean Squares For Univariate Model With and Without Covariates

SOURCE	DF	MODEL MS	ERROR MS	F
Lateral				
Conflict				
Without	(1,204)	1.13	.53	2.15
With	(1,198)	1.73	.43	4.05
Cooperation:				
Without	(1,204)	0.81	.44	1.83
With	(1,198)	1.41	.35	4.03
Vertical				
Conflict:				
Without	(1,204)	0.02	.53	0.05
With	(1,198)	0.19	.43	0.43
Cooperation:				
Without	(1,204)	0.03	.44	0.06
With	(1,198)	0.01	.35	0.01
Interactions				
Conflict:				
Without	(1,204)	1.23	.53	2.33
With	(1,198)	1.76	.43	4.11
Cooperation:				
Without	(1,204)	1.78	.44	4.01
With	(1,198)	2.20	.35	6.32

TABLE 35

Summary of Multivariate and Univariate Analysis of Covariance When Controlling For Potential Confounds (Six Covariates)

SOURCE OF VARIATION	Df	F-VALUE	P-VALUE
MANCOVA			
Dependent Variables:	Conflict Cooperation		
Lateral	(2,197)	2.38	.095
Vertical	(2,197)	0.51	.600
Interaction	(2,197)	3.23	.042
ANCOVA			
Dependent Variable:	Conflict		
Lateral	(1,198)	4.05	.046
Vertical	(1,198)	0.43	.511
Interaction	(1,198)	4.11	.044
Dependent Variable:	Cooperation		
Lateral	(1,198)	4.03	.046
Vertical	(1,198)	0.01	.918
Interaction	(1,198)	6.32	.013

hypotheses one and two can now be accepted in their entirety. Testing the hypotheses with the residual variance of the dependent variables made the simple effects for hypotheses one and two (for the low vertical conditions) more significant. This in turn increased the significance of the main effect as well as the interaction. Since error MS decreased, the critical values for both Tukey's and LSD decreased, however this change was not enough to enable any of the other simple effects to be accepted. Thus, hypotheses three thru six were again rejected.

Categorical Variables As Covariates. There is a continuing controversy among marketing exemplars as to the appropriateness of using categorical variables as covariates. A number of methodologists believe that they should not be (Dillon and Goldstein 1984; Hair, Anderson, and Tatham 1986). Table 37 presents the MANCOVA and ANCOVA results after removing the categorical variables. These results are a slight improvement over the MANOVA and ANOVA summaries (without covariates) stated earlier (see Tables 23, 24, and 26). However, the hypothesis tests reveal the same results as stated in Table 28. These categorical variables are thus needed in the analysis of covariance model.

An acceptable alternative to using categorical variables in a ANCOVA model is to use a blocking[11] procedure. Here the sample is divided as prescribed by the categorical variable and the hypotheses are re-tested with each group separately. The disadvantages of this procedure are:

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[11] The word "blocking" is used here in a colloquial rather than a statistical sense.

TABLE 36

Hypothesis Testing Summary When Controlling For Potential Confounds (six covariates)

HYPOTHESIS	TABLE	DECISION	TEST STATISTIC	P-VALUE
ONE:				
(a) main effect	Table 35	Accept	F	P = .046
(b) simple effect (low)	Table 27	Accept	LSD (t)	P < .05
(c) simple effect (high)	Table 27	Reject (wrong direction)	LSD (t)	P > .05
TWO:				
(a) main effect	Table 35	Accept	F	P = .046
(b) simple effect (low)	Table 25	Accept	LSD (t)	P < .05
(c) simple effect (high)	Table 25	Reject (wrong direction)	LSD (t)	P > .05
THREE:				
(a) main effect	Table 35	Reject (wrong direction)	F	P = .92
(b) simple effect (low)	Table 27	Reject (wrong direction)	LSD (t)	P > .05
(c) simple effect (high)	Table 27	Reject	LSD (t)	P > .05
FOUR:				
(a) main effect	Table 35	Reject	F	P = .511
(b) simple effect (low)	Table 25	Reject (wrong direction)	LSD (t)	P > .05
(c) simple effect (high)	Table 25	Reject	LSD (t)	P > .05
FIVE:				
A	Figure 12	Reject	LSD (t)	P > .05
B	Figure 12	Reject	LSD (t)	P > .05
SIX:				
A	Figure 14	Reject	LSD (t)	P > .05
B	Figure 14	Reject	LSD (t)	P > .05

TABLE 37

Summary of Multivariate and Univariate Anlaysis of Covariance When Controlling For Continuous Confound Variables (four Covariates)

SOURCE OF VARIATION	Df	F-VALUE	P-VALUE
MANCOVA			
Dependent Variables:	Conflict Cooperation		
Lateral	(2,199)	1.24	.291
Vertical	(2,199)	0.53	.589
Interaction	(2,199)	2.73	.067
ANCOVA			
Dependent Variable:	Conflict		
Lateral	(1,200)	2.36	.126
Vertical	(1,200)	0.78	.377
Interaction	(1,200)	3.64	.058
Dependent Variable:	Cooperation		
Lateral	(1,200)	1.88	.172
Vertical	(1,200)	0.08	.172
Interaction	(1,200)	5.39	.021

1) each categorical variable must be controlled separately in order to maintain an acceptable level of power; and 2) even when controlling for each variable separately power decreases. This procedure was done in order to further interpret the empirical results.

Controlling For Outcome Perception. Table 38 presents the means and standard deviations for conflict and cooperation when controlling for outcome perception. Note that the level of conflict is lower and cooperation higher for those subjects perceiving the outcome to be in their favor.

Table 39 presents a summary of the MANCOVA and ANCOVA results controlling for the four continuous covariates and outcome perception. Since outcome perception was used as a blocking variable, the hypotheses were tested with each group separately. Table 40 presents an overall summary of the hypothesis tests. Looking only at that group which perceived the outcome to be in their favor, two hypotheses were accepted. Consistent with earlier results, lateral uncertainty increased cooperation and decreased conflict. The results from this sample reveal two differences from earlier analyses: 1) the effects are additive (parrellel interaction); and 2) there is some evidence to suggest a relationship between vertical uncertainty and conflict. The means are in the hypothesized direction (see Table 38) and the main effect was nearly significant at the $\alpha = .10$ level ($p = .16$; see Table 39). Even though these results are encouraging, hypotheses three and four must again be rejected.

Since the effects were additive, the order of the means changed from

TABLE 38

Means and Standard Deviations For Conflict and Cooperation Controlling For Outcome Perception

TREATMENT	OUTCOME PERCEPTION			
	In-Favor		Not-In-Favor	
	CONFLICT	COOPERATION	CONFLICT	COOPERATION
Lat Low Vert Low	2.47 (.88)	3.60 (.75)	3.17 (.74)	2.76 (.72)
Lat High Vert Low	2.22 (.51)	3.80 (.52)	2.64 (.49)	3.39 (.56)
Lat Low Vert High	2.55 (.60)	3.59 (.40)	2.67 (.71)	3.38 (.62)
Lat High Vert High	2.29 (.71)	3.78 (.50)	2.93 (.70)	3.08 (.71)

TABLE 39

Summary of MANCOVA and ANCOVA Controlling For Outcome Perception and Four Continuous Confound Variables (four covariates)

Source of Variation	Outcome Perception			
	In-Favor		Not-In-Favor	
	DF	F (P-Value)	DF	F (P-Value)
MANCOVA (Conflict, Cooperation)				
Lateral	(2,109)	4.34 (.015)	(2,81)	.45 (.64)
Vertical	(2,109)	1.00 (.37)	(2,81)	.45 (.64)
Interaction	(2,109)	.30 (.74)	(2,81)	6.27 (.003)
ANCOVA (Conflict)				
Lateral	(1,110)	7.99 (.006)	(1,82)	.24 (.62)
Vertical	(1,110)	2.00 (.16)	(1,82)	.34 (.56)
Interaction	(1,110)	.56 (.46)	(1,82)	8.89 (.004)
ANCOVA (Cooperation)				
Lateral	(1,110)	6.48 (.012)	(1,82)	.86 (.36)
Vertical	(1,110)	.70 (.40)	(1,82)	.89 (.35)
Interaction	(1,110)	.45 (.50)	(1,82)	12.03 (.001)

TABLE 40

Hypothesis Testing Summary When Controlling for Outcome Perception and Four Continuous Confound Variables (four covariates)

HYPOTHESIS	TABLE	TEST STATISTIC	DECISION			
			IN-FAVOR	P-VALUE	NOT-IN-FAVOR	P-VALUE
ONE:						
(a) main effect	Table 39	F	Accept	P = .012	Reject	P = .36
(b) simple effect (low)	Text, pg.210&214	LSD (t)	Reject	P > .05	Accept	P < .05
(c) simple effect (high)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
TWO:						
(a) main effect	Table 39	F	Accept	P = .006	Reject	P = .62
(b) simple effect (low)	Text, pg.210&214	LSD (t)	Reject	P > .05	Accept	P < .05
(c) simple effect (high)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
THREE:						
(a) main effect	Table 39	F	Reject	P = .40	Reject (wrong direction)	P = .35
(b) simple effect (low)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject (wrong direction)	P < .05
(c) simple effect (high)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject	P > .05
FOUR:						
(a) main effect	Table 39	F	Reject	P = .16	Reject (wrong direction)	P = .56
(b) simple effect (low)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject (wrong direction)	P < .05
(c) simple effect (high)	Text, pg.210&214	LSD (t)	Reject	P > .05	Reject	P > .05
FIVE:						
A	Figures 15&12	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
B	Figures 15&12	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
SIX:						
A	Figures 15&14	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
B	Figures 15&14	LSD (t)	Reject	P > .05	Reject	P > .05

earlier results. Figure 15 presents the hypothesized and observed order for conflict and cooperation. As hypothesized, the high vertical/low lateral condition had the highest level of conflict and the lowest level of cooperation. Also as hypothesized, the high lateral/low vertical condition had the lowest level of conflict and the highest level of cooperation. Since multiple comparison procedures did not reveal significant differences between these means, hypotheses 5 and 6 must be rejected.

Looking now at that group which perceived the outcome to not be in their favor, two simple effects were accepted. As lateral uncertainty increased, cooperation increased and conflict decreased for the low vertical uncertainty conditions only. This result is consistent with earlier findings (see Figures 11 and 13). Thus hypotheses one and two were accepted for the low vertical uncertainty conditions.

Note that two other simple effects were significant, but in the wrong direction. Under hypotheses three and four, as vertical uncertainty increased, cooperation increased and conflict decreased for the low lateral conditions. Again this result is consistent with earlier findings, except in this situation the simple effects were more pronounced. This greatly increased the significance of the interaction effect. The order of means for conflict and cooperation were the same as reported earlier (see Figures 12 and 14). Thus, hypotheses three through six are rejected in their entirety.

Controlling for outcome perception in this manner identified the source of the significant interaction effect. Only for those subjects

Cell Numbers:

Vert \ Lat	L	H
L	1	2
H	3	4

CONFLICT

	High			Low
Hypothesized Rank:	3	4	1	2
Observed Rank:	3	1	4	2

COOPERATION

	High			Low
Hypothesized Rank:	2	1	4	3
Observed Rank:	2	4	1	3

FIGURE 15: Order of Means For Conflict and Cooperation (Perceived the Outcome to be in Their Favor)

who perceived the outcome of the negotiation process to not be in their favor were the effects nonadditive. Further explanation and interpretation of this result will be presented in the discussion section at the end of this chapter, as well as in Chapter VI.

Controlling For Agreement Reached. Table 41 presents the means and standard deviations for conflict and cooperation when controlling for agreement reached. Note that in general cooperation was higher and conflict lower for those subjects who reached agreement.

Table 42 presents a summary of the MANCOVA and ANCOVA results controlling for the four continuous covariates and agreement reached. Again since agreement reached was used as a blocking variable, the hypotheses were tested with each group separately. Table 43 presents an overall summary of the hypothesis tests.

Looking only at that group which reached agreement, the results are consistent with earlier findings. Although hypotheses one through six were rejected, two simple effects approached significance. As lateral uncertainty increased conflict decreased (difference between means = .30; LSD critical value = .32, α = .05) and cooperation increased (difference between means = .27; LSD critical value = .28, α = .05) for the low vertical conditions. Figure 16 presents the hypothesized versus observed ranking of means for conflict and cooperation for that group which reached agreement. As hypothesized, the high lateral/low vertical condition resulted in the lowest level of conflict and the highest level of cooperation. Although multiple comparisons indicated that there was not a

TABLE 41

Means and Standard Deviations For Conflict and Cooperation Controlling For Agreement Reached

TREATMENT	AGREEMENT			
	AGREED		STALEMATE	
	CONFLICT	COOPERATION	CONFLICT	COOPERATION
Lat Low Vert Low	2.64 (.97)	3.47 (.86)	2.97 (.58)	2.79 (.53)
Lat High Vert Low	2.34 (.53)	3.74 (.49)	2.77 (.45)	3.07 (.59)
Lat Low Vert High	2.44 (.59)	3.61 (.40)	3.00 (.64)	3.21 (.65)
Lat High Vert High	2.43 (.84)	3.58 (.71)	2.93 (.49)	3.19 (.60)

TABLE 42

Summary of MANCOVA and ANCOVA Controlling For Agreement Reached and Four Continuous Confound Variables (four covariates)

Source of Variation	AGREEMENT: Agreed DF	Agreed F (P-Value)	Stalemate DF	Stalemate F (P-Value)
MANCOVA (Conflict, Cooperation)				
Lateral	(2,144)	0.94 (.393)	(2,46)	0.67 (.516)
Vertical	(2,144)	0.19 (.825)	(2.46)	3.51 (.038)
Interaction	(2,144)	1.53 (.219)	(2,46)	0.49 (.618)
ANCOVA (Conflict)				
Lateral	(1,145)	1.86 (.175)	(1,47)	1.28 (.264)
Vertical	(1,145)	0.01 (.942)	(1,47)	1.34 (.253)
Interaction	(1,145)	2.17 (.143)	(1,47)	0.17 (.685)
ANCOVA (Cooperation)				
Lateral	(1,145)	1.34 (.249)	(1,47)	0.77 (.386)
Vertical	(1,145)	0.21 (.648)	(1,47)	1.94 (.170)
Interaction	(1,145)	3.03 (.084)	(1,47)	0.97 (.329)

TABLE 43

Hypothesis Testing Summary When Controlling for Agreement Reached and Four Continuous Confound Variables (four covariates)

HYPOTHESIS	TABLE	TEST STATISTIC	DECISION			
			AGREED	P-VALUE	STALEMATE	P-VALUE
ONE:						
(a) main effect	Table 42	F	Reject	P = .249	Reject	P = .386
(b) simple effect (low)	Text. pg.218&222	LSD (t)	Reject	P > .05	Reject	P > .05
(c) simple effect (high)	Text. pg.218&222	LSD (t)	Reject (wrong direction)	P > .05	Reject (wrong direction)	P > .05
TWO:						
(a) main effect	Table 42	F	Reject	P = .175	Reject	P = .264
(b) simple effect (low)	Text, pg.218&222	LSD (t)	Reject	P > .05	Reject	P > .05
(c) simple effect (high)	Text, pg.218&222	LSD (t)	Reject	P > .05	Reject	P > .05
THREE:						
(a) main effect	Table 42	F	Reject	P = .648	Reject (wrong direction)	P = .170
(b) simple effect (low)	Text, pg.218&222	LSD (t)	Reject (wrong direction)	P > .05	Reject (wrong direction)	P > .05
(c) simple effect (high)	Text, pg.216&222	LSD (t)	Reject	P > .05	Reject (wrong direction)	P > .05
FOUR:						
(a) main effect	Table 42	F	Reject (wrong direction)	P = .942	Reject	P = .253
(b) simple effect (low)	Text, pg.218&222	LSD (t)	Reject (wrong direction)	P > .05	Reject	P > .05
(c) simple effect (high)	Text, pg.218&222	LSD (t)	Reject	P > .05	Reject	P > .05
FIVE:						
A	Figures 16&17	LSD (t)	Reject	P > .05	Reject	P > .05
B	Figures 16&17	LSD (t)	Reject	P > .05	Reject	P > .05
SIX:						
A	Figures 16&17	LSD (t)	Reject	P > .05	Reject	P > .05
B	Figures 16&17	LSD (t)	Reject	P > .05	Reject	P > .05

significant difference between these means, this result is encouraging.

Looking now at that group which did not reach agreement, none of the simple or main effects approached significance. Analyses for this group was based on a small sample (degrees of freedom for the univariate ANCOVA with 4 covariates was 1, 47). The poor results can therefore be explained as due to a lack of statistical power.

This group provided an interesting result however which was markedly different from earlier analyses. The high vertical/low lateral condition had the highest level of conflict and cooperation (see Figure 17). For this sample, as vertical uncertainty increased, conflict and cooperation increased. This was true for both simple effects and therefore the main effect. This was the only time that conflict and cooperation did not vary inversely. A post hoc explanation could be that as vertical uncertainty increased, the need for coordination also increased. This resulted in: a) an increasing willingness to coordinate (cooperation); and b) tensions resulting from efforts to coordinate diverging interests (conflict). This finding provides empirical evidence indicating that conflict and cooperation should be viewed as separate and distinct.[12] This runs contrary to the continuum view suggesting that they are two dimensions of the same construct.

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[12] It is noted that this conclusion is based on a small sample and therefore should be interpreted as tentative.

Cell Numbers:

Vert \ Lat	L	H
L	1	2
H	3	4

CONFLICT

	High			Low
Hypothesized Rank:	3	4	1	2
Observed Rank:	1	3	4	2

COOPERATION

	High			Low
Hypothesized Rank:	2	1	4	3
Observed Rank:	2	3	4	1

FIGURE 16: Order of Means For Conflict And Cooperation (Agreement Reached)

Cell Numbers:

Vert \ Lat	L	H
L	1	2
H	3	4

	CONFLICT			
	High Conflict		Low Conflict	
Hypothesized Rank:	3	4	1	2
Observed Rank:	3	1	4	2
	COOPERATION			
Hypothesized Rank:	2	1	4	3
Observed Rank:	3	4	2	1

FIGURE 17: Order of Means For Conflict and Cooperation (Negotiation ending in stalemate)

SECTION CONCLUSION

The purpose of this section was to present the empirical results of the dyadic negotiation simulation. This included: the empirical attributes of the measurement scales, the results of the manipulation check, and the results of hypothesis testing.

The last section of this Chapter summarizes the results in light of the directly relevant literature as discussed in Chapter II. Unexpected results will also be interpreted and post hoc explanations will be presented where appropriate.

DISCUSSION AND INTERPRETATION

The purpose of this section is to summarize the results of the hypothesis tests and state conclusions. This will be accomplished by: a) summarizing the conclusions resulting from controlling different extraneous variables; b) presenting a post hoc explanation for the significant interaction; c) stating overall decision conclusions; and d) interpreting these conclusions relative to the directly relevant literature as stated in Chapter II.

SUMMARY OF HYPOTHESIS TESTS

The dimensions of conflict resulted in similar, or less significant results. Thus overall conflict, along with cooperation, were used as the

dependent variables (see the footnote on page 204 and Appendix I). The traditional alpha level of .05 was used throughout the hypothesis tests (conclusions changed very little as a result of using $\alpha = .10$).

Table 44 presents a decision summary when controlling for different sets of extraneous variables. In general, the results are consistent across the first four columns. Results listed in the last two columns are somewhat misleading. Decisions stated in the "agreed" column were very similar to the results listed in the first column. The results of the last column can be attributed to a lack of power.

Taken together, the hypotheses proposed that the effects of lateral and vertical uncertainty would be additive. This was only the case for those subjects who perceived the outcome to be in their favor (column three of table 44). For columns 1, 2, 4, and 5 of table 44 there was a non-parrallel interaction. This interaction was the most significant for that group of subjects who perceived the outcome to not be in their favor (univariate ANOVAs: for conflict as the dependent variable, $p = .004$; for cooperation as the dependent variable, $p = .001$). The interaction effect can be summarized as follows:

1. As lateral uncertainty increases, conflict decreases and cooperation increases for the low vertical uncertainty conditions.

2. As lateral uncertainty increases, conflict increases and cooperation decreases for the high vertical uncertainty conditions.

3. As vertical uncertainty increases, conflict decreases and cooperation increases for the low lateral uncertainty conditions.

4. As vertical uncertainty increases, conflict increases and cooperation decreases for the high lateral uncertainty conditions.

In order to interpret the interaction, each of these results will be ex-

TABLE 44

Hypothesis Testing Decision Summary: Controlling For Different Sets of Potential Confound Variables

HYPOTHESIS	CONTROLLING FOR NOTHING	SIX COVARIATES	FOUR COVARIATES			
			IN-FAVOR	NOT-IN-FAVOR	AGREED	STALEMATE
ONE:						
(a) main effect	Reject	**Accept**	**Accept**	Reject	Reject	Reject
(b) simple effect (low)	**Accept**	**Accept**	Reject	**Accept**	Reject	Reject
(c) simple effect (high)	Reject	Reject	Reject	Reject	Reject	Reject
TWO:						
(a) main effect	Reject	**Accept**	**Accept**	Reject	Reject	Reject
(b) simple effect (low)	**Accept**	**Accept**	Reject	**Accept**	Reject	Reject
(c) simple effect (high)	Reject	Reject	Reject	Reject	Reject	Reject
THREE:						
(a) main effect	Reject	Reject	Reject	Reject	Reject	Reject
(b) simple effect (low)	Reject	Reject	Reject	Reject	Reject	Reject
(c) simple effect (high)	Reject	Reject	Reject	Reject	Reject	Reject
FOUR:						
(a) main effect	Reject	Reject	Reject	Reject	Reject	Reject
(b) simple effect (low)	Reject	Reject	Reject	Reject	Reject	Reject
(c) simple effect (high)	Reject	Reject	Reject	Reject	Reject	Reject
FIVE:						
A	Reject	Reject	Reject	Reject	Reject	Reject
B	Reject	Reject	Reject	Reject	Reject	Reject
SIX:						
A	Reject	Reject	Reject	Reject	Reject	Reject
B	Reject	Reject	Reject	Reject	Reject	Reject

plained separately. Result number one is consistent with the conceptualization as presented in Chapter II. For those subjects bargaining in a relatively certain vertical environment, the existence of lateral uncertainty led to more cooperative and less conflictual negotiations.

Result number two is inconsistent with the conceptualization. For those subjects bargaining in an uncertain vertical environment, increasing lateral uncertainty led to conflict and noncooperation. One possible explanation could be that perceptions of different environments blend together when the total environment is uncertain. Faced with general perceived environmental uncertainty, subjects may become less conciliatory in an effort to buffer their organizations. This negotiating stance of increased resistance could very well increase conflict and decrease cooperation.

Result number three above is also inconsistent with the conceptualization. For those subjects bargaining in a relatively certain lateral environment, increasing vertical uncertainty increased cooperation and decreased conflict. It is possible that when the lateral environment is certain, increasing vertical uncertainty may be met with better planning, more coordinated actions, and a higher tolerance for competition. In other words, vertical uncertainty may underscore the need for communication and conciliation. Presumably conflict would ensue only if efforts to coordinate failed.

Result number four above supports the conceptualization as stated in Chapter II. The uncertainty surrounding a dyad's ability to obtain its inputs and place its outputs will increase the level of friction and

perceived conflict between dyad members. In the context of the experimental task, high vertical uncertainty created fewer integrative alternatives, making coordination more difficult. This explanation for increasing conflict and decreasing cooperation is credible only for the high lateral conditions however. It is possible that when the lateral environment is uncertain, increasing vertical uncertainty produces a total environment which is so unpredictable, coordination fails. This, in turn, leads to perceptions of higher conflict and noncooperation.

DECISION CONCLUSIONS

Using the two categorical extraneous variables which were highly correlated with the dependent variables as covariates in the MANCOVA model has a number of advantages: 1) all of the potential confound variables could be controlled for at the same time; 2) the entire sample could be used to test the hypotheses thus increasing power and sensitivity; and 3) the blocking procedure assigns a smaller number of subjects to each treatment, thus the chances of systematic bias increase.

Given the above advantages, the final conclusions are based on the results as stated in the second column of Table 44. Table 45 summarizes the decision conclusions. Since the main effects for the first two hypotheses were significant, these were accepted.

TABLE 45

Summary of the Decision Conclusions

HYPOTHESIS	DECISION: NULL HYPOTHESIS	DECISION: ALTERNATIVE HYPOTHESIS
1. Lateral $\xrightarrow{+}$ Cooperation	Reject	**Accept**
2. Lateral $\xrightarrow{-}$ Conflict	Reject	**Accept**
3. Vertical $\xrightarrow{-}$ Cooperation	Accept	**Reject**
4. Vertical $\xrightarrow{+}$ Conflict	Accept	**Reject**
5.	Accept	**Reject**
6.	Accept	**Reject**

5.

Vert \ Lat	L	H
L	2	1
H	4	3

Conflict:
1=low
4=high

6.

Vert \ Lat	L	H
L	3	4
H	1	2

Cooperation:
1=low
4=high

DECISION CONCLUSIONS AND PAST RESEARCH

Several conclusions followed the review of literature in Chapter II. First, it was discussed that there has been some empirical research establishing that dimensions of the environment influence internal processes (Dwyer and Welsh 1985; Dwyer, Oh, and Hoelter 1986; Achrol 1986). Second, from a flow of information perspective, an empirical relationship between vertical uncertainty and conflict has been established (Brown, Lusch, and Koenig 1984).

An implication of the political economy framework is that the positive correlation between uncertainty and conflict is true only when uncertainty is perceived to exist in the vertical environment. If uncertainty is perceived to exist in the lateral environment, it may not lead to conflict, in fact if it is perceived to be a superordinate goal, it may lead to cooperation. It was this stream of thought that led to the propositional statement: "Perceived environmental uncertainty will affect the dominant sentiments of the dyad differently, depending upon its critical source."

The results as summarized in this chapter failed to confirm Brown, Lusch, and Koenig's (1984) finding that vertical uncertainty leads to conflict. However, the results did indicate an empirical relationship between uncertainty as perceived in the lateral environment and cooperation. This result, together with past research, lends some credibility to the propositional statement. Further implications and contributions of this finding will be discussed in Chapter six.

CHAPTER SUMMARY

The purpose of this chapter was to interpret the results obtained from the dyadic negotiation simulation. The chapter began with a brief discussion of the sampling procedure, from there attention turned to the important decisions which were made during preliminary testing, the actual simulation results, and a concluding discussion.

