

AN INVESTIGATION OF THE RELATIONSHIPS BETWEEN
ISSUE-SPECIFIC CHANNEL CONFLICT AND COOPERATION AND OVERALL
CHANNEL CONFLICT AND COOPERATION

by

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(ABSTRACT)

This dissertation examines selected relationships between issue-specific and overall perceptions of conflict and cooperation within a distribution channel setting. The issue of cooperative bias in channel relations, and the dichotomy of issue-specific and overall perceptions are tested. Hypotheses stemming from exchange theory, as applicable to the channel context, are offered on the effects of incongruities, salience, and antagonism on dissatisfaction, conflict, and cooperation.

The research was conducted in two phases. The pretest was used to develop the experimental procedures for parasimulation, to assess the reliability and unidimensionality of the measurement models, and to test the manipulation of the independent variables. Subsequently, the main experiments were conducted. Both phases employed two research designs. Research design one, a 2x2 factorial, examined the effects of two levels each (high and low) of negative incongruity and salience. In research design two, a 2x2x2 nested facto-

rial, positive incongruity (high and low) and antagonism (present or absent) were additional independent variables.

Multiple indicators were used to measure the dependent variables of issue-specific dissatisfaction, conflict, and cooperation, and overall conflict and cooperation. Dependent measures were obtained using content-analysis, magnitude estimates, and rating scales. Reliability was assessed using Cronbach's alpha (rating scales), composite interjudge coefficient (content data), and regression exponent (magnitude scales). Unidimensionality of measurement models was also assessed. Inferential statistical techniques of MANOVA, ANOVA, and t-tests were used to test the hypotheses. Including the pretest, altogether five different samples were used. The findings were quantitatively integrated to summarize the results across the different samples and methods, and were statistically homogeneous.

In general, a majority of hypothesized relationships were supported by the data. Issue-specific and overall perceptions of conflict and cooperation were found to be distinct constructs, and the hypothesis of cooperative bias was supported. Incongruities succeeded in explaining the emergence of dissatisfaction, conflict, and cooperation. However, salience and antagonism had directionally correct but weaker explanatory power.

Results are discussed with respect to major findings and their theoretical and methodological contributions to the channel research domain. The dissertation concludes with a discussion of the limitations of the study and directions for future research.

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The love of my parents has always been a source of inspiration to strive for higher goals. I want them to share this. Finally, this effort would have been impossible without the support, the understanding, and the selfless love of my wife, _____. So to _____, from whom I took away valuable time, I dedicate this with love.

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Chapter I

INTRODUCTION

The study of "conflict" has attracted considerable interest of researchers from different disciplines. Sociologists, psychologists, economists, organizational behaviorists, and others have all contributed to create an impressive interdisciplinary literature base for the construct. Coinciding with the emergence of a behavioral research stream in channels of distribution over the past twenty years, several scholars have investigated conflict within the context of channels of distribution.

Perhaps due to the nature of the phenomenon, normative biases and value judgments are generally evident in conflict studies. Often conflict has been perceived as intrinsically undesirable, indicating a relative absence of cooperation. Though some theoretical writings would suggest a more complex relationship between channel conflict and cooperation, little effort has been made to empirically understand this relationship. The present research was aimed at understanding some of the relationships between channel conflict and cooperation.

This chapter outlines the conception of channels as interorganizational systems and provides an overview of the

channel literature. Subsequently, the relationships investigated are introduced, the methodology adopted is briefly outlined, followed by a discussion of the significance of the research. Finally, an overview of the remaining chapters is provided.

THE CONCEPT OF CHANNELS

A channel of distribution may be conceived as a system or a set of institutions concerned with the process of making products available for use or consumption, i.e., a channel describes the intermediaries and their activities that bridge the gap between the suppliers and the end-users of goods. This process entails several activities or functions including buying, selling, transportation, sorting, information exchange, and inventory management. Channels differ in the manner in which these functions are divided among specific constituent members. Nevertheless, this division leads to routinization of activities and specialization, i.e., channel members become proficient in performing their respective tasks. The institution of a channel also brings about efficiency in transactions, i.e., the presence of specialized middlemen reduces the number and the total cost of transactions required to sell any given quantity of goods (Baligh and Richartz 1967). Hence, the notion of a channel implies a cooperative effort aimed at achieving superordinate common goals.

On the other hand, channel relationships are also typified by some degree of inherent interdependence (Stern and El-Ansary 1982), a legal-social setting, complexity, and disproportionate risk-taking (Bowersox et al. 1980). Channel members must conform to an extensive set of laws representing the social sanctions governing the activities they may engage in, and the forms these activities may assume. The anti-trust body of legislations delineates the acceptable relationships that may exist between the channel members. The specialization in different functions by different channel members and the resulting routinization and division of tasks brings about interdependence in channel relationships. Different members of a channel usually have different degrees of stake in the success of a channel and the perceived and actual risk-levels are rarely the same for all the firms constituting a channel. These differences as well as the different areas of expertise enjoyed by different channel members may result in differences in the amount of power among the channel members. Often channel members find it in their interest to control the activities of other members through exercise of their power. Such control attempts may be construed to be infringements on individual autonomy by the members and generate perceptions of goal incongruence and/or domain dissensus. Disagreements about control of de-

cision variables may precipitate conflict. Hence, the channel relationships can potentially be conflictful and/or cooperative.

OVERVIEW OF CHANNEL LITERATURE

The available channel literature may be conveniently divided into two categories: logistics and channel behavior. Within the latter category, two sub-categories are evident: the economic approach to channel behavior and the behavioral perspective to understanding channels.

Logistics

This first category has concerned itself largely with the physical distribution problems, where "physical distribution" has been broadly defined to mean "the orchestration of flows of materials or goods and flows of information" (Stern and El-Ansary 1982, 154). The focal issues addressed here have been inventory management and control, costing, customer service standards, reordering models, forecasting, transportation decisions and systems management. The stress is clearly placed on channel performance, efficiency, and effectiveness. Characteristically, the human actors involved in a channel are of lesser importance. This body of literature is typically labeled "logistics" and, over time, has drifted away from the main body of "channel literature" as far as the common connotations are concerned.

Channel Behavior

The second category comprising of the economic and behavioral perspectives to channels, has tended to focus on understanding the behavior of channel members themselves. The conception of channels as all the flows extending from the producer to the user (Vaile et al. 1952; Mallen 1967) would legitimately include the user as a channel member and render consumer behavior as a valid subject matter for channel research. However, a distinction is usually made between channels and "commercial channels," where the latter excludes behavior of consumers from its scope. Today, the commonly accepted usage of the term "channels" only pertains to commercial channels. Accordingly, the two sub-categories of literature mentioned above have sought to explain the behavior of members constituting the commercial channels. The guiding motivation appears to be a belief that channel members are not inert or inconsequential entities, and their behavior can critically influence the performance and functioning of a channel.

However, beyond this common belief, the similarity between the two sub-categories of literature disappears. Indeed, the difference is philosophical and the two appear to be influenced by different research traditions or paradigms. The key point separating the two sub-categories is the conception of human behavior itself.

Economic Perspective

Though both paradigms have tried to understand phenomena like conflict, power and cooperation, the economic approaches to channel behavior (e.g., Galbraith 1967; Mallen 1967; Gettell 1967; Alderson and Martin 1967; Bucklin 1967; Aspinwall 1967; Palamountain 1967; Rosenbloom 1973; Bucklin 1973; El-Ansary and Robicheaux 1974), have implicitly assumed rational behavior and utility maximization. This approach also assumes consistent and deliberate behavior, absence of unpredictable, erratic, habitual and impulsive behavior, and perfect information of alternatives (listed by Monroe 1979, 24, in the context of pricing literature influenced by economics). The orientation has been to provide an analytical framework for understanding channel behavior offering no explanations about the actual "causes" of such behavior.

While the trend in available published material on channel behavior indicates that economic research tradition has now been supplanted by the behavioral paradigm, some important contributions were made and some unresolved issues were raised by the economic paradigm. These contributions and issues are also discussed in Chapter II.

Behavioral Perspective

The behavioral research has extensively used the theories of social psychology, sociology, political science, and organizational behavior. For instance, much of the channel conflict literature is modeled after the field experiments conducted by Sherif (1958), and the typology of conflict proposed by Pondy (1967) and Thomas (1976). The channel power studies have been strongly influenced by Dahl's (1957) conception of power, Emersons's (1962) conception of power as a function of dependence, and French and Raven's (1959) classification of power sources. Sometimes, this borrowing has been too complete thereby impeding original theory development. Consequently, several questions remain unanswered. These questions and the contributions of the behavioral approach are also critically evaluated in Chapter II.

INTRODUCTION TO INVESTIGATIONS

Theoretical Arguments

This investigation was concerned with exploring the nature of relationships between channel conflict and cooperation. Explicitly, three conceptual issues were investigated:

- (1) Whether the perception of conflict necessarily implied a relative absence of a perception of cooperation;
- (2) Whether the issue-specific and the overall perceptions of conflict and cooperation are different constructs; and

- (3) Whether the differences between the expected and the actual outcomes and the salience of the issues in question, as variables, explained the emergence of cooperation and dissatisfaction; and of conflict when antagonism was included as a variable.

If channel members see interactions among themselves and negotiations as task behaviors, they may have learned to expect some conflict as a part of their jobs. Further, within any channel of distribution, there may be certain issues over which conflict has traditionally occurred. Moreover, it appears reasonable to expect that some conflicts may be seen as more important than others, depending upon the salience of the issues. Hence, minor conflicts and conflict over traditionally disputed issues would cause perceptions of issue-specific conflict without aborting the overall cooperative relationships. Channel members exposed to conflicts may also dismiss them as occupational hazards. Stated differently, issue-specific perceptions of conflict may not contribute to a perception of overall conflictful relationship except under certain conditions. Even so, a threshold effect may be operative and a number of issue-specific conflict perceptions may have to be experienced before channel members begin to see their overall relationship as conflictful. In such an event, the issue-specific perceptions of conflict may coexist with overall perceptions of

cooperation, and the theoretical distinctions must be made between issue-specific and overall perceptions. The relationships are discussed at length in Chapter III.

Methodology

The technique of "parasimulation" was employed to test the research hypotheses. Both students and industry people were used as experimental subjects. The dependent measures were obtained using three different methods and multiple indicators for all measured variables were included. The measures were assessed for unidimensionality (i.e., internal consistency and external consistency). Since five different samples and three different methods were employed, the results of the investigation were quantitatively integrated summarizing the results of the tested propositions. A majority of hypothesized relationships were supported by the data.

SIGNIFICANCE OF THE RESEARCH

The results of this investigation have empirically demonstrated that (i) the issue-specific perceptions of conflict can coexist with overall perceptions of cooperation; (ii) the issue-specific and overall perceptions of conflict and cooperation are distinct; (iii) the inter-firm relations continued to be characterized as cooperative when the sub-

jects were exposed to parallel positive and negative issue-outcomes attesting to a general bias toward cooperation; and (iv) differences between the expected and actual outcomes can explain the emergence of perceptions of dissatisfaction, conflict and cooperation. However, the variables salience and antagonism had directionally correct but weaker explanatory power for the emergence of the above perceptions. These findings have significance for the academician as well as the practitioner.

Conceptual Contributions to Marketing Thought

Since cooperation is sometimes regarded as the relative absence of conflict, the latter is considered as generally undesirable. This conception of the relationship between conflict and cooperation may be oversimplified and the detrimental effects of conflict may have been overrated. As discussed in Chapter III, the postulates of exchange theory, in conjunction with some recent writings, would suggest a theoretical distinction between issue-specific and overall perceptions of conflict, and a complex relationship between conflict and cooperation.

The results show that perceptions of conflict and cooperation can coexist and differences between the expectations and the actual outcomes play an important role in explaining these perceptions. Hence, theory development on conflict and

cooperation nested in exchange theory precepts can provide insights into these constructs. An attractive feature of the conceptualization guiding the tested propositions is that it also explains some of the anomalies of earlier research.

For instance, though some channel conflict researchers have tended to see superordinate goals as a major answer to the conflict problem (Stern, Sternthal, and Craig 1973a; Hunger and Stern 1976), empirical results have not substantiated this expectation. Conceivably, the superordinate issues may have failed to reduce conflict because (i) the issues were not salient; and (ii) behavioral expectations and previous experiences led the parties to expect cooperation on such issues and, as such, they only caused issue-specific perceptions of cooperation that did not reduce the overall conflict perception. If the superordinate issues were important and typically "bones of contention," their successful resolution could have had the desired effect. In fact, this may also be seen as an alternative explanation of Sherif's Realistic Group Conflict Theory (1958) that calls for a series of superordinate goals to reduce conflict.

It is generally believed that conflict may be good or bad for performance. This belief has been reified in the form of the inverted U-shaped curve (Rosenbloom, 1973) which simply asserts that while conflict may initially stimulate

performance, beyond a certain level it can be dysfunctional. The proposed conceptualization offers an alternative behavioral explanation for the same phenomenon. It may be that simple increases in conflict levels will not undermine performance, if such conflict is expected on those issues and/or if they are unimportant issues. The latter situation may only cause issue-specific perceptions of conflict. On the other hand, performance levels may drop only when the overall relationships begin to be characterized as conflictful.

In summary, the conceptualization offered (Chapter III) can be used to develop an alternative perspective to channel conflict theory that accommodates several behavioral constructs and unifies them within a single theoretical framework.

Methodological Contributions to Marketing Thought

The chief methodological contributions may be in the area of reliability-validity assessment and providing corrections for scaling assumptions.

The results of this investigation show marked differences in the method artifacts associated with the three methods employed. The rating scales yielded small effects while the magnitude estimation provided large effect-sizes. The content analysis effects were moderate.

Multiple indicators were included for all the measured dependent variables. The measurement models were refined after checking the reliabilities and unidimensionality at the pretest as well as the experimental stage. Repeated assessment of reliability and unidimensionality with positive results have yielded tested measurement instruments for the constructs of conflict, cooperation and dissatisfaction.

A priori estimates using Cohen's power tables and the effect sizes observed in past studies were used to guide the determination of sample size to ensure adequate power for statistical tests. Post hoc estimates show that this procedure resulted in 80% of the tested propositions having the statistical power greater than 0.80 and enhanced the confidence in the statistical conclusion validity of the results.

The data-requirement prerequisites associated with the various statistical techniques are often assumed to be given in marketing studies. Nevertheless, the traditional rating scales only yield ordinal level data, thereby denying the legitimate use of powerful statistical methods based on intervally scaled data assumptions. This deficiency, in turn, undermines the statistical conclusion validity of results. Consequently, magnitude scaling methods were also employed in this investigation. The subjects demonstrated an ability to make ratio-level judgments suggesting that these much-needed techniques are viable and practically usable.

Contributions to Marketing Practice

Visualizing cooperation as the relative absence of conflict has far reaching implications for practitioners. In the interest of cooperation, it is thought to be managerially critical to understand the causes of conflict, its various forms, and ways and means of reducing conflict. A survey reported by Thomas and Schmidt (1976) revealed that managers devote more than 20% of their general management time to conflict management and rate this managerial function as equal to other managerial activities. The results show that the conflict-management may have to be redefined in terms of separate issue-specific and overall conflicts if the findings of this investigation extend to other contexts as well.

Although a general distinction is usually made between functional and dysfunctional conflict (as far as channel performance is concerned), the usual normative bias against conflict is evident. Hunger and Stern (1976, 591-2) underscore this very point:

"Although conflict is no longer considered to be necessarily dysfunctional to organizations or groups, . . . the practical research orientation continues to be the management of conflict through its reduction."

This normative bias is also evident in managerial books. For instance, Stern and El-Ansary (1982, 292) state:

"A central task in channel management is to seek ways to manage conflict. In other words, ways

must be found to keep conflict from becoming dysfunctional and to harness the energies in conflict situations to provide innovative resolutions."

Bowersox et al. (1980, 32) concur:

"Conflict that results from dependence within a particular channel is of critical importance to managers . . . Resolution of conflict either by power or by cooperation is necessary for a distribution channel to function effectively."

One explanation for this bias may be the problem of determining levels of conflict that are functional. Bowersox et al. (1980, 81), stressing this, write :

"The normal assumption in marketing literature is that conflict will influence the operating performance of channel members. Although conceptually appealing, attempts to identify a level of conflict which promotes greater goal attainment for individual channel members generally have been unsuccessful."

The conceptualization guiding this research resolves the above problem by shifting the focus from "levels of conflict that are functional" to the theoretical distinction between issue-specific and overall perceptions for both, conflict and cooperation.

Determining "correct" levels of conflict can be difficult and costly. Different industry channels , different channel relationships, and different channel segments may have different levels; the levels may change as personnel change; and, moreover, to determine such levels, they must be surpassed - an expensive exercise. Not surprisingly,

then, after acknowledging the functional aspects of conflict, the normative literature reverts to conflict-resolution. However, since conflict and cooperation can both be issue-specific and related to incongruity perceptions, and to a lesser degree to salience and antagonism, business executives can turn to assessing the behavioral expectations, the previous experience, and the importance attached to issues by the channel boundary personnel. Not only are these variables relatively easier to estimate, but they represent variables that can be managerially controlled. For instance, salience of issues can be re-defined if needed; and the role-sets can be suitably altered by providing appropriate job-descriptions. Such controls would further ensure that the boundary personnel perceive overall conflict or cooperation, and issue-specific conflict or cooperation at appropriate times in consonance with the firm's priorities, thereby facilitating better performance.

Finally, the observance of channel relations shows that channel members have conflicts over particular issues, and yet continue to retain the overall cooperative relationships. The research results also point toward a general bias for cooperation. Hence, a valid question of "so what" arises as far as the business implications of current channel conflict research are concerned. In effect, the current litera-

ture base has ignored researching the theoretical underpinnings of the normal cooperative channel behavior. Toward this end, the current investigation has made an important introductory contribution by empirically showing the cooperative bias.

OVERVIEW OF CHAPTER TWO

Chapter II reviews relevant past theoretical and empirical channel conflict literature with the objective of identifying and critically discussing the central issues that currently typify the study of conflict within channels of distribution. The existent channel power literature has also been briefly examined and the important issues requiring resolution in the area of channel conflict and channel power have been identified.

It has been argued that examining the channel conflict phenomenon from the perspectives of exchange theory yields propositions that are intuitively more appealing and more reflective of the realities in channel relationships. Methodologies employed in the available empirical investigations of channel conflict have also been critically evaluated. A quantitative integration of empirical channel research was carried out where feasible for summary statements on the studied relationships.

OVERVIEW OF CHAPTER THREE

Since the objective of this research effort was to gain an understanding of relationships between issue-specific perceptions and overall perceptions of conflict and cooperation, Chapter III develops a theoretical framework based on the arguments introduced in Chapter II for achieving this understanding. Specifically, the precise relationships between mediating variables suggested by exchange theory and the central constructs of conflict and cooperation are identified and modeled. The chapter also explicates and critically evaluates the auxiliary theories implicit in conceptualizations currently available on the relationships between channel conflict and cooperation.

OVERVIEW OF CHAPTER FOUR

Chapter IV presents the research design employed and develops the methodology for empirically testing the selected hypotheses from Chapter III. The operational hypotheses are also presented. The three measurement methods used are described and the statistical analyses carried out are explained. The experimental procedure of parasimulation and the sampling plan are explained and defended. Finally, the pretest results are reported and discussed.

OVERVIEW OF CHAPTER FIVE

Chapter V presents the results of the main experiment. Altogether four different samples were used in the main experiments. The nature of these samples is explained. The manipulation checks pertaining to the parasimulation are investigated and the detailed results obtained by the three methods are reported. Later a quantitative integration of the effects found across the four experimental samples and the pretest sample is performed to summarize the results.

OVERVIEW OF CHAPTER SIX

Chapter VI reports the conclusions and the implications arising from the obtained results. In particular, the substantive, theoretical and methodological contributions are discussed. Finally, the limitations of this research and suggestions for the future directions of research in this content area are presented.

CHAPTER SUMMARY

Due to the nature of the phenomenon, conflict has sometimes been perceived as intrinsically undesirable. A corollary of this belief has been to envision conflict to be the relative absence of cooperation. Such a conception has also instilled conceptual biases against conflict within channels of distribution. Consequently, the research effort in the

area of channel conflict primarily has revolved around identifying the causes of conflict, the types of conflict, and the aftermath of conflict, implicitly in the hope of eliminating conflict so that cooperative relationships may be restored.

The research effort presented in this dissertation sought to draw a distinction between issue-specific perceptions and overall perceptions of conflict and cooperation. Conceptually the dissertation proposes an alternate perspective to looking at conflict-cooperation relationship within channels of distribution.

Chapter II

LITERATURE REVIEW

INTRODUCTION

This chapter critically evaluates the past research in the area of channel behavior. The chapter is organized along issues rather than particular studies or the chronological development of the literature. Quantitative integration of the empirical research has been attempted and moderator variables have been identified where feasible. The issues related to conflict and cooperation are discussed in detail as they are the thrust of this research effort.

The issues selected have been important topics of controversy and research in the existing channel literature. Specifically, the issues of (i) definitions for conflict and cooperation; (ii) the relationships between conflict and the constructs of cooperation, dissatisfaction, competition, and performance; and (iii) the causes of conflict have been critically appraised. Subsequently, the empirical channel conflict literature is reviewed via quantitative integration to summarize the findings. Finally, the empirical research is appraised from a methodological perspective along the issues of scales employed; reliability; statistical conclusion, internal, construct, and external validities; and the operationalizations of constructs.

In review of empirical investigations, all results have been transformed into the d statistic (Cohen 1977). The d statistic is computed by dividing the difference of means between the control and experimental groups by their pooled standard deviation. Since different researchers have often reported the results using different statistics, the use of such a common denominator facilitates the comparability of results and discussion. However, at several places, the original statistics have also been reported. In many cases, such dual reporting has provided an interesting contrast between inferences reached by the researchers, and the strength of relationships suggested by the d statistics; particularly, when the original conclusions were based on the significance criterion alone.

Cohen (1977, pp. 25-27) suggests conventional operational definitions of "small," "medium" and "large" effect sizes (in terms of d statistic) as 0.20, 0.50, and 0.80, respectively, particularly for new areas of inquiry. However, these are relative indices, "not only to each other, but to the area of behavioral science or even more particularly to the specific content and research method being employed in any investigation" (Cohen 1977, p.25).

The statistical power for the effects has also been reported along with the d statistic. The power computations,

in all cases, were carried out post-hoc because no power estimates were originally reported by any of the researchers. Cohen (1977) has also discussed the interpretation of power levels. He offers the convention of setting the desired power to 0.80. This means that the probability of Type II error be set at 0.20. Implicit in the suggested convention is the idea that the seriousness of Type I errors (usually set at 0.05) is four times greater than the seriousness of Type II errors. Hence, power levels below 0.80 may, in general, be considered inadequate and posing a possible threat to statistical conclusion validity.

Power can be computed for two-sided or one-sided tests by selecting the appropriate alpha levels. In most cases, two-sided alpha values were used as most researchers carried out two-sided tests; where one-sided tests were carried out originally, the significance values used for calculating power were also one-sided. Alternatives actually used have been indicated.

OVERVIEW OF BEHAVIORAL ISSUES IN CHANNEL LITERATURE

Most of the behavioral channel literature has concerned itself with the two issues of power and conflict. This emphasis is traceable to the very conceptualization of channels as interorganizational systems or "superorganizations" that exhibit the basic features of any organized form of

collective behavior (Reve and Stern 1979, 406). These features are: (i) simultaneous presence of collective and individual goals (where individual refers to any constituent channel firm or member); (ii) division of tasks and functions resulting in routinization, specialization and interdependence; and (iii) integrated actions by members which lead to the development of unique channel system identities distinct from constituent members.

The concept of interdependence among the channel members has been conceived as the central behavioral dimension in the channel literature (Stern 1969; Reve and Stern 1979; Stern and El-Ansary 1982) leading not only to the rise of power relations but also a potential for conflict. The essential reasoning behind this relationship between power and conflict has been succinctly summarized by Beier and Stern (1969,112):

"A channel is generally composed of a set of marketing specialists However, the more extensive is the division of labor among the components of any system in the performance of its functions, the more interdependent the components become. Thus power is pervasive in the channel, because each member is dependent, at least to some extent, on the others. As one channel member's dependence upon another increases, the greater becomes the power of the latter Power is, however, a two-edged sword. The very nature of power creates resistance forces acting on the subject. The use of power can increase conflict to the point where existing channel alignments are destroyed."

Exercise of power may also be perceived as an infringement on the autonomy desired by channel members (Mentzer and Hunt 1983) and lead to perceptions of conflict. Another indicator of the direct relationship between power and conflict is said to be "the use of channel power as a response to conflicts in interorganizational management" (Reve and Stern 1979, 407). Given these hypothesized relationships between power and conflict, some scholars have attempted to examine empirically some propositions connecting the two constructs. Hunt and Nevin (1974) offer some evidence suggesting that the use of coercive power by fast-food franchisors may lead to lowered franchisee satisfaction which could precipitate perceptions of conflict. However, conflict was not explicitly measured. Lusch (1976b) found that the use of coercive power sources by automobile franchisors explained more intra-channel conflict than did the use of non-coercive power sources. In summary, the available empirical studies appear to support Beier and Stern (1969) inasmuch as the use of coercive power sources tends to be resented.

Other channel behavioral issues have generally been studied as they relate to either conflict or power (e.g., conflict and performance; conflict and cooperation; power and performance).

CONCEPT OF CHANNEL CONFLICT

Social conflict has been actively researched by several disciplines from various perspectives for some time. Since the late 1950's, the problem of integrating knowledge from the various disciplines began to receive considerable attention in the form of multidisciplinary journals (for instance, The Journal of Conflict Resolution and the Journal of Peace Research), and multidisciplinary symposia. Fink (1968) provides an excellent review of this integrative effort. Not surprisingly then, conflict has been one of the focal issues of interest even within the channel literature.

Definitions of Conflict

As repeatedly shown by Goldman (1966), Pondy (1967), Fink (1968), and Thomas (1976), consensus on the exact nature of conflict and its definition has been minimal. Within the channel literature, two broad streams of thinking are evident.

Economic Perspectives

The early conceptions of conflict, strongly influenced by an economic perspective, were limited to overt or manifest conflictful acts and the term was used as a synonym for competition. For instance, Palamountain (1967, 114) states:

"There are three basic forms of distributive conflict. The first, which I shall call horizontal competition, is the conflict among competitors of

the same type, e.g. competition between two independent grocers. The second, . . . intertype competition, is the conflict among different methods of distribution . . . And the third is the conflict between different stages in the same line of distribution and can be called vertical struggle."

Galbraith (1967); Gettell (1967); Mallen (1963; 1967); and Assael (1968) have also accepted this conceptualization.

Behavioral Interpretations

The behavioral theoretical literature on channel conflict (e.g., Stern and Heskett 1969; Stern and Gorman 1969; Gill and Stern 1969; and Cadotte and Stern 1979) has adopted a broader base to include (in addition to manifest conflict) other forms of conflict as well. However, the conflict construct has been typically described with reference to its antecedents and consequences, rather than formally defined. For instance, Stern and Heskett (1969, 292) state: "Conflict is, therefore an outcome of the inherent dependency of system components, arising when one component impedes the aims of another." Stern and Gorman (1969, 156) define it as: "A state of conflict may, therefore, exist when two or more components of any given system of action, e.g., a channel of distribution, become objects of each other's frustration." Pearson and Monoky (1976, 240), on the other hand, propose that: "Channel conflict may be thought of as being vertical as opposed to horizontal, interorganizational as

opposed to intraorganizational, intertype as opposed to intratype, and intrachannel as opposed to interchannel. Within these limits, conflict results from behavior that frustrates the goal attainment of others" (emphasis in the original).

Pondy's Contributions. A major trend in the behavioral conception of channel conflict was initiated by Pondy (1967). In an effort to integrate diverse conceptualizations, Pondy (1967, pp. 298-300) developed a process model of conflict where he offered a four-fold typology of conflict:

- (1) Latent Conflict: "underlying sources of . . . conflict,"
- (2) Perceived Conflict: "perception or awareness of conflictful situations,"
- (3) Affective Conflict: "stress, tension, hostility, anxiety etc. of the individuals involved," and
- (4) Manifest Conflict: "conflictful behavior, ranging from passive resistance to overt aggression."

These four kinds of conflict have since been called the four "states" of conflict. Pondy decried the futility of debating which state of conflict is really "conflict." He proposed that each state may be a relevant, though not essential, stage in the development of a conflict episode; and that conflict could be better understood if visualized as a dynamic process. "Hence each conflict relationship is made up of a sequence of interlocking conflict episodes; each episode exhibits a sequence or pattern of development, and the conflict relationships can be characterized by stable pat-

terns that appear across the sequence of episodes" (page 298). In his opinion, the task before the researcher was to "try to clarify their [the four states] relationships" (page 299).

A similar stance was adopted by Thomas (1976) in his process model of dyadic conflict. Most channel researchers have accepted the process approach to the study of conflict (e.g., Stern and Gorman 1969; Rosenberg and Stern 1971; Cadotte and Stern 1979; Brown and Day 1981). This adoption is also popular because separating the various states of the process from each other is thought to be a very difficult task (Schmidt and Kochan 1972; Brown and Day 1981).

Fink's Definition. The above conceptualizations do not obviate the need for a comprehensive definition of the construct. Such a definition was provided by Fink (1968, 456): "Such breadth is implied by defining social conflict as 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" (emphasis added). This definition positions antagonism as the common element in all conflicts. Fink (page 456) stresses that there are a number of different kinds of psychological antagonisms (e.g., incompatible goals, mutually exclusive interests, factual or value dis-

sensus) and a number of different kinds of antagonistic interactions (ranging from the most direct, violent, and unregulated struggle to the most subtle, indirect, and highly regulated forms of mutual interference), none of which is necessarily present in all instances of conflict.

Another good definition was offered by Raven and Kruglanski (1970, 70), who described conflict as "tension between two or more social entities . . . [that] arises from incompatibility of actual or desired responses." Their term "tension" appears to be a synonym to Fink's "antagonistic psychological relationship." However, Fink's definition additionally subsumes the typology of Pondy without explicating the different states. It also accommodates the process conception of conflict. The process conception of conflict appears to be superior because it recognizes that an instance of manifest conflict represents a cumulation of successive effects (i.e., from latent state to perceived and/or affective state to manifest state) rather than an impromptu reflex behavior.

Raven and Kruglanski (1970) and Fink (1968) concur on a crucial issue regarding the development of conflict: incompatibility is postulated to be of central importance. In other words, some form of incongruence between actual and/or desired states of different parties is held to be the core

of origin of conflict. Incompatible goals, mutually exclusive interests, and factual or value dissensus all imply incongruence between actual and/or desired states of the involved parties. In summary, the following definition of social conflict can be deduced from the foregoing discussion of theoretical writings:

Social 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 and/or at least one form of antagonistic interaction caused by the incongruence or incompatibility between actual and/or desired states of the involved parties.

Incompatibility as the central cause of conflict is well documented in the literature. To cite a few examples, Hunger and Stern (1976) define conflict as a "series of episodes based upon incompatibility of goals, aims, or values" (p. 591); Brown and Frazier (1978) state that "Conflict between firm j and firm i is the incompatibility of their respective goals, strategies, and activities" (p. 267; emphasis in the original); Deutsch (1973) characterizes conflict to be a state when "incompatible activities occur" (p. 10); and Brown and Day (1981) define channel conflict as "a process which progresses from a latent state of incompatibility to perceived conflict to affective conflict to manifest conflict to conflict outcomes or aftermath" (p. 264). Among others who have supported this conception are Stern (1970),

Ross and Lusch (1982), and Eliashberg and Michie (1984). The terms "incompatibility," "incongruence" and "inconsistency" have been used interchangeably in the literature.

The actual issues causing the incompatibility or the incongruence (e.g., goals, strategies, values, activities) have been considered to be of secondary importance by the scholars. At the current stage of theoretical understanding of channel conflict, such a position makes good pragmatic sense. The critical psychological state, after all, is the perception of incompatibility or incongruence. Conceivably, a host of issues can trigger this perception and the various issues are, therefore, more of an operational or measurement problem. At a later date it would be instructive to investigate the impact of different kinds of issues as exogenous variables on the perception of conflict.

Hence, the deduced definition of conflict has been adopted for this research. Although this research effort confines itself to perceived conflict and perceived cooperation, the process conception is accepted in the theoretical arguments for the research hypotheses (see Chapter III).

Conflict and Dissatisfaction

The definition of conflict as stated above in terms of incompatibility appears to be closely related to the common definitions of "dissatisfaction." The relationships between

dissatisfaction and conflict, and between satisfaction and conflict have been empirically tested in the channels context. Brown and Day (1981) found that high levels of a channel member's dissatisfaction were positively correlated with high conflict levels ($d=0.84$; $N=210$; $\text{power}=0.995$ at 2-sided 0.05 level). Schul, Lamb, and Little (1981) found high levels of franchisees' satisfaction with the channel arrangements were correlated with low levels of channel conflict ($d=2.1096$; $N=349$; $\text{power}=0.995$ at 2-sided 0.05 level). It appears that dissatisfaction and conflict covary positively. However, they are conceptually distinct in other ways.

Dissatisfaction, though also arising from a discrepancy between the desired and the actual states, does not imply antagonism. The term antagonism, though frequently used in defining conflict (e.g., Fink 1968; Mack and Snyder 1957; Williams 1947; Wright 1951; Kerr 1954; Coser 1956; Dahrendorf 1959; Shepard 1964; MacIver 1937; Simmel 1955; Gross 1966; Mack 1965; Von Wiese and Becker 1932; Hamilton 1931; Sorokin 1928) has not yet been formally and precisely defined. For instance, Fink (1968, 456) candidly admits that "antagonism (which for the moment remains undefined) is the common element in all conflicts." Fink's definition, presented earlier, conceives of conflict as antagonistic psychological relationship or interaction (p. 456). The Random

House Dictionary (1982, 56) defines antagonism as "hostility or opposition, an opposing force, principle or tendency."

A review of literature reveals a great number of terms used to define the conflict construct and its finer shades. As Fink notes, this is "especially true in the conflict literature which depends on the common language with its rich but vague and ambiguous conflict vocabulary" (page 430). Perhaps, this has happened because conflict, as a phenomenon, has been under scrutiny by several disciplines for many years. Conflict researchers have often resorted to the dictionary meanings, synonyms, or the original roots of the words to obtain precise definitions and distinctions for the terms related to conflict (e.g., Singer 1949; Mack 1965; MacIver 1937). In the current research, the dictionary definition of "antagonism" has been accepted in the absence of theoretical definitions for this term. In other words, when a perception of incompatibility becomes directed and associated with a party, and the party is perceived as an adversary or an opponent for the issue/s in question, the resultant psychological state is no longer dissatisfaction but conflict. The presence of antagonism has been considered essential to the evolution of conflict in this research. Chapter III presents the causal models.

States and Dimensions of Conflict

In an effort to gain further insight into conflict, the construct has been conceptualized as divisible into different "states," and as measurable by different "dimensions." As previously mentioned, the typology and the process conception of conflict proposed by Pondy are well entrenched in the channel literature. Pondy also provided an hierarchy of effects for conflict (Figure 1). Specifically, he hypothesized that latent conflict will lead to affective and/or perceived conflict states; and these states in turn will lead to a manifest state of conflict.

The relationship between affective and perceived states, as proposed, may be criticized in the context of the Zajonc-Lazarus debate on the nature of emotion and cognition. However, since almost twenty years of debate on the relations between affect and perception in psychology has not yet settled the question, the issue is not addressed here. Suffice it to say that the hierarchy of effects has been accepted within the channel literature. For instance, the Process Model of Dyadic Interorganizational Relations (Cadotte and Stern 1979), and the Intrachannel Conflict Process Model (Rosenberg and Stern 1971) are essentially based on Pondy's hierarchy of conflict. Brown and Day (1981) tested and found support for the following propositions:

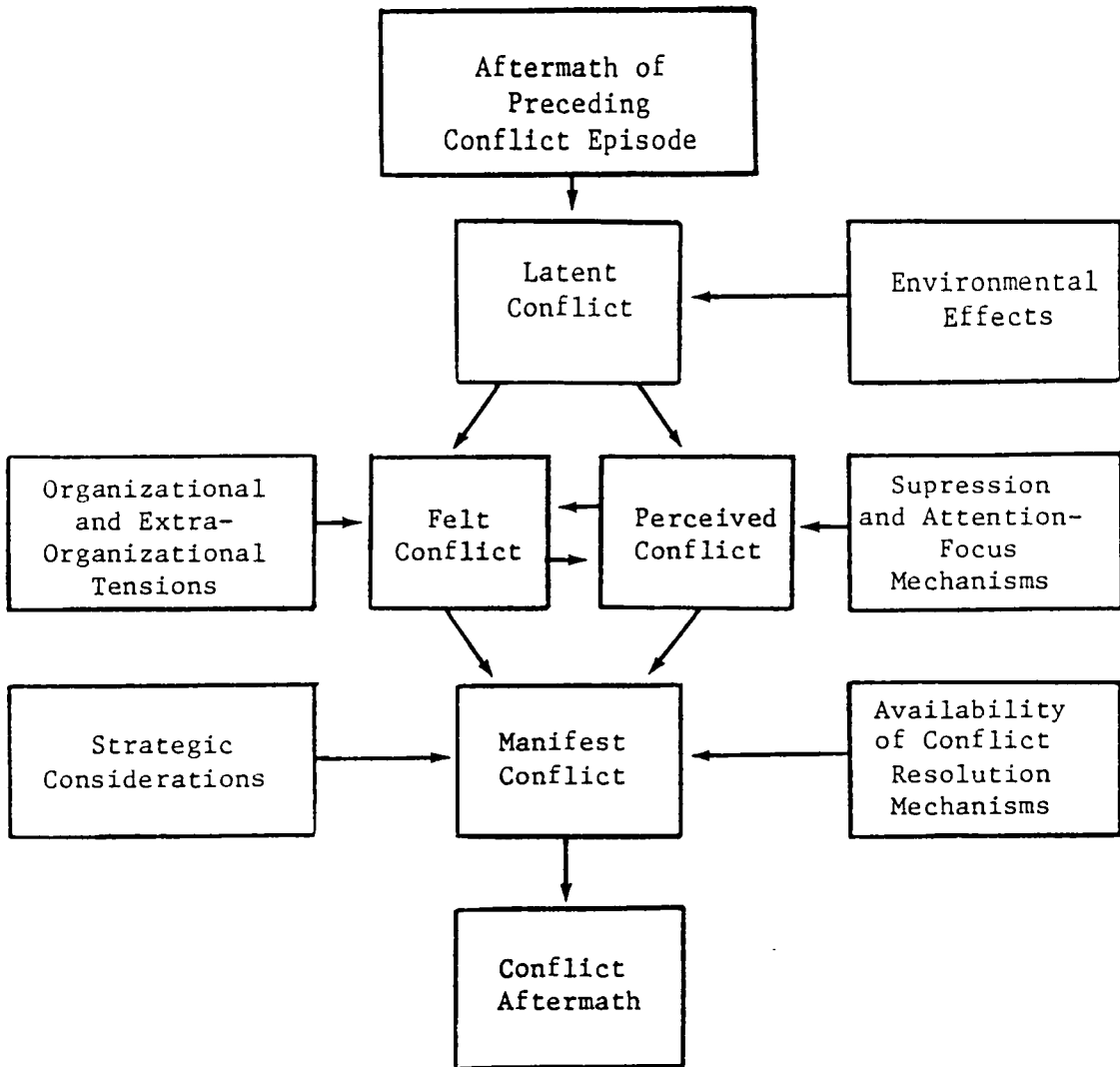


Figure 1: Pondy's Hierarchy of a Conflict Episode

(Obtained from Pondy 1967, page 306)

"affective conflict causes manifest conflict" ($d=0.9336$; $N=210$; power=0.995 at 2-sided 0.05 level) and "perceived conflict causes manifest conflict" ($d=0.6172$; $N=210$; power=0.995 at 2-sided 0.05 level).

An important but usually unacknowledged contribution of Pondy's model is the implicit learning or the history effect. Hence, the latent conflict state is moderated by the effects of the past conflictful events, i.e., a potential cause of conflict may not be perceived and/or felt as such in light of past experiences. The above notion is conceptually very close to the logic of the "comparison level" of exchange theory (Thibaut and Kelley 1959) used to guide the theoretical arguments (Chapter III).

The acceptance of the above typology has resulted in considerable confusion as far as the empirical channel literature is concerned. Foremost, when different states of conflict have been studied by different researchers, the evidence obtained is typically generalized to the phenomenon of conflict as a whole. Results of quantitative integration reported later indicate that the magnitude of effects varies greatly depending on the conflict state measured.

Compounding the problem, several "dimensions" of conflict have also been established for each conflict state i.e., frequency, intensity, and importance. The term "di-

mensions" may be conceived as different operational indicators of any conflict state. Hence, "frequency dimension" seeks to measure a conflict state in terms of the number of times it occurs; "intensity dimension" attempts to estimate the same conflict state in terms of how strongly it has occurred; while the "importance dimension" tries to obtain a measure of a conflict state by obtaining a measure of the salience of the issues over which conflict has occurred. Not surprisingly, Brown and Day (1981) point out that "researchers have studied many different aspects of channel conflict process . . . The lack of concentration on a particular stage of the process or on a particular dimension of a stage has led to the wide variety of operationalizations" (page 264).

The various dimensions have not been conceived as substitutable alternate methods of measuring conflict, but rather as complementary measures of a conflict state. Brown and Day (1981) have demonstrated that though frequency and intensity dimensions were found to be unidimensional constructs, they are highly correlated. Moreover, of the six measures developed by them, the best measure of conflict in terms of content validity, nomological validity, and convergent validity (reliability was 0.83) was provided by the multiplication of importance, frequency and intensity indi-

cators. This composite measure was also found to be unidimensional. Moreover, as the quantitative integration results show that the magnitude of effects when all three dimensions were used was much larger than when only one dimension or two dimensions were used to measure conflict.

If the dimensions of conflict used in empirical literature are valid, it follows that the operational indicators of any conflict state are inadequate individually and the construct is underidentified unless all three aspects of the construct have been measured. However, different scholars have measured different dimensions of the investigated conflict states. Treating such empirical evidence as homogeneous may be conceptually invalid as the obtained measures may not be theoretically equivalent or even comparable. In other words, an intensity measure of manifest conflict, for instance, may be theoretically distinct from a frequency measure of manifest conflict. Table 1 summarizes the past attempts at channel conflict measurement to highlight their noticeable diversity.

Conflict and Competition

Further purification of the conflict construct has been attempted by distinguishing between "conflict" and "competition," and considerable controversy has been generated over the relationships between "conflict" and "competition."

TABLE 1
PAST MEASURES OF CONFLICT STATES AND DIMENSIONS (EMPIRICAL STUDIES)

Study	States Measured	Dimensions Measured	Study	States Measured	Dimensions Measured
Assael (1968)	Manifest	Intensity	Brown and Frazier (1978)	Manifest	Frequency & Importance
Pruden (1969)	Affective	Intensity	Etgar (1979)	Affective Perceived Manifest	Intensity Intensity Frequency
Rosenberg and Stern (1971)	Perceived	Intensity			
Pearson (1973)	Affective	Intensity	Rosson and Ford (1979)	Manifest	Frequency
Stern, Sternthal and Craig (1973a)	Perceived	Intensity	Brown and Day (1981)	Manifest	Frequency Importance & Intensity
Foster and Shuptrine (1974)	Manifest	Frequency			
Hunger and Stern (1976)	Affective Perceived Manifest	Intensity Intensity Frequency & Intensity	Schul, Lamb and Little (1981)	Manifest	Frequency
			Ross and Lusch (1982)	Affective	Intensity
Lusch (1976a)	Manifest	Frequency	Brown, Lusch and Muehling (1983)	Perceived	Frequency
Lusch (1976b)	Manifest	Frequency			
Pearson and Monoky (1976)	Affective	Intensity	Eliashberg and Michle (1984)	Perceived	Frequency & Intensity
Kelly and Peters (1977)	Manifest	Frequency			

Most of the theoretical debate has occurred outside of the channel literature. The main proponents for treating competition and conflict as one have been Dahrendorf (1959), Simmel (1955), Rapoport (1960), and Boulding (1962). On the other hand, Mack and Snyder (1957), Coser (1964), Friedsam (1964), Mack (1965), and Deustch (1969) have argued for conceptually distinguishing between the two constructs.

In general, the latter scholars have tended to view conflict as a form of interaction (i.e., manifest conflict), whereas Dahrendorf and his supporters have also included the perceived and the affective states within their definition of "conflict." In justifying the theoretical separation of the two terms on the basis of different underlying psychological motives, it has been argued that though competition and conflict are both processes of opposition, and though there will be cases of overlap and confusion, competition involves striving for scarce objects according to established rules which limit what the competitors can do to each other in the course of striving. The chief objective is the scarce object, not the injury or destruction of the opponent. Challenging this position, Dahrendorf and his supporters claim that competition and conflict are essentially motivated by the same type of social relationship and are, therefore, both different manifestations of an identical force.

In a nutshell, one group has distinguished between the two terms on the grounds of differentiated underlying psychological motives, whereas the other group has proposed that they be considered synonymous precisely because the psychological motives are the same. While the former group perceives competition as a regulated activity, the latter group (acknowledging this) does not consider this distinction a significant theoretical factor.

Within the channels literature, the early theorists influenced by the economists' perspective made no distinction between the two terms (e.g., Palamountain 1967; Gettell 1967; Mallen 1967; Assael 1968). However, later on, under the influence of the debate discussed above, and presumably, also because the economic orientation was being supplanted by a behavioral one, distinctions began to be made between the two terms. Early proponents of this distinction were Stern (1971), Schmidt and Kochan (1972), and Stern et al. (1973a, 1973b). Hence, conflict was said to be different because it was direct, personal and opponent-centered behavior (Stern 1971), while competition was defined as independent, parallel striving toward a goal or object (Stern et al. 1973a). The original analogy offered by Mack (1965) of two runners aiming for the prized cup (competition), and one runner tripping the other to obtain the same cup (conflict) summarizes much of the debate over this issue.

While a conceptual distinction between conflict and competition is often retained, the distinction may not be theoretically very important. Most competitive situations would probably lead to perceptions of conflict. It is also questionable whether the difference is operationally meaningful. At any rate, no empirical evidence on this issue was found although the issue has generated a heated debate in the past and the distinctions continue to be accepted. The definition adopted in this research conceives of conflict as resulting from incongruities in presence of antagonism. To the extent, competitive situations bring about this antagonism, the emergence of conflict can be expected.

CONFLICT AND COOPERATION

A discussion of the concept of channel conflict is essentially incomplete without an appraisal of the relationships between "conflict" and "cooperation," as these constructs have been variously conceived as opposites of each other or as distinct variables.

Economic Viewpoint

The economic perspective to channel conflict and cooperation is well represented in the writings of Mallen (1963 and 1967) who traced the origins of channel conflict and cooperation to the process of exchange or transaction it-

self. Mallen proposed that channel conflict arises because, in the course of transactions, both buyers and sellers seek to maximize their individual benefits (1967, 125). He also suggested that the act of exchange indicates the elimination of conflict, and implies, a cooperative act. In other words, a transaction was thought to imply gains for both the partners. As presented, the economic perspective apparently was chiefly interested in issue-specific conflict and cooperation. However, some factors which could cause ongoing conflict have been enumerated, e.g., struggle for channel leadership, desire of the manufacturers and the retailers to eliminate wholesalers, and differences in business philosophies (Mallen 1963, 26). However, these did not become the focal points of channel conflict research. Cooperation, conceived as absence of conflict, was thought to flow from common goals.

Behavioral Perspectives

Much of the research on intergroup relations and conflict in social psychology has taken the now classic field experiments by the Sherifs as a starting point (Austin and Worchel 1979, 4). The model, labeled the "realistic group conflict theory" basically proposes three recurrent themes:

- (1) "win/lose situations spark a form of aggressive competition that is characterized by attempts to neutralize, harm, and eliminate the competing group;

- (2) win/lose situations contribute to own-group bias, that is, cause group members to raise their evaluation of their own group and lower their evaluation of the opposing group;
- (3) if it were only possible to get two groups to pursue common (rather than mutually exclusive) goals, conflict would be eliminated" (Harrison 1976, 544).

In Sherif's words: "our findings demonstrate the effectiveness of a series of superordinate goals in the reduction of intergroup conflict, hostility, and their by-products" (1958, 355). Sherif also suggested other measures for reduction of intergroup conflict (i.e., disseminating information, increasing social contact, conferences of leaders) within a context of superordinate goals (1958, 356); and later, emotional catharsis of pent-up frustrations, and balance of power (1979, 257). "Cooperation to attain one or two superordinate goals did not reduce the tensions, but cooperation at a series of such tasks resulted in a clear change in intergroup relations" (Harrison 1976, 544).

Superordinate Goals in Channel Research

The channel conflict literature, like social psychology, has also tended to see the induction of superordinate goals as one of the major solutions for conflict reduction (Stern, Sternthal and Craig 1973a, 1973b, 1975; Hunger and Stern 1976). The central importance placed on superordinate goals for conflict reduction is summarized by Hunger and Stern (1976, p.592):

"Of all possible conflict resolution techniques, the superordinate goal appears to be most effective Through various field experiments at boys' camps, Sherif et al. compiled impressive evidence indicating the functionality of injecting a series of superordinate goals into a conflict situation to reduce intergroup conflict. Subsequent studies with groups have generally supported these findings."

The empirical investigations of the efficacy of superordinate goals for reducing channel conflict have not supported Sherifs' findings. Stern et al. (1973a) hypothesized that affective conflict varies inversely with the emergence of superordinate goals, but only 3 out of 23 measures statistically supported the proposition. However, Hunger and Stern (1976) later pointed out several problems related to this conflict resolution device. Most researchers (including Sherifs) have confounded the effect of the superordinate goal with that of the elimination of the conflict-inducing manipulation. Hence, the possibility of rekindled conflict on original conflict-inducing issues cannot be ruled out. Other researchers (e.g., Stern et al. 1973a) have confounded the effect of achieving superordinate goals with the effect of reaching an agreement. Hence, the very act of agreement may reduce conflict regardless of the superordinate goals. Another possible outcome is the escalation of conflict due to the failure of superordinate goals.

In an empirical study aimed at correcting for the criticisms above, Hunger and Stern (1976) tested the proposition that there will be a significant difference in the amount of conflict reduction between a condition in which the superordinate goal is achieved and a condition in which the superordinate goal is not achieved. The hypothesis was rejected as the measures of the dependent variable, perceived conflict, were not statistically different at .05 level in the two conditions ($d=0.1025$; $N=72$; $\text{power}=0.15$ at 1-sided 0.05 level) for the proposition "achieved superordinate goals reduce conflict." The anomaly was explained by the authors as: "The superordinate goal should primarily affect the emotional or affective component of the conceptualization stage of the conflict episode" (page 604). Quantitative integration of the results of the two studies indicated a weak effect size (mean $d=0.1857$; $N=159$; $\text{power}=0.39$ at 2-sided 0.05 level) associated with the proposition "presence of superordinate goals reduce conflict."

Since the manipulation of the achievement of superordinate goal was carried out only once, the experimental outcomes could be considered as being consistent with the camp studies (Sherifs), i.e., attainment of a series of superordinate goals is thought to be necessary for conflict reduction. Alternatively, the anomaly may have been caused by

some variables relevant to understanding the theoretical relationships that were omitted in the conceptualization.

The theoretical arguments offered in this research effort provide one post hoc explanation for the anomaly. Stern et al. (1973a) and Hunger and Stern (1976) both used the imminent threat from a new entrant in the marketplace for manipulating superordinate goals in their experiments. Agreement on such external threats may have been perceived as normal behavior from firms despite conflict on other issues, and may have generated only an issue-specific perception of cooperation. The perception of conflict over the original issue may have been considered an unrelated issue. Possibly, if the manipulation of the superordinate goal involved an issue over which agreement would not be the normally expected from firms, the achievement of the superordinate goal may have reduced the perceptions of conflict.

Cooperation As Absence of Conflict

Conceptually, Sherif and channel researchers who have accepted his views have implicitly conceived of cooperation to be the lack of conflict: if superordinate goals bring about cooperation, conflict will disappear or be reduced. Pearson and Monoky (1976, 240) point out the problem of conceiving conflict and cooperation as being coexistent: "The problem of introducing the concept of cooperation along with

conflict into the channel is that a measurement problem develops as to when a situation of low cooperation becomes one of conflict." To resolve this problem, they introduced /a conflict-cooperation continuum... Such ~~a~~ continuum simply says that conflict and cooperation are opposite ends of a single scale. Given the continuum, a channel relationship containing a great amount of conflict would by definition have to possess very little cooperation.

Cooperation As a Distinct Construct

Some researchers in the past have offered conceptualizations of interorganizational cooperation as a distinct construct. This body of literature has been criticized by several writers for theoretical insufficiency (Schermerhorn 1975; Ross and Lusch 1982; Childers and Ruekert 1982). It has been noted (e.g., Schermerhorn 1975) that this state of affairs has resulted largely from scholars not heeding and building on the works of previous writers. The construct has usually been defined to fit the study at hand. Among the definitions offered for cooperation are organizational interdependence (Aiken and Hage 1968), component interdependence (Baker and O'Brien 1971), concerted decision making (Warren 1972), joint accomplishment (Schermerhorn 1975), interorganizational interaction (Levine, White, and Paul 1963), pursuing promotably interdependent goals (Deutsch 1949, Ross and

Lusch 1982), and joint striving toward an object (Stern and Reve 1980).

A common feature in the above definitions is that they describe the indicators of cooperation rather than the construct itself and, as such, are operational definitions of the construct lacking constitutive meaning. As Torgerson (1958) has argued, scientific definitions of constructs must possess constitutive meaning as well, i.e., be defined in a fashion that permits the constructs to be theoretically related to other constructs of interest. Another deficiency of the available definitions is that they have ignored the psychological state implicit in cooperation, and confined themselves to the manifest behavioral aspects of the construct.

As far as the channel context is concerned, realistically we are concerned with a scenario of several business issues confronting the channel members at any point of time. They may agree to cooperate on many, and may experience conflicts on others. Further, their behavior is confounded within an atmosphere of acknowledged interdependence and superordinate goals. By definition, they work together, make joint decisions, and interact with each other. Hence, within the channel context, the critical problem with the available definitions has to do with their very applicability. As stated, the definitions would seem to imply that channels

are synonymous with cooperation. If the definitions are interpreted to mean that cooperation implies that the modal behaviors be consistent with the offered definitions, the definitions are inadequate because they do not envision simultaneous issue-specific perceptions of conflict and cooperation- a commonplace characteristic in channels.

Robicheaux and El-Ansary (1976), in defining channel cooperation as "a state or condition characterized by members' willingness to coordinate their activities in an effort to help all channel members achieve superordinate goals" (emphasis added), recognize the need to include the psychological component of cooperation. However, their definition is still susceptible to most of the problems associated with other definitions. Perhaps more importantly, their definition fails to explain the construct in a context of simultaneous issue-specific conflicts and cooperations. A more inclusive definition is offered by Childers and Ruekert (1982, 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" (emphasis in the original).

It is noteworthy that this definition has two distinct components: a psychological component captured in "the ex-

pectation of a balanced exchange," and a behavioral component specified in "through joint action among two or more actors." Thus defined, cooperation as a construct subsumes Robicheaux and El-Ansary (1976) definition. This definition has been adopted for this research.

Issue-Specific Versus Overall Perceptions

Conflict and cooperation have also been conceptualized as distinct by differentiating between issue-specific and overall perceptions. A new conception of the relationship between conflict and cooperation was introduced by Childers and Ruekert (1982, 117-118):

"Both cooperation and conflict can be issue-specific and might be found to concurrently characterize several of the exchanges that occur among the channel members . . . The extent that conflict would lead to a deterioration in the overall level of cooperation existing between the parties would be dependent on such factors as the saliency of the issue, and the duration of the negotiations."

Some empirical evidence from non-channel contexts already suggests that conflict and cooperation may not be merely relative absences of each other; and that the two may even coexist. Coexistence of cooperation and conflict was discovered in relationships between community organizations and State Employment Service district offices by Schmidt and Kochan (1977). Sociologist Whyte (1976) also found evidence of simultaneous presence of conflict and cooperation.

Even in the channel context, conflict and cooperation may not be simply opposing psychological states but issue-specific concurrent states. Such a conception acquires a powerful intuitive appeal if one recalls that channels (by definition, a cooperative venture) are typically confronted by several issues, some of which are conflictful and others cooperative. Hence, a channel beset with conflictful issues can still retain the overall cooperative perception so long as channel members continue to see their relationship as leading to a balanced exchange relationship.

The above arguments yield interesting insights and implications toward the understanding of channel relationships. Foremost, it may be that issue-specific conflicts are necessary but not a sufficient cause for an overall perception of lack of cooperation. Issue-specific conflicts, collectively, become a sufficient cause for lack of cooperation only when they destroy the expectation of a balanced exchange relationship.

Secondly, issue-specific perceptions of conflict and cooperation may coexist easily, and indeed usually do in real-life channel relationships. While the strength of issue-specific perceptions of conflict would depend on the extent of incompatibility perceived over the issues, the issue-specific perceptions of cooperation would depend on the

extent to which balanced exchange relationship is perceived over the issues. Of course, on any given issue, there can either be an issue-specific perception of cooperation or an issue-specific perception of conflict.

An indirect argument for making theoretical distinctions between issue-specific perceptions and overall perceptions was provided by Pruden (1969). Pruden used the 6-point instrument of Walton, Dutton and Fitch (1966) to obtain measures of conflict and cooperation over twelve business issues. The mean scores ranged from 3.09 to 3.81 (perfect conflict implied a score of 6.0). Pruden suggested that "the overall relationship between seller and buyer organizations exhibits partial conflict as opposed to the opposites of total conflict or cooperation" (p.343). He also found that the median scores on different types of issues were different, suggesting that perceptions of conflict may not be global but may vary from issue to issue.

Rosenberg and Stern (1971) also found differences in the amount of perceived conflict over different types of issues. "While certain issues and groups of issues generated high conflict within the dyads, conflict was low on the average" (p.441). Their study shows how a general bias toward cooperation in channels may coexist with issue-specific perceived conflict. They also found a positive correlation bet-

ween the duration of channel membership and the amount of perceived conflict. This finding begs the question of why such channel members did not opt out of the channel. Perhaps, the overall perception of cooperation as defined above prevented channel-dissolutions and perceptions of conflict were only issue-specific. Pearson and Monoky (1976) in attempting to relate performance to conflict and cooperation found conflict and cooperation to be present in all channel segments regardless of whether they were classified high or low in performance, again suggesting coexistence of the perceptions of conflict and cooperation and the need to understand what brings about these issue-specific perceptions. Unfortunately, the available literature has not attempted to answer these questions. An understanding of what brings about cooperation may explain the simultaneous presence of conflict and cooperation.

Determinants of Channel Cooperation

Some studies that view conflict and cooperation to be distinct constructs have proposed power balance and interdependence to be determinants of conflict as well as cooperation. Stern and Reve (1980) trace the origins of conflict and cooperation to relative power bases enjoyed by channel members as well as the aggregate amount of power in the channel (p. 58). Three empirical investigations (Assael

1968; Lusch 1976b; and Brown and Frazier 1978) have tested a related proposition, namely, "use of power causes conflict." Quantitative integration shows a weak effect size (mean $d=0.1439$; $N=602$; power=0.62 at 2-sided 0.05 level). Ross and Lusch (1982) see interdependence as the common root to conflict and cooperation. However, Kelly and Peters (1977) found a weak effect associated with the proposition "dependence causes conflict" (mean $d=0.1232$; $N=172$; power=0.22 at 2-sided 0.05 level). On the other hand, Rosson and Ford (1979) found a stronger support for the proposition "dependence reduces conflict" ($d=0.7818$; $N=17$; power=0.60 at 2-sided 0.05 level).

Several criticisms of these positions can be offered. In a generally competitive market structure, few channel members are so dependent and so relatively powerless that they can be coerced into cooperation for any length of time even when they do not expect balanced exchange relationships. Both approaches offer propositions only about the overt manifest instances of conflict and cooperation, and ignore the psychological aspects of the constructs. Both positions fail to explain the coexistence of issue-specific instances of manifest conflict and cooperation observable in actual channels. Empirically, both positions have yielded weak or inconsistent results and as yet have not been vali-

dated. Finally, both the presence of interdependencies and power imbalances merely define the scenario typical of channels and, hence, the minimum conditions for any theorizing about channel behavior, rather than presenting any insight into the causes of channel conflict and cooperation.