Analysis and interpretation of the simulation results provided the bulk of the chapter. This section was organized in terms of: the empirical attributes of the measurement scales, the strength of the manipulations, descriptive statistics, the results of hypothesis testing, and the analysis of potential confounds.

The next chapter focuses on the results obtained from the content analysis of the written simulation messages. Angelmar and Stern's (1978) content analytic system was used as a framework in unitizing, coding, and interpreting the results.

CHAPTER V: RESULTS AND CONTENT ANALYSIS OF THE BARGAINING SIMULATION COMMUNICATION

INTRODUCTION

The purpose of this chapter is to test the hypotheses by using the written record of the bargaining simulation as data. The written record consists of messages which were hand written and exchanged, allowing the bargainers to communicate. The emphasis in this part of the analysis will be on subjective interpretation and categorization, rather than reliability and statistical control.

This chapter is organized in terms of: a) a description of the content analytic system; b) the procedures which were taken to code and enumerate the messages; c) the presentation of an example taken from the bargaining simulation; d) the results of testing the hypotheses; and e) a concluding discussion relating the results found in this chapter to the results as summarized in Chapter IV.

The written messages constitute actual behavior rather than perceptions of the bargaining process. As stated in Chapter II, manifest conflict involves conflictual behavior (Pondy 1967). Lusch (1976) notes that manifest conflict usually takes the form of written exchanges. Thus in this chapter the hypotheses will be tested using manifest conflict and cooperation as the dependent variables.

THE CONTENT ANALYTIC SYSTEM

Content analysis requires at least three major decisions: choice of the categories, choice of the unit of anlaysis, and choice of the system of enumeration (Holsti 1968). The categories chosen for this research were those as suggested by Angelmar and Stern 1978. These are discussed in Chapter III and operational definitions are presented in Appendix G.

The unit of analysis is the "specific segment of content that is characterized by placing it in a given category" (Holsti 1968, p. 647). The choice of the unit of analysis may be based on a "syntactic" criteria (e.g. words, sentences, exchanges); or a "semantic" criteria (e.g. assertion, intended meaning) (Holsti 1968). In this research, semantic rather than syntactic units were chosen. The rationale for this choice is rooted in a greater concern for validity than for reliability. Angelmar and Stern's (1978) content analytic procedure was constructed from Bonoma and Rosenberg's (1975). Both of these systems are clearly based on semantic unitizing. This research thus remains consistent with the research tradition.

Frequency was used as the system of enumeration (Angelmar and Stern 1978). It was assumed that each unit was given equal weight with every other unit. Statistical procedures appropriate for nominal data will therefore be used to test the hypotheses.

CODING PROCEDURES

The first step in the coding procedure was to divide the messages into units of analysis. The resulting units were then numbered and prepared for coding. For example, consider the following message written by the seller in dyad 37:

SELLER: "My supplier's deliveries vary every month, I can't be sure that I will have 90 units in inventory to sell you. I think you need to seriously consider buying 70 units at a price of $4."

This message was divided into three units of analysis:

Unit 1: "My supplier's deliveries vary every month,"

Unit 2: "I can't be sure that I will have 90 units in inventory to sell you."

Unit 3: "I think you need to seriously consider buying 70 units at a price of $4.

Obviously there were more units of analysis than there were messages. The total number of messages was 1017 ($\bar{x}$ per dyad = 9.78), while the total number of units was 1681 ($\bar{x}$ per dyad = 16.16).

The second step was to code each unit by associating it with an appropriate category. In this research, two coders were used. In preparation, the coders first studied the definitions of the categories as shown in Appendix G. Second, the coders learned the definitions of conflict and cooperation as presented in Chapter II. Subsequently, they discussed these categories and definitions with reference to some sample material (taken from the warm-up sessions). After a satisfactory degree of coding convergence had been reached, the actual data was independently categorized by the two coders.

Each coder needed to code the unit, then indicate whether, in their judgement, the unit was a conflictual or cooperative assertion. As stated in Chapter III, the categories threat, warning, punishment, negative normative appeal, and command, could be considered conflictual. This was not always the case however. For example, there were many cases in which warnings and commands were clearly cooperative statements.

DYAD 69: AN EXAMPLE

The purpose of presenting an example is to illustrate the unitizing and categorization process. The periodic numbers in parentheses represent the units of analysis.

- Communication Record
- Dyad 69
- Treatment 1 (low lat/low vert)

Buyer: "Over the past year our company has bought an average of 90 MS from S.M.C. (1) We predict demand will be high for Dec. but year end factors cause us to ask for a lower price. (2) I'd like 70 units at $1." (3)

Seller: "That is a good quantity but our company has also been averaging about 90 units a month in sales. (4) How about 70 at $5." (5)

Buyer: "We could possibly help you out on sales quota by purchasing 90 units, however we need a low price. (6) $1 per unit will help our effort as well as show you a significant profit." (7)

Seller: "If price is of major concern, I could help you out and sell you 90 units at $3. (8) Thus you could get more for a substantially lower price." (9)

Buyer: "Thank you for your last offer but we cannot accept. (10) Price being our major concern due to heavy competition in this area, (11) we would like for you to consider once again 90 units at $1." (12)

Seller: "I can't accept 90 at $1, (13) but I can make you an astonishing offer of 70 at $3." (14)

Buyer: "I realize this price may be too low on your scale, but after reviewing recent research, it seems our best interest would be to not buy at all. (15) We stand to lose less, but we would like to make a deal to please our clients. (16) Could you take $2 per unit for 70 units?" (17)

Seller: "I really can't accept that offer due to the cost to my company, the loss would be more than not selling any at all and swallowing my storage costs. (18) To please our companies that we did in fact do business together I could sell you 50 at $4. (19)

Buyer: "Once again this would hurt our interest because of the high price. (20) Since the market for MS is low (which is why we need a better price) (21)... We could, in the future, make a better deal to cover your losses for this month. (22) In the meantime we can empty your inventory (end of the year tax.) now. (23) How about 90 at $2. (24)

Seller: "I'll accept your offer." (25)

These 25 units were categorized as follows:

Unit	Coder 1	Coder 2	Conflictual	Cooperative	
1	self-disclosure	same		x[a]	+
2	self-disclosure	same		x	+
3	offer	same		x	+
4	self-disclosure	same		x	+
5	offer	same		x	+
6	self-disclosure	same		x	+
7	recommendation	same		x	+
8	self-disclosure *	offer		x	+
9	promise *	recommendation		x	+
10	reward *	self-disclosure		x	+
11	self-disclosure	same		x	+
12	command	same		x	+
13	self-disclosure	same		x	+
14	offer	same		x	+
15	self-disclosure	same		x	+
16	self-disclosure	same		x	+
17	offer	same		x	+
18	self-disclosure	same		x	+
19	reward *	offer		x	+
20	self-disclosure	same		x	+
21	self-disclosure	same		x	+
22	promise	same		x	+
23	promise *	reward		x	+
24	offer	same		x	+
25	commitment	same		x	+

[a]x = coder 1, + = coder 2
*units involving disagreement between coders

The next step was to count the frequency of each category. In this way, the proportion of conflictual and cooperative messages could be determined for each condition. Note that the coders may disagree on the specific category but agree as to whether the message was conflictual or cooperative. The categories served as guidelines, helping the coders to determine whether or not the specific unit was conflictual or cooperative. When content analyzing dyad 69, the coders disagreed over five units,

however they were in agreement that all of the messages were cooperative. This circumstance was not atypical, although the coders disagreed over the appropriate category 206 times, they disagreed over the dominant sentiment only 3 times. By way of a second example, coder 1 may have coded a unit as a "threat," while coder 2 decided that it was a "warning" (a reoccurring disagreement), however, both felt that the unit was a conflictual assertion.

Since dyad 69 did not provide an example of a conflictual message, some examples taken from the simulation transcript are as follows:

From dyad 12:

Seller: "O.K. tight-wad, open your wallet." (command)

From Dyad 16:

Seller: "Be reasonable." (command)

From dyad 76:

Buyer: "If December 31 rolls around and there isn't a microscalpel to be found, do you want the blame?" (warning)

From dyad 83:

Seller: "Maybe you shouldn't be such a scrooge." (command)

From dyad 96:

Buyer: "Let's cut out the garbage." (command)

All of the above were decidedly conflictual statements. The next section focuses on the results of the content analysis.

RESULTS AND ANALYSIS

Table 46 presents frequencies, disagreements, and intercoder reliability for each category. The "frequencies" column represents the number of units each coder associated with that category. The "total" column represents the total number of units that were placed into that category regardless of the coder. The "disagreements" column represents the number of units the coders disagreed on for that particular category. The relationship between these numbers is as follows:

$$\frac{X + Y + Z}{2} = \text{Total} = T$$

Where;

X = frequencies from coder 1

Y = frequencies from coder 2

Z = number of disagreements

The "reliability" column represents the percentage of codings on which both coders agree for each category:

$$\frac{T - Z}{T} = \text{Intercoder Reliability}$$

Note that reliabilities were lowest for threats and warnings (.63 and .72 respectively); and highest for positive normative appeals, rewards, self-disclosures, and offers (1.0, .91, .93, and .92 respectively). Overall reliability when combining all categories was .88. Thus there was a relatively high degree of convergence between the coders. Since

TABLE 46

Bargaining Category Frequencies and Reliabilities

CATEGORIES	FREQUENCIES CODER 1	CODER 2	TOTAL	DISAGREEMENTS	RELIABILITY
Positive Normative Appeal	6	6	6	0	1.00
Negative Normative Appeal	15	17	17	2	.88
Threat	15	16	19	7	.63
Punishment	36	31	37	7	.81
Warning	38	36	43	12	.72
Promise	41	41	45	8	.82
Reward	52	49	53	5	.91
Recommendation	47	50	55	13	.76
Command	54	56	62	14	.77
Question	153	152	165	25	.85
Commitment	201	197	215	32	.85
Self-Disclosure	354	355	368	27	.93
Offer	669	675	699	54	.92

the few disagreements between the coders as to whether or not the unit was conflictual or cooperative were resolved through discussion, a reliability estimate for the dominant sentiment categories was not computed.[13]

Table 46 reveals that approximately 82% of the messages were offers, self-disclosures, commitments, or questions. Thus, communication reflected a willingness to coordinate and was therefore generally cooperative. Most of the negotiations were oriented toward adjusting to the other's position rather than aggressive assertions of influence.

Table 47 presents the frequencies by treatment. This information is presented for descriptive purposes. In general it is clear that the frequencies do not cluster in one or two treatments for any of the categories. Since conflictual and cooperative units are still not distinguished, the hypotheses cannot be tested with this information.

Table 48 presents the conflict and cooperation frequencies and proportions. Using the procedures described in Chapter III, these proportions can be used to test the hypotheses. The marginal proportions will be used to test for main effects and the cell proportions for simple effects. When using this method, the continuum view of conflict and cooperation is assumed.

Table 49 presents the rank ordering of the conflict and cooperation proportions. The observed order is the same result as that obtained in

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[13] Since only the proportion of conflictual and cooperative units were used to test the hypotheses, disagreements involving specific categories were not resolved.

TABLE 47

Bargaining Category Frequencies By Treatment

CATEGORIES	1 LOW LAT LOW VERT	2 HIGH LAT LOW VERT	3 LOW LAT HIGH VERT	4 HIGH LAT HIGH VERT	OVERALL
Positive Normative Appeal	4[a] (4)[b]	2 (2)	0 (0)	0 (0)	6 (6)
Negative Normative Appeal	7 (7)	1 (2)	4 (4)	3 (4)	15 (17)
Threat	6 (7)	3 (4)	4 (3)	2 (2)	15 (16)
Punishment	11 (8)	5 (3)	8 (8)	12 (12)	36 (31)
Warning	5 (5)	5 (4)	16 (15)	12 (12)	38 (36)
Promise	16 (15)	9 (9)	12 (12)	4 (5)	41 (41)
Reward	12 (11)	13 (13)	20 (19)	7 (6)	52 (49)
Recommendation	9 (8)	12 (14)	14 (17)	12 (11)	47 (50)
Command	15 (18)	8 (7)	14 (14)	17 (17)	54 (56)
Question	37 (37)	42 (41)	34 (36)	40 (38)	153 (152)
Commitment	56 (54)	50 (49)	48 (47)	47 (47)	201 (197)
Self-Disclosure	91 (95)	75 (73)	93 (91)	95 (96)	354 (355)
Offer	175 (174)	143 (148)	183 (184)	168 (169)	669 (675)

[a]Coder 1
[b]Coder 2

TABLE 48

Conflict and Cooperation Frequencies and Proportions

	FREQUENCIES			PROPORTIONS	
TREATMENT	CONFLICT	COOPERATION	TOTAL	CONFLICT	COOPERATION
1	34	417	451	.075	.925
2	15	351	366	.041	.949
3	29	418	447	.065	.935
4	30	387	417	.072	.928
Overall	108	1573	1681	.064	.936

TABLE 49

Hypothesized Versus Observed Proportion Rankings For Conflict and Cooperation

CONFLICT PROPORTIONS

Vert \ Lat	L	H
L	.075 1	.041 2
H	.065 3	.072 4

	High			Low
Hypothesized Order	3	4	1	2
Observed Order	1	4	3	2

COOPERATION PROPORTIONS

Vert \ Lat	L	H
L	.925 1	.959 2
H	.935 3	.928 4

	High			Low
Hypothesized Order	2	1	4	3
Observed Order	2	3	4	1

Chapter IV (when controlling for: a) nothing; b) the six covariates). In other words, the same interaction effect which was discovered earlier is present here. This is logically consistent since perceptions of behavior and actual behavior should vary concurrently.

The hypothesis testing procedure was as follows:

HYPOTHESIS ONE:

		Cooperative Messages			
Lateral Conditions	Low	417	+	418	451 + 447
	High	351	+	387	366 + 417

$\pi_1 = .9298$ (proportion of cooperative units increased as
$\pi_2 = .9425$ lateral uncertainty increased)

Hypothesis:

$$H_0: \pi_1 - \pi_2 \geq 0$$

$$H_1: \pi_1 - \pi_2 < 0$$

Test Statistic:

$$Z = \frac{\pi_1 - \pi_2}{S}$$

$$= \frac{-.0127}{.0120}$$

$$= -1.058$$

Decision Rule:

Reject the null hypothesis if Z-score is greater than:

-1.64 ($\alpha = .05$)
-1.28 ($\alpha = .10$)

Decision:

Fail to reject the null hypothesis.

Thus the main effect for hypothesis one was rejected. This same procedure was followed for the rest of the main effects and all simple effects.

Table 50 presents the hypothesis testing summary for the content analysis. Four simple effects were accepted:

1b: As lateral uncertainty increased, cooperation increased for the low vertical conditions.

2b: As lateral uncertainty increased, conflict decreased for the low vertical conditions.

3c: As vertical uncertainty increased, cooperation decreased for the high lateral conditions.

4c: As vertical uncertainty increased, conflict increased for the high lateral conditions.

DISCUSSION

The results of the content analysis were consistent with the results of the previous chapter. As mentioned above, this makes intuitive sense since actual behavior and perceptions of that behavior should be positively correlated. Indeed, if the bargainer sensed the interaction to be conflictual, it would be consistent that they would a) write more conflictual messages; and b) rate the bargaining process to be more conflictual.

The first two simple effects which were accepted here were also accepted in Chapter IV. The second two simple effects which were accepted here were in the hypothesized direction in Chapter IV (not controlling

TABLE 50

Hypothesis Testing Summary For Content Analysis: Comparing Two Binomial Proportions

HYPOTHESIS	NOTATION	Z-SCORE	CRITICAL VALUES $\alpha = .05$	CRITICAL VALUES $\alpha = .10$	DECISION
ONE:					
a) main effect		-1.058			Reject
b) simple effect (low)	$H_1: \pi_1 - \pi_2 < 0$	-2.048	-1.64	-1.28	Accept
c) simple effect (high)		wrong direction			Reject
TWO:					
a) main effect		1.058			Reject
b) simple effect (low)	$H_2: \pi_1 - \pi_2 > 0$	2.048	1.64	1.28	Accept
c) simple effect (high)		wrong direction			Reject
THREE:					
a) main effect		0.69			Reject
b) simple effect (low)	$H_3: \pi_1 - \pi_2 > 0$	wrong direction	1.64	1.28	Reject
c) simple effect (high)		1.81			Accept
FOUR:					
a) main effect		-0.69			Reject
b) simple effect (low)	$H_4: \pi_1 - \pi_2 < 0$	wrong direction	-1.64	-1.28	Reject
c) simple effect (high)		-1.81			Accept
FIVE	See Table 49	N/A	N/A	N/A	Reject
SIX	See Table 49	N/A	N/A	N/A	Reject

for the covariates). The acceptance of these last two simple effects supports the conceptualization. As vertical uncertainty increased, cooperation decreased and conflict increased. This was true only for the high lateral conditions however. This finding implies that in order for vertical uncertainty to affect the dominant sentiments as hypothesized, the rest of the environment must also be uncertain.

Accepting the second two simple effects in this chapter can be explained in terms of an increase in power. Due to the large number of units, the standard error of the normal approximation became extremely small. Although a content analysis results in nominal data limiting procedures that can be used for statistical control, the increased power as well as the emphasis on subjective interpretation can be considered advantages.

The purpose of this Chapter was to describe the content analytic system, provide an illustration of the coding procedures, and to retest the hypotheses. The next Chapter summarizes the dissertation project, centering on interpretation of findings, contributions, limitations, and an agenda for future investigations.

CHAPTER VI: CONCLUSIONS

INTRODUCTION

As stated in Chapter II, the political economy framework is "organizing," meaning that important variables are arranged in ways which produce significant research questions. As such, the framework is considered a programmatic descriptive model generating concepts and propositions relating these concepts. Programmatic research is constructed in accordance with an implicit or explicit research agenda. Thus new research is a substantive, conceptual, and methodological extension of past research.

The criteria for evaluating the contribution of programmatic research may emphasize its relationship to previous research, its specific attributes, or its potential impact on the field. Drawing on Bagozzi (1984), Fern, Ozanne, and Yadav (1987) propose that these different emphases constitute different evaluative approaches. These are termed the relational, attributional, and dispositional approaches respectively. A contribution can be constructively evaluated from all three approaches. However since programmatic research originates from an existing research stream, a relational criteria is most appropriate and therefore should be stressed.

In addition to evaluative criteria, all research involves some phenomena of interest, some explanations of the phenomena, and some methods

for studying the phenomena (Brinberg and McGrath 1985). Thus the content of the research can be divided in terms of its substantive, conceptual, and methodological contributions.

The purpose of this chapter is to conclude the research by tying the previous chapters together. This will be accomplished by: a) providing further interpretation and explanation for the significant interaction (see Table 35); b) evaluating the substantive, conceptual, and methodological contributions of the research from a relational, attributional, and dispositional perspective; c) focusing on future extensions; and d) presenting the limitations. Any conclusions which extend from the interpretations as presented in this chapter are made given the following axiom: all empirical knowledge is both probabilistic (since it is based on induction and therefore cannot lead to certainty) and contingent on the conceptual, methodological, and substantive conditions under which it was obtained (Calder, Phillips, Tybout 1981; Lynch 1982; McGrath and Brinberg 1983). As McGrath and Brinberg state: "this is a fundamental fact of life which permanently and pervasively limits the "perfectibility' of scientific knowledge" (1983, p. 116).

OUTCOME PERCEPTION AND THE DUALISM OF PERCEIVED ENVIRONMENTAL UNCERTAINTY

"It is a general human weakness to allow things, uncertain and unknown, to set us up in hope, or plunge us into fear"

Gaius Julius Caesar
(102? - 44 B.C.)

The discussion section in Chapter IV presents a basic summary and

interpretation of the empirical findings. The purpose of this section is to interpret the significant interaction effect in more detail since this was an unexpected and potentially important result. A secondary purpose of this section is to state as succinctly as possible, the conclusion of this dissertation.

Taken together the hypotheses indicated that the effects of the critical source of uncertainty would be additive, resulting in a parallel interaction. This was the case for those subjects who perceived the outcome to be in their favor. For this group, the means were in the hypothesized direction, and the lateral uncertainty main effect was significant. This result, when combined with past research, provides some empirical evidence that uncertainty affects the dominant sentiments of the dyad differently, depending upon its critical source. This was important to establish since research in channels of distribution to date has emphasized only a positive correlation between perceived uncertainty and conflict.

For the sample as a whole, and especially for those subjects who perceived the outcome to not be in their favor (43% of the sample), the effects were not additive. Since the price-quantity matrices were private, subjects could not be sure whether the outcome favored them or their bargaining partner. These bargainers are therefore labeled as pessimistic in that they were sensitive to the anticipated negative consequences of their decisions. For the pessimistic bargainer, the critical source of uncertainty mattered less than the total amount. A moderate degree of uncertainty led to an increasing willingness to coordinate and thus

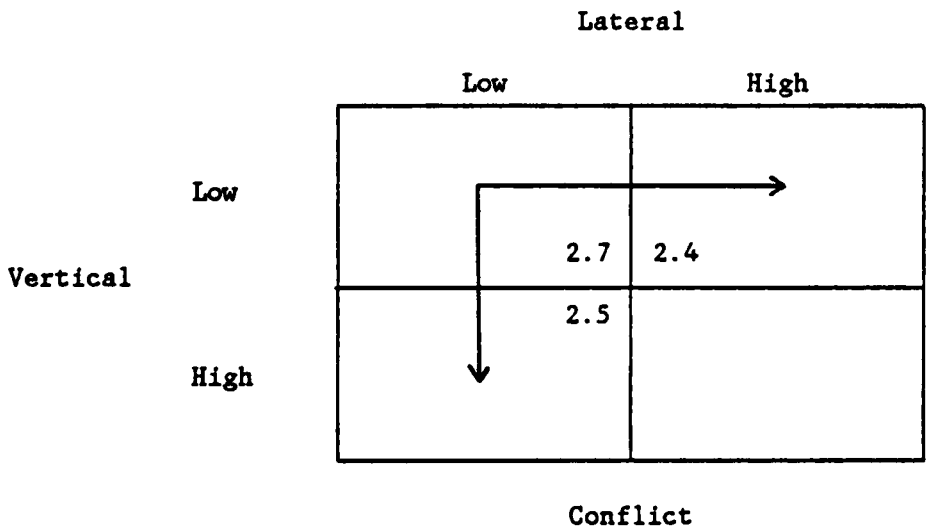
cooperation, no matter what the source. Whereas a high degree of uncertainty seemed to make coordination too difficult, resulting in conflict and noncooperation.

Looking at Figure 18, as uncertainty increases from the low/low condition, cooperation increases and conflict decreases. Note that it does not matter whether uncertainty is perceived in the lateral or vertical environment. As stated in Chapter IV, some uncertainty may be met with better planning, more coordinated actions, and a higher tolerance for competition.

Looking at Figure 19, as uncertainty increases from the high/low and low/high conditions, cooperation decreases and conflict increases. It seems that uncertainty in both environments results in a situation in which coordination becomes too difficult. This results in coordination failure and therefore conflict.

This post hoc interpretation of the significant interaction is consistent with the conceptualization to a degree. Uncertainty may be perceived as a superordinate goal leading to cooperation or as a source of frustration and tension leading to conflict. For the pessimistic bargainer, it is not the critical source of uncertainty that determines how it will affect the dominant sentiments but the amount (see Figure 20).

Why did the critical source of uncertainty not affect the pessimistic bargainer in the same way that it did the optimistic bargainer? Table 51 presents descriptive statistics controlling for outcome perception. As stated in Chapter IV, conflict is higher and cooperation lower for those bargainers who perceived the outcome to not be in their favor. This



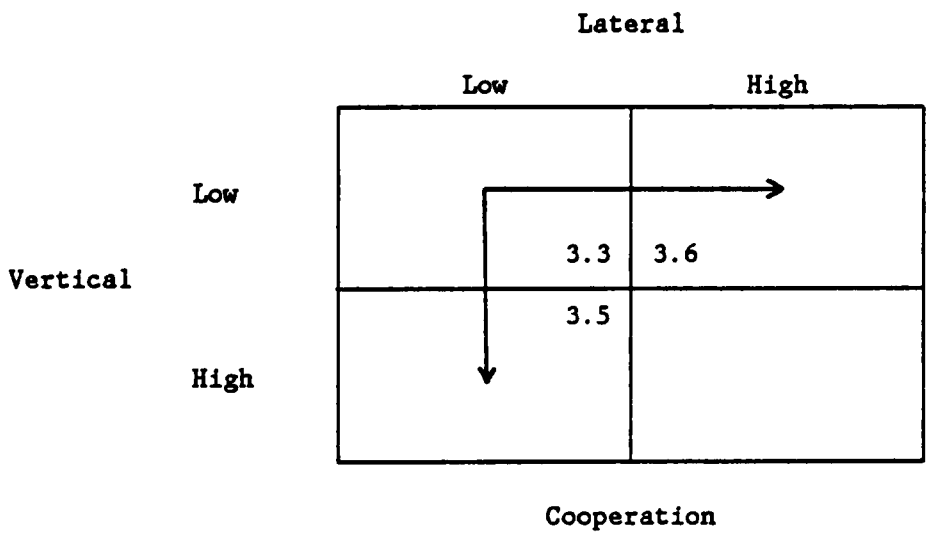
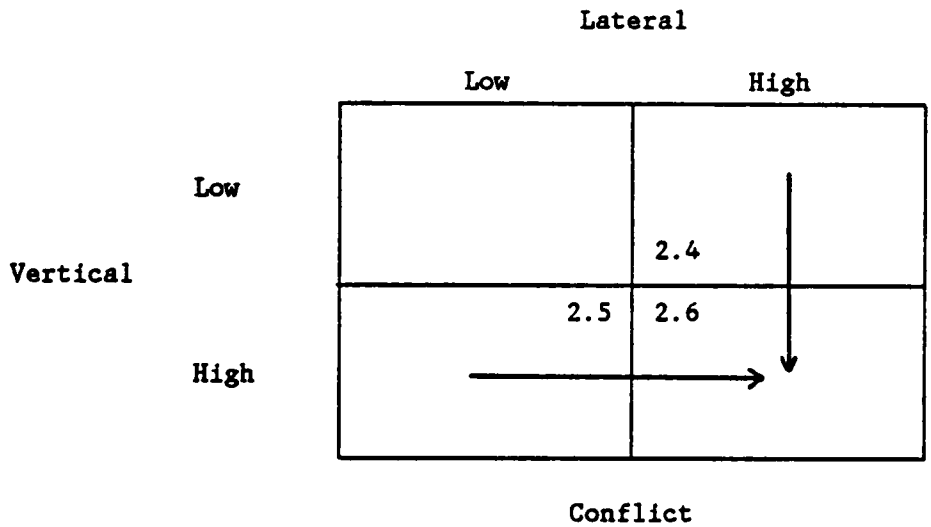


FIGURE 18

Increasing Uncertainty, Decreasing Conflict, and Increasing Cooperation (Pessimistic Bargainer)



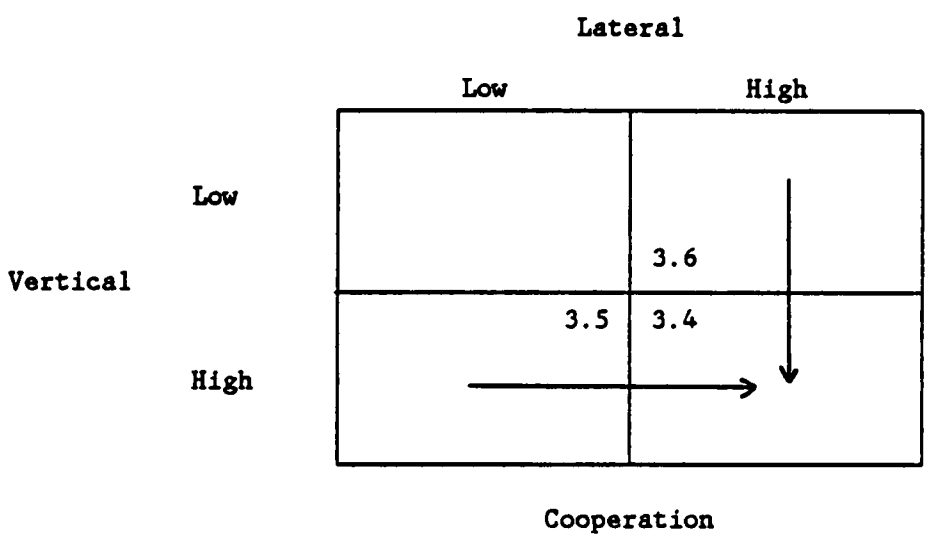


FIGURE 19

Increasing Uncertainty, Decreasing Cooperation, and Increasing Conflict (Pessimistic Bargainer)

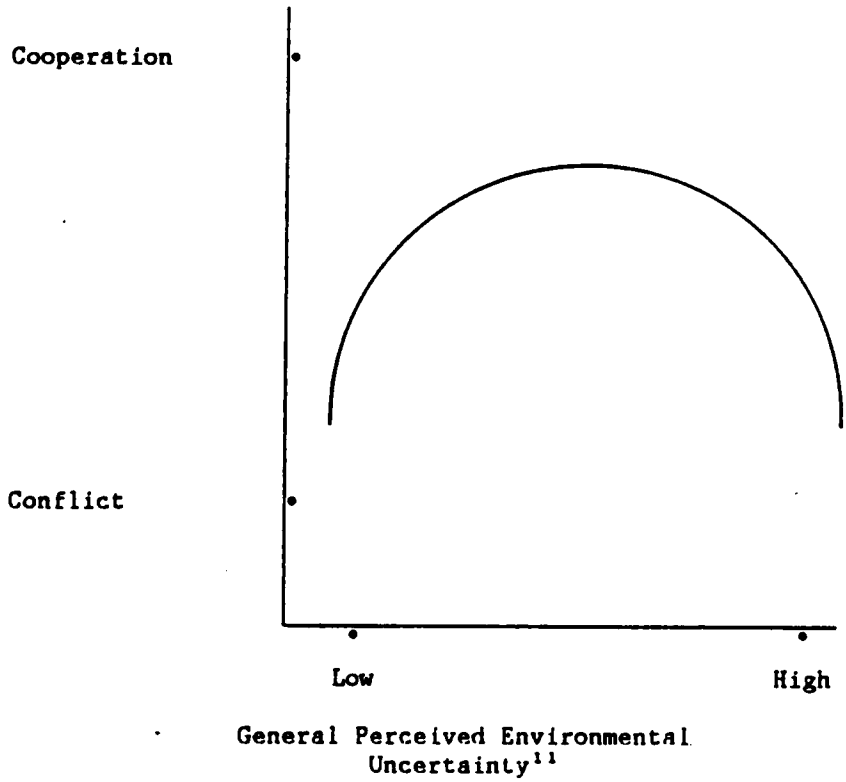


FIGURE 20: Relationship Between the Amount of Uncertainty and the Dominant Sentiments For the Pessimistic Bargainer

[11]The purpose of this graph is to communicate conceptual understanding, not define a mathematical function.

TABLE 51

Descriptive Statistics Controlling For Outcome Perception (For Scoring Continuous Extraneous Variables, See Table 30 in Chapter 4)

VARIABLE	OUTCOME PERCEPTION	
	PESSIMISTIC	OPTIMISTIC
Role (% Buyers)	51%	49%
Agreement Reached	44%	96%
Sex (% Female)	56%	65%
Motivational Orientation	6.6	6.4
Risk-Taking	4.4	4.4
Competitive Nature	4.1	4.1
Trusting By Nature	5.3	5.6
Locus of Control	2.9	3.3
Tolerance to Ambiguity	3.5	3.4
Overall Conflict	2.8	2.4
Latent Conflict	3.4	2.8
Perceived Conflict	2.7	2.3
Felt Conflict	2.4	2.1
Cooperation	3.2	3.7

by itself does not explain why the critical source of uncertainty did not have the hypothesized effect on the pessimistic group. The only other significant difference between these two groups was in terms of agreement reached. Only 44% of the pessimistic group reached agreement (versus 96% of the optimistic group). As stated in Chapter IV, controlling for agreement reached did not produce this same result. This also cannot account for the difference between the two groups. Clearly, the data produced by this research cannot answer this question. Further research is needed in order to adequately account for this difference.

The following dissertation conclusion is based on the conclusions and interpretations as presented in Chapters IV, V, and VI. As noted in the introduction to this chapter, it is both probabilistic and contingent on the experimental conditions under which it was obtained.

> **Uncertainty as perceived in the lateral environment increases cooperation and decreases conflict among bargainers in a mixed-motive setting. Uncertainty as perceived in the vertical environment has no affect on the dominant sentiments of bargainers. The amount of uncertainty as perceived in the external environment as a whole affected the dominant sentiments of those bargainers who perceived the outcome to not be in their favor. Here a moderate amount of perceived uncertainty led to cooperation, but a high amount led to conflict. Thus, perceived environmental uncertainty affects the dominant sentiments of bargaining dyads differently, depending upon: a) its critical source, and b) the amount.**

CONTRIBUTIONS

The contributions of this research will be organized and presented in accordance with the Fern, Ozanne, and Yadav (1987) framework for evaluating contributions to marketing knowledge. This framework empha-

sizes the historicity of knowledge production. All research can be evaluated relative to its past (relational approach), its present (attributional approach), and its future (dispositional approach).

THE RELATIONAL APPROACH

A relational approach emphasizes the connections between the research and its antecedents. This research can be broadly labeled as an empirical test of conceptual propositions extending from the political economy framework. Thus, it is contributing to an explicit research agenda. For programmatic research... "relational criteria might be used to determine the extent to which the current research adequately acknowledges the conceptual, methodological, and substantive contributions of prior research" (Fern, Ozanne, and Yadav 1987, p. 12).

Conceptual Contributions

Part of Chapter II traced the historical development of the political economy framework from its origin in sociology to its current conceptualization. This process resulted in a clear articulation of the research program (see Figure 4). This was a necessary process in order to pave the way for empirical testing. Claiming to value empirical justification, the political economy paradigm is almost entirely conceptual. Clearly, a productive empirical stream will not develop until researchers agree on the important concepts and their structure. This research contributed to this process by providing an interpretation of the research program.

A fundamental emphasis of the political economy tradition is on the "network" as the substantive level of analysis. Including the whole field of relations surrounding an organization emphasizes the complex relationship between a focal dyad and its environment. This emphasis has encouraged propositions relating types of environments to internal structures and processes. Achrol, Reve, and Stern proposed in 1983 that vertical uncertainty would result in conflict and lateral uncertainty in cooperation. They did not provide however a theoretical explanation as to why this would be so. Drawing on the work of Sherif, et al. (1961), Sherif and Sherif (1969), and others, a more detailed explanation was developed. This can be considered a second contribution (see "intergroup conflict and cooperation" and "proposed relationships" in Chapter II).

Additional propositions by Achrol, Reve, and Stern (1983) suggest that vertical uncertainty may underscore the need for coordination. This indicates that under some circumstances, both lateral and vertical uncertainty may promote interbargainer cooperation. The post hoc interpretation of the significant interaction provides some ideas when this might occur and why. This explanation also qualifies this relationship by explaining when both may lead to conflict. This can be considered a third contribution to the conceptual relationships outlined by the political economy framework.

Methodological Contributions

As stated in Chapter I, the most important limitations of the political economy paradigm relate to the methodological problems: "...the paradigm specifies many constructs and relationships which are difficult to capture through conventional tools such as cross-sectional surveys" (Arndt 1983, p. 52). Thus this research extends the political economy stream by adding a neglected dimensions: empirical testing. This is important since the truth content of theory is generally evaluated in marketing relative to empirical evidence (Hunt 1976).

Measurement of channel conflict has not made alot of progress since Brown and Day (1981). In addition, Schmidt and Kochan (1972) state that empirically separating Pondy's (1967) conflict states may be problematic. The conflict scale constructed for this research was able to empirically distinguish between latent, perceived, and felt conflict. This was done by constructing items measuring perceptions of incompatibility, perceptions of interference, and feelings of tension. Since frequency of disagreement may indicate increasing coordination (Dwyer and Oh 1987), the approach used in this research may be more fruitful.

A third contribution is the application of Angelmar and Stern's (1978) content analytic system. This system was constructed to analyze the messages of Stern, Sternthal, and Craig's (1973) classic article introducing the parasimulation technique. Since the content analytic system was proposed 10 years ago, it has received little attention and no application. Three reasons could explain this: a) content analysis is extremely tedious; b) semantic categorization cannot be done with a com-

puter (note that syntactic categorization can be and there are many programs now available); c) content analysis usually results in nominal data. As demonstrated in this research, semantic categorization can sense differences between treatments. Thus on the basis of these results, it is a powerful and rigorous technique that deserves more attention and application.

Substantive Contributions

Two different paradigms in channels research study the "network" as the level of analysis. These are: the transaction cost approach, and the political economic approach (Mentzer, Murray, and Gomes 1986). Transaction cost analysis draws on contract law and economics while political economic analysis draws on contingency theory. Thus these paradigms could be considered "parallel" research in that they are studying the same substantive phenomena but in different ways (Fern, Ozanne, and Yadav 1987).

This research focused on perceptions of different environments surrounding the focal dyad, thus the network was the substantive level of analysis. A manipulation check demonstrated that subjects were indeed perceiving different environments and that these perceptions could be manipulated. Thus in terms of substantive content, this research is a consistent extension of the political economic approach. This can be considered a contribution since it was accomplished in an experimental setting.

THE ATTRIBUTIONAL APPROACH

The attributional approach focuses on a set of attributes or characteristics that a significant research contribution should exhibit (Fern, Ozanne, and Yadav 1987). Since these attributes have evolved relative to specific research traditions and are largely the result of social consensus (Anderson 1983), they are still relational. Even so there are a number of methodological rules of thumb that are viewed by the discipline as outside the boundaries of any specific paradigm (e.g. establishing temporal sequence, reliability, validity, power, appropriate statistical controls, etc.). Thus this section will focus on methodological contributions that have not stemmed directly from the political economy framework.

As stated in Chapter I, according to Brown, Lusch, and Koenig (1984, p. 27): "environmental uncertainty has not been investigated to a large extent in the marketing channels literature... thus, there is very little guidance in developing measures of this construct." The contingency theory literature can be used as a resource to remedy this situation. Here the most lasting contribution to uncertainty measurement was made by Duncan in 1972. It was this research that motivated the construction of a composite measure of perceived uncertainty that was appropriate for a bargaining simulation. The lateral and vertical perceived environmental uncertainty scales were demonstrated to be unidimensional and reliable (αs =.81, .91 respectively). These scales could be adapted for use in a free simulation, parasimulation, or sample survey.

Manipulating statistical variances of supply and demand histories was an effective way of inducing vertical uncertainty (vertical uncertainty main effect in a univariate ANOVA: $P = .0001$). Manipulating statistical variances of industry association predictions was also an effective way of inducing lateral uncertainty (lateral uncertainty main effect in a univariate ANOVA: $p = .0001$). This method of inducing uncertainty is relatively flexible and could be used in a number of experimental contexts.

Very often cooperation is not measured in channels research. Researchers assume that where there is lack of conflict, there is cooperation. This research assumed that these concepts were distinct, thus a separate scale was constructed. This scale was demonstrated to be unidimensional and reliable ($\alpha = .90$).

In an effort to improve reliable categorization in the content analysis process, two coders were used. Reliability between the coders for the 13 categories was .88. Any disagreements between the coders as to whether or not the specific message was conflictual or cooperative was settled through discussion. This process of intersubjective certification increased the credibility of the results.

The results of hypothesis testing in Chapter IV were confirmed with the results of the content analysis. This was important since finding convergence between two markedly different methods increases the credibility of the results.

THE DISPOSITIONAL APPROACH

Finally, research can be evaluated in terms of future or potential contributions. These include aspects such as the ability to influence the direction of future research as well as the potential for managerial applications (Fern, Ozanne, and Yadav 1987). This section will discuss potential contributions in the three domains. Included in this discussion will be future extensions, managerial applications, and contributions to evaluative procedures.

Conceptual Contributions

As noted in Chapter II, researchers writing in the channel conflict field are divided as to whether conflict and cooperation are two dimensions of the same construct or are separate and distinct. Looking only at that group which did not reach agreement, as vertical uncertainty increased, conflict and cooperation increased. This result provides some empirical evidence that conflict and cooperation do not always vary inversely. Thus in the future, these concepts should be defined and measured as if they were separate constructs.

Methodological Contributions

The beginning of Chapter III (see "methods used to evaluate channel theories" and "types of organizational experiments") linked different sets of aims to different methodological approaches. This was important to discuss since aims justify the methods and methods exhibit realizability to aims (Laudan 1984). These sections were used to justify the choice of methods used in this research as well as to encourage a methodological pluralism in the channels field. As Dwyer and Krieger state: "...no single method provides the definitive test of theory" (1983, p. 165). Reputation and custom have relegated the field survey to a position of "meat and potatoes" in channels research (Dwyer and Krieger 1983, p. 168). Yet much of the channels literature is highly theoretical (the implication here is that the method may not exhibit realizability to the aim). Thus the channels field should encourage and reward future research using free simulations, parasimulations, bargaining simulations, field experiments, sample surveys, case histories, participant observations, integrative reviews, and conceptual pieces.

According to McGrath and Brinberg (1983, p. 122) validity as robustness in the follow-up stage involves three questions:

1) If the study were repeated exactly, would the same findings occur?

2) If the same study were done again, but with systematic variations on one or more facets of one or more of the domains, would the initial findings be robust over those variations?

3) Under what conditions - that is, for what variations in what facets in each of the domains - will the findings not hold?

The first extension of this study will be to repeat it exactly to see if

the same findings occur. A replication requires that the "sameness" constraint be relaxed for at least one of the facets of concepts, methods, or events. Thus this study will be repeated on a different sample in a different geographic region (MBA students in the Pacific Northwest).

The second extension will involve a systematic variation in the methodological domain. Here the conceptualization will first be updated based on the results from the first two studies. Then the design and instruments will be modified appropriately for a correlational study. Actual channel managers will then be sampled by a survey technique.

Looking back at the political economy program (see Figure 4), this same procedure (3 empirical studies) can be used for all four fundamental conceptual relationships. These twelve studies can be considered the first phase in the political economy research agenda.

Substantive Contributions

A fundamental contribution of the political economy approach to marketing channels is the emphasis on the total social environment surrounding a focal dyad. Future channels research will undoubtedly use the network as the theoretical level of analysis or at least acknowledge the important influence of the external environment.

Managerial applications should be de-emphasized until the completion of the first phase of the political economy research agenda. In order to produce knowledge that can be generalized to a variety of social contexts, a great deal of basic research needs to be completed. Before applications can become useful, McGrath and Brinberg's (1983) third

question above needs to have an adequate answer. This should not imply that managers cannot develop a better understanding of the social systems they are participating in by reading this research. It suggests only that this research is not far enough along to form policies for general decision making under uncertainty.

Contribution To Evaluative Procedures

This research provides the first systematic application of the Fern, Ozanne, and Yadav (1987) framework. Thus it demonstrates the usefulness of the approach for evaluating programmatic research. A direct application of the model also reveals potential problems with the framework.[14]

The strength of this framework is that research at different stages of development can be evaluated by a different approach. For example, it might be most appropriate to evaluate a Fishbein application with a relational approach; an article on reliability (e.g. Peter 1979) with an attributional approach; and an article applying interpretive sociology to product symbolism with a dispositional approach.[15]

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[14] For example, assuming that axiological assumptions cannot be removed from the conceptual and substantive domains, it is difficult to use the attributional approach without resorting to moral arguments. Clearly, an attributional approach removes any assumption of relativism.

[15] It should be acknowledged that this is exactly their point.

LIMITATIONS

Buyer-seller relationships are often defined on the basis of situational and processual characteristics. This approach recognizes two different types of dyadic interaction: "discrete transactions" and "relational exchange" (Arndt 1979; Macneil 1980; Dwyer, Schurr, and Oh 1987). Discrete transactions are characterized by limited communications and narrow content (Dwyer, Schurr, and Oh 1987). The archetype of a discrete transaction is manifested by money on one side and an easily measured commodity on the other (Macneil 1980).

Unlike discrete transactions, relational exchange transpires over time. Here each transaction is viewed in terms of its history and future. Relational aspects of negotiation start to appear when:

> ...dependence is prolonged, performance is less obvious, uncertainty leads to deeper communication, the rudiments of cooperative planning and anticipation of conflict arise, and expectations of trustworthiness may be cued by personal characteristics (Dwyer, Schurr, and Oh 1987, p. 12).

Transactions between boundary persons in actual channels are probably characterized by relational exchange. Although the simulated transactions of this research had some relational properties, these exchanges are considered "practically discrete."[16] One could argue that vertical and lateral perceived environmental uncertainty will affect dyadic sentiments differently depending upon whether or not the exchange is discrete

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[16] Table 1 in Dwyer, Schurr, and Oh (1987, p. 13) provides a useful checklist for discrete vs relational exchange. Using this table as a criteria, it is clear that most bargaining simulations produce discrete transactions.

or relational. Thus the results of this research should not be used to draw conclusions about relational exchange. This is a limitation.

The conceptualization of this research is based on two assumptions. The first is that vertical uncertainty will affect dyad members differently. This assumption is based on the following rationale:

> Uncertainty as perceived in the output sector will affect the buyer directly, and the seller indirectly, as mediated by the strategic actions of the buyer. Uncertainty as perceived in the input sector will affect the seller directly, and the buyer indirectly, as mediated by the strategic actions of the seller. Since the buyer and seller are motivated by self interest, vertical uncertainty will probably affect them differently.

The second assumption is that lateral uncertainty will affect dyad members similarly. The rationale:

> Uncertainty as perceived in the lateral environment will affect both members of the dyad directly. Since this uncertainty is not mediated by self-interest, it will probably affect the buyer and seller similarly.

Thus lateral uncertainty becomes an environmental threat which unites dyad members while vertical uncertainty becomes an environmental threat highlighting opposing interests. When these two assumptions are combined with existing research, it is a logical step to hypothesize that vertical uncertainty will result in conflict and that lateral uncertainty will result in cooperation.

However, if dyad members react strategically in a compatible way to the vertical uncertainty, their actions will be easily coordinated. This will remove the latent conflict (underlying incompatibility). Given this scenario, there is no reason to expect high vertical uncertainty to result in conflict. This could be one possible explanation why vertical uncertainty did not have the hypothesized effects. Clearly, the impact of

vertical uncertainty on dyadic sentiments is more complex than what was assumed and hypothesized in this research. This is a second limitation.

The experimental design of this research was able to investigate only the varying effects of vertical and lateral uncertainty. Thus it could not evaluate the effects of all combinations of input, output, lateral as perceived by buyer, and lateral as perceived by seller uncertainty. This would demand a 2 x 2 x 2 x 2 fully-crossed factorial design. Since these combinations are both relevant and interesting, this can be considered a third limitation.

These limitations result from the nature of organizational experiments (e.g. in an effort to increase internal validity, some realism is lost), the newness of the research tradition, and practical considerations (e.g., limited resources). They should not be viewed as problems which transcend time but as opportunities to move channels research forward.

CAPSTONE

This dissertation investigated the relationship between vertical and lateral perceived environmental uncertainty and the dominant sentiments of marketing channel dyads. The first chapter presented a statement of the problem, research questions, and an introductory summary of the conceptualization and methodology. Chapter two presented a detailed analysis of the political economy paradigm, culminating in a series of research hypotheses. The third chapter presented the experimental procedures

which were used to empirically test the research hypotheses. Chapters four and five presented the empirical results.

This chapter presented further interpretation and discussion, contributions, future extensions, and limitations. Its purpose was to put the individual summaries of chapters four and five back into the context of the research stream. From the perspective of this particular piece of research, this chapter represents the uppermost stone of a structure. However, from the perspective of the political economy framework, this piece of research, along with others, represents the ground breaking.

LITERATURE CITED

Achrol, Ravi Singh (1986), "Measuring Uncertainty in Organizational Contexts," working paper, University of Notre Dame.

Achrol, Ravi Singh, Torger Reve, Louis W. Stern (1983), "The Environment of Marketing Channel Dyads: A Framework for Comparative Analysis," Journal of Marketing, 47 (Fall), 55-67.

Aiken, Michael and Jerald Hage (1968), "Organizational Interdependence and Intraorganizational Structure," American Sociological Review, 33 (December), 912-930.

Alderson, Wroe (1965), Dynamic Marketing Behavior, Homewood, Ill: Irwin.

Aldrich, Howard (1979), Organizations and Environments, Englewood Cliffs, NJ: Prentice-Hall.

Aldrich, Howard (1982), "The Origins and Persistence of Social Networks: A Comment," in Social Structure and Network Analysis, Peter V. Marsden and Nan Lin (eds.), London: Sage.

Anand, Punam and Louis W. Stern (1985), "A Sociopsychological Explanation for Why Marketing Channel Members Relinquish Control," Journal of Marketing Research, 22 (November), 365-376.

Anderson, Paul F. (1983), "Marketing, Scientific Progress, and Scientific Method," Journal of Marketing, 47 (Fall), 18-31.

Anderson, Paul F. (1986), "On Method in Consumer Research: A Critical Relativist Perspective," Journal of Consumer Research, 13 (September), 155-173.

Angelmar, Reinhard and Louis W. Stern (1978), "Development of a Content Analytic System for Analysis of Bargaining Communication in Marketing," Journal of Marketing Research, 15 (February), 93-102.

Arndt, Johan (1979), "Toward a Concept of Domesticated Markets," Journal of Marketing, 43 (Fall), 69-75.

Arndt, Johan (1983), "The Political Economy Paradigm: Foundation for Theory Building in Marketing," Journal of Marketing, 47 (Fall), 44-54.

Aronson, E. and J. M. Carlsmith (1968), "Experimentation in Social Psychology," in Handbook of Social Psychology, G. Lindzey and E. Aronson (eds.), Reading, Mass: Addison-Wesley.

Assael, Henry (1968), "The Political Role of Trade Associations in Dis-

tribution Conflict Resolutions," Journal of Marketing, 32 (April), 21-28.

Assael, Henry (1969), "Constructive Role of Interorganizational Conflict," Administrative Science Quarterly, 14 (December), 573-582.

Bagozzi, Richard P. (1984), "A Prospectus for Theory Construction in Marketing," Journal of Marketing, 48 (Winter), 11-29.

Bales, Robert F. (1976), Interaction Process Analysis, Chicago: The University of Chicago Press.

Bates, Fredrick L. (1970), "The Political Economy Approach in Perspective," in Power in Organizations, Mayer N. Zald (ed.), Nashville: Vanderbilt Press.

Bates, Fredrick, L. and Clyde C. Harvey (1975), The Structure of Social Systems, New York: Gardner Press.

Benson, J. Kenneth (1975), "The Interorganizational Network as a Political Economy," Administrative Science Quarterly, 20, 229-249.

Blalock, Hubert M. (1960), Social Statistics, New York: McGraw-Hill.

Bonoma, Thomas V. and Helen Rosenberg (1975), "Theory-Based Content Analysis: A Social Influence Perspective for Evaluating Group Process," Chicago: Institute for Juvenile Research.

Bourgeois, L. J. (1985), "Strategic Goals, Perceived Uncertainty, and Economic Performance in Volatile Environments," Academy of Management Journal, 28 (3), 548-573.

Box, G. E. P. (1954), "Some Theorems on Quadratic Forms Applied in the Study of Analysis of Variance Problems, II: Effects of Inequality of Variance and of Correlation Between Errors in the Two-Way Classification," Annals of Mathematical Statistics, 25, 484-498.

Bray, James H. and Scott E. Maxwell (1985), Multivariate Analysis of Variance, Beverly Hills, CA: Sage Publications.

Brinberg, David and Joseph E. McGrath (1985), Validity and The Research Process, Beverly Hills, CA: Sage Publications, Inc.

Brown, James R. and Ralph L. Day (1981), "Measures of Manifest Conflict in Distribution Channels," Journal of Marketing Research, 18 (August), 263-74.

Brown, James R. and Gary L. Frazier (1978), "The Application of Channel Power: Its Effects and Connotations," in Research Frontiers in Marketing: Dialogues and Directions, Subhash C. Jain (ed.),

Chicago: AMA, 266-270.

Brown, James R., Robert F. Lusch, and Harold F. Koenig (1984), "Environmental Uncertainty Regarding Inventory Ordering," International Journal of Physical Distribution and Materials Management, 14 (3), 19-36.

Burns, Tom and G. M. Stalker (1961), The Management of Innovation, Chicago: Quadrangle Books.

Cadotte, Ernest R. and John C. Keyt (1980), "Parasimulation: A Research Tool for Marketing Channels Research," in 1980 Educators' Conference Proceedings, Richard P. Bagozzi et al. (eds.), Chicago: American Marketing Association, 289-292.

Calder, Bobby J., Lynn W. Phillips, and Alice M. Tybout (1981), "Designing Research for Application," Journal of Consumer Research, 8 (September), 197-207.