CONFLICT AND PERFORMANCE

Within the channel context, a balanced understanding of conflict must include its relationship with the managerially important issue of channel performance. Several researchers have hypothesized a relationship between channel conflict and channel performance (e.g., Stern and Gorman 1969; Stern and Heskett 1969; Rosenbloom 1973; Hunt and Nevin 1974; Lusch 1976a, 1976b). Though the relationships proposed have been complex, it is generally accepted that conflict may be both dysfunctional or beneficial to channel performance (e.g., Stern, Sternthal and Craig 1973a; Thomas 1976). For instance, Stern and Gorman (1969) link the nature of the outcome of conflict to whether or not a satisfactory inducements-contribution balance (i.e., a balance between rewards and effort) is achieved. Disintegration is hypothesized in the absence of such a balance; otherwise a unification is said to be expected. They add, "Conflict may also contribute to creating more effective and efficient channel systems" (page 171). Similarly, Pondy (1967) asserts that conflict is

frequently, but not always, negatively valued, depending on the subjectively evaluated inducements-contribution balance. Hence, people may supposedly be willing to tolerate conflict so long as inducements exceed the costs of the conflict. A similar prediction would come from exchange theory (Chapter III). Rosenbloom (1973) has also proposed a theoretical model linking conflict and efficiency.

Rosenbloom's Model

The consensus opinion within the channel area on the above relationship can be represented by an inverted U-shaped curve (Figure 2). Introduced by Rosenbloom (1973), such a curve implies that conflict stimulates performance to a certain point, beyond which increases in conflict decrease performance. Stern and Heskett (1969) support Boulding (1965) in voicing a need to identify the level of conflict above which it is malign, and below which it is benign. Rosenbloom calls this critical point phenomenon as the threshold effect.

The relationship between conflict and performance has been empirically assessed in four studies (Pruden 1969; Pearson 1973; Lusch 1976a; and Pearson and Monoky 1976). Though the results based on the significance criteria used by the authors have been inconsistent, quantitative integration suggested homogeneous results. For instance, some in-

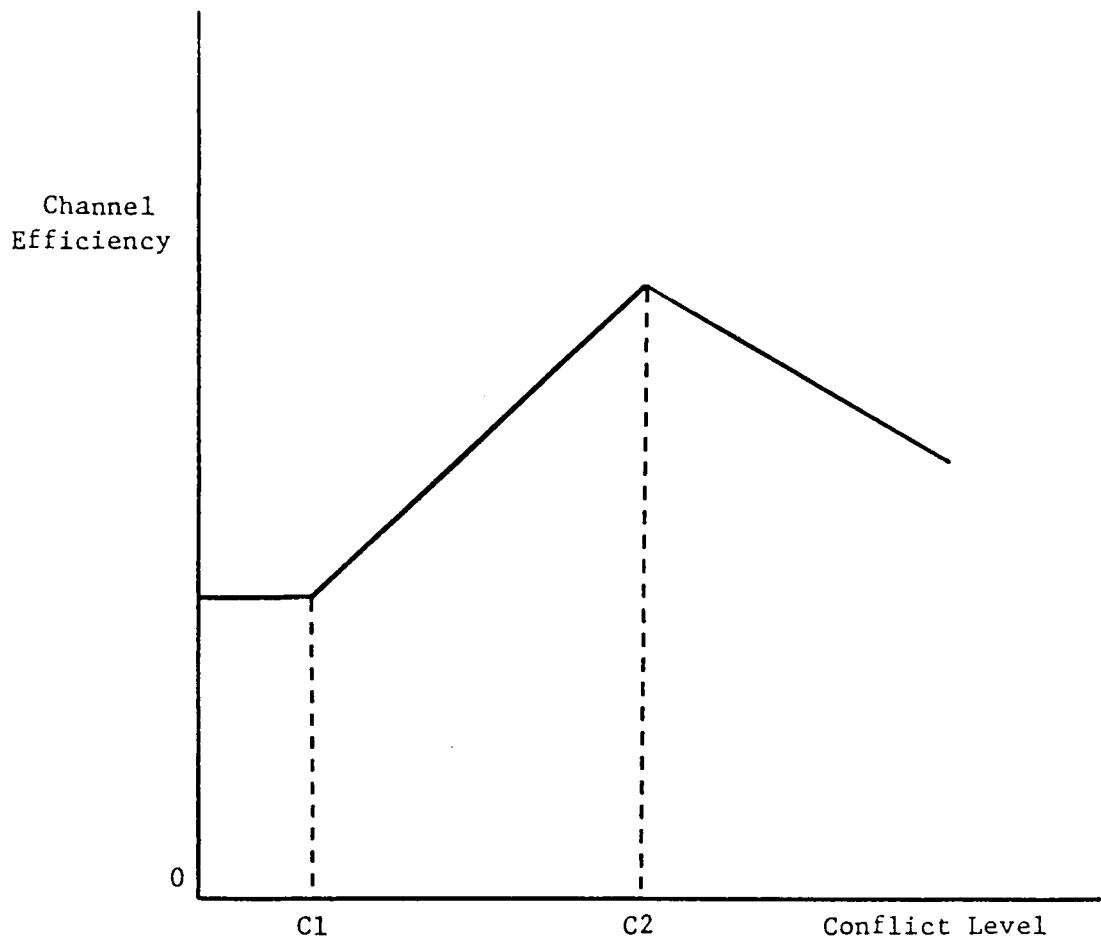


Figure 2: Conflict and Channel Efficiency - General Curve

(Obtained from Rosenbloom 1973, page 29)

direct and weak indication of the relationship between conflict and performance ($r=0.08$; $p=0.40$) was provided by Pruden (1969) who found salesmen engaging in somewhat greater communication, balance, and decision-making (factors significantly related to productivity measures at $p=.10$) in low-conflict relationships than in high-conflict relationships. Pearson (1973), in exploring conflict and performance within the food distribution industry, found no support on the basis of significance levels for the proposition that performance levels would differ between segments with low levels of conflict and those with high levels of conflict. However, six factors representing cooperation were more closely related to performance than the four factors representing conflict (Pearson and Monoky 1976). Lusch (1976a) sought to assess the effect of manifest channel conflict on return on assets and asset turnover (indicators of performance) within the automotive channel. For some dealers (i.e., Ford and Chrysler-Plymouth dealers) a negative relationship was found between conflict and performance.

Quantitative integration revealed a homogeneous mean d effect of 0.2136 ($N=296$; power=0.80 at 2-sided 0.05 level) for the proposition "conflict improves performance" and a stronger support for the proposition "conflict reduces performance" (mean $d=0.7519$; $N=124$; power=0.995 at 2-sided 0.05 level).

Rosenbloom (1973) also proposed a tolerance range at which conflict was said to have no effect on channel efficiency. Beyond this range the effect of conflict begins to influence channel efficiency (Figure 2). Rosenbloom offered the following explanation for the tolerance level: "the parties may feel that their need for each other to achieve their respective goals is so great that the conflict can have no more than a superficial effect . . . In other words, the channel members learn to live with the conflict" (page 28, emphasis added). The explanation is cloaked in economic rationality.

Only Lusch (1976a) has investigated the threshold effect implicit in the inverted U-shaped relationship. His five effects when quantitatively integrated were found to be homogeneous and yielded a mean d effect of 0.5970 (N=156; power=0.995 at 2-sided 0.05 level).

Behavioral Interpretation

A behavioral explanation of the same phenomenon based on exchange theory and role theory could also be rendered. Assuming that the ongoing channel relationship is attractive enough to maintain, conflictful issues may be evaluated by the channel members on the basis of (i) their past experiences with such issues, (ii) their expectations about the appropriate behaviors when faced with such issues, (iii)

the salience of the conflictful issues, and (iv) the recency of information used to determine expectations. If certain conflictful issues have routinely occurred and have become part of the role-set or if they are unimportant, channel members may continue performing their normal jobs despite such events. In other words, the impact on performance or efficiency may not be as simplistic as visualized by the inverted U-shaped curve.

Rosenbloom's conception also implies a cumulative effect, i.e., as the conflict level increases more and more, the hypothesized effects occur. Put differently, the cumulative impact of certain levels of conflict is thought to be inadequate to alter efficiency; only when the tolerance level is outweighed by the accumulated conflict does it begin to affect efficiency. However, issue-specific conflict may be related to overall conflict in a cumulative manner only under special conditions. The tolerance range may exist only for unimportant conflictful events or for events which are expected as part of the role set. Moreover, tolerance levels may themselves change as channel members adapt to their experiences and modify their expectations or if the salience associated with issues is altered in light of new organizational priorities. Typically, the empirical studies have used the commonplace conflictful issues peculiar to the

researched channel in an effort to be realistic. However, it is these very issues which are likely to have become part of the role-sets of the channel members. Hence, the exchange theory perspective offers an alternative explanation for Rosenbloom's curve and additionally specifies some moderator variables that have an intuitive appeal and bring the channel realities into explicit focus (Chapter III).

CAUSES OF CONFLICT

Due to the extensive theoretical literature on conflict available from various disciplines, channel researchers have identified and internalized a large number of causes of conflict (Table 2). Within the conceptual literature, the Gill and Stern (1969) study deserves a special mention inasmuch as it discusses conflict entirely in the framework of role theory. Other scholars have not confined themselves to any specific theories but have been strongly influenced by social psychology and organizational behavior literature. Of course, the historically-noteworthy economic writings also exist. The chief causes of conflict proposed in the conceptual channel literature are summarized in Table 2.

As far as the empirical literature is concerned, essentially two trends are evident. Etgar (1979) has partitioned the causes of conflict into attitudinal causes and structural causes, while the majority of researchers have used spe-

TABLE 2
CAUSES OF CONFLICT: FROM CONCEPTUAL CHANNEL LITERATURE

Hypothesized Cause	Proposing Researchers	Hypothesized Cause	Proposing Researchers	Hypothesized Cause	Proposing Researchers
Goal Impediment	Stern and Gorman (1969)	Expectation Differences	Stern and Gorman (1969)	Unilateral Decisions	Stern and Gorman (1969)
Incompatible Goals	Stern and Heskett (1969) Cadotte and Stern (1969)	Unfulfilled Expectations	Childers and Ruekert (1982)	Interdependence	Cadotte and Stern (1969) Gill and Stern (1969) Stern and Gorman (1969)
Role Deviance	Stern and Gorman (1969)	Domain Dissensus	Cadotte and Stern (1969)	Inadequate/Faulty Communications	Stern and Gorman (1969)
Role Ambiguity	Gill and Stern (1969)	Dysfunctional Domain Definitions	Stern and Heskett (1969)	Lack of Formal Authority Structure	Stern and Heskett (1969)
Role Incongruence	Gill and Stern (1969) Stern and Heskett (1969)	Use of Power	Stern and Gorman (1969) Cadotte and Stern (1969) Galbraith (1976)	Profit Motive	Galbraith (1976) Mallen (1967)
Role Dissensus	Gill and Stern (1969)	Countervailing Power	Galbraith (1976)	Philosophical Differences	Mallen (1967)
Role Misconception	Stern and Gorman (1969)	Imbalance of Power	Mallen (1967)	Disagreements on Evaluation Norms	Stern, Reve and Philips (1979)
Perceptual Incongruence	Cadotte and Stern (1969) Stern and Heskett (1969)	Desire for Autonomy	Bucklin (1973)	Absence of Motivational Investments	Cadotte and Stern (1969)
Selective Perceptions of Reality	Stern and Gorman (1969)	Intolerance	Bucklin (1973)		

cific factors like uses of non-coercive and coercive power bases (Lusch 1976b), goal incompatibility (Hunger and Stern 1976; Rosenberg and Stern 1971; and Stern et al. 1973a and 1973b), and achievement or non-achievement of superordinate goals (Hunger and Stern 1976; Stern et al. 1973a, 1973b, and 1975). The specific causes of channel conflict investigated empirically are reported in Table 3 later. However, a distinction must be made between structural variables like interdependencies and power imbalances that merely describe the context typical of channels, and the actual immediate causes of conflict, as any immediate causes of channel conflict would occur within conditions of interdependency and power imbalances.

It has been previously argued that incompatibility leading to antagonism is the core cause of conflict; and that a host of issues can trigger this perception of incongruence. The various issues, then, become more of operational details and exogenous variables rather than the immediate causes of conflict itself. A close examination of Table 2 reveals that the hypothesized causes are indeed all issues that would generate a perception of incompatibility. The central importance of incompatibility to conflict has been implicitly recognized by empirical channel research as well. This is reflected in the number of empirical researchers who

have explicitly investigated incompatibility as the cause of channel conflict, and also from the operational definitions of conflict (e.g., Rosenberg and Stern 1971; Stern et al. 1973a; Hunger and Stern 1976; Ross and Lusch 1982; Eliashberg and Michie 1984).

At a later date, it would be instructive to investigate the impact of different kinds of issues as exogenous variables on the perceptions of conflict. However, at the present stage of theoretical development, a major shortcoming of the conceptual and empirical research on causes of conflict has been an absence of works that explain (i) what causes an issue to be perceived as incompatible, (ii) what kinds of incompatibilities lead to perceptions of antagonism, and hence conflict, and (iii) what process converts incompatibilities into perceptions of conflict. Incompatibility per se may not result in conflict if the incompatibility was expected from past experiences and expectations, or if the issues have low salience.

The present research effort makes an initial contribution in this direction by analyzing the above process from an exchange theory perspective.

AN INTEGRATIVE REVIEW OF RESEARCH ON CHANNEL CONFLICT

This section reviews the empirical channel conflict literature by quantitatively integrating the results from

different studies for the investigated theoretical relationships. This section, hence, indicates the extent to which conceptual writings have been tested, and the nature of the empirical findings.

Overview

The empirical literature on channel conflict has a relatively short history. The first effort is attributed to Assael (1968). He content analyzed the intensity and frequency of manifest conflict documented in government and trade publications from 1947 to 1965. Nine industries were included in its scope. Since then, cross-sectional field studies have been the typical form of research. Stern, Sternthal and Craig, in 1973, introduced the alternate research method of parasimulation to channel conflict research. Since then several research efforts have also employed parasimulation. As might be expected, this diversity has resulted in a set of studies with varying degrees of methodological sophistication and flaws.

Appendix A provides a detailed coded summary of nineteen major empirical works (Table 3) where channel conflict was either an independent or a dependent variable. Six of these nineteen studies (Foster and Shuptrine 1974; Pearson and Monoky 1976; Kelly and Peters 1977; Brown and Frazier 1978; Rosson and Ford 1979; and Schul, Lamb, and Little

TABLE 3
INVESTIGATED CAUSES OF CONFLICT: FROM EMPIRICAL CHANNEL LITERATURE

Causes Investigated	Investigating Researchers
Goal Incompatibility	Rosenberg and Stern (1971); Stern, Sternthal and Craig (1973a); Hunger and Stern (1976); Etgar (1979); Brown and Day (1981); Eliashberg and Michie (1984)
Role Incompatibility	Assael (1968)
Perceptual Incompatibility	Rosenberg and Stern (1971); Ross and Lusch (1982); Eliashberg and Michie (1984)
Domain Dissensus	Rosenberg and Stern (1971); Ross and Lusch (1982)
Goal Impediment	Brown and Day (1981)
Drive for Autonomy	Etgar (1979); Schul, Lamb and Little (1981)
Differences in Influence Strategies	Brown and Frazier (1978)
Coercive Power	Lusch (1976 b)
Non-Coercive Power	Lusch (1976 b)
Extent of Power	Brown, Lusch and Muehling (1983)
Extent of Economic Power	Brown, Lusch and Muehling (1983)
Control Attempts	Assael (1965)
Differences in Franchise Agreements	Kelly and Peters (1977)
Past Performance	Schul, Lamb and Little (1981)
Non-Achieved Superordinate Goals	Hunger and Stern (1976)
Stake in Channel Relationship	Rosson and Ford (1979)
Performance Discrepancy Between Manufacturers and Their Wholesalers	Foster and Shuptrine (1974)

1981) were published in various proceedings of the American Marketing Association; the other twelve appeared in journals (five in Journal of Marketing Research, one in Journal of Marketing, two in Academy of Management Journal, three in Journal of Retailing, one in Journal of Purchasing, and one in Journal of Business Research.)

This selection of studies reflects a conscious effort to include studies from diverse sources. Since studies reported in journals generally tend to have a greater proportionality of rejected null hypotheses (Greenwald 1975; Rosenthal 1980), the selection procedure may have overcome the biases arising out of source-artifacts.

A second criterion for selection was the relevance of the studies. The presented studies deal with various issues related to conflict discussed earlier in this chapter: conflict and performance, power and conflict, conflict and cooperation, and antecedents and consequents of conflict.

The overriding criterion guiding the review process was an attempt to be exhaustive and current. Though there have been some other important recent empirical works on channels, they were unrelated to channel conflict construct (e.g., Lusch and Brown 1982; John and Reve 1982; Phillips 1982; Frazier 1983; Arnold, Oum, and Tigert 1983).

The results of the quantitative integration of empirical research have been used to summarize what we know about this area of inquiry after eighteen years of investigation.

Procedure for Quantitative Integration

Although unreliability attenuates observed effect sizes, all effect sizes used as inputs in the analyses were raw effects uncorrected for unreliability. This decision was made because (i) seven of nineteen studies did not report any reliability estimation; (ii) reported reliabilities range from 0.50 to 0.96; and (iii) the reliabilities of both independent and dependent measures were rarely reported. The adopted procedure therefore ensures a greater parity in the treatment of different studies. The use of uncorrected effects is also a more conservative perspective to interpreting effect sizes (i.e., if corrections for attenuation were made, effect sizes would be larger).

All forms of reported statistics (i.e., correlation coefficients, significance levels, F-statistics, t-statistics, chi-squared statistics, means, regression coefficients, frequencies, path coefficients and R-squared values) were first transformed into d statistics using conversion methods suggested by Cohen (1977), Glass, McGaw and Smith (1981), Hunter, Schmidt and Jackson (1982), Rosenthal (1980, 1982); and on the basis of known relationships between different statistics.

The convention of equating unreported non-significant p-values to 0.50 has been used following the procedure established by Monroe and Krishnan (1983b). Where p-values were reported in terms of inequalities (i.e., greater than or less than), the nearest p-value was taken. For instance, a p-value reported as "less than 0.005" was assumed to be 0.005 in the analysis. Where test statistics were reported (e.g., t-values, F-values, or chi-squared values), exact p-values were computed and used.

When estimates based on multiple indicators were reported for the same set of subjects and for the same theoretical propositions, a simple average of effects was used so that the independence assumption of statistical procedures was not violated (Monroe and Krishnan 1983b; Hunter, Schmidt and Jackson 1982). On the other hand, when the study could be separated into conceptually equivalent but statistically independent replications, then each result was entered in the cumulation (Monroe and Krishnan 1983b).

Although corrections for sampling error have been made prior to any search for theoretically relevant moderator variables, corrections for measurement errors and restriction of range have not been attempted. This procedure was adopted because (i) as stated earlier, reliabilities were only sporadically reported; (ii) reliabilities of both independent

and dependent measures were rarely reported; (iii) given the relatively small number of empirical studies in the content area and the considerable diversity in the quality of methodologies employed and diverse populations sampled, estimates of the extent of variation in the independent variables in the reference populations would have, at best, been conjectures; and finally, (iv) estimates of variation in the independent variables within particular studies were rarely available.

Conceptually, the adopted procedure gives rise to at least two rival hypotheses: (a) the variation in heterogeneous results could be due to measurement errors, and/or (b) this variation could be due to differences in range of independent variables. Therefore the following discussions of quantitative integration results where heterogeneity was discovered, should be interpreted as initial estimates of empirical research findings on channel conflict. Obviously, these qualifications do not apply to situations where sampling errors explained all the variance in effects. The results have been organized with reference to theoretical propositions investigated.

The accompanying tables report the number of effects cumulated, the number of different studies they were drawn from, the sample-weighted mean effects (in d statistic

form), corresponding total sample sizes, variance in effects, proportion of variance attributable to sampling error, and the chi-squared test results for the null hypothesis of no variation in sample correlations.

The chi-squared test, suggested by Hunter, Schmidt and Jackson (1982), is attributed to have very high statistical power and is expected to reject the null hypothesis given even a trivial amount of variation across effects (pp. 46-47). Hence, a non-significant chi-squared statistic provides strong evidence for homogeneity of results across effects. Hunter et al. (1982) have suggested procedures for correcting measurement error (i.e., attenuating effect on effect size due to inherent unreliabilities) prior to search for moderator variables after the variation due to sampling error has been partialled out (pp. 110-112). Formulae for computing reliabilities of mean effects have been offered. However, this approach is valid only "if the reliabilities do not vary much from study to study" (Hunter et al. 1982, p.112, emphasis added). Unfortunately, this assumption is not met for channel conflict studies and the reliabilities. Hence, the recommended corrections could not be made.

Power computations were also carried out (post-hoc) for the mean d effects calculated in the quantitative integration process. These are indicated in the discussion of re-

sults. Since only five out of a total of fifty-one effects analyzed pertained to one-sided tests, and since such effects were integrated with two-tailed effects, the conservative approach of computing all power estimates using two-sided alpha value has been adopted.

Results of Quantitative Integration

Tables 4 and 5 summarize the meta-analysis. The effects for the proposition "incompatibility causes conflict" were found to be heterogeneous across studies and the results suggested a search for moderator variables. Consequently, the 16 effects belonging to this proposition were re-classified along several theoretically relevant moderator variables and re-analyzed in different groupings (Table 4). Table 5 later summarizes the findings for the remaining propositions.

Incompatibility Causes Conflict

The integration of 16 effects drawn from 9 studies indicated a medium-sized weighted average effect of 0.61 across a cumulative sample size of 1382. The effects across studies showed considerable variation (95% confidence interval about the mean ranged from -0.08 to 1.30). Sampling error only corrected for 28% of the variation in effects. The chi-squared test of significance on correlations was highly

TABLE 4
RESULTS OF QUANTITATIVE INTEGRATION: INCOMPATIBILITY CAUSES CONFLICT

Theoretical Proposition	Number of Effects	Studies Drawn From	Total Sample Size	Mean Effect Size	Variance of Effects	Variance Due To Sampling Error	Chi-square Statistic	Degrees of Freedom	Exact P-Value
INCOMPATIBILITY CAUSES CONFLICT	16	9	1382	0.6063	0.1730	27.99%	42.2031	15	0.0002
(1) Differences Due to Conflict States									
(a) Incompatibility Causes Affective Conflict	3	3	195	0.2769	0.0246	100.00%	1.1870	2	0.5524
(b) Incompatibility Causes Perceived Conflict	9	3	663	0.4996	0.0892	62.77%	12.4586	8	0.1319
(c) Incompatibility Causes Manifest Conflict	5	5	596	0.8171	0.2044	17.79%	20.2182	4	0.0004
(2) Differences Due to Conflict Dimensions									
(a) One Dimensions	11	7	948	0.6686	0.2090	23.45%	34.2143	10	0.0002
(b) Two Dimensions	5	2	296	0.2851	0.0178	100.00%	1.2674	4	0.8668
(3) Differences Due to Dyadic and Individual Measures									
(a) Dyadic Measures	8	3	498	0.4825	0.1348	49.06%	14.3219	7	0.0457
(b) Individual Measures	8	6	884	0.6759	0.1811	21.13%	25.7849	7	0.0006
(4) Differences Due to Number of Industries									
(a) Single Industry	9	4	708	0.5569	0.1079	48.94%	17.2452	8	0.0277
(b) Several Industries	4	3	383	0.8583	0.3167	14.41%	20.7006	3	0.0004
(5) Differences Due to Data-Collection Methods									
(a) Mail Surveys	9	4	708	0.5569	0.1079	48.94%	17.2452	8	0.0277
(b) Personal Interviews	3	2	374	0.8318	0.2944	11.84%	18.8517	2	0.0001
(6) Differences Due to Field and Laboratory Settings									
(a) Field Studies	13	7	1091	0.6627	0.2019	24.90%	39.8348	12	0.0001
(b) Laboratory Studies	3	2	291	0.3947	0.0081	100.00%	0.5549	2	0.7577

NOTES: Studies Drawn From indicates the number of DIFFERENT studies the effects were drawn from. Mean effect sizes are reported in 'd' statistics. The mean effect sizes indicated are WEIGHTED mean effects.

significant ($p=0.0002$) confirming that the results are heterogeneous. The associated power for $N=1382$ and $d=0.61$ was greater than 0.995 at two-sided alpha value of 0.05.

Differences Due to Different Conflict States Measured. Given the common acceptance of the fourfold classification of conflict states, and because every instance of perceived and affective conflict is thought not to result in manifest conflict (Pondy 1967; Thomas 1976), the 16 effects were subdivided into three categories on the basis of conflict states measured. The sub-groups were checked for the size of sampling errors.

The average weighted d effect size increases from 0.28 (affective state; power 0.77 at 0.05 level), to 0.50 (perceived state; power 0.995 at 0.05 level), to 0.82 for the manifest state (power of 0.995 at 0.05). Sampling error explained all the variance in effect sizes for the affective state, suggesting homogeneous effects. The chi-squared test was also insignificant ($p=0.55$) confirming that results are indeed homogeneous.

Though the sampling error explained only 63% of effect variance for perceived conflict and the 95% confidence interval width was large (0.14 to 0.86), the chi-squared test was insignificant ($p=0.13$) suggesting homogeneous results despite unexplained variance in effects. For the manifest

state, sampling error explained only 18% of the variance in effects. The chi-squared test was highly significant ($p=0.0004$) suggesting heterogeneity of results. The 95% confidence interval about the mean effect was large (0.01 to 1.62).

In general, then, it can be surmised that the effects expected may be larger for manifest state than for the other two states. The finding seems to contradict the implication that manifest conflict effects should be lower than perceived or affective conflict effects since not all of latter are expected to convert to manifest instances. However, an alternative explanation can be offered for the finding. As argued earlier, manifest instances of conflict may be more representative of task behaviors than reflections of the psychological states of the channel members. Hence, measures across several such issues would lead to a heightened indication of manifest conflict.

Differences Due to Different Conflict Dimensions Measured.

Since the intensity, frequency and importance dimensions of conflict have been theoretically distinguished (e.g., Brown and Day 1981) and conceived as complementary rather than substitute measures, the studies were re-grouped on the basis of number of dimensions measured. Nine out of eleven effects used for the one-dimension studies were for the in-

tensity dimension. The mean effect size was $d=0.67$; power= 0.995 at 0.05) and the sampling error explained less than 25% of the effect variance. The confidence interval also indicated considerable differences (-0.11 to 1.45), and the chi-squared test was highly significant ($p=0.0002$) suggesting heterogeneous results. No sub-groups on the basis of different dimensions were formed because of the paucity of data points.

All of the 5 effects analyzed for the two-dimension studies were for a combination of frequency and intensity dimensions. Although the mean effect was small (mean $d=0.28$), all the variance in effects was attributable to sampling error, and the chi-squared test was insignificant ($p=0.87$) strongly suggesting homogeneity of effects.

Only one study (Brown and Day 1981) measured all three dimensions of conflict within a single study. A higher mean effect of 0.73 ($N=210$; power= 0.995 at 0.05 level; reliability 0.83) than one dimension and two dimension studies was found. Substantively, then, the use of all three dimensions can be expected to yield the largest effects. Though the larger effect size for single-dimension studies (as compared to two-dimension studies) was a counter-intuitive finding, given the heterogeneity of effects in the former sub-group, presence of other moderator variables cannot be ruled out.

Differences Due to Use of Dyads Versus Use of Individuals.

Eight of the sixteen effects analyzed were obtained by dyadic measures (i.e., differences in perceptions of dyad members were used as indicators of conflict); the other eight were individual measures of conflict. The mean effect for dyads ($d=0.48$; power=0.995 at 0.05 level) was lower than for the individuals (mean $d=0.67$; power=0.995 at 0.05). However, the sampling error did not remove all the variance in effects for either sub-group and confidence interval widths were considerable for both (-0.03 to 0.99 for dyads; -0.06 to 1.42 for individuals).

Still, on the basis of chi-squared significance tests, the dyad studies with a marginal p-value of 0.0457 can be considered to be relatively homogeneous. Hunter et al. (1982) have stressed the sensitivity of the chi-squared test: "if it is significant, the variation may still be negligible in magnitude" (p. 47).

The results suggest that the estimates of conflict tend to be inflated when only individuals are used. Theoretically, conflict can be said to exist when a channel member experiences incompatibility and antagonism. Such experiences are likely to occur when there are dyadic differences. As such, dyadic differences are a cause of perception of incompatibility rather than an estimate of conflict which results

from incompatibility and antagonism. Further, as argued earlier, every dyadic difference may not lead to antagonism, and hence, conflict. On the other hand, it is recognized that conflict probably would increase dyadic differences.

Differences Due to Number of Industries Included in Study.

Another sub-grouping was attempted using the criterion of whether the the research confined itself to a single industry or whether the sample was drawn from several different industries within single studies. The two parasimulation studies were not included as they were lab experiments. The results suggest that conflict estimates are larger when different industries are used (mean $d=0.86$; power=0.995 at 0.05 level) as opposed to one industry studies (mean $d=0.56$; power=0.995 at 0.05). The sampling errors explained less than 50% of the variance in effects for both groups. Significant chi-squared values ($p=0.0004$ for several industries; $p=0.0277$ for one industry) confirm the heterogeneity of effects and the possibility of other moderator variables.

The heterogeneity of results when a sample is drawn from different industries may be because the industries are different along theoretically meaningful variables like extent of dependence, distribution of power bases, or involvement. Hence, when samples from different industries are combined, the variances are likely to be inflated due to

these structural differences between industries. This inflation, in turn, would suggest (perhaps artificially) heterogeneous results. The use of samples from different industries within single studies, then, poses a threat to internal validity. Consequently, any claims made about external validity on the basis of such combined samples would be correspondingly erroneous. Such sampling procedures further lead the reviewer to suspect that external validity can be expected to remain a moot issue in channel research.