Campbell, Donald T. (1975), "Degrees of Freedom and the Case Study," Comparative Political Studies, 8, 178-193.

Campbell, Donald T. and J. C. Stanley (1963), Experimental and Quasi-Experimental Designs for Research, Chicago: Rand McNally.

Cheng, Joseph L. C. (1983), "Interdependence and Coordination in Organizations: A Role-System Analysis," Academy of Management Journal, 26 (March).

Cheng, Joseph L. C. (1984), "Organizational Coordination, Uncertainty, and Performance: An Integrative Study," Human Relations, 37 (10), 829-851.

Child, J. (1972), "Organizational Structure, Environment and Performance: The Role of Strategic Choice," Sociology, 6 (January), 2-22.

Childers, Terry L. and Robert W. Ruekert (1982), "The Meaning and Determinants of Cooperation Within an Interorganizational Marketing Network," in Marketing Theory: Philosophy of Science, Perspectives, Ronald F. Bush and Shelby D. Hunt (eds.), Chicago: AMA, 116-119.

Churchill, Gilbert A., Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," Journal of Marketing Research, 16 (February), 64-73.

Clopton, Stephen (1983), "Alternative Research Designs and Methodologies For Buyer-Seller Negotiation Experiments," in Research Methods and Causal Modeling in Marketing, William R. Darden, Kent B. Monroe, and William R. Dillon (eds.), Chicago: American Marketing Association, 52-54.

Cochran, W. G. (1947), "Some Consequences When The Assumptions for the Analysis of Variance Are Not Satisfied," Biometrics, 3, 22-38.

Cohen, Jacob (1977), Statistical Power Analysis for the Behavioral Sciences, New York: Academic Press.

Cook, Karen (1977), "Exchange and Power in Networks of Interorganizational Relations," The Sociological Quarterly, 18, 62-82.

Cook, Thomas D. and Donald T. Campbell (1979), Quasi-Experimentation: Design and Analysis for Field Settings, Boston: Houghton Mifflin Company.

Cummings, L. L. and D. L. Harnett (1969), "Bargaining Behavior in a Symmetric Bargaining Triad," The Review of Economic Studies, 35, 489-501.

Dant, Rajiv P. (1985), "An Investigation of the Relationships Between Issue-Specific Channel Conflict and Cooperation and Overall Channel Conflict and Cooperation," Unpublished Ph.D. Dissertation, Virginia Polytechnic Institute and State University.

Desai, M. (1983), "Political Economy," in A Dictionary of Marxist Thought, Tom Bottomore (ed.), Cambridge, Massachusetts: Harvard University Press.

Dill, W. R. (1962), "The Impact of Environment on Organization Development," in S. Mailich and E. H. Van Ness (eds.), Concepts and Issues in Administrative Behavior, Englewood Cliffs, NY: Prentice-Hall.

Dillon, William R. and Matthew Goldstein (1984), Multivariate Analysis: Methods and Applications, New York: John Wiley and Sons.

Dilts, Jeffrey C. (1985), "A Cross-Channel Comparison of Channel Conflict," AMA Educators Conference Proceedings, Chicago: AMA, 200-206.

Downey, H. Kirk, Don Hellriegel, and John W. Slocum (1975), "Environmental Uncertainty: The Construct and Its Application," Administrative Science Quarterly, 20 (December), 613-629.

Downey, H. Kirk and John W. Slocum (1975), "Uncertainty: Measures, Research, and Sources of Variation," Academy of Management Journal, 18 (September), 562-577.

Drabeck, T. E. and J. E. Haas (1967), "Realism in Laboratory Simulation: Myth or Method?" Social Forces, 47, 337-346.

Duncan, Robert B. (1972), "Characteristics of Organizational Environments and Perceived Environmental Uncertainty," Administrative Science

Quarterly, 17 (September), 313-327.

Duncan, Starkey and Donald Fiske (1977), Face-to-Face Interaction, Hillsdale, NJ: Lawrence Erlbaum Associates.

Dwyer, F. Robert and M. Ann Welsh (1985), "Environmental Relationships of the Internal Political Economy of Marketing Channels," Journal of Marketing Research, 22 (November), 397-414.

Dwyer, F. Robert and Orville C. Walker (1981), "Bargaining in an Asymmetrical Power Structure," Journal of Marketing, 45 (Winter), 104-115.

Dwyer, F. Robert, Paul H. Schurr, and Sejo Oh (1987), "Developing Buyer-Seller Relationships," Journal of Marketing, 51 (April), 11-27.

Dwyer, F. Robert and Ruth M. Krieger (1983), "Research Methods for the Study of Marketing Channels: A Critical Review and Regimen for Progress," in Research Methods and Causal Modeling in Marketing, William R. Darden, Kent B. Monroe, and William R. Dillon (eds.), Chicago: American Marketing Association.

Dwyer, F. Robert and Sejo Oh (1987), "The Consequences of Intertype Competition on Retail and Interfirm Behavior," working paper, University of Cincinnati.

Dwyer, F. Robert, Sejo Oh, and Jon W. Hoelter (1986), "External Resource Dependence and Its Consequences on the Internal Political Economy of Marketing Channels," working paper, University of Cincinnati.

Eliashberg, Jehoshua and Donald A. Michie (1984), "Multiple Business Goals Sets as Determinants of Marketing Channel Conflict: An Empirical Study, Journal of Marketing Research, 21 (February), 75-88.

Eliashberg, J., Stephen A. LaTour, Arvind Rangaswany, and Louis W. Stern (1986), "Assessing the Predictive Accuracy of Two Utility-Based Theories in a Marketing Channel Negotiation Context," Journal of Marketing Research, 23 (May), 101-110.

Etgar, Michael (1977), "Channel Environment and Channel Leadership," Journal of Marketing Research, 14 (February).

Etgar, Michael (1978), "Selection of an Effective Channel Control Mix," Journal of Marketing, 42 (July), 53-58.

Etgar, Michael (1979), "Sources and Types of Intrachannel Conflict," Journal of Retailing, 55 (Spring), 61-78.

Evan, William M. (1971), "Introduction: The Organizational Experiment," in Organizational Experiments: Laboratory and Field Research,

William M. Evan (ed.), New York: Harper and Row, 1-5.

Evan, William M. (1972), "An Organization-Set Model of Interorganizational Relations," in Interorganizational Decision Making, Matthew Tuite (ed.), Chicago: Aldine Co.

Evan, W. M. (1980), "Paradigms, Theories, and Frontiers in Organization Theory: An Introduction," In W. M. Evan (ed.), Frontiers in Organization and Management, New York: Praeger Publishing.

Fern, Edward F., Julie L. Ozanne, and Manjit S. Yadav (1987), "A Framework for Evaluating Contributions to Marketing Knowledge," working paper, Virginia Polytechnic Institute and State University.

Fink, Clinton F. (1968), "Some Conceptual Difficulties in the Theory of Social Conflict," Journal of Conflict Resolution, 12 (December), 412-460.

Foster, J. Robert and F. Kelly Shuptrine (1974), "Using Retailers' Perceptions on Channel Performance to Detect Potential Conflict," in 1973 Combined Proceeding, Thomas Y. Greer (ed.), Chicago: American Marketing Association, 118-23.

Fromkin, Howard L. and Siegfried Streufert (1970), "Laboratory Experimentation," in Handbook of Industrial and Organizational Psychology, Marvin D. Dunnette (ed.), Chicago: Rand McNally, 415-465.

Garner, William (1962), Uncertainty and Structure as Psychological Concepts, New York: John Wiley.

Gaski, John F. (1984), "The Theory of Power and Conflict in Channels of Distribution," Journal of Marketing, 48 (Summer), 9-29.

Green, Paul E. (1978), Analyzing Multivariate Data, Hinsdale, Illinois: Dryden Press.

Green, Paul E., Irwin Gross, and Patrick J. Robinson (1967), "Behavioral Experiment in Two-Person Bargaining," Journal of Marketing Research, 4 (November), 374-379.

Gross, Edward (1969), "The Definition of Organizational Goals," The British Journal of Sociology, 3 (September).

Guetzkow, H. (1968), "Some Correspondence Between Simulations and 'Realities' in International Relations," in New Approaches to International Relations, M. Kaplan (ed.), New York: St. Martin's Press.

Hair, Joseph F., Rolph E. Anderson, and Ronald L. Tatham (1987), Multivariate Data Analysis, New York: Macmillan.

Harrison, Albert A. (1976), "Intergroup Relations," in Individuals and Groups: Understanding Social Behavior, Monterey, California: Brooks/Cole Publishing Company, 535-580.

Hasenfeld, Y. (1972), "People Processing Organizations: An Exchange Approach," American Sociological Review, 37 (3), 256-263.

Hawley, A. H. (1950), Human Ecology, New York: Ronald Press.

Holsti, Ole R. (1968), "Content Analysis" in The Handbook of Social Psychology, G. Lindzey and E. Aronson (eds.), Reading, Mass: Addison-Wesley, 596-692.

Howard, John A. (1957), Marketing Management: Analysis and Decision, Homewood, Ill: R. D. Irwin.

Hrebiniale, Lawrence and Charles C. Snow (1980), "Industry Differences in Environmental Uncertainty and Organizational Characteristics Related To Uncertainty," Academy of Management Journal, 23 (4), 750-759.

Huber, George P., Michael J. O'Connell, and Larry L. Cummings (1975), "Perceived Environmental Uncertainty: Effects of Information and Structure," Academy of Management Journal, 18, 725-740.

Hudson, Laurel and Jeff B. Murray (1986), "Methodolgoical Limitations of the Hedonic Consumption Paradigm and a Possible Alternative: A Subjectivist Approach," in Advances in Consumer Research, Richard J. Lutz (ed.), Ann Arbor, MI: Association for Consumer Research, 343-348.

Hudson, Laurel and Julie L. Ozanne (1986), "The Role of Guiding Assumptions in Research: In Search of Method," working paper, Virginia Polytechnic Institute and State University.

Hunger, J. David and Louis W. Stern (1976), "An Assessment of the Functionality of the Superordinate Goal in Reducing Conflict," Academy of Management Journal, 19 (December), 591-605.

Hunter, J. E. and D. W. Gerbing (1982), "Unidimensional Measurement, Second Order Factor Analysis, and Causal Models," Research in Organizational Behavior, 4, 267-320.

Hunter, J. E. and S. H. Cohen (1969), "Package: A System of Computer Routines for the Analysis of Correlational Data," Educational and Psychological Measurement, 29, 692-800.

Hunt, Shelby D. (1976), Marketing Today, Columbus, OH: Grid, Inc.

Hutt, Michael, Michael Mokwa, and Stanley J. Shapiro (1986), "The Politics

of Marketing: Analyzing The Parallel Political Marketplace," Journal of Marketing, (Winter).

John, George and Torger Reve (1982), "The Reliability and Validity of Key Informant Data From Dyadic Relationships in Marketing Channels," Journal of Marketing Research, 19 (November), 517-524.

Kelly, J. Stephen and J. Irwin Peters (1977), "Vertical Conflict: A Comparative Analysis of Franchisees and Distributors" in Contemporary Marketing Thought, Barnett A. Greenberg and Danny N. Bellenger (eds.), Chicago: American Marketing Association, 380-4.

Kidd, Robert F. (1976), "Manipulation Checks: Advantage or Disadvantage?" Representative Research in Social Psychology, 7, 160-165.

Kirk, Roger E. (1982), Experimental Design: Procedures For The Behavioral Sciences, Balmont, CA: Wadsworth.

Knight, F. (1921), Risk, Uncertainty and Profit, New York: Harper and Row.

Koffka, Kurt (1935), Principles of Gestalt Psychology, New York: Harcourt and Brace.

Kopp, D. G., and R. J. Litschert (1980), "A Buffering Response in Light of Variation in Core Technology, Perceived Environmental Uncertainty, and Size," Academy of Management Journal, 23 (June): 252-266.

Kotler, Philip (1980), Marketing Management: Analysis, Planning, and Control, Englewood Cliffs, New Jersey: Prentice-Hall.

Kuhn, Thomas S. (1970), The Structure of Scientific Revolutions, 2nd ed., Chicago: University of Chicago Press.

Lakatos, Imre (1974), "Falsification and the Methodology of Scientific Research Programs," in Criticism and The Growth of Knowledge, Imre Lakatos and Alan Musgrave (eds.), Cambridge, U.K.: Cambridge University Press, 91-195.

Laudan, Larry (1984), Science and Values, Berkeley: University of California Press.

Lawrence, P. R., and J. W. Lorsch (1967), Organization and Environment, Cambridge, MA: Harvard Business School.

Leifer, R. and G. P. Huber (1977), "Relations Among Perceived Environmental Uncertainty, Organization Structure, and Boundary-Spanning Behavior," Administrative Science Quarterly, 22 (2), 235-247.

Lentner, Marvin and Thomas Bishop (1986), Experimental Design and Analy-

sis. Blacksburg, VA: Valley Book Company.

Lindquist, E. F. (1953), Design and Analysis of Experiments in Psychology and Education. Boston: Houghton Mifflin.

Luce, R. D. and Howard Raiffa (1957), Games and Decisions. New York: John Wiley.

Lusch, Robert F. (1976), "Sources of Power: Their Impact on Intrachannel Conflict," Journal of Marketing Research. 13 (November), 382-90.

Lynch, John G. (1982), "On the External Validity of Experiments in Consumer Research," Journal of Consumer Research. 9 (December), 225-239.

Macneil, Ian R. (1980), The New Social Contract. An Inquiry Into Modern Contractual Relations. New Haven, CT: Yale University Press.

Mallen, Bruce (1964), "Conflict and Cooperation in Marketing Channels," in L. George Smith (ed.), Reflections On Progress in Marketing. Chicago: American Marketing Association, 65-85.

March, J. G. and H. A. Simon (1958), Organizations. New York: John Wiley & Sons.

Mathews, H. Lee, David T. Wilson, and John F. Monoky (1972), "Bargaining Behavior in a Buyer-Seller Dyad," Journal of Marketing Research. 9 (February), 103-105.

McAlister, Leigh, Max H. Bazerman, and Peter Fader (1986), "Power and Goal Setting in Channel Negotiations," Journal of Marketing Research. 23 (August), 228-236.

McGrath, Joseph E. and David Brinberg (1983), "External Validity and the Research Process: A Comment on the Calder/Lynch Dialogue," Journal of Consumer Research. 10 (June), 115-124.

McGuire, William J. (1973), "The Yin and Yang of Progress in Social Psychology: Seven Koan," Journal of Personality and Social Psychology 26, 446-456.

Mentzer, John T. and Jeff B. Murray (1985), "The Division of Labor as a Core Concept in Channels Research," AMA Educators Conference Proceedings. Chicago: AMA, 210-214.

Mentzer, John T., Jeff B. Murray, and Roger Gomes (1986), "Research in Channels of Distribution: Four Paradigms," working paper, Virginia Polytechnic Institute and State University.

Nunnally, J. (1967), Psychometric Theory. New York: McGraw-Hill.

Ott, Lyman (1984), An Introduction to Statistical Methods and Data Analysis, 2nd edition, Boston: Duxbury Press.

Palamountain, J. C. (1967), "Distribution: Its Economic Conflicts," in Marketing Channels: A Conceptual Viewpoint, Bruce E. Mallen (ed.), New York: John Wiley and Sons, Inc., 114-118.

Parsons, Talcott (ed.) (1961), Theories of Society, New York: Free Press.

Pearson, E. S. (1931), "The Analysis of Variance in Cases of Non-Normal Variation," Biometrika, 23, 114-133.

Pearson, Michael M. (1973), "The Conflict-Performance Assumption," Journal of Purchasing, 9 (February), 57-69.

Pearson, Michael and John F. Monoky (1976), "The Role of Conflict and Cooperation in Channel Performance," Marketing: 1776-1976 and Beyond, K. L. Bernhardt (ed.), Chicago: AMA.

Peter, J. Paul (1979), "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," Journal of Marketing Research, 16 (February), 6-17.

Petroshius, Susan M. and Kent B. Monroe (1987), "Effect of Product-Line Pricing Characteristics on Product Evaluations," Journal of Consumer Research, 13 (March), 511-519.

Pfeffer, Jeffrey (1982), Organizations and Organization Theory, Boston: Pitman.

Pfeffer, Jeffrey and Gerald R. Salancik (1978), The External Control of Organizations, New York: Harper and Row.

Phillips, Lynn W. (1981), "Assessing Measurement Error in Key Informant Reports: A Methodological Note on Organizational Analysis in Marketing," Journal of Marketing Research, 18 (November), 395-415.

Pondy, Louis R. (1967), "Organizational Conflict: Concepts and Models," Administrative Science Quarterly, 12 (September), 296-320.

Price, James L. (1968), "Design of Proof in Organizational Research," Administrative Science Quarterly, 13 (June).

Pruden, Henry O. (1969), "Interorganizational Conflict, Linkage, and Exchange: A Study of Industrial Salesman," Academy of Management Journal, 12 (September), 339-350.

Pruitt, Dean G. (1981), Negotiation Behavior, New York: Academic Press.

Pruitt, Dean G. and Steven A. Lewis (1975), "Development of Integrative Solutions in Bilateral Negotiation," Journal of Personality and Social Psychology, 31, 621-633.

Rao, Akshay Raghavendra (1986), "The Impact of Product Familiarity on the Price-Perceived Quality Relationship," unpublished Ph.D. dissertation, Virginia Polytechnic Institute and State University.

Raven, Bertram H., and Arie W. Kruglanski (1970), "Conflict and Power," in The Structure of Conflict, Paul Swingle (ed.), New York: Academic Press, 62-73.

Reve, Torger and Louis W. Stern (1979), "Interorganizational Relations in Marketing Channels," Academy of Management Review, 4 (3).

Ridgeway, Valentine F. (1975), "Administration of Manufacturer-Dealer Systems," Administrative Science Quarterly, 7 (March), 464-483.

Robicheaux, Robert A. and Adel El-Ansary (1976), "A General Model For Understanding Channel Market Behavior," Journal of Retailing, 52 (Winter), 13-30, 93, 94.

Rosenthal, Robert and Donald B. Rubin (1980), "Company Within-and Between-Subject Studies," Sociological Methods and Research, 9 (August), 127-136.

Rosenberg, Larry J. and Louis W. Stern (1971), "Conflict Measurement in the Distribution Channel," Journal of Marketing Research, 8 (November), 437-442.

Rosenbloom, Bert (1983), Marketing Channels: A Management View, 2nd ed., Chicago: The Dryden Press.

Ross, Robert, H. and Robert F. Lusch (1982), "Similarities Between Conflict and Cooperation in the Marketing Channel," Journal of Business Research, 10, 237-250.

Rubin, Jeffrey Z. and Bert R. Brown (1975), The Social Psychology of Bargaining and Negotiation, New York: Academic Press.

Sathe, V. (1974), "Structural Adaptation to Environment: Study of Insurance Company," Unpublished Ph.D. Dissertation, Ohio State University.

Sawyer, Alan G. and A. Dwayne Ball (1981), "Statistical Power and Effect Size in Marketing Research," Journal of Marketing Research, 18, 275-290.

Schmidt, Stuart M. and Thomas A. Kochan (1972), "Conflict: Toward Conceptual Clarity," Administrative Science Quarterly, 17 (September),

359-370.

Schul, Pat L., Charles W. Lamb, Jr., and Taylor E. Little (1981), "A Path Analysis of the Interchannel Conflict Process," in The Changing Market Environment: New Theories and Applications, Kenneth Bernhardt, Thomas Kinnear, Kra Dolich, William Perreault, Michael Etzel, Kenneth Roering, and William Kehol (eds.), Chicago: American Marketing Association, 39-42.

Schurr, Paul H. and Greg J. Lessne (1983), "Methods for Laboratory Negotiation Research in Industrial Marketing," in Research Methods and Causal Modeling in Marketing, Willian R. Darden, Kent B. Monroe, and William R. Dillon (eds.), Chicago: American Marketing Association.

Schurr, Paul H. and Julie L. Ozanne (1984), "Influences on Exchange Processes: Buyers' Preconceptions of a Seller's Trustworthiness and Bargaining Toughness," Journal of Consumer Research, 11 (March), 939-953.

Scott, W. Richard (1965), "Field Methods in the Study of Organizations," in Handbook of Organizations, James G. March (ed.), Chicago: Rand McNally, 261-304.

Secord, P., and C. Backman (1964), Social Psychology, New York: McGraw-Hill.

Seiler, J. A. (1963), "Diagnosing Interdepartmental Conflict," Harvard Business Review, 41, 121-132.

Sherif, Muzafer (1958), "Superordinate Goals in the Reduction of Intergroup Conflicts," American Journal of Sociology, 63, 349-356.

Sherif, M., and C. W. Sherif (1969), Social Psychology, New York: Harper and Row.

Sherif, M., O. J. Harvey, B. J. White, W. R. Hood, and C. W. Sherif (1961), Intergroup Conflict and Cooperation: The Robers' Cave Experiment, Norman, OK: The University Book Exchange.

Simon, Herbert A. (1964), "On the Concept of Organizational Goal," Administrative Science Quarterly, 9 (June), 1-22.

Spector, Paul E. (1977), "What To Do With Significant Multivariate Effects in Multivariate Analysis of Variance," Journal of Applied Psychology, 62 (2), 158-163.

Spekman, Robert E. and Louis W. Stern (1979), "Environmental Uncertainty and Buying Group Structure: An Empirical Investigation," Journal of Marketing, 43 (Spring), 54-64.

Starbuck, W. H. (1976), "Organizations and Their Environments," in Handbook of Industrial and Organizational Psychology, M. D. Dunnette (ed.), Chicago, IL: Rand McNally, 1069-1123.

Stern, L. W. (1969), Distribution Channels: Behavioral Dimensions, Boston: Houghton Mifflin.

Stern, Louis W. and Adel I. El-Ansary (1977), Marketing Channels, Englewood Cliffs, NJ: Prentice-Hall, Inc.

Stern, Louis W., Brain Sternthal and C. Samuel Craig (1973), "Managing Conflict in Distribution Channels: A Laboratory Study," Journal of Marketing Research, 10 (May), 169-179.

Stern, Louis W. and Torger Reve (1980), "Distribution Channels As Political Economies: A Framework for Comparative Analysis," Journal of Marketing, 44 (Summer), 52-64.

Stevens, James (1986), Applied Multivariate Statistics For The Social Sciences, Hillsdale, New Jersey: Lawrence Erlbaum.

Streufert, S. (1968), "The Components of a Simulation of Local Conflict: An Analysis of the Tactical and Negotiations Game," ARPA Technical Report, Project SD 260, Northwestern University, Evanston, Ill.

Tedeschi, James T. (1970), "Threats and Promises," in The Structure of Conflict, P. G. Swingle (ed.), New York: Academic Press, 155-191.

Terreberry, S. (1968), "The Evolution of Organizational Environments," Administrative Science Quarterly, 12 (March), 591-613.

Thompson, James D. (1967), Organizations in Action, New York: McGraw-Hill.

Walker, Orville C. (1971), "The Effects of Learning on Bargaining Behavior," in Combined Proceedings, Fred C. Alvine (ed.), Chicago: American Marketing Association, 194-199.

Wamsley, G. and M. Zald (1973), "The Political Economy of Public Organizations," Public Administration Review, 33 (Jan-Feb), 62-73.

Warren, Roland L. (1967), "The Interorganizational Field As a Focus for Investigation, Administrative Science Quarterly, 12 (December), 396-419.

Weick, Karl E. (1965), "Laboratory Experimentation With Organizations," in Handbook of Organizations, James G. March (ed.), Chicago: Rand McNally.

Weick, Karl E. (1969), The Social Psychology of Organizing, New York:

Random House.

Welch, B. L. (1947), "The Generalization of Student's Problem When Several Different Population Variances are Involved," Biometrika, 34, 28-35.

Wetzel, Christopher (1977), "Manipulation Checks: A Reply to Kidd," Representative Research in Social Psychology, 8, 88-93.

Zald, M. (1970), "Political Economy: A Framework for Comparative Analysis," in Power in Organizations, M. Zald (ed.), Nashville: Vanderbilt University Press, 221-261.

Zaltman, Gerald, Karen LeMasters, and Michael Heffring (1982), Theory Construction In Marketing, New York: Wiley and Sons.

Zelditch, Morris (1980), "Can You Really Study an Army in the Laboratory," in A Sociological Reader on Complex Organizations, Amitai Etzioni (ed.), New York: Holt, Rinehart and Winston, 528-539.

Zelditch, M. and T. K. Hopkins (1961), "Laboratory Experiments With Organizations," in Complex Organizations, Amitai Etzioni (ed.), New York: Holt, Rinehart, and Winston, 464-478.

Zigler, E. (1963), "Metatheoretical Issues in Developmental Psychology," in Theories in Contemporary Psychology, New York: Macmillan, 341-369.

APPENDIX A

Integrative Review of Political Economy Literature[17]

[17] Note that Hutt, Mokwa, and Shapiro (1986) was not included in this review since this article was not applied directly to channels. Also, Dwyer, Oh, and Hoelter (1986) was not included in the review since this article is still under review.

	Zald (1970)	Benson (1975)
Intellectual foundations	"Institutional approach" to studying society Social system theory Sociology Political science Organizational theory	System resource view of organizations Social theory Organization theory
Level of the conceptual macrostructure	Integrative framework: "The framework is of the 'middle range' because it assumes many of the assertions or concepts of social-system analysis and the general theory of action. Instead of dealing with 'universals' and completely general propositions, it attempts to develop concepts, propositions, and variables that will order a range of specific organizational forms and processes" (p. 222).	Framework: "The political-economy perspective is integrative in the sense that a number of diverse concerns of interorganizational research are brought together" (p. 230).
Definition of "Political Economy"	"The political economy framework focuses on the intersection of the policy structure and political life of organizations with the economy and economic life within organizations" (p. 221). The over-all framework is undergirded by a very general assumption: "...processes originating in any one of the sectors may impinge in some organizational cases on any of the other sectors" (p. 230).	The political economy perspective proposes a framework for analyzing interorganizational fields. This framework emphasizes the distinction between substructure and superstructure. At the level of substructure, differentially powerful organizations interact in pursuit of the scarce resources of money (economic structure and processes) and authority (political structure and processes). At the level of superstructure, dominant sentiments emerge as firms coordinate their activity. The substructure (political-economy) places constraints on the range of potential variation in the superstructure.
Specific concepts utilized	External policy Economic environment Internal policy Internal economic structure and process	Substructure Superstructure Equilibrium Balance Network environments
Definition of concepts	External policy - Two dimensions: (1) "...political relations develop 'horizontally' among organizations having similar 'products.' Horizontal relations have two focuses: control of relations among the similar units - price-fixing, establishing territories - and control of relations between the organizations as a group and agents in the impinging environment - government, unions, etc." (p. 222); (2) "...political relations develop 'vertically' among suppliers of resources, distributors, and buyers of products (Palamountain 1955). These include suppliers of labor, raw materials and facilities, and capital" (p. 222). Economic environment - Vertical relations: "On the input side, organizations deal with a variety of specific markets, each with its own internal differentiation and supply-demand characteristics. "On the output side, organizations vary in the number of products	Substructure - The political-economy. Superstructure - Dominant sentiments: Four analytical dimensions were specified at this level: (1) Domain consensus; (2) Ideological consensus; (3) Judgments between organizations of the quality of work of each; (4) Work coordination (p. 247). Equilibrium - "An interorganizational network is equilibrated to the extent that participant organizations are engaged in highly coordinated, cooperative interactions based on normative consensus and mutual respect" (p. 235). Balance - The relationship between the four superstructural dimensions. Network environments - The social context within which network relations are negotiated. Important dimensions of the structured environment: (1) Resource concentration/dispersion; (2) Power concentration/dispersion; (3) Network autonomy/dependence; (4) Resource abundance/scarcity; (5) Control mechanisms; incentive versus authoritative.