Differences Due to Data Gathering Method. Another comparison was carried out by sub-classifying the studies on the basis of whether mail surveys or personal interviews were used for data collection. The average effect for mail studies (mean $d=0.56$; power=0.995 at 0.05) was much lower than the mean for personal interview studies (mean $d=0.83$; power=0.995 at 0.05 level). Sampling errors explained less than 50% of variance in effects and the 95% confidence interval widths were large for both groups (0.10 to 1.02 for mail surveys; -0.17 to 1.83 for interviews). Further, chi-squared tests were also significant suggesting continued heterogeneity. The two parasimulation studies could not be classified into either sub-group.

The results suggest, within limitations, the tendency of obtaining larger effects when the data are collected

through personal interviews. This may be because in a personal interview setting, the investigator has the opportunities to clarify questions and provide examples of what the investigator considers as instances of conflict. Such promptings would cause the respondents to recall other similar instances, and consider them as conflictful even though the same instances may not have been originally characterized as conflictful if the respondents were alone answering mail questionnaires.

Differences Due to Field Versus Laboratory Studies. A final sub-grouping of incompatibility studies was attempted using the criterion of whether the studies were carried out in the field or in labs. Only two studies that yielded three effect estimates were available for the latter group. Although, it was expected that the average effect size of lab studies would be higher than the field studies, the mean effect for field studies was 0.66 (power=0.995 at 0.05 level) as compared to mean d of 0.39 for lab studies (power=0.995 at 0.05 level). However, the sampling error explained all the variance for the lab studies and the chi-squared test was insignificant ($p=0.76$) suggesting homogeneous results. On the other hand, only about 25% of variance in effects in field studies is explained by the sampling error, and the chi-squared test ($p=0.0001$) suggests heterogeneity.

Both parasimulation studies had employed student subjects. The lower mean effect observed suggests that if investigations using parasimulation are planned, sample sizes required for any given level of statistical power will be larger than if field investigations are planned. Since lower effects could also be caused by inadequacy of experimental operationalizations, manipulation checks will be of critical importance in experimental studies.

In summary, various integrations presented above have yielded mixed results about the basic theoretical proposition "incompatibility causes conflict." Several moderator variables were identified, and some succeeded in making the results of sub-groups homogeneous. Others suggest the possibilities of methodological differences and other moderator variables. Some other possible moderators may be (a) extent of involvement in the channel relationship, (b) whether the channel was comprised of contractual relationships (e.g., franchises) or whether channel members were independent, and (c) the manner in which incompatibility was operationalized (e.g., with reference to goals, domains, or perception). Sufficient data points were not available to subgroup the studies along these other criterion variables. Hence, definitive conclusions must await more empirical investigations.

Other Theoretical Relationships

Quantitative integration of the following seven theoretical relationships investigated in the channel conflict literature was also attempted (Table 5):

- (i) conflict improves performance;
- (ii) conflict reduces performance;
- (iii) conflict is related to performance through a threshold effect;
- (iv) use of power causes conflict;
- (v) dependence causes conflict;
- (vi) cooperation improves performance; and
- (vii) superordinate goals reduce conflict.

The paucity of data points did not permit quantitative integration of any other propositions.

In all seven cases, the sampling errors explained all the variance in the effects. All the chi-squared tests were statistically insignificant, and the p-values ranged from 0.33 (for "use of power causes conflict") to 0.99 (for "superordinate goals reduce conflict") strongly suggesting homogeneity of results. Hence Table 5 provides initial estimates of the magnitude of effects one can expect when the above propositions are investigated. A more conclusive statement must perhaps await the availability of additional data points as several of the integrations employ only two or three effects.

TABLE 5

RESULTS OF QUANTITATIVE INTEGRATION OF SEVEN THEORETICAL PROPOSITIONS ON CHANNEL CONFLICT

Theoretical Proposition	Number of Effects	Studies Drawn From	Total Sample Size	Mean Effect Size	Variance of Effects	Variance Due To Sampling Error	Chi-square Statistic	Degrees of Freedom	Exact P-Value
Conflict improves performance	7	4	296	0.2136	0.0165	100%	1.1895	6	0.98
Conflict reduces performance	4	2	124	0.7519	0.0607	100%	1.6585	3	0.64
Conflict is related to performance through a threshold effect	5	1	156	0.5970	0.0761	100%	2.5097	4	0.64
Use of power causes conflict	3	3	602	0.1439	0.0153	100%	2.1952	2	0.33
Dependence causes conflict	3	1	172	0.1232	0.0267	100%	1.1508	2	0.56
Cooperation improves performance	2	2	109	0.3114	0.0420	100%	1.1247	1	0.34
Superordinate goals reduce conflict	2	2	159	0.1857	0.0000	100%	0.0001	1	0.99

NOTES: Studies Drawn From indicates the number of DIFFERENT studies the effects were drawn from. Mean effect sizes are reported in 'd' statistics. The mean effect sizes indicated are WEIGHTED mean effects.

Considerable diversity in the magnitude of effects is noticeable. "Conflict reduces performance" was supported by a fairly large effect size (mean $d=0.75$ based on 4 effects from 2 studies; $N=124$; power=0.995 at 0.05 level) and "conflict is related to performance through a threshold effect" was supported by a medium sized effect (mean $d=0.60$ based on 5 effects from a single study; $N=156$; power=0.995 at 0.05 level). The support for other propositions was weak, and the magnitude of effects ranged from a mean effect of 0.12 for "dependence causes conflict" to mean effect of 0.31 for "cooperation improves performance."

Summary of Findings

As previously noted, the empirical investigations of channel conflict have failed to provide definitive answers to the central issues being addressed in this research effort. Whenever conflict and cooperation have been simultaneously measured within the same studies (e.g., Pearson 1973; Pearson and Monoky 1976; Whyte 1976; Schmidt and Kochan 1977), perceptions of conflict and cooperation were found to co-exist. Hence the results suggest that theoretical distinctions proposed between conflict and cooperation have not been adequate. Channel segments characterized by cooperation were also found not to be operationally superior to those characterized by conflict by Rosson and Ford (1979)

and Pearson (1973). Moreover, superordinate goals meant to bring about perceived cooperation, did not reduce conflict as hypothesized with any large effect (Stern, Sternthal, and Craig 1973a; Hunger and Stern 1976). The distinctions proposed between issue-specific conflict and cooperation, and overall conflict and cooperation in this research explain several of these counter-intuitive findings.

VALIDITY AND RELIABILITY ISSUES

Scaling Issues

Various types of rating scales were found to have been used in the reviewed channel conflict literature. If different scales require varying amounts of cognitive effort and judgment, some of the variation in findings may be attributable to variation in the scales themselves. The rating scales (even though we assume them to yield interval data) are criticized for (i) limited resolution of the categories; (ii) ordinal-level of measurement; and finally (iii) artificially constraining the respondents to try and match the true range of stimuli to the fixed range provided (e.g., Lodge 1981). These attributes may undermine the statistical conclusion validity of results. Future investigations would benefit considerably by the use of techniques like magnitude scaling which are purported to yield ratio-level data. The

distribution of scales employed by the empirical studies to measure conflict is summarized in Table 6.

Statistical Conclusion Validity

None of the studies reviewed in the channel conflict literature reported the power of their statistical tests or estimates of their effect sizes. Inferences have typically been based on the basis of the significance criterion. The p-value is highly susceptible to sample size increases and does not indicate the probability of Type II errors. As alpha level decreases, *ceteris paribus*, the probability of Type II error increases and power decreases, and consequently statistical conclusion validity decreases. No sample size estimates were based on a priori power requirements.

Table 7 summarizes the post-hoc computations of effect sizes and power for the channel conflict studies that furnished adequate data to permit such calculations. Out of a total of 51 propositions tested and presented in these tables, the power of four was not computed because the sample sizes were less than 8 and/or because the magnitude of effect sizes was less than 0.10. Of the remaining 47 propositions tested, 22 tests (46.8%) had "low" power ranging from 0.07 to 0.67; eight tests (17.0%) had power ranging from 0.75 to 0.86; while the remaining 17 tests had "high" power beyond the 0.90 level.

TABLE 6
SCALES USED TO MEASURE CONFLICT IN CHANNEL LITERATURE

Study Reference	Scales Used	Study Reference	Scales Used
Assael (1968)	Content analysis of intensity of conflict	Pearson and Monoky (1976)	10-point Likert-type scales
Pruden (1969)	6-point Likert-type scales	Kelly and Peters (1977)	4-point Likert-type scales
Rosenberg and Stern (1971)	5-point Likert-type scales	Brown and Frazier (1978)	11-point Likert-type scales
Pearson (1973)	10-point Stapel scales	Etgar (1979)	5-point Likert-type scales 6-point Likert-type scales Frequencies
Stern, Sternthal and Craig (1973a)	7-point semantic differentials		Frequencies
Foster and Shuptrine (1974)	4-point Likert-type scales	Rosson and Ford (1979)	
Hunger and Stern (1976)	5-point Likert-type scales 17 Likert-type scales Bales' EMB scale in content analysis (Number of points in scales not indicated)	Brown and Day (1981)	11-point Likert-type scales
		Schul, Lamb and Little (1981)	4-point Likert-type scales
		Ross and Lusch (1982)	10-point Stapel scales
Lusch (1976a)	4-point Likert-type scales	Brown, Lusch and Meunling (1983)	7-point Likert-type scales
Lusch (1976b)	4-point Likert-type scales	Eliashberg and Michie (1984)	5-point Likert-type scales

TABLE 7
OBSERVED EFFECT SIZES AND STATISTICAL POWER IN EMPIRICAL CONFLICT RESEARCH

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Average Effect Size	Sample Size*	Alpha Level Assumed	Statistical Power***
Assael (1968)	a) Domain dissensus causes conflict	Manifest	Intensity	1.9595	3*	0.05	Not Computed
	b) Attempts at control cause conflict	Manifest	Intensity	0.8811	3*	0.05	Not Computed
Pruden (1969)	Conflict improves performance	Affective	Intensity	0.2618	31*	0.05	0.17
Rosenberg and Stern (1971)	a) Goal incompatibility causes conflict	Perceived	Intensity	1.1790	37*	0.05	0.99
	b) Domain dissensus causes conflict	Perceived	Intensity	0.8112	37*	0.05	0.92
	c) Perceptual differences cause conflict	Perceived	Intensity	0.6921	37*	0.05	0.84
Pearson (1973)	a) Conflict improves performance	Affective	Intensity	0.2446	55	0.05	0.25
	b) Cooperation improves performance	Affective	Intensity	0.5144	55	0.05	0.75
Stern, Sternthal and Craig (1973a)	a) Goal incompatibility causes conflict	Perceived	Intensity	0.4171	52*	0.05	0.55
	b) Superordinate goals reduce conflict	Perceived	Intensity	0.1847	42*	0.05	0.13
	c) Exchange of persons reduces conflict	Perceived	Intensity	0.3082	42*	0.05	0.29
Foster and Shuptrine (1974)	Performance discrepancy causes conflict	Manifest	Frequency	0.4004	167	0.05	0.96

See footnotes at the end of the table.

TABLE 7 (CONTINUED)
OBSERVED EFFECT SIZES AND STATISTICAL POWER IN EMPIRICAL CONFLICT RESEARCH

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Average Effect Size	Sample Size*	Alpha Level Assumed	Statistical Power***
Hunger and Stern (1976)	a) Goal incompatibility causes conflict	Affective	Intensity	0.2663	36	0.05**	0.31
	b) Goal incompatibility causes conflict	Manifest	Frequency & Intensity	0.4981	36	0.05	0.55
	c) Superordinate goals reduce conflict	Affective	Intensity	0.1870	36	0.05**	0.20
	d) Achieved superordinate goals reduce conflict	Affective	Intensity	0.1870	36	0.05**	0.20
Lusch (1976a)	a) Conflict improves performance	Manifest	Frequency	0.1623	29*	0.05	0.10
	b) Conflict reduces performance	Manifest	Frequency	0.7958	28*	0.05	0.83
	c) Conflict is related to performance through a threshold effect	Manifest	Frequency	0.6537	29*	0.05	0.67
Lusch (1976b)	a) Use of coercive power causes conflict	Manifest	Frequency	0.1988	567	0.05@	0.91
	b) Use of non-coercive power causes conflict	Manifest	Frequency	0.0799	567	0.05@	Not computed
Pearson and Morioka (1976)	a) Conflict improves performance	Affective	Intensity	0.0677	54	0.05	Not computed
	b) Cooperation improves performance	Affective	Intensity	0.1047	54	0.05@	computed 0.08
Kelly and Peters (1977)	Dependence causes conflict	Manifest	Frequency	0.1000	31*	0.05	0.07

See footnotes at the end of the table.

TABLE 7 (CONTINUED)
OBSERVED EFFECT SIZES AND STATISTICAL POWER IN EMPIRICAL CONFLICT RESEARCH

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Average Effect Size	Sample Size*	Alpha Level Assumed	Statistical Power***
Brown and Frazier (1978)	a) Use of non-coercive power causes conflict	Manifest	Frequency & Importance	0.5595	26	0.05	0.50
	b) Use of coercive power causes conflict	Manifest	Frequency & Importance	0.4291	26	0.05	0.33
	c) Use of non-coercive power causes dissatisfaction	Not Applicable	Not Applicable	0.8056	26	0.05	0.80
	d) Use of coercive power causes dissatisfaction	Not Applicable	Not Applicable	0.8765	26	0.05	0.86
Etgar (1979)	a) Attitudinal incompatibility causes conflict	Affective	Intensity	0.3976	69	0.05	0.64
	b) Structural incompatibility causes conflict	Affective	Intensity	0.5780	69	0.05	0.91
	c) Attitudinal incompatibility causes conflict	Manifest	Frequency	1.8771	138	0.05	0.99
	d) Structural incompatibility causes conflict	Manifest	Frequency	0.8682	138	0.05	0.99
Rosson and Ford (1979)	a) Dependence reduces conflict	Manifest	Frequency	0.7818	17	0.05	0.60
	b) Conflict reduces performance	Manifest	Frequency	1.0281	17	0.05	0.80
Brown and Day (1981)	a) Dissatisfaction causes conflict	Manifest	Frequency & Importance	0.8400	210	0.05	0.99
	b) Goal incompatibility causes conflict	Manifest	Frequency & Importance	0.5884	210	0.05	0.99
	c) Goal impediment causes conflict	Manifest	Frequency & Importance	0.8781	210	0.05	0.99
	d) Affective conflict causes manifest conflict	Manifest	Frequency & Importance	0.9336	210	0.05	0.99
	e) Perceived conflict causes manifest conflict	Manifest	Frequency & Importance	0.6172	210	0.05	0.99

See footnotes at the end of the table.

TABLE 7 (CONTINUED)
OBSERVED EFFECT SIZES AND STATISTICAL POWER IN EMPIRICAL CONFLICT RESEARCH

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Average Effect Size	Sample Size*	Alpha Level Assumed	Statistical Power***
Schul, Lamb and Little (1981)	a) High performance reduces conflict	Manifest	Frequency	0.3162	349	0.05	0.98
	b) Autonomy reduces conflict	Manifest	Frequency	0.6456	349	0.05	0.99
	c) Leadership reduces conflict	Manifest	Frequency	0.4559	349	0.05	0.99
	d) Satisfaction reduces conflict	Manifest	Frequency	2.1096	349	0.05	0.99
Ross and Lusch (1982)	a) Domain dissensus causes conflict	Affective	Intensity	0.1001	54	0.05	0.08
	b) Domain dissensus reduces cooperation	Affective	Intensity	0.5385	54	0.05	0.79
	c) Perceptual incongruity causes conflict	Affective	Intensity	0.0200	54	0.05	Not computed
	d) Perceptual incongruity reduces cooperation	Affective	Intensity	0.5164	54	0.05	0.78
Eliashberg and Michie (1984)	a) System goal incongruity causes conflict	Perceived	Frequency & Intensity	0.1886	50*	0.05	0.16
	b) Operative goal incongruity causes conflict	Perceived	Frequency & Intensity	0.1535	50*	0.05	0.12
	c) Perceived operative goal incongruity causes conflict	Perceived	Frequency & Intensity	0.2890	50*	0.05	0.30
	d) Perceptual incongruities cause conflict	Perceived	Frequency & Intensity	0.2199	50*	0.05	0.20

All statistics reported in studies were first transformed into 'd' statistic. An assumption of homogeneity of variances has been made in power computations. Power values indicated have been obtained by linear interpolation when necessary. The average effect sizes reported are simple UNWEIGHTED averages.

Sample size indicates subjects in 'control' of 'experimental' groups when N (control) equals N (experimental); for unequal groups, harmonic mean of the samples is used. The use of harmonic means is indicated by an asterix () in the table.

** Indicates one-tailed alpha levels; others are two-tailed probabilities.

*** When sample sizes were less than 8, or the effect sizes were less than 0.10, power was not computed. @ Some tests were one-tailed and others were two-tailed. Hence, the conservative estimate of two-tailed tests was taken.

Cohen (1977, p.56) offers the convention of setting the desired power to 0.80. This means that the probability of Type II error be set at 0.20. Implicit in the suggested convention is the idea that the seriousness of Type I errors (usually set at 0.05) is four times greater than the seriousness of Type II errors. From this standpoint, the channel conflict literature has an almost fifty-fifty split between tests with "low" power and tests with "sufficient" power.

Table 8 reports a contrast between actual sample sizes used in these studies and the required sample sizes to obtain the power levels of 0.50 and 0.80. Fifty-seven percent of the propositions tested (29 out of 51) needed greater sample sizes than actually used to obtain a power level of 0.80; while 41.2% needed larger samples to obtain a power level of 0.50. On the other hand several researchers (notably, Brown and Day 1981 and Schul et al. 1981) really could have used smaller samples to achieve sufficient power.

Random sampling is another important assumption of most statistical techniques. Table 9 reports the sampling methods employed and the response rates obtained. Only sampling methods used to obtain measures of conflict are summarized. Most studies have used non-random samples.

Though resource-constraints often render random sampling unfeasible, power based sample size determination is

TABLE 8
COMPARISON OF ACTUAL SAMPLE SIZES AND REQUIRED SAMPLE SIZES AT ALPHA OF 0.05 (2-sided)

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Observed Average Effect Size	Actual Sample Size*	Observed Power***	Required Power of 0.50	Required Sample For** Power of 0.80
Assael (1968)	a) Domain dissensus causes conflict	Manifest	Intensity	1.9595	3*	Not Computed	5#	9#
	b) Attempts at control cause conflict	Manifest	Intensity	0.8811	3*	Not Computed	12#	23#
Pruden (1969)	Conflict improves performance	Affective	Intensity	0.2618	31*	0.17	129#	263#
Rosenberg and Stern (1971)	a) Goal incompatibility causes conflict	Perceived	Intensity	1.1790	37*	0.99	8	13
	b) Domain dissensus causes conflict	Perceived	Intensity	0.8112	37*	0.92	13	26
	c) Perceptual differences cause conflict	Perceived	Intensity	0.6921	37*	0.84	18	35
Pearson (1973)	a) Conflict improves performance	Affective	Intensity	0.2446	55	0.25	151#	306#
	b) Cooperation improves performance	Affective	Intensity	0.5144	55	0.75	31	63#
Stern, Sternthal and Craig (1973a)	a) goal incompatibility causes conflict	Perceived	Intensity	0.4171	52*	0.55	46	92#
	b) Superordinate goals reduce conflict	Perceived	Intensity	0.1847	42*	0.13	309#	629#
	c) Exchange of persons reduces conflict	Perceived	Intensity	0.3082	42*	0.29	83#	168#
Foster and Shuptrine (1974)	Performance discrepancy causes conflict	Manifest	Frequency	0.4004	167	0.96	49	99

See footnotes at the end of the table.

TABLE 8 (CONTINUED)
COMPARISON OF ACTUAL SAMPLE SIZES AND REQUIRED SAMPLE SIZES AT ALPHA OF 0.05 (2-sided)

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Observed Average Effect Size	Actual Sample Size*	Observed Power***	Required Power of 0.50	Required Sample Size for** Power of 0.80
Hunger and Stern (1976)	a) Goal incompatibility causes conflict	Affective	Intensity	0.2663	36	0.31	**84#	**190#
	b) Goal incompatibility causes conflict	Manifest	Frequency & Intensity	0.4981	36	0.55	32	64#
	c) Superordinate goals reduce conflict	Affective	Intensity	0.1870	36	0.20	**177#	**403#
	d) Achieved superordinate goals reduce conflict	Affective	Intensity	0.1870	36	0.20	**177#	**403#
Lusch (1976a)	a) Conflict improves performance	Manifest	Frequency	0.1623	29*	0.10	424#	865#
	b) Conflict reduces performance	Manifest	Frequency	0.7958	28*	0.83	13	26
	c) Conflict is related to performance through a threshold effect	Manifest	Frequency	0.6537	29*	0.67	20	39#
Lusch (1976b)	a) Use of coercive power causes conflict	Manifest	Frequency	0.1988	567	0.91	@193	@393
	b) Use of non-coercive power causes conflict	Manifest	Frequency	0.0799	567	Not computed	@769#	@1571#
Pearson and Monoky (1976)	a) Conflict improves performance	Affective	Intensity	0.0677	54	Not computed	769#	1571#
	b) Cooperation improves performance	Affective	Intensity	0.1047	54	0.08	769#	1571#
Kelly and Peters (1977)	Dependence causes conflict	Manifest	Frequency	0.1000	31*	0.07	769#	1571#

See footnotes at the end of the table.

TABLE 8 (CONTINUED)
COMPARISON OF ACTUAL SAMPLE SIZES AND REQUIRED SAMPLE SIZES AT ALPHA OF 0.05 (2-sided)

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Observed Average Effect Size	Actual Sample Size*	Observed Power***	Required Power of 0.50	Sample For** Power of 0.80
Brown and Irazier (1978)	a) Use of non-coercive power causes conflict	Manifest	Frequency & Importance	0.5595	26	0.50	26	53#
	b) Use of coercive power causes conflict	Manifest	Frequency & Importance	0.4291	26	0.33	44#	89#
	c) Use of non-coercive power causes dissatisfaction	Not Applicable	Not Applicable	0.8056	26	0.80	13	26
	d) Use of coercive power causes dissatisfaction	Not Applicable	Not Applicable	0.8765	26	0.86	12	23
Etgar (1979)	a) Attitudinal incompatibility causes conflict	Affective	Intensity	0.3976	69	0.64	49	99#
	b) Structural incompatibility causes conflict	Affective	Intensity	0.5780	69	0.91	24	49
	c) Attitudinal incompatibility causes conflict	Manifest	Frequency	1.8771	138	0.99	5	9
	d) Structural incompatibility causes conflict	Manifest	Frequency	0.8682	138	0.99	12	23
Rosson and Ford (1979)	a) Dependence reduces conflict	Manifest	Frequency	0.7818	17	0.60	14	28#
	b) Conflict reduces performance	Manifest	Frequency	1.0281	17	0.80	9	17
Brown and Day (1981)	a) Dissatisfaction causes conflict	Manifest	Frequency & Importance	0.8400	210	0.99	13	25
	b) Goal incompatibility causes conflict	Manifest	Frequency & Importance	0.5884	210	0.99	23	47
	c) Goal impediment causes conflict	Manifest	Frequency & Importance	0.8781	210	0.99	12	23
	d) Affective conflict causes manifest conflict	Manifest	Frequency & Importance	0.9339	210	0.99	11	21
	e) Perceived conflict causes manifest conflict	Manifest	Frequency & Importance	0.6172	210	0.99	21	43

See footnotes at the end of the table.

TABLE 8 (CONTINUED)
COMPARISON OF ACTUAL SAMPLE SIZES AND REQUIRED SAMPLE SIZES AT ALPHA OF 0.05 (2-sided)

Study Reference	Propositions Tested	Conflict State	Conflict Dimension	Observed Average Effect Size	Actual Sample Size*	Observed Power***	Required Power of 0.50	Required Sample For**	Power of 0.80
Schul, Lamb and Little (1981)	a) High performance reduces conflict	Manifest	Frequency	0.3162	349	0.98	79		160
	b) Autonomy reduces conflict	Manifest	Frequency	0.6456	349	0.99	20		41
	c) leadership reduces conflict	Manifest	Frequency	0.4559	349	0.99	39		78
	d) Satisfaction reduces conflict	Manifest	Frequency	2.1096	349	0.99	5		9
Koss and Lusch (1982)	a) Domain dissensus causes conflict	Affective	Intensity	0.1001	54	0.08	769#		1571#
	b) Domain dissensus reduces cooperation	Affective	Intensity	0.5385	54	0.79	28		57#
	c) Perceptual incongruity causes conflict	Affective	Intensity	0.0200	54	Not computed	769#		1571#
	d) Perceptual incongruity reduces cooperation	Affective	Intensity	0.5164	54	0.78	30		61#
Eliashberg and Michie (1984)	a) System goal incongruity causes conflict	Perceived	Frequency & Intensity	0.1886	50*	0.16	251#		511#
	b) Operative goal incongruity causes conflict	Perceived	Frequency & Intensity	0.1535	50*	0.12	481#		982#
	c) Perceived operative goal incongruity causes conflict	Perceived	Frequency & Intensity	0.2890	50*	0.30	97#		197#
	d) Perceived incongruities cause conflict	Perceived	Frequency & Intensity	0.2199	50*	0.20	172#		350#

As assumption of homogeneity of variances has been made in power computations. Required sample sizes have been obtained by linear interpolation when necessary. All fractions of N have been rounded upward. When the OBSERVED Effect sizes were less than 0.10 or greater than 1.40, REQUIRED sample sizes are reported for effects of 0.10 and 1.40 respectively. The average effect sizes reported are simple UNWEIGHTED averages.

* Indicates use of harmonic mean of samples for computing OBSERVED power.

** Indicates use of one-tailed alpha of 0.05 when the researchers originally conducted one-sided tests.

*** When ACTUAL sample sizes were less than 8 or the OBSERVED effect sizes were less than 0.10, power was not computed.

@ Some tests were one-tailed and others were two-tailed. Hence, the conservative estimate of two-tailed tests was taken.

Indicates REQUIRED sample sizes are greater than sample sizes ACTUALLY used.

TABLE 9
SAMPLING METHODS AND RESPONSE RATES

Study Reference	Sampling Methods	Response Rates	Study Reference	Sampling Methods	Response Rates
Assael (1968)	Non-random	Not applicable	Pearson and Monoky (1976)	Non-random	Not Provided
Pruden (1969)	Non-random	Not Provided	Kelly and Peters (1977)	Non-random	Not Provided
Rosenberg and Stern (1971)	Non-random	Manufacturer's Personnel: 100% Distributors: 79% Dealers: 35%	Brown and Frazier (1978)	Non-random	Not Provided
Pearson (1973)	Non-random	Not Provided	Etgar (1979)	Non-random	Not Provided
Stern, Sternthal and Craig (1973a)	Non-random	Not Applicable	Rosson and Ford (1979)	Non-random	18%
Foster and Shuptrine (1974)	Non-random	94%	Brown and Day (1981)	Non-random	21%
Hunger and Stern (1976)	Non-random	Not Applicable	Schul, Lamb and Little (1981)	Non-random	36%
Lusch (1976a)	Random	47%	Ross and Lusch (1982)	Random	54%
Lusch (1976b)	Random	47%	Brown, Lusch and Muehling (1983)	Non-random	Not Provided
			Eliashberg and Michie (1984)	a) Franchisees: Census b) Regional Managers: Non-random	19%
					96%

relatively easy. Confidence in conclusion validity can be enhanced if future researchers attempt to improve the sampling approach.

Internal Validity

Given statistical conclusion validity, internal validity largely becomes an issue of having the ability to rule out rival hypotheses for the observed effects. It also explicitly requires that the direction of the relationship is as specified. From this perspective, some channel conflict studies are seriously threatened. Three illustrative instances of studies ranging from the 1971 study by Rosenberg and Stern to the 1979 study by Etgar are cited as examples.

Rosenberg and Stern (1971) acknowledge that at the time of data collection (mid-1969), the industry was going through a markedly prosperous period. Hence, timing becomes a formidable rival hypothesis and casts doubts about the internal validity of findings. As far as the Lusch (1976a; 1976b) studies dealing with automobile channel are concerned, the data were collected in November-December 1974. Given the year and the state of automobile industry and U.S. economy in that year, over-intensified responses to measures of conflict cannot be ruled out as a rival hypothesis, i.e., goal incompatibility between the manufacturers and dealers may have atypically heightened leading to an increase in

manifestations of conflict. Etgar (1979) sampled dealers from six lines of business in the year 1976 (i.e., furniture, stereo equipment, life insurance, shoes, liquor, and the automobile channels). Conceivably, these industries may be different along some theoretically meaningful variables (e.g., extent of dependence, power-imbalance, or involvement). While rival hypotheses can be proposed for any findings, these three studies could have been improved by selecting different channels and sampling within a single industry. Table 10 summarizes the extent to which weak support, partial support, or no support was found for the hypothesized effects. The details of the propositions have been presented in Appendix A tables. Of a total of 61 propositions tested by the nineteen studies, thirteen (21.31%) were not supported; eighteen (29.51%) had either weak or partial support; and twenty-eight (45.90%) were supported. Table 10 was prepared on the basis of the criteria used by the researchers themselves to evaluate their hypotheses. This documentation underscores the need for more systematic research so that theories can be modified and refined over time and provide more definitive answers to issues investigated.

TABLE 10
EMPIRICAL SUPPORT FOR HYPOTHESIZED PROPOSITIONS

Study Reference	Empirical Support	Study Reference	Empirical Support
Assael (1968)	Inferential statistics not provided	Pearson and Monoky (1976)	Of 4 propositions, 2 were not supported; 1 had partial support; and 1 was supported
Pruden (1969)	1 or 2 propositions not supported	Kelly and Peters (1977)	Of 2 propositions, 1 was weakly supported, and the other had partial support
Kosenberg and Stern (1971)	All 3 propositions partially supported	Brown and Frazier (1978)	11 of 12 propositions supported and 1 not supported
Pearson (1973)	Both propositions not supported	Etgar (1979)	Propositions not clear
Stern, Sternthal and Craig (1973a)	Of 3 propositions, 1 had very weak support; 1 had partial support; and 1 was supported	Rosson and Ford (1979)	Both propositions weakly supported
Foster and Shuptrine (1974)	Inferential statistics were not provided	Brown and Day (1981)	All propositions were supported
Hunger and Stern (1976)	Of 6, 2 propositions were not supported; 2 were partially supported; and 2 were supported	Schul, Lamb and Little (1981)	3 of 4 propositions supported and 1 not supported
Lusch (1976a)	Of 3 propositions, 2 were not supported, and 1 had mixed support	Ross and Lusch (1982)	Of 4 propositions, 2 supported and 2 not supported
Lusch (1976b)	Of 3 propositions, 2 were partially supported, and 1 was supported	Brown, Lusch and Muehling (1983)	Of 8 propositions, 1 not supported; others were supported
		Eliashberg and Michie (1984)	All 3 propositions very weakly supported by data

Construct Validity

Given that the statistical relationship is substantially plausible, construct validity implies that the cause and effect measures correctly represent the constructs, the sample and research setting are appropriate for the substantive question, and the manipulations and/or operations are sufficient to justify the substantive conclusions. Assuming the theoretical deduction of hypotheses is robust, construct validity largely becomes an issue of demonstrating convergent and discriminant validities using multiple indicators and different methods.