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	Zald (1970)	Benson (1975)
Definition of concepts	they offer and in the structural characteristics of product markets" (p. 234). Internal polity - Three aspects: (1) Internal power structure; (2) Processes of demand-aggregation and conflict-resolution; (3) Succession systems and processes. Internal economic structure and process - Three aspects: (1) The division of labor, technologies, and interunit exchanges; (2) Resource allocation and efficiency; (3) Incentive economies and their consequences	
Substantive domain of application	Public and private organizations	Human service agencies: "Nevertheless, the focus on resources should provide a basis on which future extensions of the scheme will be accomplished" (p. 230).
Theoretical bivariate relationships suggested in specific illustrative propositions	"This approach postulates that economic and political forces, structures, pressures, and constraints: (1) Are among the most significant activators of change; (2) Are the key factors shaping directions of change" (p. 235-236). (note: In the context of my research question, Zald states: "...the political economy approach can be used in describing enduring structural conflicts and their resolutions" (p. 242)).	The hypothesis of balance: It is argued that increases in one superstructural dimension tend to be associated with increases in the others. Similarly, decreases in one dimension tend to be associated with decreases in the others (p. 236). Superstructural dimensions may become balanced at varying equilibrium levels. The political-economic base hypothesis: Superstructural events place restrictive limits upon the potential range of variation of the equilibrium components (dimensions) (p. 236).
Were theoretical relationships empirically tested	No: "The political economy framework can be used to generate specific predictions... no claim is made, however, that this framework has reached an advanced state of development" (p. 237).	No

	Stern and Reve (1980)	Arndt (1983)
Intellectual foundations	Organization theory Public administration theory Marketing theory Sociology Transaction cost analysis Political science	Social exchange theory The behavioral theory of the firm Transaction cost economics
Level of the conceptual macro-structure	Integrative framework: "The political economy perspective as an organizing framework enables the generation of significant research questions and, therefore, has the potential for producing new theoretical insights" (p. 53).	Paradigm: paradigms are viewed here as the foundations of theory, they give theory building in a field direction and meaning.
Definition of "Political Economy"	"The political economy approach views a social system as comprising interacting sets of major economic and sociopolitical forces which affect collective behavior and performance" (p. 53).	This article builds on what may be called the "organizational approach to political economy" (p. 47). This approach views social systems... "as 'comprising interacting sets of major economic and sociopolitical forces which affect collective behavior and performance (Stern and Reve 1980, p. 53)" (p. 47).
Specific concepts utilized	Internal economic structure Internal economic processes Internal socio-political structure Internal socio-political processes External economy External polity	The environment External political relations External economic relations Internal polity Internal economy
Definition of concepts	<u>Internal economic structure</u> - The transactional form within an organized collectivity set up to complete internal exchanges. <u>Internal economic processes</u> - The decision making processes which determine the terms of trade, functions, and activities among the internal actors. <u>Internal socio-political structure</u> - The pattern of dependence relations within an organized collectivity. <u>Internal socio-political processes</u> - "The dominant sentiments and behaviors which characterize the interactions between actors within an organized collectivity" (p. 52). <u>External economy</u> - "The economic task environment of an organized collectivity described by the nature of its vertical (input and output) and horizontal markets" (p. 52). <u>External polity</u> - "The socio-political task environment of an organized collectivity described by the distribution and use of power resources among external actors and their prevailing sentiments" (p. 52).	<u>The Environment</u> - Political and economic organizations which are external to the unit of analysis. "The following five dimensions presented below are common to many attempts to develop inventories of environmental dimensions:" (p. 49). (1) proximity to the focal unit (2) capacity (availability of resources) (3) differentiation (heterogeniety or complexity) (4) concentration or dispersion (5) turbulence (rate of change) "...a superordinate dimension is environmental uncertainty or predictability, which is a function of dimensions (2) to (5) above" (p. 49). <u>External political relations</u> - Involves organizational effectiveness, that is, "...to promote legitimacy by meeting the demands of the various interest groups involved in exchanges with the social unit" (p. 49). <u>External economic relations</u> - Involves organizational efficiency, that is, "...the normal use of the transactional arrangements or the decision-making modes" (p. 49). <u>Internal polity</u> - Refers to the power system of the social unit, "...the way authority is distributed, mobilized, utilized, and limited" (p. 50). <u>Internal economy</u> - Refers to the coordination of behavior and the allocation of resources to produce an output of "sufficient interest for external exchange partners" (p. 50).

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	Stern and Reve (1980)	Arndt (1983)
Substantive domain of application	Marketing Channels	General application: micromarketing as well as macromarketing contexts.
Theoretical bivariate relationships suggested in specific illustrative propositions	P1: Centralized planning processes are related positively to channel efficiency and effectiveness. P2: Centralized planning processes are related negatively to quick reaction to external threats. P3: "Market transactions in oligopsonistic situations are likely to lead to information imbalances, opportunistic behavior, and high transaction costs" (p. 56). P4: As power becomes increasingly balanced, both cooperation, and the potential for conflict will tend to increase. P5: The use of coercive power will produce a dysfunctional level of conflict. P6: The use of coercive power will produce instability, resulting in decreased competitive viability. P7: Minimal power will lead to low levels of cooperation. P8: When power is centralized and market transactions predominate, centralized planning processes will emerge. P9: Under the conditions specified by P8, both conflict and cooperation will be high. Such channels will tend to be more competitively effective. P10: A channel characterized by hierarchical transactions and centralized power will effectively mediate conflict, produce superordinate goals, and will be more likely to achieve efficiency. P11: Cooperation is positively related to efficiency. P12: Individual power is positively related to individual profits.	No specific propositions were stated. However, the following statement was made in the context of formulations: "A common pattern is that the internal polity is affected by its relations to the external polity (and to some extent to the relations to the external economy)" (p. 50).
Were theoretical relationships empirically tested	No	No... "to get from such a general recognition of the external control of organizations to a theoretically meaningful and operational framework is a vast navigational task in still mostly uncharted waters" (p. 48).

	Achrol, Reve, and Stern (1983)	Dwyer and Welsh (1985)
Intellectual foundations	Organization theory Marketing theory Sociology	Organizational theory Sociology Marketing theory
Level of the conceptual macro-structure	Integrative framework: "As such a framework makes no pretension of being a theory. Rather, its purpose is to help position individual researchers so that they can proceed in a systematic and methodical fashion toward the emergence of a dominant theoretical paradigm" (56).	Framework; a "road map" designed to facilitate the comparative analysis of productive exchange systems.
Definition of "Political Economy"	"The political economy approach views a social system as comprising interacting sets of major economic and sociopolitical forces which affect collective behavior and performance" (Stern and Reve 1980, p. 93).	A system characterized by interdependence among four basic elements: the external polity, external economy, internal polity, and internal economy.
Specific concepts utilized	Focal dyad Macro environment Primary task environment Secondary task environment	Environmental characteristics Channel configuration Internal political structure and process
Definition of concepts	Focal dyad - Any two-party exchange relationship under investigation. "Whenever direct, goal-oriented social interaction occurs between actors in a channel, a channel dyad exists" (p. 58). Macro environment - Composed of social, economic, political, and technological forces which interact with activities in the primary and secondary environments. Primary and secondary task environments - The former is comprised of immediate suppliers and customers of the dyad. The ladder is comprised of suppliers to the immediate suppliers, customers to the immediate customers, regulatory agents, and competitors. These environments are divided into four sectors: (1) Input: suppliers to the dyad. (2) Output: customers of the dyad. (3) Competitive: actual and potential horizontal competitors of the dyad. (4) Regulatory: public agencies who directly or potentially affect the political economic structure or processes of the dyad. The secondary task environment is best characterized by five qualitative dimensions: (1) Environmental capacity. (2) Environmental homogeneity-heterogeneity (3) Environmental stability - instability (4) Environmental concentration - instability (5) Environmental turbulence	Environmental characteristics - "Decision makers typically focus on the environment as representing either (1) a source of information or (2) a stock of resources. This classification of environmental impact reflects the two fundamental problems the environment poses for decision makers: uncertainty and dependence" (p. 199). "...we consider only one environmental attribute representing uncertainty, the degree of heterogeneity in the task environment" (p. 199). "...we consider only one dimension of dependence, the variability of the channel output environment" (p. 199). Channel configuration - Channel structure as defined by the division of labor. Channel configuration reflects environmental conditions (contingency approach) and acts as a filtering mechanism for environmental information. Internal political structure and process - This is defined as the decision structures and the decision influence patterns of the unit of analysis. The decision structure of a channel has 4 primary dimensions: (1) centralization (concentration of decision making) (2) participation (degree of in decision making) (3) formalization (the extent to which decision making is regulated) (4) specialization (the amount of task differentiation) Decision influence patterns represent the relative control of channel members over marketing decisions.

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	Achrol, Reve, and Stern (1983)	Dwyer and Welsh (1985)
Substantive domain of application	Marketing Channels	Marketing Channels
Theoretical bivariate relationships suggested in specific illustrative propositions	P_1: There is a positive relationship between vertical uncertainty (input-output) and conflict. P_2: There is a positive relationship between vertical uncertainty and efforts to vertically coordinate. P_3: The direction of change in the power balance is determined by which member is able to absorb uncertainty. The direction of change in power also determines the direction of centralization of planning, coordination, and decision processes. P_4: Vertical uncertainty may lead to backward or forward integration. P_5: As vertical uncertainty, and therefore conflict increases, the dyad is likely to move to a "looser" relationship. P_6: There is a positive relationship between uncertainty in the competitive sector and cooperation. P_7: If uncertainty from the competitive sector cannot be absorbed by vertical coordination, closer linkages are established with competitors. P_8: "The more certain the regulatory environment, the more cooperative, coordinated, and integrated dyad behavior becomes in response to regulatory demands" (p. 65). P_9: Under regulatory uncertainty, channel dyads tend to enter into interest coalitions with actors in the input, output, and competitive sectors. P_{10}: If regulatory uncertainty cannot be absorbed by coalition behavior, closer linkages will be established with the regulatory agents.	"At its most general level, the proposed model suggests that environmental differences will be associated with differences in the internal politics of marketing channels" (p. 400). Specific propositions: H_1: "Compared with homogeneous environments, heterogeneous channel environments will be associated with: (a) complex channel configurations; (b) decentralized decision structures; (c) high participation in decision making; (d) less formalization in procedures; (e) specialization of function; (f) more retailer control over marketing decisions" (p. 401). H_2: "Compared with steadfast channel environments, variable channel environments will be associated with: (a) less complex channel configurations; (b) centralized decision structures; (c) less participation in decision making; (d) formalized procedures; (e) less specialization in function; (f) less retailer control over marketing decisions" (p. 401).
Were theoretical relationships empirically tested	No: "In this article, the original framework is extended to account for the impact of environmental forces on dyadic structure and processes. To date, the latter topic has largely been ignored, especially in empirical studies" (p. 65).	Yes: "Given the primal status of research under the proposed paradigm, multivariate statistical support for three of 12 specific hypotheses - and localized support for three more - should be greeted with sanguinity" (p. 409).

APPENDIX B

Definitions of Key Concepts in The Political Economy Framework (Stern and Reve 1980, pgs. 61-62)

Political economy - collectivity comprised of an economic system (economy) and a sociopolitical system (polity) which jointly influence collective behavior and performance.

Internal political economy - the internal structuring and functioning of an organized collectivity (e.g., marketing channel) analyzed in terms of an internal economy and an internal polity and their interactions.

External political economy - the task environment of an organized collectivity (e.g., marketing channel) analyzed in terms of an external economy and an external polity and their interactions.

Internal economy - the internal economic allocation system analyzed in terms of the internal economic structure and processes.

Internal polity - the internal sociopolitical allocation system analyzed in terms of the internal sociopolitical structure and processes.

External economy - the economic task environment of an organized collectivity (e.g., marketing channel) described by the nature of its vertical (input and output) and horizontal markets.

External polity - the sociopolitical task environment of an organized collectivity (e.g., marketing channel) described by the distribution and use of power resources among external actors and their prevailing sentiments.

Internal economic structure - the economic arrangements or transactional form within an organized collectivity (e.g., marketing channel) set up to complete internal exchanges.

Internal economic processes - the decision making processes within an organized collectivity (e.g., marketing channel which determine the terms of trade and the division of labor functions, and activities among the internal actors.

Internal sociopolitical structure - the pattern of power/dependence relations within an organized collectivity (e.g., marketing channel).

Internal sociopolitical processes - the dominant sentiments and behaviors which characterize the interactions between actors within an organized collectivity (e.g., marketing channel).

Transactional form - internal economic arrangements ranging from markets to hierarchies (e.g., vertical integration).

Decision making processes - internal collective choice processes ranging from impersonal determination of terms of trade through the price mechanism, through bargaining processes, to centralized planning processes.

Power/dependence relations - internal power/dependence pattern ranging from minimal power (low dependence), through mixed power constellations of balanced and imbalanced power (mutual dependence), to centralized power (unilateral dependence).

Dominant sentiments and behaviors - internal sentiments and behaviors of cooperation and functional or dysfunctional conflict characterizing internal exchange, ranging from minimal cooperation, high dysfunctional conflict to maximal cooperation, functional conflict.

APPENDIX C

Integrative Review of the Perceived Environmental Uncertainty Literature

	Duncan (1972)	Tosi, Aldag, and Storey (1973)
Research design	Cross-sectional survey (mail questionnaire and personal interviews.)	Cross-sectional survey (mail questionnaire and secondary data sources). Secondary sources included Standard and Poor's Compustat tapes. These tapes contain balance sheet, income statement, and other data for New York Stock Exchange firms over the past twenty years.
Empirical setting	Industrial: three manufacturing organizations and three research and development organizations.	Middle and top level executives were sampled in a single firm. Secondary data included information from 12 industries and 22 firms. Sample survey was designed to replicate Lawrence and Lorsch's (1969) environmental uncertainty study.
Sample characteristics/size/unit of analysis	22 organizational decision units. An organizational decision unit is defined as a "formally specified work group within the organization under a superior charged with a formally defined set of responsibilities directed toward the attainment of the goals of the organization" (p. 313). Responses obtained from individual decision unit members were pooled on all items of a variable to reflect the degree of the given variable experienced by the unit as a whole. Consideration was given to differences among individuals in their perception of uncertainty and the environmental dimensions before aggregate measures were constructed.	102 executives, unit of analysis for sample survey was the individual. Unit of analysis used for constructs measured by secondary sources was the industry.
Constructs included	1) The simple-complex environmental dimension. 2) The static-dynamic environmental dimension. 3) Perceived environmental uncertainty.	Market volatility Technological change Perceived environmental uncertainty
Proposed relationships between constructs (hypotheses)	H_1: "Decision units with simple-static environments will experience the least perceived environmental uncertainty" (p. 320). H_2: "Decision units with complex-dynamic environments will experience the greatest perceived environmental uncertainty" (p. 320). H_3: "Decision units with simple-dynamic environments will experience greater perceived environmental uncertainty than individuals in decision units with complex-static environments" (p. 320).	The purpose of this study was to examine Lawrence and Lorsch's environmental uncertainty scale. Research questions: 1) What are the reliabilities of the scales? 2) What concepts underlie the items? 3) Are the scales valid measures? (responses from their sample were correlated with two alternative measures of uncertainty: market volatility and technological change).
Theoretical definition of perceived environmental uncertainty (PEU)	Three components: (p. 313) 1) "the lack of information regarding the environmental factors associated with a given decision-making situation;" 2) "not knowing the outcome of a specific decision in terms of how much the organization would lose if the decision were incorrect;" 3) "inability to assign probabilities with any degree of confidence with regard to how environmental factors are going to affect the success or failure of the decision unit in performing its function."	"...the degree of accuracy with which one can predict the future. Where there is less variance, there is more certainty" (p. 10).

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	Duncan (1972)	Tosi, Aldag, and Storey (1973)
Measurement of PEU	The first two components of the definition were measured with a Likert type scale. Six scale items were used for each component with 5 response categories: (1) never, (2) seldom, (3) occasionally, (4) fairly often, (5) always. Individual responses were pooled for each decision unit. The third component of the definition was measured with two questions: 1) First, respondents were asked to indicate on a scale (...-1.0) how sure they were that certain environmental factors would affect their performance. 2) Second, respondents were asked to indicate the range of numbers they were considering when responding to the first question. This measures how confident the respondent was when assessing their certainty. Individual responses to these two questions were multiplied to obtain the degree of ability to assign probabilities. These responses were then summed and divided by the number of factors for each decision unit. The scores of the three components of uncertainty were then added to form a total uncertainty score.	Lawrence and Lorsch's (1969) perceived environmental uncertainty scale. This 9-item scale was constructed to measure the degree of certainty found in three different organization subsystems: production, marketing, and research. Alternative measures of volatility and technological change were derived from secondary data sources: 1) "The coefficient of variation of sales over the past ten years was used as a measure of market volatility" (p. 30). 2) The average ratio of the sum of research and development expenditures and capital expenditures to total assets over the past ten years was used as a measure of technological change. 3) "...to obtain a composite measure of market, technological, and other volatility sources, the coefficient of variation of earnings before interest and taxes over the past ten years was used, again weighted by corporate sales" (p. 31).
Validity, reliability evidence	None	In response to the three research questions: 1) "Only one of the subscales fits Nunnally's suggested 0.50 level for research instrument reliability (1967 edition). The total scale, however, appears to have marginally adequate internal consistency (r_{kk}=0.313)" (p. 33). 2) Four factors were extracted from the scale. These factors are not interpretable in a manner similar to that proposed by Lawrence and Lorsch. 3) Correlations of Lawrence and Lorsch's scale with the alternative measures of uncertainty (volatility and change) were low and inconsistent.
Statistical analysis	In testing the hypotheses, a 2 x 2 (simple-complex x static-dynamic) analysis of variance was performed.	For the three research questions: 1) An estimate of the internal reliability was computed: $r_{kk} = \frac{Kr_{ij}}{1 + (K - 1)r_{ij}}$ where: K = number of items r_{ij} = average correlation between items. 2) Factor analysis. 3) Correlation matrix
Outcomes (accept/reject and p-values)	The first and second hypotheses were confirmed, $p < 0.01$. Some support for the third hypothesis: Decision units with simple-dynamic environments experience, on the average, a greater level of perceived uncertainty than groups with complex-static environments. However, multiple comparisons indicate that the difference between means was not significant.	See "Validity, reliability evidence" above for details. General conclusion: The environmental uncertainty subscale used by Lawrence and Lorch is not methodologically adequate.

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	Duncan (1972)	Tosi, Aldag, and Storey (1973)
Outcomes (accept/reject and p-values)	The static-dynamic main effect is much higher (F=10.504) than the simple-complex main effect (F=10.418). Thus: "Decision units with dynamic environments always experience significantly more uncertainty in decision making regardless of whether their environment is simple or complex" (p. 122).	

	Downey, Hellriegel and Slocum (1975)	Huber, O'Connell and Cummings (1975)
Research design	Survey (mail questionnaire); Indepth interviews were also conducted with six division managers several weeks after they had responded to the questionnaire.	Laboratory simulation
Empirical setting	Industrial: a single, large United States conglomerate; products and services of the divisions were diverse, involving power generation, control equipment, and major household appliances.	Three-man teams played a military game under closely controlled conditions. Subjects played against a predetermined program controlled by the experimenter.
Sample characteristics/size/ unit of analysis	31 division managers; Each respondent occupied a top managerial position in a relatively autonomous division of the conglomerate. There were no functional managers represented in the sample. Unit of analysis was the individual.	72 ROTC students at two large state universities and 72 cadets at the USAF Academy (144 total). Data was analyzed with two procedures: the first used the individual as the unit of analysis (N = 144); the second used the team as the unit of analysis (N = 48).
Constructs included	Lawrence and Lorsch's (1967) perceived environmental uncertainty scale. Duncan's (1972) perceived environmental uncertainty scale. Duncan's (1972) environmental characteristics instrument. Criterion Uncertainty measures: 1) Department of Commerce change in projections volatility 2) Perceived degree of competition in the division's industry 3) Perceived, decreased volatility of the divisions prices 4) Perceived decreased volatility of the divisions sales	Information load Information specificity Group structure Perceived environmental uncertainty
Proposed relationship between constructs (hypotheses)	Research questions: 1) Is the Lawrence and Lorsch PEU scale reliable? 2) Is the Duncan PEU scale reliable? 3) Are the two scales measuring the same thing? 4) Does either scale correlate strongly with the criterion uncertainty measures? 5) What kinds of results are obtained after replicating Duncan's (1972) study?	H_1: "Perceived uncertainty will be greatest at moderate information loads" (p. 327). H_2: "Perceived uncertainty will be positively associated with specificity of information" (p. 329). H_3: "Tightly structured groups will perceive more uncertainty than loosely structured groups" (p. 329).
Theoretical definition of perceived environmental uncertainty	Generally consistent with Tosi, Aldag, and Storey (1973), and Duncan (1972). They emphasize the uncertainty is the result of environmental effects but is also a psychological trait: "This model of uncertainty is based on a view of environmental elements as stimuli which lack inherent meaning or information value until structured by an individual perceiver" (p. 313).	Same as Duncan (1972)
Measurement of PEU	See Tosi, Aldag, and Storey (1973), and Duncan (1972) in this integrative review. The four criterion uncertainty constructs can be considered a third measure of PEU.	Two procedures were used with first the individual, then the team as the unit of analysis: Procedure 1: Data was obtained from subjects with a game-related questionnaire. Subjects were asked how uncertain they felt about the enemy strategy in each of the four areas of the game: military operations, economics, diplomatic negotiations, and intelligence. Responses were made by marking a continuous scale whose endpoints were anchored at "very certain" and "very uncertain."

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	Downey, Hellriegel and Slocum (1975)	Huber, O'Connell and Cummings (1975)
Measurement of PEU		Procedure 1: Data was obtained from teams with a game-related questionnaire. First teams listed various alternative strategies they thought the enemy was following. Then they estimated the chances out of 100 that the enemy forces actually were following each of the listed strategies (these estimations were later converted to probabilities). The scale-free measure of uncertainty developed by Shannon and Weaver (1949) was then used: $U = \sum_{s=1}^{s} (P_s)(\log_2 P_s)$ Where: s = number of strategies; P_s = probability of any alternative strategy. In this equation, the larger the absolute value of the summed products of the P's and their logarithms, the greater the perceived uncertainty.
Validity, reliability evidence	In response to the first four research questions: 1) The Lawrence and Lorsch subscales and their total uncertainty scale do not meet Nunnally's suggested criterion for research instruments (r_{xx} = .30) 2) Two of Duncan's three subscales and his total uncertainty scale met Nunnally's criterion. 3) The observed Pearson's correlation coefficient between the two constructs was not statistically significant (r = .14, P < .30). "This low correlation indicates that the core dimension in the two instruments are dissimilar" (p. 624). 4) Neither scale correlates strongly with the criterion measures. "Assuming the criterion measures are meaningful, the results do not support the construct validity of the two total uncertainty scales" (p. 623).	None
Statistical analysis	Techniques used for the five research questions: 1) and (2) Internal reliabilities were calculated using Nunnally's (1967) coefficient alpha. 3) Pearson's correlation coefficient alpha. 4) Kendall's Taus was used because of the ordinal nature to the nonlinear relationships. The uncertainty scores of managers in the product and industry groupings were analyzed through the use of Kruskal-Wallis' analysis of variance. 5) Replication used a 2 x 2 analysis of variance.	Four-way analyses of variance were used to analyze the data of the 3 x 2 x 2 x 2 design, i.e., the (information load) x (information specificity) x (team structure) x (subject population).
Outcomes (accept/reject and p-values)	In response to the last research question: This replication is not consistent with the hypothesis that perceived environmental complexity is a contributor to uncertainty perception.	Hypothesis one was not supported. A negative linear relationship was found between information load and perceived uncertainty. This negative relationship was highly significant P < .01. Hypothesis two was not supported.

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	Downey, Hellriegel and Slocum (1975)	Huber, O'Connell and Cummings (1975)
Outcomes (accept/reject and p-values	The results of this replication also indicate that perceived environmental dynamism is not an important contributor to uncertainty perception.	Hypothesis three was supported by the data from procedure 1, $p < .05$. This hypothesis was not supported by the data from procedure 2. Post hoc data analysis identified an unanticipated relationship: Information specificity was found to be positively associated with perceived uncertainty in loosely structured groups and negatively associated with perceived uncertainty in tightly structured groups.

	Leifer and Huber (1977)	Etzar (1977)
Research design	Cross-sectional field study, data was obtained by administering a questionnaire.	Cross-sectional survey (structured questionnaire was administered by personal interview).
Empirical setting	State government: a large health and welfare organization concerned with family problems, adoption, and social work. Data was obtained from semi-autonomous work groups which included clerical, managerial, and caseworker personnel.	Eight different distributive channels in a large northeastern area were surveyed. "All surveyed dealers sell mainly consumer goods and are primarily dependent on the specific channel for their livelihood" (p. 72).
Sample characteristics/size/unit of analysis	220 employees were sampled in 12 work groups. Hypotheses were tested with N = 192. Unit of analysis was the individual subject.	Selection was done randomly from a yellow pages directory. Sample included dealers who sell low priced items as well as high priced items. Unit of analysis was the individual; 99 usable responses were included in the analysis.
Constructs included	1) Organization structure. (organicness). 2) Frequency of boundary - spanning activity. 3) Perceived environmental uncertainty (PEU)	Product's life cycle stage Perceived environmental uncertainty Marketing technology Competitive effects Channel control
Proposed relationship between constructs (hypotheses)	H_1: "Organicness of structure will be positively associated with PEU" (p. 137). H_2: "Organicness will be positively associated with frequency of boundary-spanning activity" (p. 138). H_3: "Frequency of boundary-spanning activity will be positively associated with PEU" (p. 139).	The control of the supplier is higher when: H_1: "The demand for the products marketed by the specific channel is declining rather than when it is growing" (p. 72). H_2: "The degree of volatility [uncertainty] in demand is low" (p. 72). H_3: "The marketing technology requires a low labor input" (p. 72). H_4: "Interchannel competition is high" (p. 72).
Theoretical definition of perceived environmental uncertainty (PEU)	The concept of organizational environment was operationalized as PEU. Thus, the authors provide only measures of PEU and no theoretical definition. They also do not define theoretically the concept of organizational environment, however their use of the term is consistent with Pfeffer and Salancik (1978) and also Weick's notion of an "enacted environment" (1969).	A volatile or unstable environment: "When the demand for a product varies considerably" (p. 71).
Measurement of PEU	PEU was measured by seven questionnaire items of the form: "How often do you *know* what to expect in your dealings with other people or organizations?" (p. 140). The responses were collected on a 0 to 100 scale anchored at five points: never, seldom, sometimes, often, and always.	Dealers were asked to provide estimates about the stability and growth of the demand for their products. A 7-point semantic differential scale was used for all estimates.
Validity, reliability evidence	All measures were factor analyzed to determine if all items merited inclusion in the variable. The criterion for excluding an item was that it would have little association with the first factor. According to Churchill (1979, p. 69) this is an appropriate way to purify a measure.	An internal consistency measure was not used for the PEU items specifically. A split sample analysis was run in the data analysis stage in order to assess the stability of the Canonical weights. Results indicated that the weights and their signs were relatively stable.
Statistical analysis	Data was organized into 3 contingency tables (ordinal scales). Analysis used the Goodman-Kruskal Gamma, a nonparametric measure of association yielding values of $-1 \leq \gamma \leq 1$.	First stage: The 12 control variables were factor analyzed. A varimax rotated factor analysis yielded four factors. Second stage: The relationship between channel control and the environmental variables was

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	Leiffer and Huber (1977)	Etgar (1977)
Outcomes (accept/reject and p-values	Hypothesis 1 is supported ($p < .05$) subject to the qualification that the positive relationship appears to be influenced by boundary-spanning or information-processing activity that links the two variables of the hypothesis. Hypothesis 2 is supported ($p < .01$) without qualification. Hypothesis 3 is supported ($p < .01$) subject to the qualification that the positive relationship appears to be influenced by the organicness of the organization of which the individual is a member.	Hypothesis one was confirmed. Hypothesis two was rejected. Hypothesis three was rejected. Hypothesis four was confirmed. Overall results: "Channel leaders emerge in distributive channels which face threatening environments - ones where demand declines, competition increases, and uncertainty is high" (p. 73).

	Spekman and Stern (1979)	Hrebiniak and Snow (1980)
Research design	Cross-sectional survey (respondents were either personally administered or mailed questionnaires).	Cross-sectional survey (mail questionnaire and secondary data sources). Secondary sources included Standard and Poor's "Register of Corporations, Directors and Executives" (1976) and the Dun and Bradstreet "Million Dollar Directory" (1976).
Empirical setting	Study consisted of 20 firms from the greater Chicago area. Eleven different industries were represented, of which 70% served industrial markets.	Organizations were chosen by key informants in an attempt to maximize differences in industry characteristics related to uncertainty. Industries included the automotive, air transportation, plastics/synthetic resins, and semiconductors.
Sample characteristics/size/unit of analysis	322 usable questionnaires were aggregated into 52 buying groups, representative of 21 different commodities. Unit of analysis is thus the buying group and hypotheses were tested with N=52.	All respondents were top level managers with the responsibility for environmental surveillance. Total sample was 247 usable questionnaires from executives in 88 companies. Unit of analysis was the individual.
Constructs included	1) Buying group structure (centralization, participation in decision making, rules and procedures, division of labor). 2) Power (influence of the purchasing agent within the buying group). 3) Perceived environmental uncertainty.	Environmental uncertainty Environmental complexity Organizational structure Organizational influence
Proposed relationship between constructs (hypotheses)	H_1: "Firms operating under conditions of low environmental uncertainty will have more highly centralized buying groups than firms operating under conditions of higher environmental uncertainty" (p. 55). H_2: "Firms operating under conditions of low environmental uncertainty will have a more highly specified division of labor in their buying groups than firms operating under conditions of higher environmental uncertainty" (p. 55). H_3: "Firms operating under conditions of low environmental uncertainty will have a higher degree of rules and procedures in their buying groups than firms operating under conditions of higher environmental uncertainty" (p. 55). H_4: "Firms operating under conditions of low environmental uncertainty will have less participation in decision making in their buying groups than firms operating under conditions of higher environmental uncertainty" (p. 55) H_5: "Buying group members operating under conditions of higher environmental uncertainty will attribute greater influence to purchasing agents than those buying group members operating under conditions of low environmental uncertainty" (p. 55)	Research questions: 1) Is industry type associated with varying levels of different types of environmental uncertainty? 2) Is industry type associated with differences in environmental complexity? 3) Is industry type associated with differences in the influence of departments, units, or functional areas? 4) Is there a relationship between uncertainty and structure, and does this relationship vary by industry?

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	Spekman and Stern (1979)	Grabinlak and Snow (1980)
Theoretical definition of perceived environmental uncertainty (PEU)	No formal definition of PEU. Environmental uncertainty is viewed here as the outcome of certain types of environments. In this study, the "environment" is created as information which becomes available to the organization or which the organization seeks out. This is consistent with Weick (1969) and Dill (1962).	The degree of predictability of financial/capital markets, government regulation, actions of competitors, actions of suppliers, and general conditions facing the organization.
Measurement of PEU	Measured with a likert type scale. Eleven scale items were used with 6 response categories: (1) never, (2) seldom, (3) occasionally, (4) rather often, (5) nearly all the time, (6) does not apply. Example question: "With respect to your role in the buying task group, how often are you in doubt about how to obtain information necessary for making purchasing-related decisions?" (p. 91).	Construct was assessed by asking managers to rate various environmental elements or publics on their degree of certainty/predictability. A 33-item questionnaire was used.
Validity, reliability evidence	Coefficient alpha was used as an internal consistency measure for the PEU scale (α = .68). For early stages of basic research, Nunnally (1967) suggests that reliabilities of .50 to .60 suffice.	Items were subjected to factor analysis (varimax rotation). In all, 19 items loaded on 5 factors, and appropriate items were averaged for each respondent. "In the present sample, then, uncertainty appears to be a heterogeneous concept comprised of five independent dimensions or problem areas" (p. 754).
Statistical analysis	Bivariate regression	Research questions were assessed with analysis of variance and t-tests.
Outcomes (accept/reject and p-values)	Hypothesis 1 was not supported ($p = .262$). Hypothesis 2 was supported weakly ($p = .132$). Hypothesis 3 was not supported ($p = .547$). Hypothesis 4 was supported strongly ($p = .005$). Hypothesis 5 was tested in two parts: a) "Purchasing agent influence in purchasing-related decisions," (p. 59). This was supported ($p < .05$). b) "Purchasing agent influence in other than purchasing-related decisions" (p. 59). This was also supported ($p < .01$).	In response to the research questions: (1) (3) (4) Empirical evidence suggests an association between the variables in these three questions. (2) No support was found for the association between industry type and environmental complexity. General result: "These data suggest that the relationships between decentralization and standardization, on one hand, and uncertainty and complexity, on the other, are affected by industry and do not follow directly from a universal structural-contingency model." (p. 755).

	Brown, Lusch, and Keeing (1984)	Cheng (1984)
Research design	Cross-sectional survey (structured questionnaires administered during personal interviews).	Cross-sectional survey (personal interviews, on-site administration of questionnaires, and organizational records).
Empirical setting	Retail stores located in and around a large U.S. Eastern metropolitan area. Retailers carrying one of six product classes: beer, fast foods, shoes, tires, automobiles and lawn mowers were included in the sample.	Scientific research units in Belgium. Eighty-two percent of the research units were located in academic institutions, 112 were in industrial enterprises, and the remaining 32 were in governmental agencies. Five scientific fields were represented: engineering, physics, chemistry, biology, and the social sciences.
Sample characteristics/size/unit of analysis	1064 retailers, unit of analysis was the individual. This sample included perceptions from one side of the channel dyad, the retailer's.	Unit of analysis was the research unit. A research unit is a "group of scientists that has specific scientific-technical responsibilities, a distinct life-span, one recognized leader, and at least three core members" (p. 833). Analysis was based on 111 research units.
Constructs included	Dependence Environmental Uncertainty Power Conflict	Uncertainty Coordination Performance
Proposed relationships between constructs (hypothesized)	H_1: "The more dependent channel member R (retailer) is on channel member S (supplier), the higher the degree of uncertainty R faces" (p. 21). H_2: "Channel member R's perceptions of channel member S's power is directly related to the extent to which R is dependent on S" (p. 22). H_3: "The higher the degree of uncertainty that channel member R perceives, the more power he perceives channel member S to have over him" (p. 22). H_4: "The higher the degree of uncertainty that channel member R perceives, the higher the extent of conflict he will perceive to exist in the R-S channel relationship" (p. 23). H_5: "The greater the extent to which channel member R perceives channel member S to have power over him, the higher the degree of conflict R will perceive in the R-S channel" (p 24). H_6: "The more environment uncertainty R faces the more dependent R will become on a specific S" (p. 24).	H_1: "The higher the level of coordination, the higher the level of output performance (both in terms of output quality and quantity)" (p. 834). H_2: "The higher the level of uncertainty, the stronger the positive relationship between coordination and output performance (both in terms of output quality and quantity)" (p. 835).
Theoretical definition of perceived environmental uncertainty (PEU)	"Environmental uncertainty is seen as related to inventory-ordering decisions and thus is viewed as the variability channel members face in obtaining their required inputs or disposing of their resulting outputs. As Achrol et al. (1983) note, variability in supplies and fluctuations in demand can produce conflict among channel members. Thus, one aspect of uncertainty in the environment is variability in demand and supply and its effect on inventory levels" (p. 23).	"...the difference between the amount of knowledge required to perform the task and the amount of knowledge already possessed by the organization" (p. 834). If uncertainty is low: "...the additional knowledge that can potentially be brought about by good coordination is limited" (p. 834). If uncertainty is high: "...the additional knowledge that can potentially be brought about by good coor-

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	Brown, Lusch, and Koenig (1984)	Cheng (1984)
Theoretical definition of perceived environmental uncertainty (PEU)		"Hence, other things being equal, the effect of coordination on output performance will increase as the level of uncertainty increases" (p. 335).
Measurement of PEU	Retailers were asked to rate the extent of their agreement on a series of 12 items designed to reflect uncertainty. Responses to the items were made on seven-point Likert-type scales. These responses were then summed to form a unidimensional index, with higher scale values referring to perceptions of greater environmental uncertainty.	Construct was measured in terms of the paradigm development of a research unit's scientific field. Rationale: "...fields with developed paradigms exhibited greater consensus on methodology and important research questions than those in fields with undeveloped paradigms" (p. 337). This consensus provided a more certain or predictable environment. Units performing research in the social sciences were assigned to a high-uncertainty group, units performing research in biology were assigned to a medium-uncertainty group, and units performing research in physics, chemistry, and engineering were assigned to a low-uncertainty group.
Validity, reliability evidence	"Corrected item-total correlations for each item reflected the construct. Of the 12, five items were found not to be strongly enough correlated with the overall scale to be retained for further analysis. The remaining seven items were then used to calculate coefficients alpha and beta, which were found to be 0.939 to 0.487 respectively" (p. 27). These coefficients do not meet the guidelines set by Nunnally (1978) and Revelle (1979), 0.70 and 0.50 respectively. However, the authors decided that their coefficients were sufficiently close and the scale was deemed reliable and unidimensional.	"In an attempt to further explore the link between paradigm development and uncertainty, researchers have investigated the effects of paradigm development on academic turnover (Pfeffer and Moore, 1980), science policy control (Cheng and McKinley, 1983), and the editorial practices of journal organizations (Tools, 1974), among others. without exception, their findings were consistent with those of Lodahl and Gordon (1972) and together, provide a strong empirical base for the use of paradigm development as a measure of uncertainty in scientific fields" (p. 337).
Statistical analysis	Path analysis, in particular, the LISREL V procedure of Jöreskog and Sörbom (1981).	Hypothesis 1 was tested by regressing each of the two output (quantity and quality) variables on coordination. Hypothesis 2 was tested through two procedures: (1) subgroup analysis, and (2) moderated regression.
Outcome (accept/reject and p-values)	Hypothesis 1 was rejected. Hypothesis 2 cannot be rejected. Hypothesis 3 was rejected. Hypothesis 4 cannot be rejected. Hypothesis 5 cannot be rejected. Hypothesis 6 was rejected.	Empirical results provide strong support for hypothesis 1 ($p < .01$). Empirical results provide support for hypothesis 2 ($p < .05$) with respect to out-put quality, but not output quantity.

	Bourgeois (1985)
Research design	Cross-sectional survey (mail questionnaire, personal interviews, and secondary data sources). Secondary data sources included industry statistics and annual reports.
Empirical setting	20 nondiversified public corporations headquartered in the Pacific Northwest. Firms represented three broad categories of commercial activity: 12 service firms (retailers, wholesalers, and transporters), 4 high technology (R & D) firms, and 4 manufacturers.
Sample characteristics/size/unit of analysis	49 top managers or officers. Each perceptual measure was aggregated to yield a top management team score, one per firm. Thus, unit of analysis was the strategic level of total organizations (N=20).
Constructs included	1) Environmental volatility (dynamism; unpredictable discontinuities). 2) Economic performance (return on total assets, growth in net earnings, growth in earnings per share, return on sales, growth in capital averaged over the five years preceding data collection 1971-76). 3) Goal consensus. 4) Goals or objectives. 5) Perceived environmental uncertainty.
Proposed relationship between constructs (hypotheses)	H_1: "The greater the match between true environmental volatility and managers' perceived environmental uncertainty, the higher the economic performance of a firm" (p. 551). H_2: "The greater the homogeneity of perceived environmental uncertainty within a top management team, the greater the economic performance of a firm" (p. 551). H_3: "The greater the goal consensus within the top management team, the greater the economic performance of the firm" (p. 552). H_4: "The greater the positive association between environmental volatility and the number of strategic objectives, the higher the economic performance" (p. 552).
Theoretical definition of perceived environmental uncertainty (PEU)	Same as Duncan (1972)
Measurement of PEU	Modified Duncan's (1972) instrument. Used only one item to tap each of Duncan's three dimensions. PEU was calculated for each individual team member on each environmental component (customers, suppliers, competitors, socio-political, and technological). Then, member scores were pooled to obtain the mean and standard deviation on each component for the entire team. Finally, the mean of the five components served as the total perceived environmental uncertainty score for the top management team. The PEU diversity index was also computed by summing the five component standard deviations.
Validity, reliability evidence	None
Statistical analysis	Multivariate grouping techniques were used to construct principle components which would be used in subsequent analysis. Hypotheses were tested with zero-order and second-order partial correlations.
Outcomes (accept/reject and p-values)	Strong support for hypothesis 1. "Congruence between volatility and perceived environmental diversity explains over 10% of the variance in economic performance" (p. 560), $p < .01$. Hypotheses two and three were not confirmed. In both hypotheses there was a significant correlation among the constructs, however the relationship was opposite to what had been predicted. Hypothesis four was not confirmed.

APPENDIX D

Integrative Review of the Channel Conflict Literature[18]

[18] Since this literature is quite extensive, the following review provides only a sample from 1968 to 1985.

	Assael (1968)	Pruden (1969)
Research design	Subjectivist approach (content analysis and interviews).	Survey (mail questionnaires, interviews, and observations).
Empirical setting	Intensive search of trade publications and congressional hearings from 1947 to 1963. In-depth interviews with key officials of distributive trade associations. Study was limited to the role of national associations in resolving distributive issues of national importance.	A national producer-distributor of wood building materials, in four geographically scattered West Coast cities.
Sample characteristics/size/unit of analysis	Nine industries; unit of analysis was the organization (retailer, wholesaler, and manufacturer).	Data collected for the analysis of interorganizational conflict came from 44 field interviews and observations of sales calls. Data for the linkage and exchange variables came from a mail questionnaire (N=91). Unit of analysis for the conflict variable was the dyad, and for the linkage and exchange variables, the individual.
Constructs included	Manufacturer's requirements Absorption of distributive functions Role dissensus Manifest conflict	Interorganizational conflict (affective) Interorganizational linking process Exchange
Proposed relationship between constructs (hypotheses)	The study suggested three characteristic causes of most distributive conflicts: 1) Manufacturers requirements to maintain production and cover high fixed costs create pressures on dealers to increase sales volume. 2) Absorption by one party of distributive functions previously held by another. 3) Differing interpretations of the role of the wholesaler or retailer stem from differing economic objectives reflecting the trade status and financial resources of the disputants.	H_1: "As the level of interorganizational conflict increases, the level of interorganizational linking process increases" (p. 140). H_2: "As the level of interorganizational linking process increases" (p. 140).
Theoretical definition of channel conflict	Not specified or clear.	Not specified or clear.
Measurement of channel conflict	Dimension: Intensity. Conflicts which prompted political and legislative efforts by trade associations in attempting to resolve them. Conflicts which prompted self-resolution by the trade associations themselves.	Dimension: Intensity. Median scores of ratings on 12 5-point scales with conflict and cooperation as poles. Items pertained to information, structure and attitudes descriptive of channel relations.
Validity, reliability evidence	None cited	None cited
Statistical analysis	None	Contingency table analysis (chi-square was used for significance tests and Phi was used as a measure of association).
Outcomes	Descriptive details of hypothesized relationships resulting in manifest conflict were provided. Specifically absorption by one party of distributive functions previously held by another was found to be applicable to all nine industries.	The first hypothesis was not supported, the correlation was moderately negative instead of positive and $p < 0.40$. The second hypothesis was supported with $p < 0.10$.

	Rosenberg and Stern (1971)	Pearson (1973)
Research design	Survey (mail questionnaire and personal interviews).	Survey (mail questionnaire and archival data).
Empirical setting	A single channel which distributes a relatively expensive household durable good. Channel members included the manufacturer, the contractually linked independent distributers within a specific region, and their independent dealers.	A large grocery chain located in the Rocky Mountain region was used for three reasons: 1) A grocery chain is the lower distribution level of many varied channels of distribution, thus the researcher had the opportunity to study a wide variety of channel types in a relatively localized area. 2) Channel was set-up for centralized buying, thus primary channel participants were easy to identify. 3) The grocery chain possessed a well-maintained system to monitor the efficiency of its suppliers. This information was used as a secondary data source.
Sample characteristics/size/unit of analysis	The three classes of firms were regarded as categories and the respondents were grouped to represent the manufacturer (12), distributers (11), and dealers (87). Means were computed for all 32 issues per set (composite) and for the four issue categories (causes) for each category of respondents. This permitted comparisons of conflict between the organizations in each dyad.	55 channel segments, unit of analysis was the dyad.
Constructs included	Goal incompatibility Domain dissensus Perceptual differences Perceived conflict	Affective conflict Channel operational performance
Proposed relationship between constructs (hypotheses)	H_1: The level of perceived conflict varies directly with goal incompatibility. H_2: The level of perceived conflict varies directly with domain dissensus. H_3: The level of perceived conflict varies directly with differences in perceptions of reality.	Null hypothesis: "...there is no difference in the operational performance of channel segments characterized by conflict and those characterized by cooperation" (p. 41). H_1: "The channel segments characterized by conflict are operationally superior to those characterized by cooperation" (p. 42). H_2: "The channel segments characterized by cooperation are operationally superior to those characterized by conflict" (p. 42)
Theoretical definition of channel conflict	Not specified or clear.	"...refers to the struggle or clash between individuals or institutions generated by differences in positions, goals, or attitudes" (p. 39). Study is confined to vertical, inter-organizational conflict.
Measurement of channel conflict	Dimension: Intensity. The absolute distance between reciprocal channel members' perceptions of issues which are symptomatic of conflict; 32 items measured on Likert type scales.	Dimension: Intensity. Questionnaire consisted of 15 cooperative statements and 15 conflict statements. Each group of words sits at an extreme end of a conflict-cooperation continuum. A 10-point semal rating scale was used.

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	Rosenberg and Stern (1971)	Pearson (1973)
Validity, reliability evidence	Nomological validity: conflict significantly correlated with satisfaction Convergent validity: similar results for different dimensions of conflict (affective and manifest). No reliability estimation cited.	Author states that the questionnaire was "designed and validated," however no details were given. According to Pearson and Monoky (1976), consistency checks were carried out in Pearson's dissertation. This involved a 5-step refining process to arrive at the 30-item scale for affective conflict cited.
Statistical analysis	t-test was employed as a measure of significance. Correlation analysis was used to make appropriate comparisons.	Chi-square tests.
Outcomes (accept/reject and p-values)	Hypothesis 1 was partially supported, significance was found for dealer-manufacturer, and wholesaler-manufacturer dyads at .01 level. Hypothesis 2 was partially supported, significance was found for dealer-manufacturer, and wholesaler-dealer dyads at .01 and .05 levels respectively. Hypothesis 3 was partially supported, significance was found for dealer-wholesaler, and wholesaler-manufacturer dyads at .01 and .05 respectively.	Null hypothesis could not be rejected. Both alternative hypothesized relationships were found to be insignificant at .10 level.

	Stern, Sternthal, and Craig (1973)	Pearson and Monoky (1976)
Research design	Parasimulation: laboratory research was selected for two reasons: 1) "...it is unlikely at this time that field experimentation is feasible, given the nature of the topic to be studied and the types of units that would be included" (p. 171). 2) "...a more refined theoretical base must be established before field experiments are warranted" (p. 171).	Survey (personally administered questionnaire).
Empirical setting	Student groups acting as manufacturers and wholesalers of micro-scalpels within a simulated channel network.	Wholesale and retail outlets of a grocery chain in the Rocky Mountain region.
Sample characteristics/size/unit of analysis	282 subjects were recruited from both graduate (149 students) and undergraduate (133 students) classes in business administration at The Ohio State University. Unit of analysis was the individual participant.	34 channel segments, each consisting of a retail grocery buyer and the adjacent vendor. Unit of analysis was the dyad.
Constructs included	Affective conflict Goal incompatibility Superordinate goals Exchange of persons program	Affective conflict—cooperation Channel operational performance
Proposed relationship between constructs (hypotheses)	H_1: Affective conflict varies directly with goal incompatibility. H_2: Affective conflict varies inversely with the emergence of superordinate goals. H_3: Affective conflict varies inversely with exchange of personnel between firms.	Channel performance covaries with: H_1: Perceived conflict positively. H_2: Perceived conflict negatively. H_3: Perceived cooperation positively H_4: Perceived cooperation negatively
Theoretical definition of channel conflict	"...direct, personal, and opponent-centered behavior... behavior typified by mutual interference" (p. 149).	Channel conflict may be thought of as being vertical, interorganizational, intertype, and intrachannel. "Within these limits, conflict results from behavior that frustrates the goal attainment of others" (p. 140).
Measurement of channel conflict	Dimension: Intensity. Ratings on 23-item, 7-point semantic differentials containing adjectives characteristic of channel conflict and cooperation.	Dimension: Intensity. Respondents' ratings of applicability of 30 descriptive statements (15 conflict and 15 cooperation) to their channel using a 12-point graphic scale.
Validity, reliability evidence	Construct validity: subjects organizational perceptions were determined using a 23-item, 7-point Likert-type scale. These items measure whether "critical attributes of a complex formal organization were perceived by "firm" members. Convergent validity: Manipulation check of conflict induction by comparing perceptual ratings across conflict treatments. No reliability assessment cited.	Through a series of 5 steps in the validation process, an original list of 179 adjectives, descriptive in some way of channel relationships, was refined as to strength, consistency, and connotation down to 30 statements.
Statistical analysis	Analysis of variance	Factor analysis Discriminant analysis t-tests
Outcomes (accept/reject and p-values	Hypothesis 1 was supported. 22 items out of 23 were significant at .01 level. Hypothesis 2 was weakly supported. 1 out of 23 items were significant at .05 level. Hypothesis 3 was moderately supported. 4 of 23 items were significant at .05 level, 9 items were significant at .01 level.	Hypothesis 1 was not supported, only 1 of 10 factors had positive covariation. Hypothesis 2 was partially supported. Hypothesis 3 was generally supported. Hypothesis 4 was not supported, only 1 of 10 factors had negative covariation.

	Lusch (1976)	Hunger and Stern (1976)
Research design	Cross-sectional survey (mail questionnaire).	Parasimulation (laboratory research)
Empirical setting	A contractual marketing system for the distribution of automobiles was selected. "In this channel, the retailer (franchisee) and manufacturer (franchiser) are very interdependent, and therefore conflicts between them are likely to have an impact on channel performance" (p. [illegible]).	Student groups acting as manufacturers and wholesalers of microscalpels within a simulated channel network.
Sample characteristics/size/unit of analysis	Twelve hundred dealers were randomly selected from a mailing list compiled by R. L. Polk. Usable questionnaires were received from 49.4% of the dealers. Specific N varied from 21-51 depending upon the dealer group. Unit of analysis was the [illegible].	108 naive male volunteers were used as subjects, all were undergraduate and approximately 35% were students in business administration. Unit of analysis was the individual participant.
Constructs included	Manifest conflict Dealer operating performance	Goal incompatibility Achieved superordinate goals Non-achieved superordinate goals Perceived conflict Affective conflict Manifest conflict
Proposed relationships between constructs (hypotheses)	H_1: "The operating performance of the franchise will increase as the franchisee's conflict with the franchiser increases" (p. 7). H_2: "The operating performance of the franchisee will decrease as the franchisee's conflict with the franchiser increases" (p. 7). H_3: "The operating performance of the franchisee will increase as the franchisee's conflict with the franchiser increases but only up to a point, after which the franchisees operating performance will decrease" (p. 7).	H_1: Goal incompatibility will result in attitudinal bias against the out-group, and positive bias for the in-group. H_2: "In the course of frustrating relations between two groups, behavioral indications of conflict will be demonstrated" (p. 593). H_3: The introduction of a superordinate goal will cause both groups to cooperate in working toward achieving a common goal, even though the underlying cause of the frustration remains unchanged. H_2: Achieved superordinate goal will reduce subsequent perceived conflict, despite unresolved original issues. H_3: Achieved superordinate goal will reduce more conflict than non-achieved superordinate goal condition. H_4: Conflict after non-achieved superordinate goal will exceed the control group conflict.
Theoretical definition of channel conflict	Not specified or clear.	"...conceived as a process which begins when one party perceives that some of its concerns have been or are about to be frustrated by another party. This approach views conflict as an episode containing a series of events. The frustration (blocking) of a party's goal-directed activity leads to that party's conceptualization of the situation as one of conflict" (p. 591).
Measurement of channel conflict	Dimension: Frequency. Frequency of disagreements between the manufacturers and the dealers over 20 business issues as perceived by dealers.	Dimension: Intensity and frequency. Perceived conflict: Two Likert-type statements were included in the posttest questionnaire. Affective conflict: 17-item Likert scale designed to measure attitudes toward both the in-group and the out-group. Manifest conflict: Content analysis of inter-firm memos using Sales' techniques.