Method Artifacts

With the exception of Assael (1968), Stern, Sternthal and Craig (1973a), and Hunger and Stern (1976) who employed content analytic techniques to obtain conflict measures, other reviewed studies have consistently resorted to paper-and-pencil measures. Of these three studies, only Stern, Sternthal and Craig (1973a) can be said to have used two substantially different methods to measure the same construct, affective conflict: content of inter-firm messages and semantic differential scales administered after the experiment were used. Since different methods are subject to different method artifacts, the use of substantially different methods in the future will facilitate better inferences about construct validity in studies.

Pruden (1969) measured affective conflict by 44 field interviews in four West Coast cities, and measured interorganizational linking process behavior and productivity through a national mail survey. Such a procedure poses at least two threats to construct validity. The use of West Coast city measures of one construct and nationwide measures of the other two constructs raises the issue of comparability, and geography becomes a possible contaminant, specially since no efforts were made to compare measures of interorganizational linking process behavior and productivity from West Coast with the national measures. It is also questionable if perceptual measures obtained in interviews are comparable to mail-obtained perceptual measures, and method variance becomes a confound, specially once again since no validation of comparability was attempted. The results of separate quantitative integrations presented earlier have shown that (a) mail survey effects and personal interview effects, and (b) lab study effects and field studies, were substantially different.

States and Dimensions of Conflict

A considerable threat to establishing construct validity has resulted from the confusion on the four states of conflict (Pondy 1967). Though different states have been studied by different researchers, the evidence so obtained

is typically generalized to the phenomenon of conflict as a whole. Seventeen of nineteen empirical studies have measured only one state of conflict each (perceived conflict: 3 studies; affective conflict: 4 studies; and manifest conflict: 9 studies). Only Brown and Day (1981) have reported measures of perceived, affective and manifest conflict states within a single study. Since every instance of perceived and affective conflict does not lead to an instance of manifest conflict (Pondy 1967; Thomas 1976), treating results on different states of conflict as homogeneous and directly comparable is conceptually invalid. Quantitative integration results have also suggested differences in effects depending on the state measured.

Hunger and Stern (1976) and Etgar (1979), who also measured all three conflict states within single studies (but did not report all the results), used questions on different issues for different states. Hunger and Stern measured perceived conflict by obtaining ratings on two generalized statements about overall inter-firm relations (results not reported); affective conflict was measured on the basis of seventeen traits indicative of conflict and cooperation; while manifest conflict was estimated by content analysis of memos exchanged during negotiations on a single issue. Etgar's measures suffer from the same confound. Affective

conflict was measured by ratings on overall harmoniousness, overall satisfaction with performance, and overall willingness to change policies of leading supplier; perceived conflict was estimated by measuring nine different issues like role-clarity, perceptual divergence, and goal divergence (these were used as causes of conflict); while manifest conflict was measured by frequencies of sale-stoppage, litigations started, and outside arbitration sought in last three years. Since different issues are likely to generate different levels of conflict, such measures should not be treated as comparable.

Compounding the typology problem, several dimensions have also been established for each conflict state i.e., frequency, intensity, and importance. Again, different scholars have measured different dimensions of the investigated conflict states. Treating such empirical evidence as homogeneous is conceptually questionable as the obtained measures may not be theoretically equivalent or even comparable. Brown and Day (1981) share this concern about treating measures of different dimensions as equivalent and provide some clues about the relationships of these dimensions. Quantitative integration also points to differences in effect sizes depending on the number of dimensions measured.

Reliability

Seven of the nineteen empirical studies coded did not address the issue of reliability. The non-reporting of reliability is surprising since most studies employed multi-item self-report instruments.

Eight of nineteen studies did not address the validity issues; and another study (Foster and Shuptrine 1974) only provides anecdotal evidence toward convergent validity. In general, however, the later studies have paid more attention to reliability and validity assessment. Most frequently assessments of nomological and convergent validities have been carried out. Three studies (Schul, Lamb, and Little 1981; Ross and Lusch 1982; Brown, Lusch and Muehling 1983) have demonstrated discriminant validity for conflict antecedents. As far as the construct of conflict itself is concerned, discriminant as well as convergent validity have been assessed together only by Brown, Lusch and Muehling (1983). Table 11 documents the extent and the nature of reliability and validity assessment carried out in the empirical channel studies.

External Validity

Different field studies have used samples from different channels of distribution (Appendix A). However, the implications have been typically discussed in generalized

TABLE 11
RELIABILITY AND VALIDITY ASSESSMENT

Study Reference	Reliability and Validity Assessment	Study Reference	Reliability and Validity Assessment
Assael (1968)	None cited	Hunger and Stern (1976)	a) Convergent validity for perceived conflict (manipulation check of conflict induction.)
Pruden (1969)	None cited		
Rosenberg and Stern (1971)	a) Nomological validity (conflict significantly correlated with satisfaction.) b) Convergent validity (similar results for affective and manifest conflict.) c) No reliability estimation cited.	Lusch (1976a)	a) Alpha coefficient of conflict scale was .89. b) No validity assessment cited.
		Lusch (1976b)	a) Alpha coefficient of conflict scale was .89. b) Convergent validity (correlation between conflict scales and overall measure was .50). c) Nomological validity (conflict measures significantly correlated to power sources).
Pearson (1973)	a) Consistency checks carried out in the dissertation in the course of 5-step refining process to arrive at the 30-item scale for affective conflict cited. Details not specified. b) No validity assessment cited.	Pearson and Monoky (1976)	a) Consistency checks carried out in the dissertation in the course of 5-step refining process to arrive at the 30-item scale for affective conflict cited. Details not specified. b) No validity assessment cited.
Stern, Sternthal and Craig (1973a)	a) Convergent validity (manipulation check of conflict induction by comparing perceptual ratings across conflict treatments.) b) No reliability assessment cited.	Kelly and Peters (1977)	None cited.
Foster and Shuptrine (1974)	a) Convergent validity (some anecdotal instances supportive of measures obtained.) b) No reliability assessment cited.		

TABLE 11 (CONTINUED)
RELIABILITY AND VALIDITY ASSESSMENT

Study Reference	Reliability and Validity Assessment	Study Reference	Reliability and Validity Assessment
Brown and Frazier (1978)	a) Nomological validity (conflict measures significantly related to influence strategies.) b) No reliability assessment cited.	Schul, Lamb and Little (1981)	a) Alpha coefficients for conflict antecedents, satisfaction scale, and conflict scale were .50, .96 and .91 respectively. b) Discriminant validity of conflict antecedents was demonstrated by varimax rotated factor analysis, i.e., the items loaded as specified. c) Convergent validity (satisfaction measures significantly correlated with overall satisfaction measure.) d) Convergent validity (conflict measures significantly correlated with overall conflict measure.) e) Nomological validity (conflict antecedents and satisfaction, and satisfaction and conflict related as predicted.)
Etgar (1979)	a) Nomological validity (weak canonical correlations between conflict states found.) b) No reliability assessment cited. None cited.		
Rosson and Ford (1979)			
Brown and Day (1981)	a) Alpha coefficients for 6 measures ranged from .83 to .90. b) Nomological validity (correlations between four variables, and 6 measures were significant and in the right direction.) c) Content validity (correlations between 6 measures checked for their accuracy.)		

TABLE 11 (CONTINUED)
RELIABILITY AND VALIDITY ASSESSMENT

Study Reference	Reliability and Validity Assessment	Study Reference	Reliability and Validity Assessment
Ross and Lusch (1982)	a) Alpha coefficients for domain dissensus and perceptual incongruity scales was .67 and .78. b) Criterion validity previously established by Pearson (1973) using discriminant analysis for 10 descriptors of conflict and cooperation cited. c) Content validity (domain dissensus and perceptual incongruity scales based on field discussions and literature review.) d) Criterion validity (domain dissensus and perceptual incongruity scales correlated differently with conflict and cooperation scales.) e) Control validity (10 issues used to construct domain dissensus and perceptual incongruity scales cited to be understood and controllable by management.)	Eliashberg and Michie (1984)	a) Alpha coefficients for two factors each obtained from frequency scales over twenty business issues were .90 and .78 for regional managers; and .78 and .74 for the franchisees. (Different factors were obtained for the two respondent groups.) b) Alpha coefficients for two factors each obtained from intensity scales over twenty business issues were .94 and .83 for regional managers; and .90 and .87 for the franchisees. (Different factors were obtained for the two respondent groups.) c) No validity assessment cited.
Brown, Lusch and Muehling (1983)	a) Alpha coefficient for conflict scales was 0.82. b) Unidimensionality demonstrated by LISREL (beta was 0.654).		

terms. With the exception of Brown and Day (1981), Lusch (1976a, b), and Eliashberg and Michie (1984), no efforts were made to assess this generalizability. As reported earlier, separate integration of effects taken from studies using samples from a single industry, and of effects based on samples from several industries within single studies, has revealed differences in the magnitude of mean effects.

Consequently, external validity in the case of channels research is likely to remain a moot point for some time. Given the nascent stages of channel conflict research, it is impossible to assert whether conflict as a behavioral phenomenon assumes similar forms across channels. There could be differences due to theoretically relevant variables of dependence, or differential power bases, or involvement with the relationship. Should a cumulation of empirical evidence reveal a common pattern, future researchers can perhaps claim some external validity. The current priority in channel conflict research should be to obtain valid evidence for theoretical relationships.

Operationalization Issues

A variety of operational definitions for dependent and independent variables have been used in the channel conflict literature. For instance, Rosenberg and Stern (1971), defined perceived conflict to be the difference between reci-

procal channel members' perceptions of issues which are symptomatic of conflict. Ratings were obtained on 32 issues using 5-point Likert-type scales. Averages were computed before differences were obtained. Hunger and Stern (1976) defined perceived conflict to be the ratings of two general statements describing the relationship between the two firms on a 5-point Likert type scale. Both studies measured the intensity dimension. Similar examples can be cited for other states of conflict too. A similar diversity exists for conflict as an independent variable. Foremost, there is the theoretical problem of what causes conflict or what reduces conflict. Perhaps due to the extensive theoretical literature on conflict available from various disciplines, channel studies have used different independent variables. Some have used composite variables like attitudinal causes and structural causes (Etgar 1979) while the others have used specific factors.

Further, the same factors have been given different operational definitions. For instance, to Rosenberg and Stern (1971), goal incompatibility translated to the distance between reciprocal channel members' ratings on eight issues. However, to Hunger and Stern (1976) and Stern et al. (1973a and 1973b), this was a matter of parasimulation induction operationalized via different pay-off matrices. While in

the Rosenberg and Stern study, comparative ratings were the basis for inference, in the latter studies the manipulation was simply assumed to have worked. The issue of equivalence again crops up.

In summary, the operational problem is at least partly theoretical. A program of systematic research can greatly help to alleviate this problem. A start could be made by adopting a commonly accepted cause of conflict (say, goal incompatibility or non-achievement of superordinate goal) and exploring its impact on all four states of conflict proposed by Pondy. Once this has been studied in the laboratory and the field, another cause (say, use of coercive power) could be adopted and similarly explored. This approach would lead to a systematic investigation of the channel conflict phenomenon.

SOME OTHER UNRESOLVED BEHAVIORAL ISSUES IN CHANNELS

Although at least three kinds of channel conflict were identified by Palamountain (1967), the channel literature has confined itself to the study of vertical conflict. This focus may be because of the very conception of a channel as a superorganization; or because vertical conflict was thought to be most closely related to the performance of a channel; or because, as Mallen (1967) stated: "horizontal competition is well covered in traditional economic analy-

sis," (page 125). However, to the extent some researchers draw a distinction between conflict and competition, and the economic analysis does not adequately explain the behavioral dimensions of conflict, research effort is needed on horizontal conflict and inter-type conflict. As of now, no empirical study could be located on these in the channel literature. Conceivably, horizontal conflict and inter-type conflict may have a significant relationship with channel performance.

Considerable effort has been devoted to debating the issue of whether conflict and competition are different. It may not be difficult to empirically resolve the issue. For instance, a series of channel scenarios could be developed with some describing object-centered, parallel striving behaviors (definitionally, competition), and some others describing opponent-centered direct behaviors (definitionally, conflict); and the respondent channel members could be asked to classify them dichotomously into competition or conflict. Such an investigation would demonstrate the extent to which the distinction between competition and conflict is theoretically and empirically relevant.

The bulk of early behavioral literature on channels tended to be purely conceptual. Numerous propositions were generated and most of them remain unverified. For instance,

Robicheaux and El-Ansary (1976) deduced thirty propositions on various aspects of channels; Stern and Heskett (1969) generated fourteen propositions; Cadotte and Stern (1969) proposed fifteen research hypotheses with associated mathematical models; and Gill and Stern (1969) provided a role-theory conception of various channel behavioral issues. It would not be an exaggeration to say that empirical research on channel power and conflict, indeed on all channel behavioral issues, is far behind the theoretical works that already exist. Moreover these theoretical notions have begun to find their way into the textbooks, and are in the process of becoming reified.

Mc Vey (1967) wrote a stimulating article titled "Are Channels of Distribution What the Textbooks Say?," wherein he questioned the very conception of channels as interorganizational systems. In particular, he questioned whether channel members really resorted to integrated action and whether the channel members are really motivated by superordinate goals in the manner and to the extent popularly believed. This could be fairly easily verified by a field survey covering several channels.

CHAPTER SUMMARY

Chapter II has reviewed the relevant past theoretical and empirical literature dealing with channel conflict to

isolate the dominant conceptual and methodological issues that currently characterize this research domain.

The chief conceptual problems appear to be: (a) the failure to theoretically distinguish between issue-specific and overall perceptions of conflict and cooperation; (b) the implicit and explicit treatment of conflict and cooperation by some researchers as opposing psychological states; and (c) a general failure to examine the intervening moderator variables that may mediate the relationships between issue-specific and overall perceptions, and between conflict and cooperation. Moreover, the researchers have not let the realities of channel behavior determine the research issues (Dant 1985). As a result theoretical understanding of cooperation, the most common channel behavior is minimal. Similarly, the simultaneous presence of conflict and cooperation in channel relationships has not been explained. This orientation has also encouraged some normative biases against conflict.

As far as empirical investigations are concerned, the major issues appear to be: (a) a general failure to recognize conceptual differences among different states and dimensions of conflict though these have been theoretically recognized and accepted; (b) reliance on inferential statistical methods to the exclusion of effect size estimations;

(c) absence of statistical power measurement which renders inferential statistical findings questionable; (d) incomplete reliability and validity assessment which undermines the confidence that can be placed in the reported results; and (e) reliance on single-method measures which casts doubts on the validation of measures attempted and prevents the researchers from ruling out rival hypotheses like method-artifacts. As detailed in Chapter IV, the proposed methodology seeks to overcome several of these shortcomings.

Chapter III develops the theoretical framework for testing the relationships between issue-specific and overall perceptions of conflict and cooperation.

Chapter III

CONCEPTUAL DEVELOPMENT OF CONFLICT - COOPERATION RELATIONSHIP

INTRODUCTION

This chapter develops the conceptual arguments culminating into research hypotheses. As mentioned before, the purpose of this research is to understand the relationships between channel conflict perceptions and channel cooperation perceptions by proposing conceptual distinctions between issue-specific and overall perceptions.

The chief issues and points developed in Chapter II that are important for the theoretical development are briefly summarized below:

(i) Incongruity leading to antagonism (which can be triggered by a host of issues like differences over goals, strategies, values and activities) is the central cause of conflict. Such a conception is supported by both conceptual writings and empirical evidence in the channel literature.

(ii) A conceptual distinction between "conflict" and "dissatisfaction" was offered. Whereas "dissatisfaction" merely implies an incongruity situation arising out of differences in desired and/or actual states between the involved parties, "conflict," entails incongruity leading to antagonism. The term "antagonism" was said to imply a perception of adversary relationship between the parties.

(iii) The following alternative definition of "conflict" was adopted for the current research effort:

Social conflict is any social situation or process in which two or more social entities are linked by at least one form of an antagonistic psychological relationship and/or at least one form of an antagonistic interaction caused by the incongruence or incompatibility between actual and/or desired states of the involved parties.

Though the process conception of conflict in Pondy's hierarchy of conflict episodes is embraced, this current effort limits itself to the perceived conflict state. In other words, the relationships that may exist between latent conflict and perceived conflict, between perceived conflict and affective conflict, or between perceived/affective conflict and manifest conflict are beyond the realm of this conceptualization.

(iv) The realistic channel context was described as a scenario of several business issues confronting the channel members at any point in time. They might agree to cooperate on many, and experience conflicts on others; all this confounded or nested within an atmosphere of acknowledged interdependence and superordinate goals. By definition, channel members work together, make joint decisions, and interact with each other. Hence, the realistic channel context presents many opportunities for simultaneous issue-specific perceptions of conflict and cooperation.

(v) Since the channel context refutes the conception of cooperation as the relative absence of conflict (and vice versa), the following definition of "cooperation" was adopted to conceptually distinguish between conflict and cooperation:

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.

(vi) Two rival theoretical positions on the relationship between conflict and cooperation in the channel context were identified: a) the conception of cooperation as the relative absence of conflict, and vice versa (e.g., Pearson 1973; Deutsch 1973; Pearson and Monoky 1976; and implicitly, Sherif 1958; Stern, Sternthal, and Craig 1973a; Hunger and Stern 1976); and b) the conception of conflict and cooperation as theoretically distinct constructs from overall perceptions of conflict and cooperation (Childers and Ruekert 1982). The first position appears to have been strongly influenced by the social psychology paradigm which has developed around the realistic group conflict theory of Sherif.

While no empirical studies were found to have investigated the Childers and Ruekert position, the available empirical evidence already reviewed (Schmidt and Kochan 1977; Stern, Sternthal, and Craig 1973a; Hunger and Stern 1976; Pearson and Monoky 1976; Pearson 1973; Rosson and Ford 1979)

seriously questions the validity of the first position. Moreover, the first conception does not explain the simultaneity of conflict and cooperation in channels.

(vii) The need to distinguish between issue-specific and overall perceptions was stressed in order to understand the relationship between conflict and cooperation.

CONCEPTUALIZATION

In the following sections, the two rival positions are critically examined for the research hypotheses implicit in their conception. Auxiliary theories assumed in the two positions are identified. Later, a new paradigm based on exchange theory (Thibaut and Kelley 1959) is proposed for understanding the theoretical distinctions identified by Childers and Ruekert between conflict and cooperation. The exchange theory framework facilitates the integration of (i) conceptual differences proposed between issue-specific and overall perceptions, and (ii) the conception of conflict and cooperation as distinct constructs. Exchange theory, additionally, identifies moderator variables that have an intuitive appeal and are also reminiscent of observable channel realities. In other words, the use of the exchange theoretic framework helps to bring theory "closer" to observed channel behavior. Theoretical hypotheses deduced from the new paradigm are presented; and finally, the hypotheses tested in the current research effort are identified.

Cooperation as Relative Absence of Conflict

The relationship between conflict and cooperation as conceived by writers who see one to be the relative absence of the other may be expressed as:

Cooperation = f (Cooperative Issues, $1 / \text{Conflictful Issues}$)

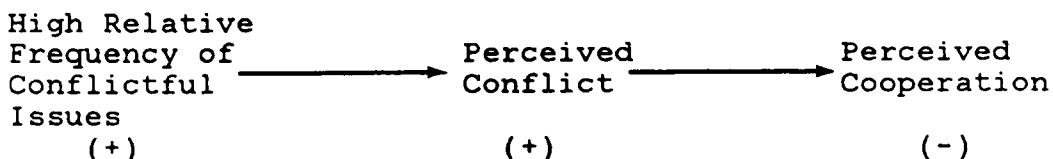
or

Conflict = f (Conflictful Issues, $1 / \text{Cooperative Issues}$)

If this conception is accurate, the extent of perceived conflict is solely dependent on the number of conflictful issues and inversely related to the number of cooperative issues. Similarly, the extent of perceived cooperation would be entirely dependent on the number of cooperative issues and inversely related to the number of conflictful issues. The above can be stated in the form of the following theoretical hypothesis:

Theoretical Hypothesis One (a)

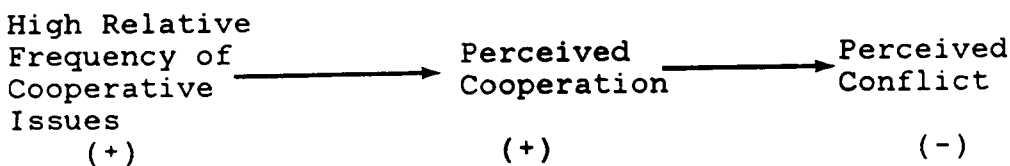
Given an ongoing channel relationship, the greater the number of conflictful issues relative to the number of cooperative issues, the greater the amount of perceived conflict; and lesser the amount of perceived cooperation.



The converse of this theoretical hypothesis may be stated as follows:

Theoretical Hypothesis One (b)

Given an ongoing channel relationship, the greater the number of cooperative issues relative to the number of conflictful issues, the greater the amount of perceived cooperation; and lesser the amount of perceived conflict.



Implicit Auxiliary Theories

Several important unstated assumptions are implicit in the above propositions. Foremost, it is assumed that channel members do not have any yardsticks (or "comparison levels" in the terminology of exchange theory discussed later) for evaluating their relationships. In other words, not recognizing the presence of some criteria for evaluations, in this context is tantamount to believing that channel members are naive as to what may be realistically expected in channel relationships; they presumably assume perfect accord; and when conflictful issues come up, the channel relationships are evaluated by simply comparing the relative frequencies of conflictful and cooperative issues.

Another major assumption being made in this conception is that the salience of the issues is not a relevant varia-

ble; i.e., the channel members do not assess the importance of the various issues as far as conflict perceptions and cooperation perceptions are concerned, but only concern themselves with the tally of number of issues over which conflict or cooperation has occurred. Such a tally would obviously only yield some measure of overall perceptions. Hence, it is apparent that no distinctions are being made between issue-specific perceptions and overall perceptions. As a matter of fact, in dichotomizing the constructs as opposites, the adherents of this conception are only talking about overall perceptions. This philosophy is also well documented in the manner in which the empirical investigations on channel conflict have been carried out, i.e., scales for measuring conflict have been typically made up of ratings on a number of business issues and composite indicators for conflict have been derived by combining the individual measures in various ways.

The conception of channel members inferring conflict or cooperation by a tally of issues not only ignores the history effects which can be expected to influence the way they perceive issues, but also does not recognize the possibility of there being a threshold effect. In other words, even disregarding other possible intervening variables, a certain number of conflictful issues may have to occur before the relationship is perceived as conflictful.

The boundary channel personnel who actually interact with each other, are not seen to be guided by the expectations of their respective organizations. In other words, this assumption implies that the channel members take the conflictful and cooperative instances very personally when they negotiate and interact with each other, and do not perceive such interactions as organizational task-behaviors: the organizations do not prescribe appropriate role-sets for their members, or if they do, members do not use them as guidelines for evaluating inter-organizational interactions.

In later sections, it has been argued that all three assumptions are counter-intuitive and not reflective of actual channel realities. However, even at this juncture, it will be fruitful to point out that strict transference of this paradigm to the channel behavioral context is difficult to defend. As previously stated, the realistic group conflict theory basically proposes three recurrent themes:

- (1) win/lose situations spark a form of aggressive competition that is characterized by attempts to neutralize, harm, and eliminate the competing group;
- (2) win/lose situations contribute to own-group bias, that is, cause group members to raise their evaluation of their own group and lower their evaluation of the opposing group;
- (3) if it were only possible to get two groups to pursue common (rather than mutually exclusive) goals, conflict would be eliminated.

A critical phrase in Sherif's theorizing is the contextual "win/lose situations." The scenarios or the settings to which his theory is extended call for situations where only one of the parties can gain, and only if the other party loses, i.e., a zero-sum game setting is required. Not surprisingly, one may expect to find aggressive competition and in-group out-group biases in such an environment. In such a setting, one would also view conceptualizing cooperation as the relative absence of conflict more charitably.

However, such a setting is seldom found in channels. The reader will recall that the very formulation of a channel represents a cooperative effort. As such, win/lose orientations are likely to be rare since the game is not a zero-sum game, and all parties stand to profit from their relationships. In other words, superordinate goals definitionally exist. This cooperative bias also means that one would expect the parties to be attempting negotiations aimed at resolving their differences, rather than harming each other. In fact in the vast majority of profitable channel relationships, cooperation remains the modal behavior. For the same reason, then, conceptualizing cooperation as the relative absence of conflict becomes questionable.

From a measurement perspective, this conception can be said to be a tautological one. A heightened measure of ove-

rall conflictful relationships can easily be obtained by combining responses on a large number of issues channel members might disagree on (as has, indeed, been done so far in channel conflict research). One would expect, then, following the above conception, that such a relationship will be characterized by absence of cooperation. However, as mentioned before, whenever conflict and cooperation have been measured within the same study, they have been found to coexist. Conceivably, this may have occurred because cooperation is the expectation of a balanced exchange relationship, and not merely absence of conflict. This expectation may have persisted despite several issue-specific perceptions of conflict.

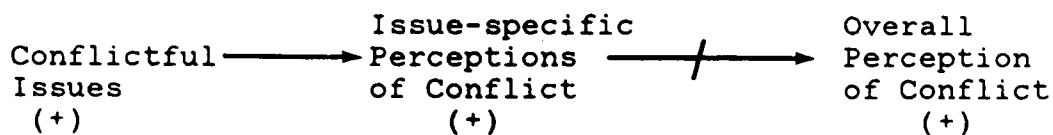
Conflict and Cooperation as Distinct Constructs

Childers and Ruekert (1982) have argued that both conflict and cooperation can be issue-specific and might be found concurrently to characterize several of the exchanges that occur among the channel members. They assert that the extent to which conflict would lead to a deterioration in the overall level of cooperation existing between the parties would be dependent on (a) saliency of the issues, and (b) the duration of the negotiations (pages 117-118). Their definition of cooperation, adopted in this research, has already been re-stated above.

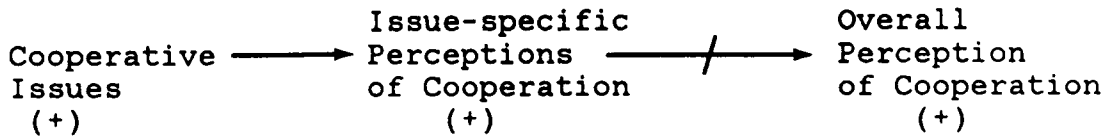
Central to their conceptualization is the notion of "expectations." Hence, if a manufacturer and a wholesaler are cooperating on an advertising campaign and are in conflict over the inventory levels the wholesaler should maintain, and if such a state of affairs does not detract from each party's expectations of being able to achieve a balanced exchange of resources, the conflictful issue may generate only issue-specific perception of conflict and not influence the overall perception of cooperation. Stated differently, issue-specific perceived conflict would not rule out an overall perception of cooperation. Only when conflictful issues lead to a decrease in one's expectations of equitable relationships, would overall perceptions of cooperation be undermined. Such a situation may be expected when the issues are important and have been subject to negotiations for a duration of time. The above reasoning yields the following theoretical hypotheses :

Theoretical Hypothesis Two

Given an ongoing channel relationship, issue-specific perceptions of conflict and cooperation may be found to exist concurrently. These issue-specific perceptions of conflict and cooperation will not per se lead to overall perceptions of conflict or cooperation.

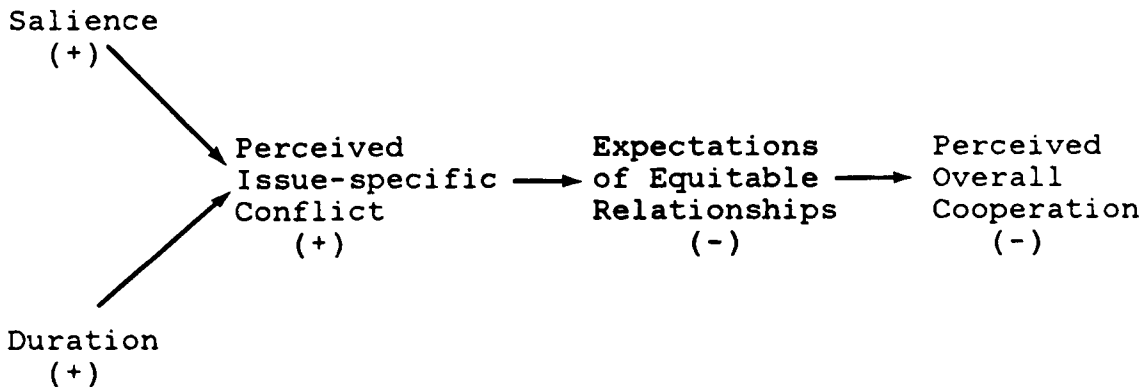


and



Theoretical Hypothesis Three

Given an ongoing channel relationship, the greater the salience of a conflictful issue, and the greater the time spent on negotiations over it, the greater the perceived issue-specific conflict. The greater the perceived issue-specific conflict, the lower the expectations of equitable relationships, and the lower the overall perception of cooperation.



Implicit Auxiliary Theories

While Childers and Ruekert (1982) have correctly incorporated salience or importance of the issues as an intervening variable affecting the relationships between issue-specific and overall perceived conflict, their conceptualization does not recognize the presence of any evaluation criteria or guiding expectations resulting from role-sets prescribed by organizations for their members.

They also do not explain how expectations come to be formed: a conceptual missing link central to their theory.