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	Lusch (1976)	Hunger and Stern (1976)
Validity, reliability evidence	Content validity: authors used open-ended interviews with automobile dealers to identify appropriate elements coming from the domain of conflict. Reliability of the conflict scale as estimated by coefficient alpha was .49.	Reliability: Affective conflict scale was found to have a Spearman Rank Correlation Coefficient of .81 corrected for ties. Item analysis was also conducted on each of the 17 traits to insure that they were differentiating.
Statistical analysis	Regression analysis was used in a best-of-fit context: If Y = operating performance X = level of conflict H_0 would be supported if $Y = B_0 - B_1 X$ is found to be significant. H_2 would be supported if $Y = B_0 - B_1 X$ is found to be significant. H_3 would be supported if $Y = B_0 - B_1 X - B_2 X^2$ is found to be significant.	Hypothesis 1: Wilcoxon matched-pairs Hypothesis 2: Chi-square Other hypotheses: One-way analysis of variance.
Outcome (accept/reject and p-values	H_0 and H_3 were not supported. H_2 would be supported for some dealers (p-values ranged from .10-.003 for those dealers that supported the negative relationship between conflict and performance).	Hypothesis 1 was partially supported: In-group bias at .05 level was insignificant; 14 of 17 indicators of outgroup bias were significant at .05 level. Hypothesis 2 was supported at .06 and .01 level. Hypothesis 3 was supported (p-value not cited). Hypothesis 4 was not supported at .05 level. Hypothesis 5 was partially supported: ANOVA F was significant at .05 level, but direct t-tests were not significant. Hypothesis 6 was not supported at .05 level.

	Brown, Lusch, and Koenig (1984)	Dilts (1985)
Research design	Cross-sectional survey (structured questionnaires administered during personal interviews).	Cross-sectional survey (mail questionnaire).
Empirical setting	Retail stores located in and around a large U.S. Eastern metropolitan area. Retailers carrying one of six product classes, beer, fast foods, shoes, tires, automobiles, and lawn mowers were included in the sample.	Suppliers and single unit retailers in alternative channel types. All were involved in the marketing of audio and video home electronic products in the upper mid-west.
Sample characteristics/size/unit of analysis	N=44 retailers, unit of analysis was the individual. This sample included perceptions from one side of the channel dyad, the retailers.	78 retailers, stratified by channel types. Unit of analysis was the individual retailer (owner and/or manager).
Constructs included	Dependence Environmental uncertainty Power Manifest conflict	Manifest conflict Type of channel structure (a) Business format franchise (b) Exclusive dealers (c) Conventional channel
Proposed relationship between constructs (hypotheses)	H_1: The more dependent the retailer is on the supplier, the more uncertainty the retailer faces. H_2: The retailer's perception of the supplier's power, is related to the extent that the retailer is dependent on the supplier. H_3: The higher the degree of uncertainty the retailer perceives, the more power he perceives the supplier has over him. H_4: "The higher the degree of uncertainty that channel member R perceives, the higher the extent of conflict he will perceive to exist in the R-S channel relationship" (p. 23). H_5: "The greater the extent to which channel member R perceives channel member S to have power over him, the higher the degree of conflict R will perceive in the R-S channel" (p. 24). H_6: The more uncertainty the retailer faces, the more dependent the retailer will become on their supplier.	H_1: "The magnitude of aggregate, intrachannel conflict experienced by retailers will differ by type of channel structure. Channel members in conventional channel arrangements will tend to experience a high level of conflict relative to members of alternative structures" (p.). H_2: "The magnitude of conflict that is experienced on individual policies (issues) will differ among channel types" (p.).
Theoretical definition of channel conflict	Not specified or clear	"...a form of opposition that develops out of a situation of interdependence in which one channel member is perceived as interfering with the aims of another. As a process, conflict consists of a series of episodes that build upon one another, evolving from a latent state of incompatibility to its outcome" (p.).
Measurement of channel conflict	Dimension: frequency. Each retailer was asked to rate, on 7-point scales (1-very infrequently, 7-very frequently), the frequency of disagreements between the retailer and his major supplier over each of the 16 issues. These responses were summed to form a unidimensional index of manifest channel conflict.	Dimension: frequency and intensity. Employing an 11-point scale, retailers were requested to estimate the percentage of their discussions regarding 19 issues in which disagreements were expressed. The intensity of disagreements experienced on each issue was rated on a 7-point scale.
Validity, reliability evidence	Reliability: Manifest conflict scale was found to have a coefficient alpha and beta of .88 and .73 respectively. "Thus, these results strongly indicate that conflict is unidimensional and reliable" (p. 28).	Criterion validity: all 19 issues specifying the domain of conflict correlated ($.10 \geq r \geq .35$) with a single-item, 7-point measure of overall conflict. Convergent validity: This evidence was provided by correlating the multi-item construct with the single-item measure of overall conflict. Nomological validity: The multi-item index was significantly related in the expected directions with a single-item, 7-point measure of tension between channel members ($r=.31$, $p=.0001$) and satisfaction with

Continued

	Brown, Lusch, and Koenig (1984)	Dilcs (1985)
Validity, reliability evidence		Reliability: The internal consistency of the multi-item measure was assessed by coefficient alpha, which for the 19 item index was .90.
Statistical analysis	Path analysis, in particular, the LISREL V procedure of Jöreskog and Sörbom (1981).	One-way analysis of variance. One-way multivariate analysis of variance.
Outcomes (accept/reject and p-values)	Hypothesis 1 was rejected. Hypothesis 2 could not be rejected. Hypothesis 3 was rejected. Hypothesis 4 could not be rejected. Hypothesis 5 could not be rejected. Hypothesis 6 was rejected.	Hypothesis 1 was not supported (F=1.53; p=.22). Hypothesis 2 was supported at the .10 level (F=1.41; p=.08).

APPENDIX E

Integrative Review of the Dyadic Negotiation Simulation Literature

Green, Gross, and Robinson (1967)

Type of experimental simulation

Mixed-motive bargaining game; "In bargaining games each participant can gain by agreeing on an action whose outcome is mutually preferred to other possible outcomes in the absence of agreement" (374).

Experimental Design

Quasi-Latin square design.

Type of Dyad

Two individual players.

Background of Subjects

The participants were 24 male Wharton School of Finance and Commerce graduate students.

Experimental Task

In order to receive a monetary payoff, members of the bargaining dyad had to agree on how a joint payoff should be split.

Organizational Context

Duopoly

Exchange of Information

Written messages with the experimenters acting as messengers, the identity of each subject's opponent was not given.

Uncertainty

Low vertical environmental uncertainty; "...each player knew what the other player would be paid in the absence of agreement, and furthermore, the total amount negotiable" (p. 375).

Cummings and Harnett (1969)

Type of Experimental Simulation

Simulated bilateral monopoly utilizing a three-position bargaining chain.

Experimental Design

Six dependent measures were taken on four conditions. Results were then compared (t-tests).

Type of Dyad

Triadic bargaining paradigm: "A" bargained with "B" and with "C" (two dyads), with communication permitted between "B" and "C" under one of the experimental conditions. Bargainers "B" and "C" were symmetrical to one another with respect to their relationship with "A".

Background of Subjects

Participants were 138 male, undergraduate business school students.

Experimental Task

The task consisted of Bargainer "A" negotiating with Bargainers "B" and "C" a single price-quantity agreement. "The structure of the payoff matrices was designed to present a conflict of interest between Bargainer 'A' and Bargainers 'B' and 'C'. In general, Bargainer 'A' preferred low prices while 'B' and 'C' preferred high prices" (p. 487).

Organizational Context

Symmetric bargaining system: "Symmetry is defined in this study through establishing Bargainers 'B' and 'C' as equals in terms of information and communication availability as well as in terms of availability as well as in terms of availability of the terminal bid in a series of offers and counter offers with Bargainer 'A'; that is, the symmetry relates to the relation between Bargainers 'B' and 'C'" (p. 486).

Exchange of Information

Written messages with the experimenters acting as messengers, the identity of each subjects' opponent was not given. Under one experimental

condition, "B" and "C" were allowed to exchange information freely, under another, exchange of information was restricted.

Uncertainty

Under condition 1, "A" was given complete information (low vertical environmental uncertainty), "B" and "C" were furnished with only their own profit tables (high vertical environmental uncertainty).

Under condition 2, all three members of the bargaining simulation were furnished with complete information (they each had a copy of each other's bargaining tables).

<note: "information" was defined as the amount of knowledge a bargainer has about the reward structure of his opponents (p. 486). "Uncertainty" was not defined as an independent variable and conflict/cooperation were not used as dependent variables.>

Walker (1971)

Type of Experimental Simulation

Mixed-motive bargaining game; "A triadic structure was employed with a monopolist manufacturer negotiating simultaneously with two competing retailers" (p. 195).

Experimental Design

Paired difference tests (t-tests)

Type of Dyad

One individual "manufacturer" versus one or two individual "retailers."

Background of Subjects

The participants were 72 undergraduate business students.

Experimental Task

Each bargainer was given a profit matrix showing every possible combination of price and quantity (about 90 combinations). Matrix provided a range of possible agreements which were profitable for both members of the dyad, however it was designed so that each bargainer and different preferences.

Organizational Context

Monopolistic manufacturer negotiating simultaneously with two competing retailers. Unbalanced power situation, retailers were not allowed to communicate in order to inhibit coalition formation.

Exchange of Information

Written communication; identities were not given; communication was restricted to the selection of standard messages, "these messages reflected two major content categories: (1) demanding - threatening, and (2) cooperative."

Uncertainty

High vertical environmental uncertainty; "all bargainers were given incomplete information concerning the economic parameters of the situation" (p. 195).

Mathews, Wilson, and Monoky (1972)

Type of Experimental Simulation

Two-person, non-zero-sum, mixed motive "prisoner's dilemma" game. Here a person attempts to attain some goal(s) in which success is dependent upon his/her strategy and that of the other individual.

Experimental Design

Conflict/Cooperation was crossed with similarity/dissimilarity, producing a 2 x 2 table of frequency data (chi-square tests).

Type of Dyad

Individual buyers and sellers.

Background of Subjects

Participants were 300 undergraduate business majors recruited from classes in basic marketing.

Experimental Task

Subjects were instructed to maximize payoffs in a mixed motive situation, negotiations were based on price-quantity matrices.

Organizational Context

Buyer-seller dyad: "The buyer's only source of supply was the seller currently calling on him, and purchase was not deferrable" (p. 103).

Exchange of Information

Written communications

Uncertainty

High vertical environmental uncertainty; effect of other party's decision on own payoff was not made explicit.

Stern, Sternthal, Craig (1973)

Type of Experimental Simulation

Mixed-motive parasimulation; "the design employed falls somewhere between a straight forward simulation and a game (e.g., prisoner's dilemma)" (p. 171).

Experimental Design

Means of 3 groups were compared across 23 items measuring conflict and cooperation (ANOVA).

Type of Dyad

Salesman versus purchasing agent, each representing a small group which was designed to be analogous to a firm.

Background of Subjects

The participants were 282 subjects recruited from graduate and undergraduate classes in business administration at the Ohio State University.

Experimental Task

Salesman and purchasing agent were to bargain for a limited time period over a 6 x 5 price/quantity matrix. Naturally profitable points varied for the low versus high conflict inductions.

Organizational Context

"One group was randomly assigned to assume the role of Surgical Manufacturing Company, a fictitious producer of microscalpels and other hospital instruments, while the other group was to represent Wholesale Hospital Supply Company, Surgical's sole distributor in a defined geographical territory" (p. 171).

"Each firm was required to allocate group members among three available organizational positions (marketing manager, marketing analyst, and salesman or purchasing agent)" (p. 171).

Exchange of Information

Written communication, groups were assigned to separate cubicles, experimenter served as messenger.

Uncertainty

High vertical perceived environmental uncertainty; "information was to be considered 'private and proprietary.' No information concerning the other firms profit position was made available" (p. 172).

(note: the article hypothesizes that exchange-of-persons programs, as uncertainty absorbing mechanisms may promote understanding and therefore decrease conflict. Thus, the exchange-of-persons induction, could be considered a low vertical perceived environmental uncertainty induction).

Pruitt and Lewis (1975)

Type of Experimental Simulation

Simulated, mixed-motive negotiation task.

Experimental Design

Experiment I: 2 x 2 x 2 factorial between-subjects design.

Experiment II: 2 x 2 factorial between-subjects design.

Type of Dyad

Individual buyers and sellers.

Background of Subjects

Participants were psychology students (undergraduates) from the State University of New York at Buffalo.

Experimental Task

Buyer and seller negotiated to agree on prices for three commodities. "The buyer could gain his highest profits on iron and the seller on coal, so that mutually profitable trade-offs could be negotiated if the buyer made heavy concessions on coal and the seller on iron" (p. 623).

Organizational Context

General bilateral negotiations, not necessarily assumed to be analogous to an industrial context.

Exchange of Information

Face-to-face, verbal communications; under one condition, shared information had to be truthful; under another condition, shared information was free, thus subjects could bluff with respect to their profit sheet.

Uncertainty

Level of vertical environmental uncertainty cannot be inferred since communication was not restricted. Other party's payoff table was unknown.

Dwyer and Walker (1981)

Type of Experimental Simulation

Mixed-motive bargaining game; A bilateral and a triadic structure was employed with a monopolistic manufacturer negotiating with one or two retailers.

Experimental Design

Within-subject design; paired difference tests (t-tests).

Type of Dyad

Two bargaining groups: dyadic (manufacturer-retailer), and triadic (manufacturer--two retailers).

Background of Subjects

Participants were 36 male MBA students.

Experimental Task

Payoff tables meeting the requirements of a mixed motive game. Each bargainers payoff table showed his profit for every possible combination of price, quantity, and functions (500 combinations).

Organizational Context

Condition I: Symmetrical distribution of power, bilateral monopolistic structure involving one manufacturer and one retailer.

Condition II: Asymmetrical distribution of power, triadic structure involving a monopolistic manufacturer negotiating with two competing retailers.

Exchange of Information

Written communication; identities were not given; communication was restricted to the selection of standard messages, these messages reflected three major content categories: (1) demanding-threatening, (2) cooperative, (3) submissive-yielding.

Uncertainty

Low vertical environmental uncertainty, "...in order to control the effects of information, all bargainers were given copies of their partner's payoff tables as well as their own" (p. 107).

Schurr and Ozanne (1984)

Type of Experimental Simulation

Mixed-motive, computerized bargaining game (programmed opponent).

Experimental Design

Fully crossed 2 x 2 factorial between-subjects design.

Type of Dyad

Subjects, in the role of industrial buyers, bargained with two programmed opponents: a current supplier and a new vendor.

Background of Subjects

Participants were 103 MBA students.

Experimental Task

Bargaining task utilized mixed-motive payoff tables; buyers made concessions by gradually offering to pay higher prices; sellers, in turn, made concessions by gradually offering to accept lower prices.

Organizational Context

"The subjects played the role of newly assigned purchasing agents for custom-designed, high-tech plugs, sockets, and cable, the negotiated 'items.' Only two vendors were qualified to supply these items: a current supplier and a new vendor. The plugs, sockets, and cable had to be purchased from the same vendor, with price for each item being the negotiable issues. Both suppliers were described as having alternative buyers for their products" (p. 8).

Exchange of Information

"Subjects communicated with both suppliers via an interactive telecommunications system programmed on an Apple microcomputer. subjects could select messages and prices, send proposals, and receive replies using this system" (p. 8).

Uncertainty

High vertical perceived environmental uncertainty: "Buyers did not see the seller's tables at any time."

Eliashberg, et al. (1986)

Type of Experimental Simulation

marketing channel mixed-motive negotiation simulation; "Channels of distribution conform to the common 'image' of the generalized bargaining problem addressed by developers of the theories, that is bargainers need to reach some mutually acceptable settlement but also wish to settle on terms favorable to themselves" (p. 101).

Experimental Design

2 x 2 fully crossed factorial, between-subjects design.

Type of Dyad

"In each session, one person was assigned randomly to the role of 'sales manager' for a manufacturer of ski caps and the other to the role of 'buyer' for a retailing firm" (p. 103).

Background of Subjects

56 executives and 140 MBA students participated in the study. Executives were paired with executives and students with students.

Experimental Task

Subjects were told they would negotiate the price to be paid for the ski caps and the quantity to be shipped using a 9 x 5 price-quantity matrix.

Organizational Context

"Both the retailing and the manufacturing firms were said to be major companies. Both were described as having been in business for a number of years and being roughly equal in size, financial performance, stability, and profitability. This description was necessary to make certain the participants did not attribute unequal situational power to the firms at the outset" (p. 103).

Exchange of Information

Face-to-face, verbal communication, "communication between the parties was not restricted during the course of negotiation" (p. 104).

Uncertainty

Full information condition: both matrices were given to each dyad member (low vertical perceived environmental uncertainty).

Partial information condition: the matrices were private (high vertical perceived environmental uncertainty).

Note: Since the authors did not restrict information exchange during the actual negotiations, it is not clear what level of vertical uncertainty existed during the actual negotiations.

McAlister, Bazerman, and Fader (1986)

Type of Experimental Simulation

Marketing channel mixed-motive negotiation simulation; emphasizing competition in a free market between buyers and sellers.

Experimental Design

Four negotiator conditions (buyer vs. seller, constrained vs. unconstrained) were nested within each of the four market conditions producing 16 possible cell assignments.

Type of Dyad

Individual buyers (retail stores) negotiated with individual sellers (manufacturers of refrigerators).

Background of Subjects

Participants were 120 MIT Sloan School master's students.

Experimental Task

Subjects were instructed to maximize payoffs in a mixed motive situation, negotiations were based on a profit schedule showing nine levels for each of three factors. Levels were labeled A through I, subjects could propose only three-letter deals.

Organizational Context

Free market negotiations: "The logistics of the market required buyers and sellers to make contact at the front of the classroom and then proceed to the 'bargaining' area to engage in the actual negotiation. Ocean agreement was reached, a 'transaction form' was completed, which identified the buyer and seller and the delivery, discount, and financing terms agreed upon... after jointly turning in the form, the buyer and seller were free to return to the 'meeting' area to make contact for another transaction. This cyclical process continued until the end of the 30-minute market session" (p. 231).

Exchange of Information

Face-to-face, verbal communication.

Uncertainty

Negotiations began with high vertical environmental uncertainty; however, authors did not restrict information exchange during the actual negotiations, thus it is not clear what level of vertical uncertainty existed during the negotiations.

APPENDIX F

Buyer's and Seller's Price-Quantity Matrices

BUYER'S COST TABLE

		PRICE				
		$ 1	$ 2	$ 3	$ 4	$ 5
Quantity Purchased (micro-scalpels)	10 units	$100	$150	$200	$250	$300
	30 units	$150	$200	$250	$300	$350
	50 units	$190	$240	$290	$340	$390
	70 units	$220	$270	$320	$370	$420
	90 units	$240	$290	$340	$390	$440

Recall:

As a buyer for the Wholesale Hospital Supply Company, you will be rewarded only if you are able to lower the costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

SELLER'S COST TABLE

		PRICE				
		$ 1	$ 2	$ 3	$ 4	$ 5
Quantity Sold (micro-scalpels)	10 units	$440	$390	$340	$290	$240
	30 units	$420	$370	$320	$270	$220
	50 units	$390	$340	$290	$240	$190
	70 units	$350	$300	$250	$200	$150
	90 units	$300	$250	$200	$150	$100

Recall:

As a seller for the Surgical Manufacturing Company, you will be rewarded only if you are able to lower the costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

APPENDIX G

Operational Definitions of Categories From Angelmar and Stern's (1978) Content Analytic System

1. Promise - A statement in which the source indicates his intention to provide the target with a reinforcing consequence which source anticipates target will evaluate as pleasant, positive, or rewarding.

2. Threat - Same as promise, except that the reinforcing consequences are thought to be noxious, unpleasant, or punishing.

3. Recommendation - A statement in which the source predicts that a pleasant environmental consequence will occur to the target. Its occurrence is not under the source's control.

4. Warning - Same as recommendation, except that the consequences are thought to be unpleasant.

5. Reward - A statement by the source that is thought to create pleasant consequences for the target.

6. Punishment - Same as reward, except that the consequences are thought to be unpleasant.

7. Positive normative appeal - A statement in which the source indicates that the target's past, present, or future behavior was or will be in conformity with social norms.

8. Negative normative appeal - Same as positive normative appeal, except that the target's behavior is in violation of social norms.

9. Commitment - A statement by the source to the effect that its future bids will not go below or above a certain level.

10. Self-Disclosure - A statement in which the source reveals information about itself.

11. Question - A statement in which the source asks the target to reveal information about itself.

12. Command - A statement in which the source suggests that the target perform a certain behavior.

13. Offer - A statement which indicates a preferred price and quantity.

APPENDIX H

List of Instruments Needed For The Dyadic Negotiation Simulation

TABLE OF CONTENTS:

THE R. B. PAMPLIN COLLEGE OF BUSINESS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Department of Marketing

Blacksburg, Virginia 24061

Dear Participant:

Thank you for volunteering to participate in this research. Since you are currently enrolled in an upper division business course, the topic of this study will be somewhat familiar to you. We hope you will find it to be an interesting and relevant experience.

The purpose of this research is to investigate how social and economic factors affect the bargaining process. This will be done by constructing a simulation in which participants negotiate over the purchase or sale of microscalpels. This activity will take place in a specific social context, as outlined by a scenario.

During the simulation, it is important that you make decisions using only the information that is provided. Also, it is important that you play your role by acting in a manner that fits with the objectives for that role.

Keep in mind that you will not be evaluated in any way during the simulation, there are no right or wrong answers. Your responses will be kept strictly confidential.

In conclusion, it is necessary that you understand every aspect of the simulation. Please concentrate, listen carefully, and study all written materials along the way. If you have any questions, please ask them at anytime.

Jeff B. Murray

A Bargaining Simulation: Instructions To The Buyer

For the next hour and a half you will be participating in a bargaining simulation. During the simulation you will be asked to take the following role: a buyer of microscalpels representing the Wholesale Hospital Supply Company. A "microscalpel" is a small, light, very sharp, straight knife used by surgeons. It will be your job to buy microscalpels from a seller representing the Surgical Manufacturing Company. Eventually, the microscalpels your firm buys will be distributed to hospitals and retailers in your geographic territory. The Wholesale Hospital Supply Company and the Surgical Manufacturing Company have both been in business for a number of years, are stable, and reasonably profitable. Both firms are equal in size, performance, and power (e.g., number of employees, stock price, return on investment, social influence etc.).

For the purposes of the simulation, it is important that you take your assigned role seriously and that you act in a manner that fits with the position you hold. In other words, assume that the results you achieve will have significant effects on your firm's profitability for this month.

This bargaining simulation will consist of several short phases. In order to acquaint you with the bargaining process, the first phase involves a short "warm-up" negotiation using a price--quantity table similar to the one shown below.

Buyer's Costs

		Price		
		$1	$2	$3
	10	$30	$40	$50
Quantity	20	$40	$50	$60
	30	$50	$60	$70

Note that the numbers inside the table represent "costs" accrued at that particular price and quantity. For example, if you negotiate to purchase 20 microscalpels at $2 apiece, total transaction costs (including inventory-carrying, sales/force management, transportation, etc.) will be $50. Notice that as price increases, costs tend to increase since it will be harder for you to sell a more expensive product. Also, as quantity purchased increases, costs tend to increase because of inventory-carrying costs. As a buyer for the Wholesale Hospital Supply Company, you will be rewarded only if you are able to lower the costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

While bargaining, please use only the price and quantity options provided in your table. All communication during the simulation will be written (using the memo pad provided). As the buyer, you will begin the bargaining process by making an offer of a price you would like to pay and a quantity you would like to receive. The seller will respond to your offer by accepting it or by making a counter-offer. Feel free to communicate openly--write whatever you feel is appropriate to your bargaining partner. The warm-up phase will continue until agreement is reached or the ten minute time limit has elapsed. Keep in mind that you don't have to reach agreement.

The second phase of the simulation will be similar to the warm-up. However, in this phase you will work with a more elaborate price--quantity table, as well as a scenario clarifying the social context. The third and final phase of the simulation will involve asking you about some of your perceptions of the bargaining process.

After you have completed and understand these instructions, please wait for the experimenter to initiate the warm-up session. We are looking forward to your participation in this simulation. We hope you will find it an exciting and interesting experience.

A Bargaining Simulation: Instructions To The Seller

For the next hour and half you will be participating in a bargaining simulation. During the simulation you will be asked to take the following role: a seller of microscalpels representing the Surgical Manufacturing Company. A "microscalpel" is a small, light, very sharp, straight knife used by surgeons. It will be your job to sell microscalpels to a buyer representing the Wholesale Hospital Supply Company. Eventually, the microscalpels your firm sells will be distributed to hospitals and retailers in your geographic territory. The Surgical Manufacturing Company and the Wholesale Hospital Supply Company have both been in business for a number of years, are stable, and reasonably profitable. Both firms are equal in size, performance, and power (e.g., number of employees, stock price, return on investment, social influence, etc.).

For the purposes of the simulation, it is important that you take your assigned role seriously and that you act in a manner that fits with the position you hold. In other words, assume that the results you achieve will have significant effects on your firm's profitability for this month.

This bargaining simulation will consist of several short phases. In order to acquaint you with the bargaining process, the first phase involves a short "warm-up" negotiation using a price--quantity table similar to the one shown below.