Relative salience of various conflictful or cooperative issues is a judgment which would be predicated on organizational priorities which, in turn, would be reflected in the role-sets prescribed for the boundary personnel or the organizational expectations from the boundary personnel. In other words, an issue would be deemed salient by the interacting channel members if their firms determined them to be important.

Similarly, any judgments on the durations of negotiations would be based on the past experiences of the boundary personnel. Hence, for instance, if the negotiator for the wholesaler firm knows from past experiences that changing inventory level requirements or margins takes approximately two months on an average, then a duration of two months would not be deemed "long." Thus, it is not the duration of negotiations per se, but the past experience on the issue that is a critical mediating variable.

Exchange Theory Framework

The following section reviews Exchange theory and presents ten deduced research hypotheses based on this review. Of these ten hypotheses, four were tested empirically, and are identified later.

Salient Features of Exchange Theory

In a nutshell, Thibaut and Kelley's (1959) exchange theory conceives interaction to be the essence of any interpersonal relationship (p.10), and all social interaction as involving explicit or implicit exchange of rewards and costs. Rewards refer to the pleasures, satisfactions and gratifications a person enjoys; and costs refer to any factors that operate to inhibit or deter the performance of a sequence of behavior (p.12). An assumption is made that "amount of reward . . . can be measured and . . . [is] reducible to a single psychological scale" (p.12), and "costs . . . are also assumed to be measurable on a common psychological scale" (p.13). Amount-of-reward and amount-of-cost psychological scales "can be combined into a single scale of "goodness" of outcome, with states of high reward and low cost being given high-scale values and states of low reward and high cost, low-scale values" (p.13). In other words, the goodness-of-outcome is an absolute bi-polar scale that arrays various combinations of rewards and costs that vary in attractiveness. Outcome is a general term for rewards gained and costs incurred (p.13).

Specific outcomes, though they could be directly assigned points on the goodness-of-outcome scale, are said not to be directly judged by the goodness-of-outcome scale, but

are evaluated with reference to two standards: (i) comparison level (CL) which "is the standard against which the member evaluates the "attractiveness" of the relationship or how satisfactory it is;" and (ii) comparison level for alternatives (CL-alt) which is defined to be "the standard the member uses in deciding whether to remain in or to leave the relationship" (p.21). CL has been conceptualized as a kind of zero or neutral point on the goodness-of-outcome scale (p.97), whereas CL-alt has been conceived as the lowest level of outcomes a member will accept in the light of available alternative opportunities (p.21).

In chapter 6 of their book (p.80), Thibaut and Kelley have discussed the various determinants of the CL; the factors that also determine the exact location of CL on the goodness-of-outcome scale. The key determinant is held to be past experiences (either personal or vicarious). Hence, CL can alternatively be conceptualized as some modal or average value of past experiences (p.81). A person who has experienced superior outcomes will have a higher CL than a person who (say) has only known mediocrity (p.82). However, CL is not determined by a simple average but a weighted average of past experiences. Each outcome's contribution to the average is weighted by its salience. "A person's CL depends not only upon outcomes he has experienced or seen others experi-

encing but also upon which of these are actively stimulating to him - are obtruded to him, are vivid" (pp. 81-82).

Salience is conceptualized to influence the CL in two distinct ways. The salience associated with a certain outcome may be dependent "upon the recency of experiencing the outcome" (p.21, emphasis added). Hence, salience depends in part upon momentary cues which serve as reminders of certain relationships and alternatives; CL is subject to situation-to-situation and moment-to-moment variations (p.82); and CL tends to move to the level of outcomes currently being attained (p.98). On the other hand, there are outcomes whose salience is independent of the immediate situation; these outcomes are likely to be salient under almost all circumstances because of some special significance they have to the individual (pp. 82 and 84). In the channel context certain outcomes may be seen as such if they are closely related to organizational goals and priorities as reflected in the role-sets of the boundary personnel. Thibaut and Kelley suggest that salience may also depend on the personality variable of an individual's conception of his/her power. However, the details are not presented here because, as indicated later, the latter variable is not treated as a variable in the current investigation. The determinants of CL-alt are also not discussed because the construct will not be employed in this research.

Assuming a dyadic relationship which, in general, is attractive enough to retain, exchange theory makes the following predictions about how individuals evaluate outcomes ensuing from a given dyadic relationship (pp. 21 and 81): (i) if the outcomes are superior to or "above" the CL (we can term this situation as Positive Incongruity ; see (b) in Figure 3), the resultant psychological state is satisfaction; on the other hand (ii) if the actual outcomes are inferior or "below" the CL (we can term this situation as Negative Incongruity ; see (a) in Figure 3), the resulting psychological state is dissatisfaction (Figure 3). Moreover, the extent of satisfaction and dissatisfaction is determined by the magnitude of discrepancy or the distance between actual outcomes and comparison level, and the salience of the outcomes.

Exchange Theory and Channel Behavior

The exchange theory formulation provides an appropriate analogous framework for investigating the nature of conflict and cooperation in the channel context. The conception of all social interactions as involving exchange of rewards and costs captures the channel interactions where boundary personnel usually meet to discuss exchanges involving rewards and costs. The centrality of exchange-behavior in marketing is well accepted (e.g., Bagozzi 1974, 1975). Exchange theory

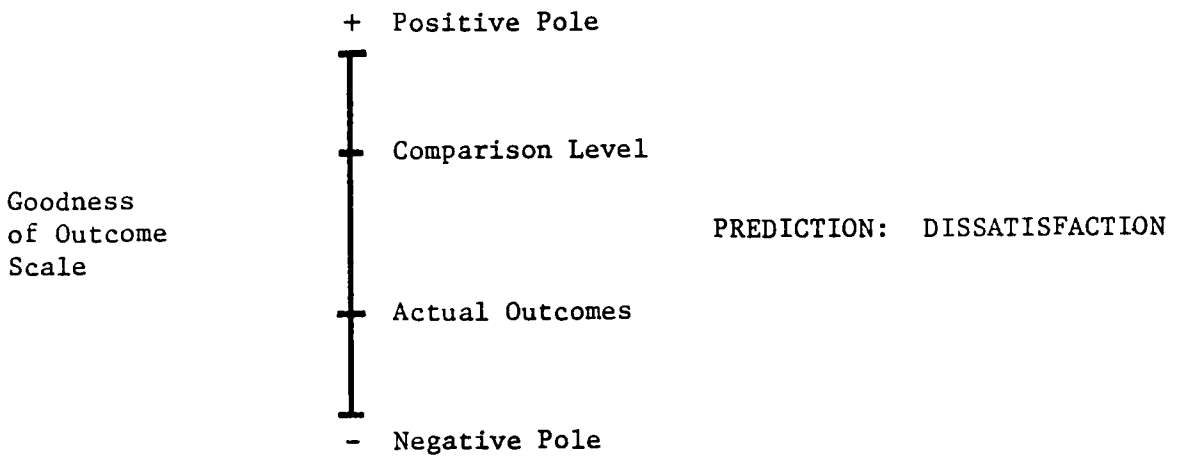
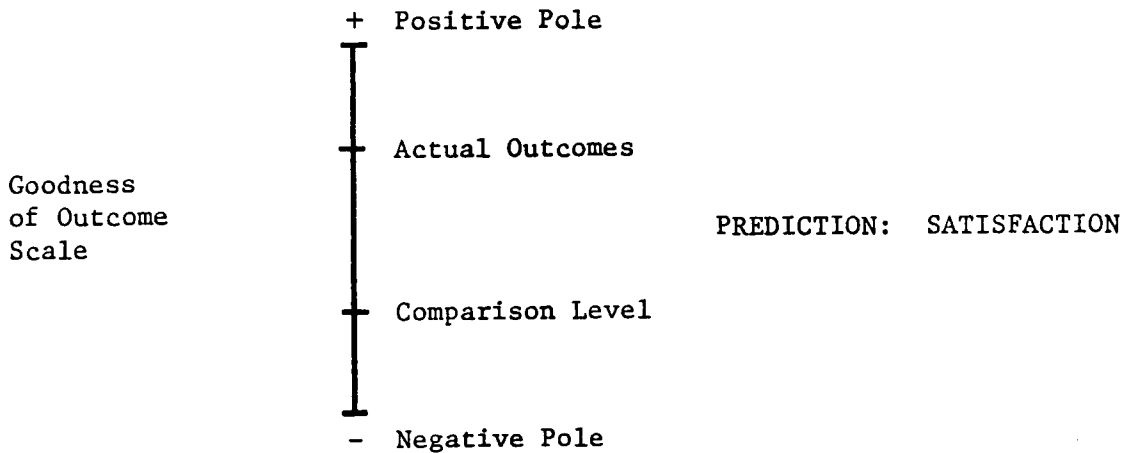
A. NEGATIVE INCONGRUITYB. POSITIVE INCONGRUITY

Figure 3: Predictions From Exchange Theory

(Inferred from Thibaut and Kelley 1959)

focuses on dyadic relationships (though an extension to group interactions is also provided). The use of buyer-vendor dyadic relationships as contextually synonymous to channels of distribution for understanding channel behavior has widespread support from the researchers in this area (McVey 1967; Pruden 1969; Rosenberg and Stern 1971; Pearson 1973; Stern et al. 1973a; Hunger and Stern 1976; Pearson and Monoky 1976; Ross and Lusch 1982; Eliashberg and Michie 1984). The original justification was provided by McVey (1967) who argued that channel members are most conscious of dyadic interactions with other members most adjacent to them in the channel because the vast majority of channel interactions occur between adjacent dyad members. Consequently, it is appropriate to study channel behavior in the context of such dyadic interactions.

Applicability of Comparison Level. The notion of CL (a central construct of exchange theory) or an evaluative criteria for judging relationships on the basis of past experiences, salience, and recency has considerable intuitive appeal within the channel context. Subjected to numerous dyadic interactions in ongoing relationships, channel members can be expected to develop estimates of realistic expectations from those relationships. For instance, they would know the kinds of issues that are not negotiable, the kinds of stances the

other parties usually adopt to different types of issues, the topics over which they can really discuss and negotiate, the behavior patterns of other parties, the kinds of issues considered trivial or "part of the game," typical time taken to change certain policies, issues which are quickly suppressed by invoking the contractual agreements, kinds of issues the other parties try to force through muscle and/or persuasion, and the kinds of issues typically used as bargaining chips by them or by the other parties. Part of this experience base would also be an understanding of typical issues that cause disagreements and conflicts, and the kinds of issues and contingencies over which accord is quick and expected.

It is also reasonable to expect that certain outcomes, issues, and experiences would stand out as salient because of their recent occurrence (in the sense that they might be suggestive of things to come) or because they are intrinsically important. The latter would probably be dependent on the significance of certain issues to organizational goals, priorities, and business contracts conveyed to boundary personnel in the form of job-descriptions or in the process of induction of new employees. All this together would constitute a kind of repertoire which a channel member can be expected to invoke as a yardstick or criterion for evaluating

the issue-outcomes and indeed, the satisfaction with the relationship itself. This yardstick is precisely what exchange theory terms as CL. Eliashberg and Michie (1984) have explicitly discussed such a criterion (though they called it reference structure) being the basis for judging which goals are deemed congruent and incongruent. Exchange theory posits CL to be the basis for evaluating not just goals, but outcomes in general. Indeed, it is tautological that an evaluation requires the use of some criteria for comparison. The theory merely specifies the determinants of such criteria, which as argued above, seem to fit the channel context rather well.

Dissatisfaction and Conflict. As presented, exchange theory suggests that "negative incongruity" would lead to dissatisfaction, and "positive incongruity" would result in satisfaction. Both dissatisfaction and conflict arise from perceptions of incompatibility or incongruence, and the empirical investigations have shown the two constructs to covary strongly (Chapter II). A perception of dissatisfaction, it was argued, becomes a perception of conflict when perceptions of antagonism or adversary relationships also creep in. As such, dissatisfaction and conflict are closely related. It is quite possible that several negative incongruities may only result in dissatisfaction; while others

could cause perceptions of conflict. This can be verified in an empirical investigation by testing for the emergence of antagonism. However, a prediction can be made that this is most likely to occur when the issues are salient. In an experimental context, salience can be assessed through a manipulation check. In the channel literature a similar distinction has been made between dissatisfaction and conflict (Schul et al. 1981).

Satisfaction and Cooperation. Satisfaction in channel context has been defined as (i) positive affective evaluations and attitudes concerning channel arrangements (Schul et al. 1981), and (ii) the degree to which expectations about goals are met (Brown and Frazier 1978). It is easy to see how such experiences of satisfaction are likely to enhance a channel member's expectations of balanced exchange relationship (definitionally cooperation). Although no empirical investigations of the relationship between channel satisfaction and channel cooperation were found in the available literature, the two constructs are likely to be closely related. The issue of conceptual distinctions between satisfaction and cooperation has not been addressed in the available channel literature.

When channel members evaluate the issue-outcomes, they may experience satisfaction if the outcomes please them.

Hence, satisfaction is experienced after the issue-outcomes are evaluated. As such, the definition offered by Schul et al. (1981) appears to be relatively better founded. On the other hand, a perception of cooperation goes beyond satisfaction. Now the channel members are making inferences about how the satisfaction they have experienced has strengthened their expectations of balanced exchange relationships. Hence, the sequence appears to be (i) evaluation of issue-outcomes, (ii) satisfaction if the evaluation is positive, and (iii) perception of cooperation as satisfaction enhances expectations of balanced exchange relationship. This hierarchy guides the development of propositions concerning these constructs.

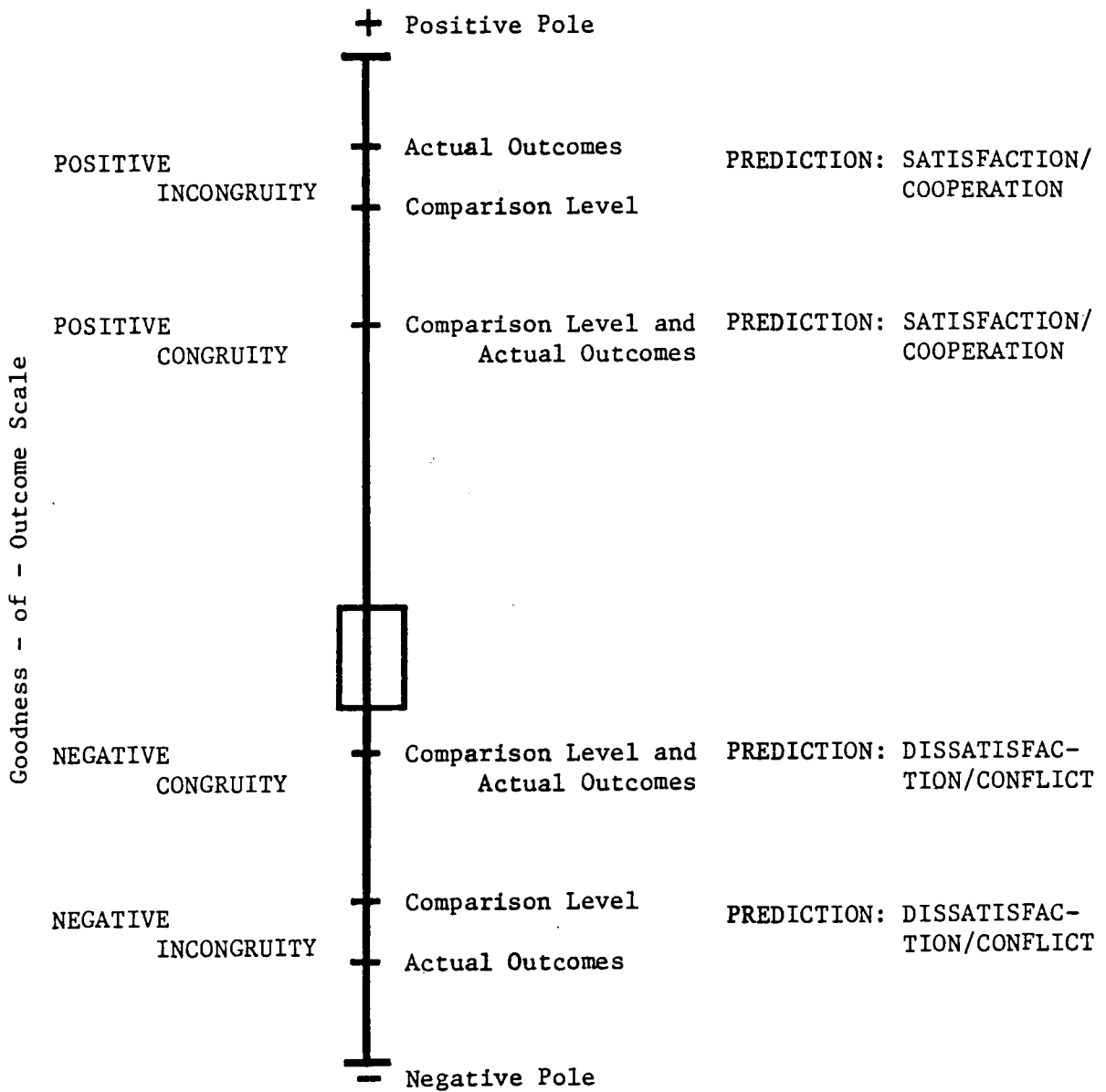
Positive and Negative Congruities. Although exchange theory predicts satisfaction only in the event of "positive incongruity," another scenario to consider would be a situation where issue-outcomes coincide with the CL, and both were close to the positive pole of the goodness-of-outcome scale (a condition we can term "Positive Congruity"). Would channel members experience cooperation and satisfaction? Since CL defines the expectations from the relationships, when "positive congruity" occurs channel members will find their expectations met, leading to satisfaction, and an experience of balanced exchange relationship (cooperation) can be ex-

pected. The strength of the perceptions of satisfaction and cooperation arising out of "positive congruity" can be expected to be less than those arising out of "positive incongruity" where outcomes exceed the expectations.

Of course, this would not happen if the the expectations defined by CL were not high enough (i.e., the CL was closer to the negative pole in the goodness-of-outcome scale). We may term this situation of CL being close to the negative pole in the goodness-of-outcome, and the issue-outcomes coinciding with this low CL as "Negative Congruity." It is suggested that, as a first recourse to such a relationship, the channel members would probably opt out of such a channel. Under the "rare" conditions of there being only one existing channel for the product category or the particular channel being indispensable, channel members may retain the relationship in the interest of organizational welfare even though they experience dissatisfaction and possibly conflict in the relationship. The perceptions of dissatisfaction and conflict in the "negative congruity" condition would be weaker than in the case of "negative incongruity," since in the "negative congruity" condition the channel members have chosen to stay in the channel for organizational well-being.

However, the conditions of positive congruity and negative congruity may not occur in certain circumstances depending on the placement of the CL along the goodness-of-outcome scale. Though certain ranges on this scale may be well defined in terms of desirability or undesirability, (i.e., when the CL is close to poles), there may also be ranges on the scale which can be termed "ranges of indifference." If the CL is located in a range of indifference and one of the congruities occurs, neither satisfaction/cooperation nor dissatisfaction/conflict may occur. The notion of such ranges of indifference is consistent with social judgment theory and the adaptation-level theory. In an experimental context, then, operationalizing the congruity conditions may require careful planning and will probably involve several iterations with different scenarios. In the propositions pertaining to congruity conditions, it has been assumed that the CL is not located in the ranges of indifference.

In summary, to the original two situations of positive incongruity and negative incongruity visualized by exchange theory, we have now added two supplemental conditions of positive congruity and negative congruity on the basis of alternate scenarios that may be found to exist in channels. The four situations and related predictions are summarized in Figure 4.



The Box Represents an Example of a Range of Indifference that May Exist

Figure 4: Predictions From Four Incongruity and Congruity Conditions
(Based on the Conceptual Arguments Offered)

Issue-Specific Perceptions and Exchange Theory. Exchange theory, as presented, delineates the psychological mechanics of evaluating overall relationships. However, it can be argued that the mechanics do not change even when it comes to evaluating issue-specific outcomes. Foremost, as mentioned before, it is tautological that an evaluation requires invoking some comparison criterion. There is no reason to suspect that this statement would be any less valid depending on whether we are concerned with a particular outcome evaluation or an evaluation based on several outcomes. Hence, the discussion really pertains to whether or not the criterion invoked for evaluating a single outcome would be constructed in the same manner as exchange theory suggests for evaluation of several outcomes.

Theories of social learning suggest that people form evaluation criteria largely on the basis of personal experiences and vicarious experiences. The above proposition is equally applicable to global or particular criteria. The CL, however, is formulated on the basis of a large number of past experiences over different kinds of issues. Hence, when it comes to evaluating a particular issue-outcome, it is reasonable to suppose that channel members would invoke a criterion based on past experiences over similar kinds of issues. This "comparison level" used for assessing a single

outcome would then, be a sub-set of the CL used for evaluating overall relationships. There is also no reason to expect that salience and recency variables would not be operative in the same manner as proposed by exchange theory.

This notion of use of sub-sets of CL is implicit in exchange theory. Thibaut and Kelley have indicated that CL can change from situation to situation in their discussion of the salience variable. In other words, CL is not conceived of as a fixed criterion. The notion of certain experiences having lasting salience also implicitly suggests that outcomes belonging to this category will be evaluated differently than outcome categories which are not deemed to be salient.

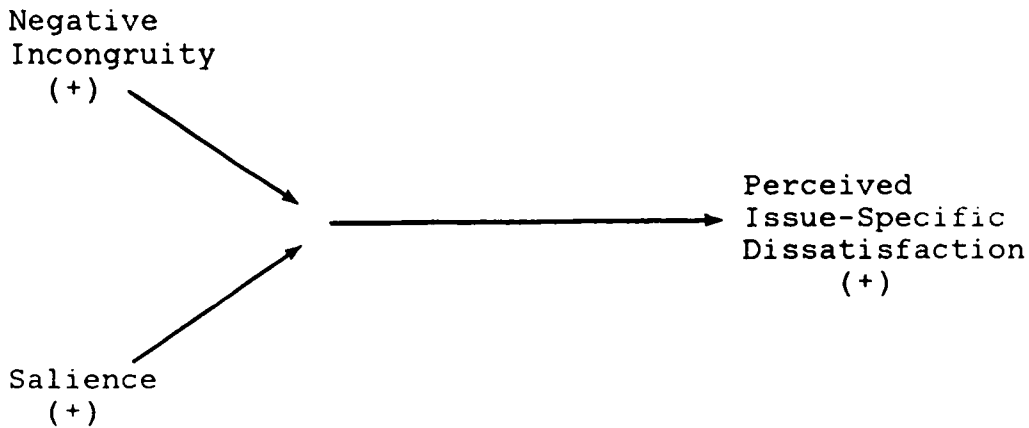
The argument can be best presented by an example. Consider a channel relationship where past experiences suggest to channel member, A, that (i) A's representatives are very courteously received by channel member B, and (ii) that B is very reasonable in negotiating mark-ups allowed in light of cost-justifications. Such perceptions and many others would be the building blocks of A's CL. Let us further assume that there is an incident where B mistreats A's representative. How would A evaluate the ongoing relationship with B? First of all, in light of all the other positive things going in the relationship, A might continue to characterize the ove-

rall relationship as satisfactory and cooperative. However, A would also have an evaluation of the unfortunate incident and would consider how B has treated A's representatives in the past (a sub-set of CL) and determine the particular incident to be dissatisfactory and, perhaps, even conflictful. In other words, A would experience issue-specific conflict even though the overall characterization of the relationship is cooperative. What has been argued is an obvious issue: when we are evaluating a particular outcome we recall our past experiences over similar kinds of issues as an evaluation criterion. Hence, the exchange theory analogy suggests several theoretical propositions for issue-specific perceptions also.

It must be emphasized that it is not exchange theory which is being tested here, but propositions on the channel relationships. The exchange theory has been espoused because it provides an instrumental explanation (Chalmers 1982, p.113) to behavioral issues of channel conflict and cooperation and a useful analogical framework for integrating the various theoretical propositions indicated below.

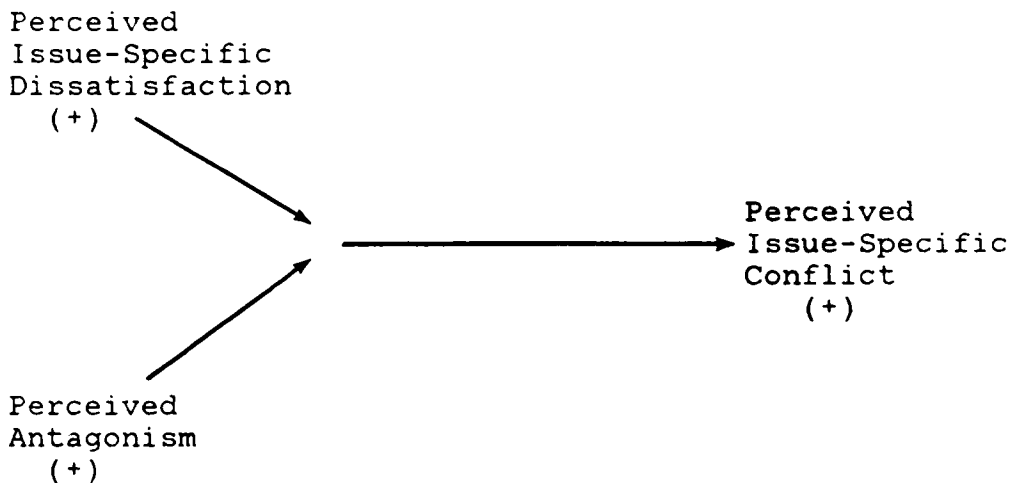
Theoretical Hypothesis Four (a)

Given an ongoing channel relationship, the greater the negative incongruity between the issue-outcome and the comparison level invoked, and the greater the salience of the issue, the greater the amount of perceived issue-specific dissatisfaction.



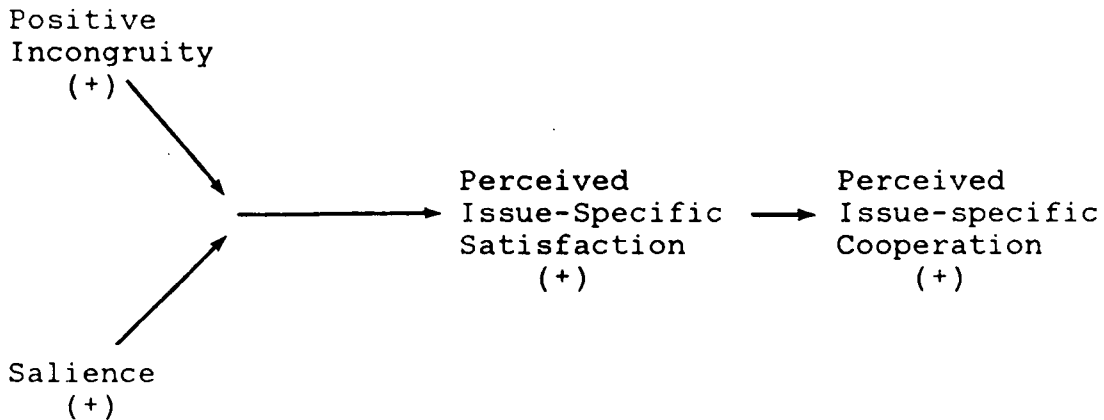
Theoretical Hypothesis Four (b)

Given an ongoing channel relationship, the greater the amount of perceived issue-specific dissatisfaction and the emergence of perceived antagonism, the greater the perceived issue-specific conflict.



Theoretical Hypothesis Five

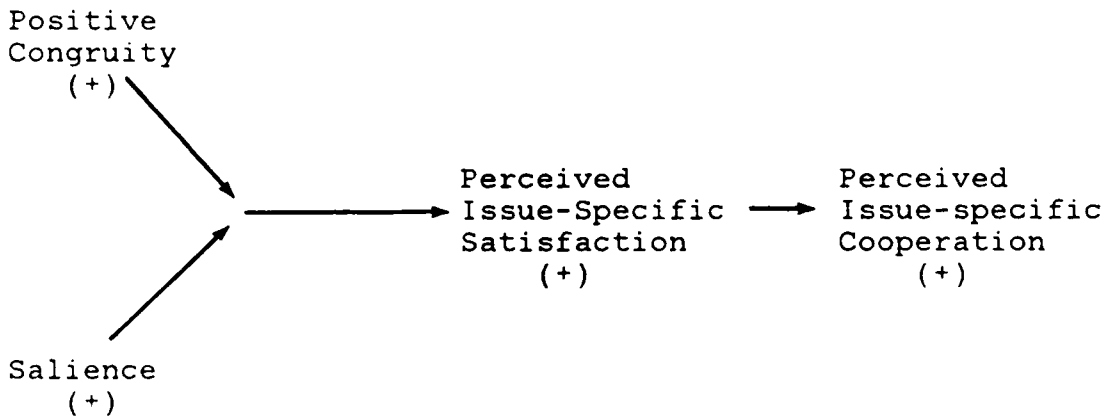
Given an ongoing channel relationship, the greater the positive incongruity between the issue-outcome and the comparison level invoked, and the greater the salience of the issue, the greater the amount of perceived issue-specific satisfaction and cooperation.



Hypotheses which draw upon the concepts of "positive congruity" and "negative congruity" are modeled below:

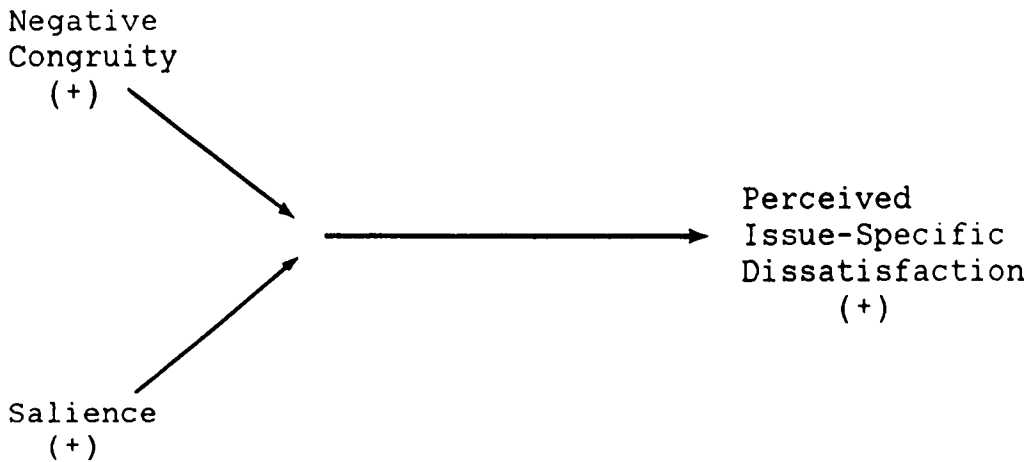
Theoretical Hypothesis Six

Given an ongoing channel relationship and a condition of positive congruity between the the issue-outcome and the comparison level invoked, the greater the salience of the issue, the greater the amount of perceived issue-specific satisfaction and cooperation.



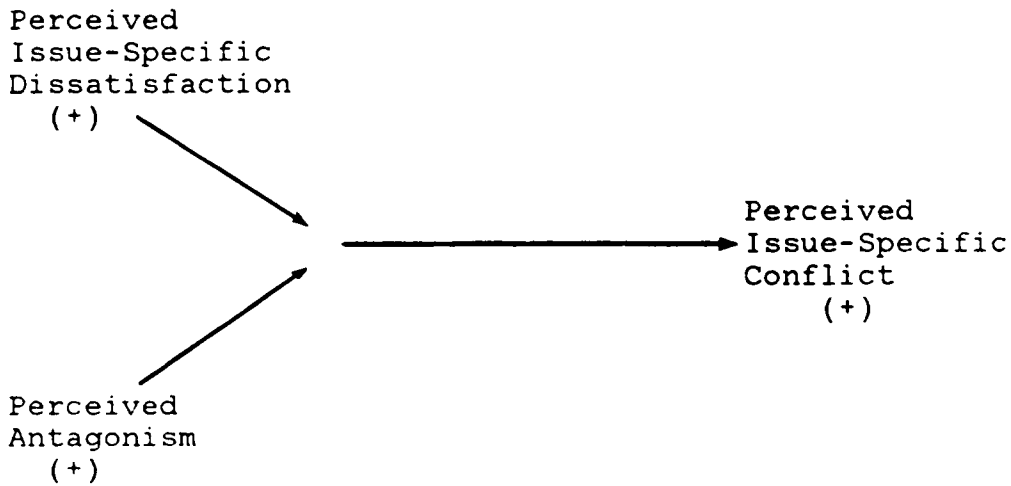
Theoretical Hypothesis Seven (a)

Given an ongoing channel relationship and a condition of negative congruity between the the issue-outcome and the comparison level invoked, the greater the salience of the issue, the greater the amount of perceived issue-specific dissatisfaction.



Theoretical Hypothesis Seven (b)

Given an ongoing channel relationship and negative congruity, the greater the perceived issue-specific dissatisfaction and the emergence of perceived antagonism, the greater the perceived issue-specific conflict.



Overall Perceptions

Regarding the relationships between issue-specific perceptions and overall perceptions, the exchange theory postulates have two alternative sets of propositions to offer.

Situation One. Mentzer and Hunt (1983) have proposed that in channels of distribution, each member is constantly evaluating the performance of the other channel members; and the dissatisfied channel member may start a search for alternative channel relationships. Specifically, such a recourse is thought to be dependent on variables like degree of unacceptable performance and the nature of past relationships between the two channel members. Hence, if past relationships have been profitable and the extent of unacceptable performance is not "great," the extreme step of channel dissolution is likely to be avoided. Moreover, the evaluation of other alternatives must take into account the substantial costs of a channel dissolution. Therefore, only when the alternative is sufficiently superior to overcome the costs of a change-over will the extreme step be taken.

Conceptually, the above arguments allude to exchange theory's second standard, comparison level for alternatives which was defined as "the standard the member uses in deciding whether to remain in or to leave the relationship" (Thibaut and Kelley 1959, 21). This standard takes into account the quality of alternatives available. Thibaut and Kelley hypothesized that individuals use the comparison level for alternatives in deciding whether to terminate or continue a relationship, i.e., with reference to opportunities available as compared to current relationships.

To arrive at the critical point in channel relationships where alternatives are actively considered, however, the issue becomes one of unacceptable performance rather than one of merely conflictful or cooperative perceptions. Hence, a series of issue-specific conflict perceptions may lower the expectations of a balanced exchange required to achieve intraorganizational and interorganizational goals, and ultimately perhaps lead to a termination of the relationship. Although a cumulation of issue-specific conflict perceptions resulting in an overall perception of conflict is implied above, two important qualifiers need to be borne in mind.

Foremost, a threshold effect may be operative, i.e., a certain number of issue-specific conflict perceptions may be required before the cumulation of such perceptions translates into an overall conflict perception. Further, the conceptual links between overall conflict perceptions and perceptions of unacceptable performance are not clear, and the two may be related to each other through other mediating variables. This issue is not addressed further, as the propositions stemming from the above arguments are not examined in this research.

Situation Two. When past relationships have been profitable enough to remain in the channel the issue is not unaccepta-

ble performance but conflict over issues. In such a context, the comparison level for alternatives becomes irrelevant as channel members are not contemplating the possibility of channel dissolutions. In this setting, a series of issue-specific conflict perceptions if unmitigated by a parallel series of issue-specific perceptions of cooperation, may then lead toward overall conflict perception.

Hence, issue-specific conflict perceptions may get neutralized by issue-specific perceptions of cooperation, and the overall perception of a cooperative relationship may remain unchanged. Implicitly, it is being asserted in these arguments that the general bias in channel relationships is toward cooperation rather than conflict. This contention appears to be justified in light of actual channel realities. When such a neutralization does not occur, the channel members would again invoke the comparison level to evaluate the overall attractiveness of their relationships. Only when the preponderance of issue-specific conflict perceptions over issue-specific perceptions of cooperation is found, an estimate of overall conflict can be obtained by combining measures of issue-specific perceptions of conflict.

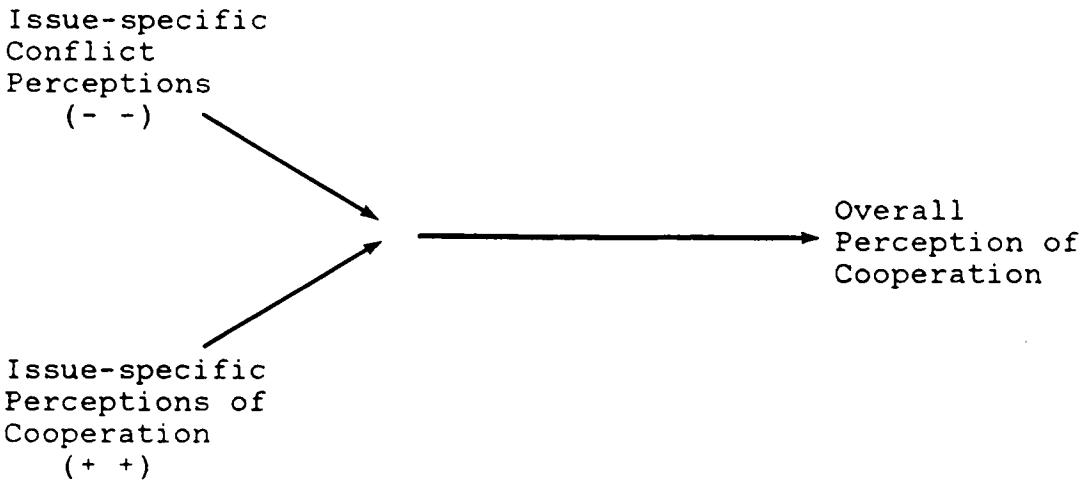
However, even this overall perception of conflict is not synonymous with the absence of overall cooperation. While the overall perception of conflict may lower the location

of CL on the goodness-of-outcome scale, it may not destroy the expectation of a balanced exchange relationship. Only when this expectation is destroyed will the overall perception of conflict lead to an overall perception of lack of cooperation.

The above arguments suggest the following theoretical hypotheses:

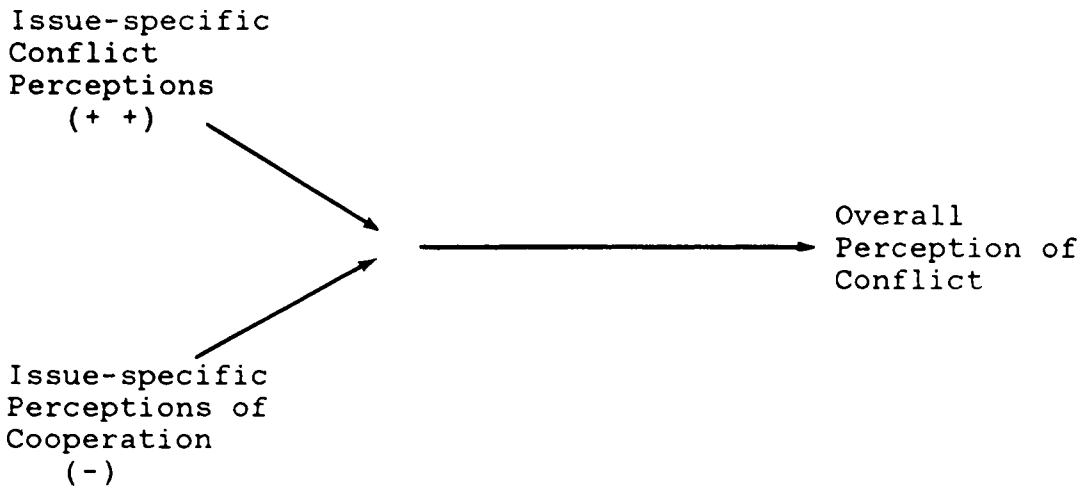
Theoretical Hypothesis Eight

Given an ongoing channel relationship, a series of issue-specific conflict perceptions, if neutralized by a series of issue-specific perceptions of cooperation, will result in the retention of an overall perception of cooperation.



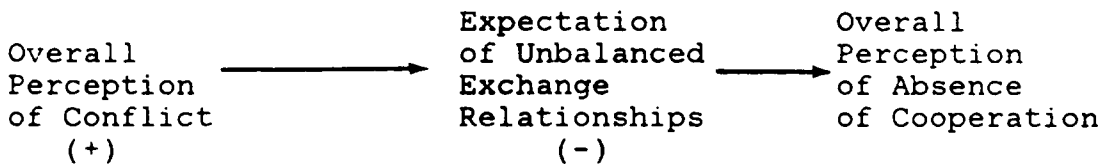
Theoretical Hypothesis Nine

Given an ongoing channel relationship, if the series of issue-specific conflict perceptions is not neutralized by a series of issue-specific perceptions of cooperation, the greater the number and salience of issue-specific perceptions of conflict relative to issue-specific perceptions of cooperation, the greater the overall perception of conflict.



Theoretical Hypothesis Ten

Given an ongoing channel relationship and an overall perception of conflict, an overall absence of cooperation will be perceived if the overall perception of conflict destroys the expectations of a balanced exchange relationship.



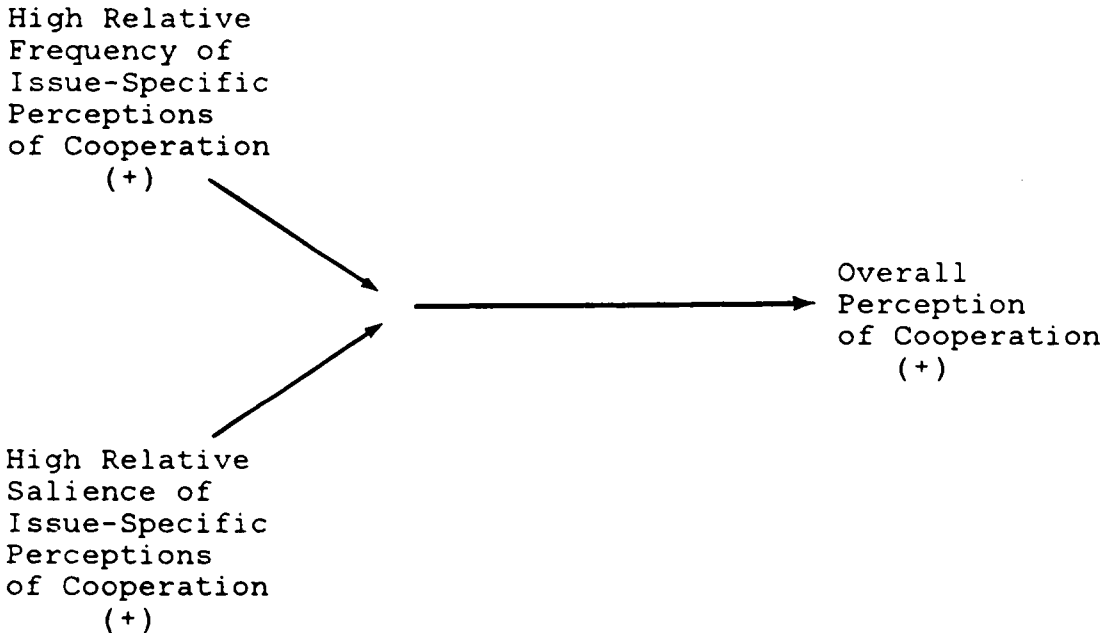
The notion of "neutralization" implies that the salience of the conflictful and cooperative issues is comparable and the number of issue-specific perceptions of conflict and cooperation is equivalent. In theoretical hypothesis eight this has been indicated by double negative (-) signs and double positive (+) signs. Conversely, "not neutralized" in theoretical hypothesis nine means that the salience and/or the number of issue-specific conflict perceptions is greater than issue-specific perceptions of cooperation. This has

been indicated by double positive signs for conflict and a single negative sign for perceptions of cooperation.

Theoretical hypotheses five and six predicted the occurrence of issue-specific perceptions of cooperation and satisfaction under conditions of positive incongruity and positive congruity. The general bias toward cooperation was also stressed by theoretical hypothesis eight. Hence, the relationship between issue-specific and overall perceptions of cooperation is relatively direct:

Theoretical Hypothesis Eleven

Given an ongoing channel relationship, the greater the number of issue-specific perceptions of cooperation relative to the number of issue-specific perceptions of conflict, and the greater the salience of cooperation perceptions relative to conflict perceptions, the greater the overall perception of cooperation.



Investigated Hypotheses

The current effort investigated theoretical hypotheses four (a), four (b), five and eight. Central to this new conceptualization is the insight it offers about the mechanics by which particular issues come to be perceived as conflictful or cooperative. Hence, theoretical hypothesis four (a), four (b), and five were selected because they specify these relationships. Testing hypothesis four (a) and four (b) together in this investigation was particularly important to assess the relationship between conflict and dissatisfaction.

Theoretical hypotheses six, seven (a), and seven (b) specify predictions associated with the admittedly interesting conditions of positive congruity and negative congruity. Assessment of these hypotheses was not planned within the current research effort to keep the resultant experimental design from becoming unwieldy. Moreover, as mentioned before, operationalizing congruity conditions may have required several time-consuming iterations. Further, the assessment of relationships between issue-specific and overall perceptions was felt to be more important. Theoretical hypothesis eight explicates what may be considered to be the essence of the proposed relationships between issue-specific and overall perceptions. The researchers hitherto have been

obtaining estimates of a series of issue-specific conflicts and labeling the combined measures an estimate of overall conflict. They have also overlooked the implicit bias toward cooperation one would expect to find in channel relationships since channels are definitionally cooperative. The test of hypothesis eight was aimed at assessing this cooperative bias and the coexistence of issue-specific conflict and cooperation.

Theoretical hypothesis nine entails inducing a preponderance of conflictful issues over cooperative issues, and had the effect of doubling the number of cells in the experimental design presented in Chapter IV; and hence, was dropped. Further, a threshold effect may have been operative (i.e., conflictful issues may have had to out-number cooperative issues by a considerable margin before the preponderance was operationalized). This would have greatly increased the time required for parasimulation sessions causing confounds like subject-fatigue. Hypothesis ten is contingent to obtaining the overall perception of conflict specified by hypothesis nine. Hypothesis eleven was omitted because, like hypothesis nine, it required the doubling of number of cells in the design.

Theoretical hypotheses one (a) and one (b), based on the conception of conflict and cooperation as the relative

absences of each other, also require inducing a preponderance of conflictful and cooperative issues, respectively. Hence, these hypotheses are best investigated in conjunction with hypotheses nine, ten, and eleven. In fact, a strong inference test could be designed for this set of hypotheses.

CHAPTER SUMMARY

Chapter III presented the arguments of the two rival conceptions of the relationships between cooperation and conflict. Theoretical propositions deducible from both positions were stated and the implicit auxiliary theories were critically assessed. Later, exchange theory framework was introduced and its analogical suitability for understanding relationships between channel conflict and channel cooperation was described. Theoretical propositions implicit in this new paradigm were presented. Finally, the hypotheses actually tested in this research were identified.

Chapter IV presents the experimental designs and the methodology employed. The results of the pretest are also analyzed and discussed.

Chapter IV

RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

This chapter presents the methodology employed for testing the selected theoretical hypotheses. First, the operational hypotheses stemming from the theoretical hypotheses are derived and the experimental designs used are presented. Then the technique of "parasimulation" used in the research, and the operationalization of variables are explained. After describing the nature of samples employed and the method adopted for sample-size determination, the operational plan of the study, the data-collection methods, and the statistical analyses employed are explained. Finally, the tests of hypotheses carried out for the pretest data are described, and the implications of their results are discussed.

The experimental procedures, the manipulation of independent variables, and the approach to statistical analyses described in this chapter are identical to those followed in the actual experiments reported in Chapter V. No changes were considered necessary because of the largely supportive results on the manipulation checks and the tested propositions.

OPERATIONAL HYPOTHESES

The investigation of the chosen theoretical hypotheses called for an experimental design that permitted variations in the incongruity conditions and salience. In addition, the test of hypothesis four (b) required that a perception of antagonism be manipulated; while the testing of hypothesis eight required that a series of parallel issue-specific perceptions of conflict and cooperation be induced. For these manipulations, two levels each of positive and negative incongruity (high, low), two levels of salience (high, low) and two levels of antagonism (present, absent) were used in this research. This section presents the operational hypotheses stemming from the theoretical hypotheses presented in Chapter III in terms of the manipulated levels of the independent variables.

Operational Hypotheses Four (a)

Hypothesis four (a) postulated that higher negative incongruity and higher salience conditions will generate greater levels of dissatisfaction. Further, a synergistic interaction (Rosenthal and Rosnow 1984) of negative incongruity and salience was predicted. Since negative incongruity and salience are manipulated at two levels each, there are three operational hypotheses:

- H4.a.1 A high negative incongruity condition will generate a greater amount of issue-specific dissatisfaction than a low negative incongruity condition.
- H4.a.2 A high salience condition will generate a greater amount of issue-specific dissatisfaction than a low salience condition.
- H4.a.3 A high negative incongruity and a high salience condition will generate a greater amount of issue-specific dissatisfaction than either a low negative incongruity and a low salience condition, or any high-low combination of negative incongruity and salience.

The validation of theoretical hypothesis four (a) is a prerequisite to testing theoretical hypothesis four (b) because theoretical hypothesis four (b) implicitly assumes that the interaction of negative incongruity and salience has generated issue-specific dissatisfaction.

Operational Hypotheses Four (b)

Theoretical hypothesis four (b), asserts that in presence of antagonism, higher negative incongruity and higher salience conditions will generate greater levels of issue-specific conflicts. Also, a synergistic interaction of antagonism and dissatisfaction is expected, where operationally, dissatisfaction occurs because of the interaction of negative incongruity and salience.

- H4.b.1 In presence of antagonism, a high negative incongruity condition will generate a greater amount of issue-specific conflict than a low negative incongruity condition.

- H4.b.2 In presence of antagonism, a high salience condition will generate a greater amount of issue-specific conflict than a low salience condition.
- H4.b.3 In presence of antagonism, a high negative incongruity and a high salience condition will generate a greater amount of issue-specific conflict than either a low negative incongruity and a low salience condition, or any high-low combination of negative incongruity and salience.

Operational Hypotheses Five

Theoretical hypothesis five predicted that higher positive incongruity and higher salience conditions will generate greater levels of issue-specific satisfaction and cooperation. Further, a synergistic interaction of positive incongruity and salience levels is expected.

- H5.1 A high positive incongruity condition will generate a greater amount of issue-specific satisfaction and cooperation than a low positive incongruity condition.
- H5.2 A high salience condition will generate a greater amount of issue-specific satisfaction and cooperation than a low salience condition.
- H5.3 A high positive incongruity and a high salience condition will generate a greater amount of issue-specific satisfaction and cooperation than either a low positive incongruity and a low salience condition, or any high-low combination of positive incongruity and salience.

Operational Hypothesis Eight

Theoretical hypothesis eight makes a point-prediction about a residual perception of cooperation after the participants have been exposed to a parallel series of perceptions of issue-specific conflict and cooperation.

- H8 Parallel instances of perceptions of issue-specific cooperation and conflict will generate a final perception of overall cooperation.

RESEARCH DESIGNS

Two research designs were used because the testing of hypothesis four (a) required a different manipulation of the independent variables than that required for the other hypotheses. Specifically, hypothesis four (a) makes predictions about the effects of negative incongruity and salience on dissatisfaction, whereas hypotheses four (b), five, and eight add the variable of antagonism (present or absent) to make predictions about conflict and cooperation. The research designs are presented in Figures 5 and 6. The first research design (RD-1), a two by two factorial design, was employed to test theoretical hypothesis four (a). The second research design (RD-2), a two by two by two nested factorial design, was used to test theoretical hypotheses four (b), five and eight.

Since hypothesis eight requires that the same participants be exposed to parallel series of issue-specific perceptions of conflict and cooperation, a within-subjects design was used. Participants were first randomly assigned to one of the designs, and subsequently, to a particular row in the assigned design. Once assigned to a row, they were ex-

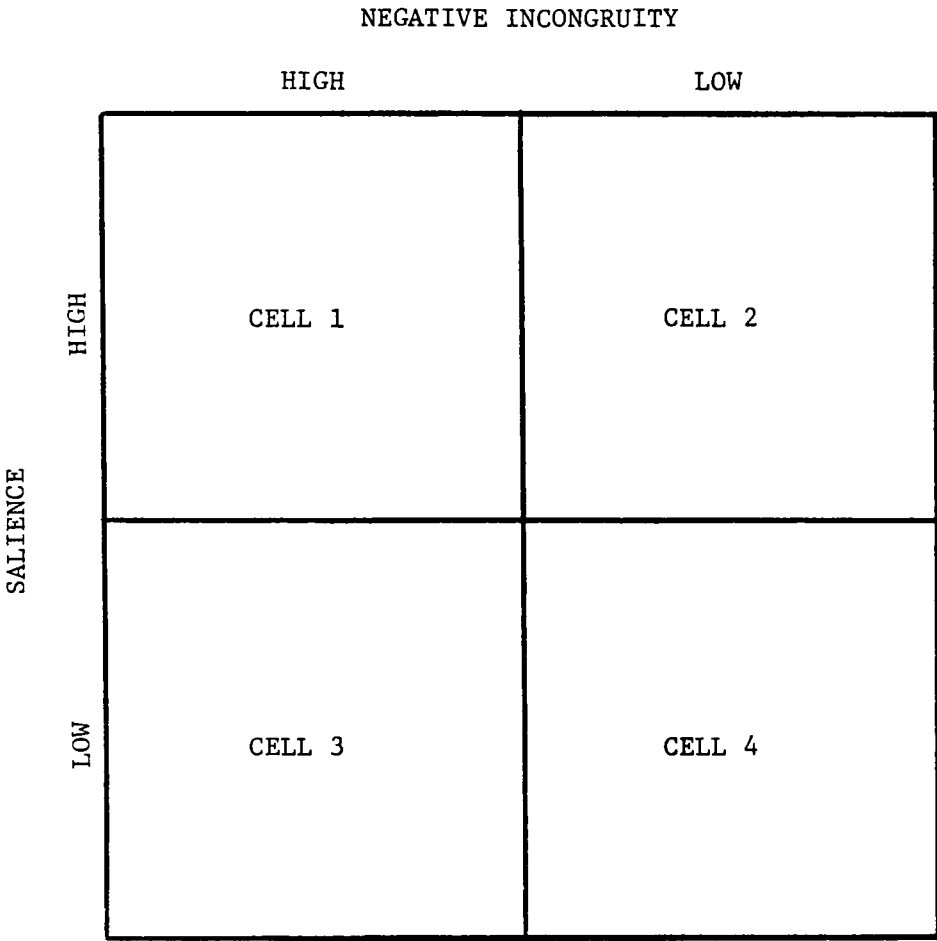


Figure 5: Research Design One
(For Testing Theoretical Hypohtesis Four (a))

		INCONGRUITY			
		HIGH NEGATIVE INCONBRUITY	HIGH POSITIVE INCONGRUITY	LOW NEGATIVE INCONGRUITY	LOW POSITIVE INCONGRUITY
		ANTAGONISM			
		YES	NO	YES	NO
SALIENCE	HIGH	CELL 5	CELL 6	CELL 7	CELL 8
	LOW	CELL 9	CELL 10	CELL 11	CELL 12

Figure 6: Research Design Two

(For Testing Theoretical Hypotheses Four (b), Five, and Eight)

posed to all the manipulations of cells belonging to that row, one at a time in random order. Dependent measures were obtained after each set of manipulations.

Incongruity Conditions

Since hypotheses four (a), four (b), and five predict a covariation between incongruity and the dependent variables of dissatisfaction, conflict and cooperation, respectively, levels of incongruity had to be varied. As shown in Figures 5 and 6, two levels of each incongruity condition were manipulated yielding two levels of negative incongruity and two levels of positive incongruity, high and low respectively.

Levels of incongruity were varied by increasing the magnitude of discrepancy between the comparison level (CL) and the issue-outcomes. The simplest method of operationalizing these levels was to associate dollar values with incongruity levels. For example, if on one issue, the comparison level suggests that profits should be \$20,000 and the actual profits are \$15,000, there is a negative difference of \$5,000. If this scenario is called the low negative incongruity condition, then the condition of high negative incongruity would be one where the dollar discrepancy between the CL and an outcome is higher. Since hypothesis eight called for a parallel series of conflictful and cooperative perceptions, using dollar values made it easier to ensure

that the positive incongruity levels were parallel to the negative incongruity levels.

Salience

Salience was also manipulated at two levels even though the hypotheses are stated in terms of continuous covariation. To manipulate salience, the background scenarios for parasimulation experiments (described later) provided several examples of high and low salience issues from an organizational priority perspective. The issues actually used in the experiment were also included as examples. Further, when different issues arose, separate memos from management were sent to the negotiators indicating the salience of each issue to the firm.

Antagonism

Antagonism was manipulated by its presence and absence. Operationally, antagonism was also manipulated through additional management memos. The memos indicated that issue-outcomes constitute a semblance of adversary relationship.

Number of Issues

For the testing of hypothesis eight the inclusion of several incongruity incidents was required. Consequently, participants in RD-2 assessed four issues as indicated in the design, one at a time. The parallel between the posi-

tive and negative issues was ensured by associating equal dollar amounts with the two types of incongruities. In RD-1, the participants assessed two negative issues, one each for high and low negative incongruity conditions.

PARASIMULATION

Introduction

The experimental method of parasimulation used in this research was developed by Stern, Sternthal, and Craig (1973a) to study the phenomenon of channel conflict. The procedure consists of getting naive subject teams to assume the roles of channel members and negotiate various channel issues. While the organizational background is defined through scenario booklets, various other manipulations can also be introduced during the negotiation process. At the end of the time-bound negotiation sessions, behavioral measures on variables of interest can be obtained. Parasimulation has been used to obtain quantitative measures of dependence (Kyet 1980), interdependence and power (Firat and Kumcu 1984), superordinate goals manipulation (Stern et al. 1973a; Stern and Hunger 1976), and exchange-of-persons manipulation (Stern et al. 1973a).

Three different versions of parasimulation are currently available for behavioral channel research. The original version called Surgical Manufacturing Company and Wholesale

Hospital Supply Company (SMC-WHSC), successfully parasimulated conditions of organizational context, conflict perception, superordinate goals (both, achieved and non-achieved), and exchange-of-persons induction. Cadotte (1979; 1983) developed a new and expanded parasimulation version called Poker Chip Market or Chips, that additionally facilitated inductions of retail market, inventory management, wholesale market, manufacturers' market, production environment, and financial environment. Kyet (1980) used the 1979 version of Chips to operationalize portions of Cadotte and Stern's (1979) model of channel relations.

The third approach was developed by Firat and Kumcu (1983; 1984). This version is essentially a modification of the SMC-WHSC, though several product channels were used. Instead of the dyadic setting of manufacturer-wholesaler used by SMC-WHSC, Firat and Kumcu's version investigates triadic relationships. The conditions parasimulated were interdependence, power-relations, past relations, and conflict. Both Cadotte's (1983) and Firat and Kumcu's (1984) versions were used for ongoing research (as parts of course requirements) at the University of Tennessee, Knoxville, Appalachian State University, North Carolina, and Ball State University, Indiana, respectively. A modified version of SMC-WHSC was used in the current investigation.

Justification for Using Parasimulation

A channel behavior researcher is faced with three alternatives of field research, parasimulation, or computer simulation. The vast majority of empirical channel research, as discussed in Chapter II, has been carried out in the field.

The field research alternative for channel behavior investigations suffers from several disadvantages. Access to channel data is often difficult because of the sensitive and proprietary nature of the information. Since external validity in channels is likely to remain a moot point for some time (see discussion in Chapter II), drawing samples from geographically dispersed populations or from populations comprising different industries without elaborate checks for the consistency of respondents' profiles becomes indefensible. Further, such preliminary checks can be time-consuming, and can greatly reduce the size of usable populations. Individuals performing similar functions often have different designations in different firms. These people must be contacted if valid and equivalent measures are to be obtained. Identifying such informants is a slow exercise with a large potential for error. Manipulation of variables like salience and incongruities is very difficult (Firat and Kumcu 1984). Since such variables can be observed only when

they emerge, their study requires in-depth case analyses that represent compromises in sample size and statistical power, and require much longer periods for data collection.