Seller's Costs

		Price		
		$1	$2	$3
	10	$70	$60	$50
Quantity	20	$60	$50	$40
	30	$50	$40	$30

Note that the numbers inside the table represent "costs" accrued at that particular price and quantity. For example, if you negotiate to sell 20 microscalpels at $2 apiece, total transaction costs (including inventory-carrying, sales force management, transportation, etc.) will be $50. Notice that as price increases, costs tend to decrease, this assumes the normal upwardly sloping supply curve. Also, as quantity sold increases, costs tend to decrease because of lower inventory-carrying costs. As a seller for the Surgical Manufacturing Company, you will be rewarded only if you are able to lower the costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

While bargaining, please use only the price and quantity options provided in your table. All communication during the simulation will be written (using the memo pad provided). As the seller, you will respond to the buyer's first offer by accepting it, or by making a counter-offer of a price you would like to receive and a quantity you would like to sell. If you make a counter-offer, the buyer will respond by accepting it or by making another counter-offer. Feel free to communicate openly--write whatever you feel is appropriate to your bargaining partner. The warm-up phase will continue until agreement is reached or the ten minute time limit has elapsed. Keep in mind that you don't have to reach agreement.

The second phase of the simulation will be similar to the warm-up. However in this phase you will work with a more elaborate price--quantity table, as well as a scenario clarifying the social context. The third and final phase of the simulation will involve asking you about some of your perceptions of the bargaining process.

After you have completed and understand these instructions, please wait for the experimenter to initiate the warm-up session. We are looking forward to your participation in this simulation. We hope you will find it an exciting and interesting experience.

Buyer's Cost Table

		Price			
		$1	$2	$3	$4
Quantity Purchased (micro-scalpels)	10	$30	$40	$50	$60
	30	$40	$50	$60	$70
	50	$50	$60	$70	$80
	70	$60	$70	$80	$90

Recall:

As a buyer for the Wholesale Hospital Supply Company, you will be rewarded only if you are able to lower costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

Seller's Cost Table

		Price			
		$1	$2	$3	$4
	10	$90	$80	$70	$60
Quantity Sold (micro-scalpels)	30	$80	$70	$60	$50
	50	$70	$60	$50	$40
	70	$60	$50	$40	$30

Recall:

As a seller for the Surgical Manufacturing Company, you will be rewarded only if you are able to lower the costs associated with the negotiated transaction. Thus your only motivation during bargaining is to lower costs for yourself.

PAGE ____

DYAD NUMBER ____

BUYER'S MESSAGE

SELLER'S MESSAGE

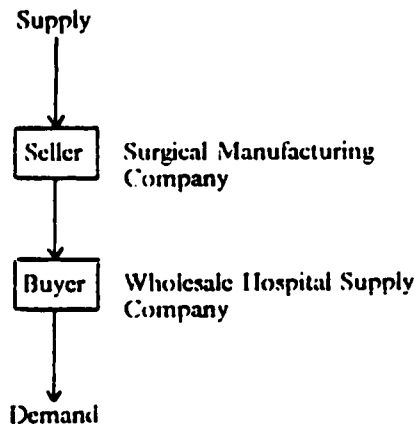
BUYER'S MESSAGE

SELLER'S MESSAGE

A Bargaining Simulation: Further Instructions

You have now completed the warm-up exercise and should understand how to bargain using the price--quantity tables. It is time to move on to the second phase of the simulation.

In this phase you will receive a more elaborate price--quantity table. Also, you will be asked to read a short scenario defining the social and economic context in which bargaining will take place. The scenarios describe social and economic conditions which need to be taken into account while bargaining. Just as in an actual decision making situation, there will not be a clear and obvious response to the information that is contained in the scenario. It is possible however to act in a way which will minimize any potential problems the social and economic environments (scenario) may pose. Thus, please carefully consider and use the information contained in the scenario to develop an appropriate strategy before bargaining. As you read and analyze the scenario, it may be helpful to refer to the following diagram:



You will be given 15 minutes to study carefully the scenario as well as your new price--quantity table. After this 15 minute time period, bargaining will begin.

During this phase you will be assigned the same role (buyer or seller) that you had in the warm-up exercise. All communication will again be written and the buyer will start the negotiation by making an offer of a price and quantity. The seller may respond to the buyer's offer by accepting it, or by making a counter offer. Again, we would like to remind you to feel welcome to communicate freely and openly--write whatever you feel is appropriate to your bargaining partner.

Bargaining will continue until agreement is reached *or* the 20 minute time limit has elapsed. Once again, your only motivation is to lower costs for yourself. However, this time you need to do this in a social and economic context, as outlined by the scenario. After you have finished reading and understand these instructions, wait for the experimenter to hand out the scenario and the new price--quantity tables. If you have a question, please ask the experimenter at this time.

WHS Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Wholesale Hospital Supply Company is to distribute microscalpels to hospitals and retailers in your geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other wholesaler--manufacturer combinations.

If you are unable to reach an agreement with the Surgical Manufacturing Company, your company will not have microscalpels to distribute. In this situation, your customers would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Surgical Manufacturing Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would loose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$304
B	$306
C	$303
D	$305
E	$301
F	$307
G	$302
H	$309
I	$308

Economic Factors:

There are a number of economic factors which may influence the process of buying microscalpels from manufacturers. Knowing that the units bought will eventually need to be re-sold to hospitals and retailers, one of the most important economic factors is customer demand.

Your prediction regarding demand should be considered carefully when bargaining with the seller for an appropriate price--quantity combination. In order to help you forecast the level of demand before bargaining, your firm provides you with the historical record. The data below indicates the quantity demanded for each month, so far this year. Keep in mind that your company is able to negotiate with the Surgical Manufacturing Company only 1 time per month. The amount that you bargain to buy from the seller today should be based on the amount that you predict will be demanded in December. Note that your current inventory is 0 units.

Quantity Demanded per Month:

Month	***Number of Units***
Jan.	89
Feb.	91
March	91
April	89
May	92
June	87
July	88
Aug.	93
Sept.	92
Oct.	88
Nov.	90
Dec.	?

SM Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Surgical Manufacturing Company is to sell microscalpels to wholesalers representing a certain geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other manufacturer--wholesaler combinations.

If you are unable to reach an agreement with the Wholesale Hospital Supply Company, this wholesaler will not have any microscalpels to distribute. In this situation, the final customers (hospitals and retailers) would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Wholesale Hospital Supply Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). You will also need to pay the cost of having extra microscalpels in stock. In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would lose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$304
B	$306
C	$303
D	$305
E	$301
F	$307
G	$302
H	$309
I	$308

Economic Factors

There are a number of economic factors which may influence the process of selling microscalpels to wholesalers. One of these factors is the quantity of semi-manufactured microscalpels which will be supplied to you in the future. This is important since you have a long-term contract with the Razor-Sharp Wholesale Company to sell them 90 microscalpels each and every month. Any additional microscalpels which are supplied can be sold to the representative of the Wholesale Hospital Supply Company (assuming that an agreement can be reached).

Your current inventory is 180 microscalpels. Of this, 90 units will be used to fulfill your contract with the Razor-Sharp Wholesale Company for the month of December. This leaves your current available inventory at 90 units plus the amount which will be supplied to you in December. In order to not break your contract with the Razor-Sharp Wholesale Company in the future month, you will need 90 units. Thus, the amount that you bargain to sell the Wholesale Hospital Supply Company should be based on what you predict will be supplied to you in December. For instance, if 50 microscalpels are supplied, then your current inventory would be 90 + 50 = 140. In order to not break your contract the following month, you could bargain to sell up to 50 microscalpels to the Wholesale Hospital Supply Company.

Your prediction regarding supply should be considered carefully when bargaining with the buyer of the Wholesale Hospital Supply Company for an appropriate price--quantity combination. In order to help you forecast the level of supply before bargaining, your firm provides you with the historical record. The data below indicates the quantity supplied for each month, so far this year.

Quantity Supplied per Month:

Month	***Number of Units***
Jan.	89
Feb.	91
March	91
April	89
May	92
June	87
July	88
Aug.	93
Sept.	92
Oct.	88
Nov.	90
Dec.	?

Wholesale HS Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Wholesale Hospital Supply Company is to distribute microscalpels to hospitals and retailers in your geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other wholesaler--manufacturer combinations.

If you are unable to reach an agreement with the Surgical Manufacturing Company, your company will not have microscalpels to distribute. In this situation, your customers would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Surgical Manufacturing Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would loose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$275
B	$335
C	$245
D	$305
E	$205
F	$365
G	$225
H	$405
I	$385

Economic Factors:

There are a number of economic factors which may influence the process of buying microscalpels from manufacturers. Knowing that the units bought will eventually need to be re-sold to hospitals and retailers, one of the most important economic factors is customer demand.

Your prediction regarding demand should be considered carefully when bargaining with the seller for an appropriate price--quantity combination. In order to help you forecast the level of demand before bargaining, your firm provides you with the historical record. The data below indicates the quantity demanded for each month, so far this year. Keep in mind that your company is able to negotiate with the Surgical Manufacturing Company only 1 time per month. The amount that you bargain to buy from the seller today should be based on the amount that you predict will be demanded in December. Note that your current inventory is 0 units.

Quantity Demanded per Month:

Month	***Number of Units***
Jan.	89
Feb.	91
March	91
April	89
May	92
June	87
July	88
Aug.	93
Sept.	92
Oct.	88
Nov.	90
Dec.	?

Surgical M Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Surgical Manufacturing Company is to sell microscalpels to wholesalers representing a certain geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other manufacturer–wholesaler combinations.

If you are unable to reach an agreement with the Wholesale Hospital Supply Company, this wholesaler will not have any microscalpels to distribute. In this situation, the final customers (hospitals and retailers) would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Wholesale Hospital Supply Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler–manufacturer combination). You will also need to pay the cost of having extra microscalpels in stock. In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price–quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would lose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$275
B	$335
C	$245
D	$305
E	$205
F	$365
G	$225
H	$405
I	$385

Economic Factors

There are a number of economic factors which may influence the process of selling microscalpels to wholesalers. One of these factors is the quantity of semi-manufactured microscalpels which will be supplied to you in the future. This is important since you have a long-term contract with the Razor-Sharp Wholesale Company to sell them 90 microscalpels each and every month. Any additional microscalpels which are supplied can be sold to the representative of the Wholesale Hospital Supply Company (assuming that an agreement can be reached).

Your current inventory is 180 microscalpels. Of this, 90 units will be used to fulfill your contract with the Razor-Sharp Wholesale Company for the month of December. This leaves your current available inventory at 90 units plus the amount which will be supplied to you in December. In order to not break your contract with the Razor-Sharp Wholesale Company in the future month, you will need 90 units. Thus, the amount that you bargain to sell the Wholesale Hospital Supply Company should be based on what you predict will be supplied to you in December. For instance, if 50 microscalpels are supplied, then your current inventory would be 90 + 50 = 140. In order to not break your contract the following month, you could bargain to sell up to 50 microscalpels to the Wholesale Hospital Supply Company.

Your prediction regarding supply should be considered carefully when bargaining with the buyer of the Wholesale Hospital Supply Company for an appropriate price–quantity combination. In order to help you forecast the level of supply before bargaining, your firm provides you with the historical record. The data below indicates the quantity supplied for each month, so far this year.

Quantity Supplied per Month:

Month	***Number of Units***
Jan.	89
Feb.	91
March	91
April	89
May	92
June	87
July	88
Aug.	93
Sept.	92
Oct.	88
Nov.	90
Dec.	?

Wholesale Hospital Supply Co.

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Wholesale Hospital Supply Company is to distribute microscalpels to hospitals and retailers in your geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other wholesaler--manufacturer combinations.

If you are unable to reach an agreement with the Surgical Manufacturing Company, your company will not have microscalpels to distribute. In this situation, your customers would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Surgical Manufacturing Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would loose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$304
B	$306
C	$303
D	$305
E	$301
F	$307
G	$302
H	$309
I	$308

Economic Factors:

There are a number of economic factors which may influence the process of buying microscalpels from manufcturers. Knowing that the units bought will eventually need to be re-sold to hospitals and retailers, one of the most important economic factors is customer demand.

Your prediction regading demand should be considered carefully when bargaining with the seller for an appropriate price--quantity combination. In order to help you forecast the level of demand before bargaining, your firm provides you with the historical record. The data below indicates the quantity demanded for each month, so far this year. Keep in mind that your company is able to negotiate with the Surgical Manufacturing Company only 1 time per month. The amount that you bargin to buy from the seller today should be based on the amount that you predict will be demanded in December. Note that your current inventory is 0 units.

Quantity Demanded per Month:

Month	***Number of Units***
Jan.	78
Feb.	102
March	114
April	66
May	126
June	30
July	54
Aug.	150
Sept.	138
Oct.	42
Nov.	90
Dec.	?

Surgical Manufacturing Co.

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Surgical Manufacturing Company is to sell microscalpels to wholesalers representing a certain geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other manufacturer--wholesaler combinations.

If you are unable to reach an agreement with the Wholesale Hospital Supply Company, this wholesaler will not have any microscalpels to distribute. In this situation, the final customers (hospitals and retailers) would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Wholesale Hospital Supply Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). You will also need to pay the cost of having extra microscalpels in stock. In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would lose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$304
B	$306
C	$303
D	$305
E	$301
F	$307
G	$302
H	$309
I	$308

Economic Factors

There are a number of economic factors which may influence the process of selling microscalpels to wholesalers. One of these factors is the quantity of semi-manufactured microscalpels which will be supplied to you in the future. This is important since you have a long-term contract with the Razor-Sharp Wholesale Company to sell them 90 microscalpels each and every month. Any additional microscalpels which are supplied can be sold to the representative of the Wholesale Hospital Supply Company (assuming that an agreement can be reached).

Your current inventory is 180 microscalpels. Of this, 90 units will be used to fulfill your contract with the Razor-Sharp Wholesale Company for the month of December. This leaves your current available inventory at 90 units plus the amount which will be supplied to you in December. In order to not break your contract with the Razor-Sharp Wholesale Company in the future month, you will need 90 units. Thus, the amount that you bargain to sell the Wholesale Hospital Supply Company should be based on what you predict will be supplied to you in December. For instance, if 50 microscalpels are supplied, then your current inventory would be 90 + 50 = 140. In order to not break your contract the following month, you could bargain to sell up to 50 microscalpels to the Wholesale Hospital Supply Company.

Your prediction regarding supply should be considered carefully when bargaining with the buyer of the Wholesale Hospital Supply Company for an appropriate price--quantity combination. In order to help you forecast the level of supply before bargaining, your firm provides you with the historical record. The data below indicates the quantity supplied for each month, so far this year.

Quantity Supplied per Month:

Month	***Number of Units***
Jan.	78
Feb.	102
March	114
April	66
May	126
June	30
July	54
Aug.	150
Sept.	138
Oct.	42
Nov.	90
Dec.	?

Hospital Supply Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Wholesale Hospital Supply Company is to distribute microscalpels to hospitals and retailers in your geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other wholesaler--manufacturer combinations.

If you are unable to reach an agreement with the Surgical Manufacturing Company, your company will not have microscalpels to distribute. In this situation, your customers would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Surgical Manufacturing Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would loose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$275
B	$335
C	$245
D	$305
E	$205
F	$365
G	$225
H	$405
I	$385

Economic Factors:

There are a number of economic factors which may influence the process of buying microscalpels from manufacturers. Knowing that the units bought will eventually need to be re-sold to hospitals and retailers, one of the most important economic factors is customer demand.

Your prediction regarding demand should be considered carefully when bargaining with the seller for an appropriate price--quantity combination. In order to help you forecast the level of demand before bargaining, your firm provides you with the historical record. The data below indicates the quantity demanded for each month, so far this year. Keep in mind that your company is able to negotiate with the Surgical Manufacturing Company only 1 time per month. The amount that you bargain to buy from the seller today should be based on the amount that you predict will be demanded in December Note that your current inventory is 0 units.

Quantity Demanded per Month:

Month	***Number of Units***
Jan.	78
Feb.	102
March	114
April	66
May	126
June	30
July	54
Aug.	150
Sept.	138
Oct.	42
Nov.	90
Dec.	?

Manufacturing Company

Instructions:

Social and economic factors may affect the process of bargaining. The following scenario provides some information on the potential impact of these factors. Please read the scenario slowly and carefully. Use the information it contains to develop an appropriate strategy before bargaining.

Social Factors:

The purpose of the Surgical Manufacturing Company is to sell microscalpels to wholesalers representing a certain geographic territory. There are a number of social factors which may influence this process. One of these factors is the actions taken by your competitors. In this context, competitors refer to other manufacturer--wholesaler combinations.

If you are unable to reach an agreement with the Wholesale Hospital Supply Company, this wholesaler will not have any microscalpels to distribute. In this situation, the final customers (hospitals and retailers) would need to buy from another wholesaler. The nearest wholesaler competitor has a long term commitment with their own manufacturer. Thus if you fail to reach an agreement with the Wholesale Hospital Supply Company, you will loose a certain amount of business to a competitor channel ("channel" meaning a wholesaler--manufacturer combination). You will also need to pay the cost of having extra microscalpels in stock. In other words, there is a cost associated with not reaching an agreement. This cost needs to be considered carefully when bargaining for an appropriate price--quantity combination. In order to help you forecast the cost of not reaching an agreement, a number of different firms belonging to your industry association provided predictions. These predictions are summarized and made available to you as data below. Use this data to predict how much you would lose if agreement is not reached during bargaining.

Firm's Predictions

Firm	*Cost of Not Reaching an Agreement*
A	$275
B	$335
C	$245
D	$305
E	$205
F	$365
G	$225
H	$405
I	$385

Economic Factors:

There are a number of economic factors which may influence the process of selling microscalpels to wholesalers. One of these factors is the quantity of semi-manufactured microscalpels which will be supplied to you in the future. This is important since you have a long-term contract with the Razor-Sharp Wholesale Company to sell them 90 microscalpels each and every month. Any additional microscalpels which are supplied can be sold to the representative of the Wholesale Hospital Supply Company (assuming that an agreement can be reached).

Your current available inventory is 180 microscalpels. Of this, 90 units will be used to fulfill your contract with the Razor-Sharp Wholesale Company for the month of December. This leaves your current available inventory at 90 units plus the amount which will be supplied to you in December. In order to not break your contract with the Razor-Sharp Wholesale Company in the future month, you will need 90 units. Thus, the amount that you bargain to sell the Wholesale Hospital Supply Company should be based on what you predict will be supplied to you in December. For instance, if 50 microscalpels are supplied, then your current inventory would be 90 + 50 = 140. In order to not break your contract the following month, you could bargain to sell up to 50 microscalpels to the Wholesale Hospital Supply Company.

Your prediction regarding supply should be considered carefully when bargaining with the buyer of the Wholesale Hospital Supply Company for an appropriate price–quantity combination. In order to help you forecast the level of supply before bargaining, your firm provides you with the historical record. The data below indicates the quantity supplied for each month, so far this year.

Quantity Supplied per Month:

Month	***Number of Units***
Jan.	78
Feb.	102
March	114
April	66
May	126
June	30
July	54
Aug.	150
Sept.	138
Oct.	42
Nov.	90
Dec.	?

Instructions:

Please respond to the following statements pertaining to the scenario. Circle the number on each of the scales below at that place which best reflects your own opinion.

The first six statements pertain only to the data found in the "social factors" section of your scenario.

1. The impact of the social factors on the cost of not reaching an agreement always seems to be changing.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

2. The firms' predictions seem diverse.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

3. Based on the firms' predictions there seems to be a general lack of consistent information on how these social factors will affect the cost of not reaching an agreement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

4. Based on the firms' predictions the impact of the social factors on the cost of not reaching an agreement is unpredictable.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

5. The information provided by the firms' predictions seems ambiguous.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

6. The information provided by the firms' predictions seems vague.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

The second six statements pertain only to the data found in the "economic factors" section of your scenario.

7. Over the last 11 months, units demanded always seems to be changing.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

8. The number of units demanded each month, over the last year, seems diverse.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

9. Based on the historical record, there seems to be a general lack of consistent information as to what demand will be in December.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

10. Based on the historical record, the number of units that will be demanded in December is unpredictable.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

11. The information provided by the historical record seems ambiguous.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

12. The information provided by the historical record seems vague.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

Instructions:

Please respond to the following statements pertaining to the scenario. Circle the number on each of the scales below at that place which best reflects your own opinion.

The first six statements pertain only to the data found in the "social factors" section of your scenario.

1. The impact of the social factors on the cost of not reaching an agreement always seems to be changing.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

2. The firms' predictions seem diverse.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

3. Based on the firms' predictions there seems to be a general lack of consistent information on how these social factors will affect the cost of not reaching an agreement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

4. Based on the firms' predictions the impact of the social factors on the cost of not reaching an agreement is unpredictable.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

5. The information provided by the firms' predictions seems ambiguous.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

6. The information provided by the firms' predictions seems vague.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

The second six statements pertain only to the data found in the "economic factors" section of your scenario.

7. Over the last 11 months, units supplied always seems to be changing.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

8. The number of units supplied each month, over the last year, seems diverse.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

9. Based on the historical record, there seems to be a general lack of consistent information as to what supply will be in December.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

10. Based on the historical record, the number of units that will be supplied in December is unpredictable.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

11. The information provided by the historical record seems ambiguous.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

12. The information provided by the historical record seems vague.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

Questionnaire To Be Administered After The Simulation

Part A. Please respond to the following statements pertaining to your perception of the negotiation process. Circle the number on each of the scales below at that place which best reflects your own opinion.

1. My bargaining partner seemed to hinder the process of reaching a fair agreement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

2. My bargaining partner seemed stubborn during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

3. My bargaining partner showed a willingness to give and take during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

4. My bargaining partner seemed inflexible during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

5. During negotiations, my bargaining partner and I seemed to stand in oppositioin to one another.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

6. My bargaining partner tried to be fair during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

7. My bargaining partner seemed willing to compromise during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

8. During negotiations, it seemed as though my bargaining partner and I worked against one another.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

9. My bargaining partner seemed open to my offers during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

10. My bargaining partner seemed generally supportive during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

11. During negotiations, the interests of my bargaining partner and I seemed to clash.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

12. The negotiation process was filled with tension.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

13. My bargaining partner seemed generally flexible during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

14. During the negotiation process, my bargaining partner and I seemed to work together.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

15. I felt distressed during the negotiation process

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

16. During negotiations, my bargaining partner seemed willing to yield so that an agreement could be reached.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

17. I felt antagonistic toward my partner during the negotiation process.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

18. My bargaining partner seemed helpful during negotiations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

Part B. Please answer the following questions.

19. Was agreement reached (circle one)?

YES NO

19a. If yes, what was the price and quantity you agreed on? ____ ____

20. In your opinion, who came out ahead (circle one)?

Both of Us	Myself	My Bargaining Partner	Neither of Us

21. In your opinion, which issue was more important (circle one)?

PRICE	QUANTITY	BOTH WERE EQUALLY IMPORTANT

Part C. Please circle the number on each row that best describes yourself with respect to this negotiation simulation.

22.	I did not understand instructions at all	1	2	3	4	5	6	7	8	9	I completely understood the instructions
23.	I did not understand the scenarios at all	1	2	3	4	5	6	7	8	9	I completely understood the scenarios
24.	I negotiated to help both myself and my bargaining partner	1	2	3	4	5	6	7	8	9	I negotiated to help only myself

25.	I bargained to lower costs for both myself and my bargaining partner	1	2	3	4	5	6	7	8	9	I bargained to lower costs only for myself
26.	During bargaining, I pursued the interests of both myself and my bargaining partner	1	2	3	4	5	6	7	8	9	During bargaining, I pursued self interest
27.	I was totally uninterested	1	2	3	4	5	6	7	8	9	I was very interested.
28.	I was totally unstimulated	1	2	3	4	5	6	7	8	9	I was very stimulated
29.	I was totally uninvolved	1	2	3	4	5	6	7	8	9	I was very involved
30.	I did not take the simulation seriously	1	2	3	4	5	6	7	8	9	I took the simulation seriously
31.	This was a worthless experience	1	2	3	4	5	6	7	8	9	This was a valuable experience

Part D. Please circle the number on each row that best describes your nature.

32.	high risk-taker	1	2	3	4	5	6	7	8	9	low risk-taker
33.	competitor	1	2	3	4	5	6	7	8	9	cooperator
34.	suspicious	1	2	3	4	5	6	7	8	9	trusting
35.	I attribute success mostly to my own behavior	1	2	3	4	5	6	7	8	9	I attribute success mostly to luck, fate, chance, or other people

Part E. Please circle the number on each row that describes best what you generally prefer.

36.	regularity	1	2	3	4	5	6	7	8	9	change
37.	clarity	1	2	3	4	5	6	7	8	9	ambiguity
38	balance	1	2	3	4	5	6	7	8	9	imbalance
39.	concreteness	1	2	3	4	5	6	7	8	9	abstraction

Part F. Please answer the following questions:

40. Sex: M F

41. Age: _____

42. Major: _____

43. Year in school: _____

THANK YOU

APPENDIX I

Table 35.1: Summary of Multivariate and Univariate Analysis of Covariance When Controlling For Potential Confounds (Six Covariates)[18]

[18] The dependent variables used in this analysis include: latent conflict, perceived conflict, felt conflict, and cooperation. Note that the MANCOVA was not significant and that the univariate ANCOVA's revealed results similar to although less significant than what was found for overall conflict (Table 35).

TABLE 35.1

Summary of Multivariate and Univariate Analysis of Covariance When Controlling For Potential Confounds (Six Covariates)

Source of Variation	DF	F-Value	P-Value
MANCOVA			
Dependent Variables:	Latent Conflict, Perceived Conflict, Felt Conflict, Cooperation		
Lateral	(4,195)	1.26	.286
Vertical	(4,195)	0.44	.780
Interaction	(4,195)	1.75	.141
ANCOVA			
Dependent Variable:	Latent Conflict		
Lateral	(1,198)	2.01	.158
Vertical	(1,198)	0.16	.690
Interaction	(1,198)	1.70	.194
Dependent Variable:	Perceived Conflict		
Lateral	(1,198)	2.76	.098
Vertical	(1,198)	0.68	.411
Interaction	(1,198)	3.10	.080
Dependent Variable:	Felt Conflict		
Lateral	(1,198)	3.64	.058
Vertical	(1,198)	0.16	.690
Interaction	(1,198)	3.87	.051
Dependent Variable:	Cooperation		
Lateral	(1,198)	4.03	.046
Vertical	(1,198)	0.01	.918
Interaction	(1,198)	6.32	.013

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