Since this inquiry falls squarely in the domain of theory-testing, it is not the external validity of the hypothesized propositions that is being tested, but, rather, the predictive ability of the new independent variables isolated. Hence, the focal issues of concern are measure reliability, and statistical conclusion, internal, and construct validities. A field setting with the characteristic multiplicity of interacting variables related to independent variables in indeterminate ways, would have seriously threatened the internal validity of the study. Further, the values the variables under scrutiny can achieve (even if they could be isolated in the field setting) are likely to be quite wide in range. Categorizing such ranges into discrete fixed levels at best is an arbitrary exercise that should not be attempted until later in the theory-testing stage.

Finally, theoretical hypothesis eight requires a longitudinal data collection plan. The critical significance of this hypothesis has already been stressed (Chapter III). Successive instances of conflict and cooperation in channels may occur over an "extended" period of time. Hence the costs and time implications alone rule out the field alter-

native at this time. Also, it is not certain if one could get channel segments to agree to be closely scrutinized over a period of time.

Computer simulation also overcomes many of these problems associated with field research. Some scholars (e.g., Bowersox 1972; Bowersox et al. 1979; Forrester 1961; Mentzer and Cosmas 1979; Shycon and Maffei 1960) have used computer simulations to address physical distribution issues. This method allows for maximum control over variables and manipulations. However, by definition, it is an abstraction of the "real" world where only a small number of variables and interrelationships are defined and incorporated (Cadotte and Kyet 1980). Moreover, as observed by Stern, Sternthal, and Craig (1973a, p. 171), "the unavailability of adequate descriptive material concerning behavioral relations among distribution channel members prohibits specification of 'tight and tough' rules required for simulation exercises." The above comment is particularly relevant to the state-of-art understanding of the relationships between channel conflict and cooperation.

Parasimulation, on the other hand, is positioned between these two alternatives and incorporates some advantageous features from both: the researcher can design and manipulate the abstraction with considerable control, and yet

it allows the participants freedom to behave in potentially unpredictable ways. Parasimulation, hence, emerges as a relatively attractive choice as it allows the researchers to meet three important research criteria: (i) randomized subject or treatment allocation, (ii) complete control over treatment levels, and (iii) ability to rule out extraneous variables.

Justification for Selection of SMC-WHSC Version

The Chips version and the formulation by Firat and Kumcu (1984) both require repeated sessions spread out either across approximately two years or five months respectively. The Chips game may be considered to be superior in some ways inasmuch as it induces a wide variety of organizational conditions. In addition to the long time-frame envisioned by the Chips game, the orientation of the exercise is to get the participants to appreciate the multi-faceted implications of business decisions. As such, the goal is to develop decision-making skills rather than understanding behavioral constructs that may be operative during negotiations and decision-making. If compressed into short sessions, participants might not fully comprehend the significance of all the variables induced.

The Firat and Kumcu version was not suitable because (in addition to the time-frame problem) it seeks to investi-

gate triadic rather than dyadic interactions. As chronicled in Chapter III, the context of dyadic relationships for understanding behavioral channel issues has widespread support with good reasons. Moreover, the exchange theoretic analogy also envisions dyadic interactions. However, their formulation explicitly induces "past relations" as a variable which is conceptually similar to the notion of comparison level. Hence, the Firat and Kumcu scenarios were used to guide the development of portions of scenarios for this investigation (Appendix B).

On the other hand, the SMC-WHSC as the prototypic model offered the advantages of a relatively manageable time-frame and the dyadic context. The actual formulation used for this research is described later.

OPERATIONALIZATION OF INDEPENDENT VARIABLES

The research was carried out in two stages. The results of the first stage, the pre-test, were primarily used to (i) check the operational manipulations of the independent variables, (ii) estimate the time required for the experimental procedure, and (iii) test the measurement procedures used. However, to obtain the estimates of effect-sizes associated with the tested propositions, all the inferential tests carried out for the experimental samples were also carried out for the pretest sample, and are presented later in this chapter.

The modified version of parasimulation used for this research was labeled Virginia Hospital Supplies Channel (VHSC). The fictitious manufacturing firm was called Virginia Surgical Manufacturing Company (VSMC) and its sole distributor in Virginia, Wholesale Hospital Supply Company of Virginia (WHSCV). The subjects negotiated and appraised different issues in teams of three (marketing manager, marketing analyst, and salesperson or purchasing agent) where the job-descriptions of the salesperson (of VSMC) and the purchasing agent (of WHSCV) were essentially the same (Stern et al. 1973a). Participant teams were randomly assigned to VSMC or WHSCV. The levels of independent variables used have already been discussed. The specifics of these manipulations are now presented.

Incongruity Conditions and Issues

The incongruities were manipulated by varying the magnitude and the direction of the discrepancies between issue-outcomes and comparison level (i.e., the expectations). The equivalence of the issue-outcomes was ensured by associating dollar amounts with the incongruities. A different issue was used for each incongruity condition (i.e., positive/negative and high/low), and each issue was introduced to participant-teams in the form of a memo from the marketing vice-presidents of their respective firms. For time reasons,

the four issues representing the four incongruities were not actually negotiated but merely appraised.

The summary of actual issues to be used and the associated dollar values are presented in Table 12. The actual memos used are attached in Appendix B. Altogether eight memos were prepared (i.e., four for VSMC and four for WHSCV) originating from their respective marketing vice-presidents. Attached to each memo was a request from the vice-presidents that the participants write down their comments on the issues and answer a short questionnaire, ostensibly, to aid the vice-presidents in future interactions with the other firm (Appendix C). Realistically, the kinds of issue-outcomes presented in Table 12 would be results of previous negotiations rather than unilateral decisions. This was pointed out in both the memos and the background scenarios (Appendix B).

Salience

Salience was manipulated by citing the importance of specific issues in the background scenarios and through separate management memos sent along with the memos describing the issues. The memos were from the finance vice-presidents of the two firms to their respective participants. Altogether sixteen different memos were drafted, eight for each firm to accommodate all combinations of salience and issues envisioned by the designs (memos are presented in Appendix B).

TABLE 12
MANIPULATION OF INCONGRUITIES

Condition: High Negative Incongruity

Issue: Change in Inventory Levels

Manipulations:

A) Associated estimated loss to VSMC: \$20,000.

B) Associated estimated loss to WHSCV: \$20,000.

Condition: Low Negative Incongruity

Issue: Price Change for Infra-Red Lamps

Manipulations:

A) Associated estimated loss to VSMC: \$5,000.

B) Associated estimated loss to WHSCV: \$5,000.

Condition: High Positive Incongruity

Issue: Support for Local Cooperative Promotion

Manipulations:

A) Associated estimated savings to VSMC: \$20,000.

B) Associated estimated savings to WHSCV: \$20,000.

Condition: Low Positive Incongruity

Issue: Meal Allowance of Management Trainees

Manipulations:

A) Associated estimated savings to VSMC: \$5,000.

B) Associated estimated savings to WHSCV: \$5,000.

Antagonism

Antagonism was manipulated by its presence and absence through additional separate confidential memos from the marketing vice-presidents, stating that the negative issue-outcomes constituted a semblance of adversary relationships. Four different drafts were prepared (two for each firm) for conditions where antagonism was present (Appendix B). Where antagonism was absent, (i.e., positive issues) such memos were not sent.

A concern associated with the described manipulation procedure for antagonism was that the presence of confidential memos for antagonism would distort salience attached to negative incongruity issues and the participants would see these potentially conflictful issues to be more important than corresponding potentially cooperative issues (positive incongruities), since no such confidential memos were sent for the latter. To counterbalance this possible confound (since equivalence of issue-outcomes was required by hypothesis eight) contents similar to those in confidential memos were included within memos introducing positive incongruity issues.

EXECUTION OF THE EXPERIMENT

During the pretest, the subject pool consisted of thirty-four senior undergraduates enrolled in a marketing class at Virginia Tech. The volunteers were exposed to the magnitude scaling training exercises in class-rooms. Subsequently, the subjects were assigned to groups of three using random assignment. Groups were informed that they would be working either as VSMC or WHSCV. The teams were then randomly assigned to one of the two "firms" and each member was issued background scenarios and instructions for bargaining for their respective firms with a cover letter (Appendix B). The teams were not told who they would be negotiating against.

The subjects were asked to familiarize themselves with the materials before the experiment. The instructions indicated that the two teams would meet for a one-time study on inter-firm bargaining. The actual pretest experiments were carried out 7 to 11 days later as only two teams negotiated each day. Except one day, simultaneous multiple sessions could not be planned due to the non-availability of sufficient vacant class-rooms.

The firms were depicted as equal in size and other meaningful variables to prevent any perceptions of power-differentials. The firms were purported to follow open-door

philosophies of business, and the teams were fore-warned that in the course of the bargaining, vice presidents may interrupt to get feedback on various issues. The general inter-firm relationship was typified as balanced and one of give-and-take, and various examples of past issue-outcomes and issues pending were cited in the background scenarios to manipulate expectations based on past experiences. The bargaining was carried out on the basis of profit-loss matrices (given at the time of the experiment) specifying profits/losses at various price and quantity combinations of a new product, laser-scalpel, to be introduced by VSMC (Appendix B). The choice of the product under discussion was reflective of a desire to keep the product unfamiliar, so that the subjects would rely entirely on the matrices for bargaining and take the price-quantity combinations as credible.

On the scheduled day of the parasimulation, the teams were first asked to voluntarily allocate group members among three available organizational positions (marketing manager, market analyst, and salesperson or purchasing agent). The functions to be performed by the officers with the same designations were identical in both firms and the purchasing agent of WHSCV did exactly what the salesperson of VSMC did. The bidding process began with VSMC trying to sell the laser-scalpels to WHSCV by preparing an offer-to-sell (Appendix

B). The bid preparation started with the marketing analyst of VSMC suggesting three bid prices and quantities to the marketing manager using an intra-firm memo (Appendix B). The marketing manager selected one bid and conveyed this to the salesperson by another intra-firm memo. The latter, in turn, recorded it on an offer-to-sell form (Appendix B) put it in an envelope and passed it to the experimenter for transporting it to WHSCV. At WHSCV, the bid was received by the purchasing agent who passed it to the marketing manager with comments on an intra-firm memo (Appendix B). The marketing manager relayed this information to the analyst requesting either a counter-offer or a suggestion that the offer be accepted. In the former case, the process followed in VSMC was repeated. These procedures were stressed in the instruction booklets (Appendix B) issued to the participants together with the background scenarios, and have been used in all channel parasimulation studies reviewed to induce perceptions of organizational structure, hierarchy, functional specialization, and interdependence.

The teams were allotted ten minutes to prepare a bid or a counter-bid although the first bid by VSMC took 15 minutes on an average. Their objective was to maximize their respective profits. The issue-outcomes were introduced in random order as follows. After VSMC had sent its initial offer,

the first issue-outcome was introduced in the form of a set of memos as discussed earlier. They responded to the outcome while WHSCV analyzed their offer and prepared a counter-bid. Once WHSCV finished, they too were handed the memo-sets for the first issue-outcome. The experimenter held the bids till the teams had finished with the questionnaires attached to issue-outcomes. The experimenter then collected these responses and handed over the bids. Once the teams received the bids/counter-bids from the other firm, they resumed the bidding analysis and preparation. This process was repeated till all issue-outcomes had been appraised. Both teams were kept continuously busy with either the bids or issue appraisal to save time. The actual discussion of each of the four issues was not attempted lest the time required for parasimulation became too long. The average duration of the experiment was two hours for RD-2 and one hour for RD-1 not counting the administration of the final instruments.

The profit-loss matrices were kept moderately compatible so that the disagreements caused over negotiations would not bias the issue-specific perceptions unduly. The influence, of-course, would be consistent with direction known. On the other hand, the matrices had to be sufficiently incompatible to permit the bidding to last four rounds. In

the pretest, none of the groups had reached an agreement by the time all the issues had been appraised. Questions in the final questionnaire were included to ascertain if the bargaining generated perceptions of dissatisfaction or conflict; and whether these perceptions influenced the issue-appraisals.

The described method deviated from the conventional parasimulation in that here the focus was on the issue appraisals rather than the bidding; dependent measures have never been obtained in the course of the experiment (except that memos were written); and the behavioral constructs were hypothesized to have been caused by passive appraisals rather than active bidding. However, the key utility of the parasimulation framework for the task at hand lay in its ability to simulate an organizational context in which issue-outcomes are in reality evaluated in actual channels. Questions were included in the final rating instrument to check for the emergence of this organizational context.

After all the issues had been evaluated, the bidding was stopped and the final instruments were administered. The two teams were housed in separate rooms; within each team, the members were separated by cardboard partitions; and all communications were carried out through intra-firm or inter-firm memos. The administration of the final ques-

tionnaires took 30 minutes on an average. Once the final measures had been obtained, the subjects were sworn to secrecy and debriefed.

Since six individuals were measured at a session, altogether six sessions were held in the pretest. In two sessions, only five of the six volunteers turned up for the experiment. In such teams the manager was asked to take on the role of the analyst as well. In the case of another team of six (RD-2), one issue was inadvertently not administered. Since in this team the participants were not exposed to equal number of positive and negative issues, their responses are not included in the analysis in the present investigation. Consequently, the effective sample size for the pretest became 28.

SAMPLING PROCEDURES

Subjects

Initially, it was planned to employ students as the main sample for the experiments, and to replicate the experiment using a group of actual channel members from the hospital supply industry. Although it was not possible to get the actual hospital channel members to partake in the experiment, extension MBA programs offered for industry people by Virginia Tech at the Northern Virginia campus and by Appalachian State University at Winston-Salem provided a pool of industry subjects.

The pretest was carried out using 34 Virginia Tech undergraduates (all of senior class-standing from a marketing class) between May 27 and May 31, 1984. The volunteers were offered extra credit for the course for agreeing to take part in the study. For the main experiment, in addition to the industrial sample mentioned above, undergraduate and graduate students were also used.

Estimation of Sample Size

A priori, power considerations were used to determine the sample size. No guiding clues from past studies, i.e., estimates of magnitude of effect, were available for the relationships being tested in hypothesis five on issue-specific perceptions of satisfaction and cooperation, hypothesis eight, and hypothesis four (a) about dissatisfaction. However, Brown and Day (1981) had found a very close relationship between dissatisfaction and conflict ($d=0.84$; $N=210$; $\text{power}=0.995$ at 2-sided 0.05 level).

The results from quantitative integration for the proposition "incompatibility causes conflict" had yielded an average effect size (d statistic) of approximately 0.60. When parasimulation studies and field studies were analyzed separately the mean d estimates were approximately 0.40 and 0.66, respectively. When only perceived conflict was measured (both parasimulation studies measured perceived con-

flict), the average effect size was 0.50; while studies using individual measures (as compared to dyadic measures) yielded a mean d of 0.67. Again, both parasimulation studies had obtained individual measures. Since the current investigation also planned individual perceptual measures, the sample size estimate was based on the most conservative effect-size estimate of 0.40.

Theoretical hypotheses four (a), four (b), and five, all require one-sided tests (discussed later). The testing of theoretical hypothesis eight also visualizes one-sided tests. Consequently, it was planned to use a one-side alpha level; and the level was set at 0.10 instead of the customary 0.05. The choice of 0.10 was justifiable given the pioneering nature of the study. Following Cohen (1977), the desired power level was set at 0.80. Hence, the required sample size estimate came to 57 (Cohen 1977, page 54). Since RD-1 and RD-2 were within subjects designs and the teams comprised of three members, each row of each research design required 29 subjects, or a total of 116 participants across both designs.

No estimates were proposed for the industrial sample. The aim was to get 58 participants. They were to be used for RD-2 rather than RD-1 since it was RD-2 that tested the hypotheses on conflict and cooperation, the acknowledged thrust of dissertation.

Scenario Sample

The two discrepant subjects from the pretest, who had not shown up for the experiments, turned up one day later since extra course credit was at stake. These volunteers were asked to imagine the bargaining they had read about and prepared for on the basis of the background material and the accompanying instructions (Appendix B) distributed to all volunteers, and rate the issue-outcomes. They were informed as to when and how the issues would have been introduced in a real experiment. The same procedure was followed with two other volunteers who could not be accommodated into teams. These "scenario-raters" (a non-experimental condition) were able to respond to all the instruments except the final rating questionnaire which dealt with the experimental experience (Appendix C).

Between the pretest and actual experiments this procedure gave rise to yet another kind of sample ($N = 26$) dubbed "scenario sample." This practice was continued because the responses of the scenario sample could provide clues about the impact the bargaining-experience might have had on the responses of the subjects. The scenario sample was separately analyzed and the results are presented in Chapter V.

DATA COLLECTION

The dependent variables measured were issue-specific perceptions of (i) dissatisfaction/satisfaction, (ii) conflict, and (iii) cooperation; and overall perceptions of (iv) cooperation, and (v) conflict. Three different methods - (a) content analysis, (b) magnitude estimation, and (c) rating scales - were used to measure the dependent variables.

Content Analysis

Data for content analysis were obtained through memos written by the participants. Procedurally, each participant in RD-2 wrote altogether five memos (three in RD-1). When the issues to be appraised were introduced to the subject teams, the vice-presidents requested written comments from the participants in the form of reply-memos. The reply-memos asked for the participants' comments on the issue as well as the current overall relationship with the other firm. The actual memos used are presented in Appendix C. At the end of the experiment, the subjects were asked to assess the overall relationship with the other firm given the history of their relationships and the issues appraised. This generated the third memo in RD-1 and the fifth memo in RD-2.

It was expected that the comments on the issues would reflect the nature of the issue-outcomes. When overall rela-

tionships were evaluated after each issue, there would be either (a) a tendency for the overall relationship assessments to reflect the nature of the specific issue-outcomes, even though the final assessment (memo administered after the close of bargaining; Appendix C) would be characterized as cooperative following operational hypothesis eight; or (b) overall relationships would consistently be perceived as cooperative in all five measures.

The former outcome about the overall perceptions seems to contradict the contention of issue-specific perceptions not necessarily influencing overall perceptions. However, the outcome was considered possible because, conceptually, the issue-outcomes might reduce the subjects' expectations of balanced relationships. Of course, the most desirable outcome would be: issue-specific comments being consistent with the nature of issue-outcomes, and the overall perceptions consistently being perceived as cooperative.

Therefore in the background scenarios, several positive and negative issue-outcomes purported to have occurred recently were cited to convey to participants that both types of outcomes occur frequently in the going channel relationships. Further, in the reply-memos, it was indicated that the overall assessment of the inter-firm relationship should be judged in light of specific issue-outcomes and past history of relationships (Appendix C).

The content analysis was carried out using Bales' (1976) schema. Three categories of statements (categories 1, 2 and 3; Bales 1976, pp. 177-180) are defined by Bales to capture indicators of satisfaction and cooperation. Classification of statements into categories 10, 11, and 12, on the other hand, is purported to estimate dissatisfaction and conflict.

For each issue, the frequency of statements belonging to each class was ascertained by two independent judges (a graduate MBA student and the present writer). The coding guide used by the judges is attached to Appendix C. The unit of analysis was a "thought unit" rather than a grammatical sentence (Appendix C). Before any statistical analyses were attempted, the inter-judge reliability was assessed using the method proposed by Holsti (1969). Given the nature of the coding task, the choice of Holsti's Composite Reliability Coefficient appears to be appropriate (Schuster 1983). Bales (1976, page 109) suggests a reliability of 0.50 as acceptable.

Two summary indices are available in the literature for statistically judging the results. The dissatisfaction and conflict was measured using the index of Expressive Malintegrative Behavior (EMB) developed by Manheim (1960) and successfully used by Stern et al. (1975) and Hunger and Stern

(1976). The extent of satisfaction and cooperation was assessed by using the index of Expressed Out-group Evaluation (EOE) employed by Hunger and Stern (1976, page 600). Both indices express the relative frequency of particular types of statements as compared to the combined number of pertinent statements. One-sample chi-square tests for nominal data (Siegel 1956, page 42) were used to estimate statistical significance of the observed frequencies obtained by EMB and EOE.

The conclusion validity of using the chi-square tests can be questioned on several grounds: (i) no estimates of population distributions or variances underlying EMBs and EOE are available (Stern et al. 1975; Hunger and Stern 1976); and (ii) the categories suggested by Bales are not independent. Further, by the way EMB and EOE are constructed, the denominators contain the numerators: again violating the independence requirements. However, in absence of any other known statistical method (Stern et al. 1975), one-sample chi-square test remains the only option. Mannheim (1960), Hunger and Stern (1976), and Angelmar and Stern (1978), though aware of the independence problem, were also forced to use the chi-square test. In the chi-square tests the hypothetical control-group frequencies were deemed to be 50% (e.g., Hunger and Stern 1976). The same convention was adopted in this research.

In the current investigation, an alternate analysis was also carried out. The effect sizes (d statistics) were computed for making inferences. As discussed later, the research designs provide "control group" measures for all operational hypotheses (see Figures 7, 8, and 9 presented later) except operational hypothesis 8 on overall perceptions. Consequently, the mean number of statements belonging to different categories and the corresponding standard deviations were calculated for each cell of the designs; and in subsequent pairwise-comparisons (as indicated in Figures 7, 8, and 9), the magnitude of effects was estimated. Two advantages are noteworthy in using this approach: (i) chi-square test only estimates the significance levels, whereas d statistic will estimate the magnitude of effect as well; (ii) the somewhat arbitrary value of 50% will not have to be assigned to the supposed "control group" scores. Since the pairwise comparisons visualized in Figures 7, 8, and 9 are conceptually derived, they can be expected to yield actual estimates of control-group scores. This procedure is actually a more rigorous test of the hypotheses. It is acknowledged, however, that the violation of statistical assumptions were as much a problem in using d statistic as in chi-square tests. For operational hypothesis eight, the designs did not provide a natural control-group. Hence, only chi-square tests were carried out.

Though the results of content analyses are discussed in terms of frequencies, they may be considered to be a measure of the intensity of perceptions. Since comments were invited on each issue, the greater the number of statements indicating a perception the greater one may expect the intensity of that perception to be. The same logic holds for the fifth memo administered at the end of the experiment on the overall assessment of inter-firm relationships. A large number of statements suggesting a perception of cooperation would lead one to infer that the intensity of such a perception is high.

Magnitude Estimation

The purpose for including magnitude estimation was to obtain ratio-level data. Lodge (1981, pp. 5-6) has criticized the reliance on rating scales for (i) information loss due to the limited resolution of response categories; (ii) yielding ordinal level data; and (iii) fixed response categories inadvertently affecting the responses (e.g., the judgment of a stimulus often cannot be accommodated in the small number of response categories; or the response categories may be too expansive relative to the range the stimulus can assume). Magnitude estimation is the matching of physical stimuli to subjective sensations. This method can overcome all three criticisms. No restrictions are placed on

the respondents for response categories. Since the judgments about the stimuli are made with reference to an anchor stimulus, magnitude scales can yield ratio level data.

Numerical estimation involves matching numbers to one's strength of impressions. The technique assumes that the observers can match numbers to the strength of sensations from stimuli with which they are confronted. Though the number system is relatively well-learned, the explicit act of matching numbers to the perceived stimuli is unfamiliar. Consequently, subjects were initiated to the estimation technique through two simple exercises suggested by Lodge (1981) involving matching numbers to lengths of lines and crime descriptions (Appendix B). The objective behind including both exercises was to familiarize the prospective participants with numerically estimating both visual metric stimuli (lines) and social stimuli (crime descriptions). The responses to the line stimuli were plotted on the log-log coordinates to see if the subjects' responses would yield a linear plot on the logarithmically ruled graph. These practice exercises were carried out 7 to 11 days prior to the actual experiments.

The actual magnitude scales were administered at the end of the experiments and were obtained in two ways. The first approach asked participants to assign numbers to each

of the four issues (or two in RD-1) they had appraised (Appendix C). The subjects were told to assign the number 100 to the infra-red lamp issue-outcome, where 100 denoted a reference measure. Subsequently, using this score as the reference score, they were asked to assign numbers to other issues along various descriptors of relevant constructs. For positive descriptors the anchor was the meal allowance issue, also rated 100. The respondents rated the overall inter-firm relationships in addition to individual issues.

The second approach involved respondents assigning line-lengths for making exactly the same relative judgments. They were asked to assign a length of 50 millimeters to the infra-red lamp issue-outcome. Thereafter, using this issue rated 50 mm as the reference score, the other issues were rated by the assignment of line-lengths to reflect their relative judgments (instruments presented in Appendix C).

Rating Scales

Both the content analysis and the magnitude scales only measured the intensity dimension of the constructs. In effect, the frequency and the importance dimensions were not measured. However, since measures were obtained for individual issues, the frequency dimension does not have any conceptual meaning within the proposed designs. The rating scales were also constructed to measure the intensity

dimensions of conflict, cooperation, satisfaction/dissatisfaction. Four short questionnaires (Appendix C) were administered in the course of the parasimulation to each team in RD-2, ostensibly, under the guise of vice presidents requesting feedback after each issue was introduced. At the end of the experiment, a final rating questionnaire was administered (Appendix C) to measure participants' experimental experience. All rating questionnaires on issues contained questions on issue-specific and overall perceptions. The actual items used in the questionnaires were based on the questionnaires of Stern et al. (1973a), and Brown and Day (1981), and the adopted definitions of constructs. Some help in the selection of indicators was also obtained from The Measurement of Meaning by Osgood, Suci, and Tannenbaum (1964). Multiple indicators were included for all constructs for the purpose of validation of scales.

INTRODUCTION TO STATISTICAL PROCEDURES

The means, variances, and the effect sizes for all variables measured were computed for each cell of the designs. The summary statistics are presented in Appendix E. Reliability was assessed for each measurement method employed. PACKAGE was employed for unidimensionality assessment of the rating scales. Several manipulation checks based on the final instruments and the magnitude scales were also carried out.

The geometric mean responses for the line exercise were first plotted on the logarithmically ruled graph to check whether the points approximated a straight line. The rationale for this expectation is the Power Law (Lodge 1981, p.13). The actual regression exponents were subsequently computed. The regression exponent was expected to approximate 1.0. This check was carried out to establish the validity of using the magnitude scale data for subsequent analyses. The tests of hypotheses were carried out using the log-transformed data.

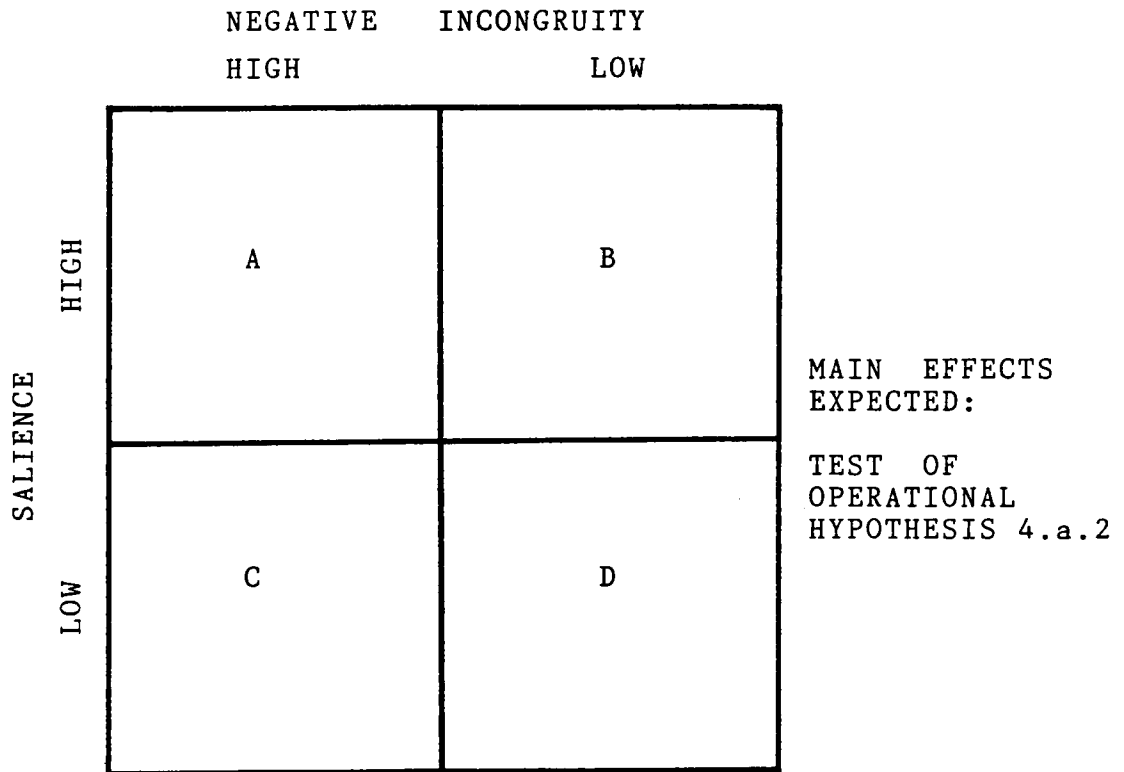
Most of the operational hypotheses could have been tested by simple within-subjects analysis of variance (ANOVA) or t-tests. As indicated in the operational hypotheses, the dependent variables for this investigation are: issue-specific perception of dissatisfaction/satisfaction, conflict, and cooperation; and the overall perceptions of conflict and cooperation. However, at various points in Chapters II and III, it was pointed out that dissatisfaction and conflict, and satisfaction and cooperation are expected to be highly correlated. The assessment of the correlation between these multiple dependent variables was carried out for the purposes of discriminant validity evaluation. Since these dependent variables were a priori expected to be significantly correlated, MANOVA was initially used to test the

impact of the independent variables on multiple dependent variables.

Figures 7, 8, and 9 below summarize the post-MANOVA ANOVA-based tests for assessing the operational hypotheses on issue-specific perceptions of dissatisfaction/satisfaction, conflict and cooperation. In addition, pair-wise comparisons carried out for testing the hypotheses on interactions (operational hypotheses 4.a.3, 4.b.3, and 5.3) have also been specifically indicated.

Operational hypothesis 8, dealing with overall perceptions, could not be directly tested using ANOVA procedures. The exact details about the testing of this hypothesis are presented later under the results. However, in defense of the research designs, it may be noted here that RD-2 with within-subjects approach exposed the participants to a parallel series of issue-specific perceptions of conflict and cooperation; and as such, prepared them to be measured for overall perceptions as visualized by the operational hypothesis 8.

The presence of demand characteristics was checked for by asking the participants for their interpretations of the purpose of the study. A question to this effect had been included in the final rating questionnaire for this purpose (Appendix C).



MAIN EFFECTS
EXPECTED:

TEST OF
OPERATIONAL
HYPOTHESIS 4.a.2

MAIN EFFECTS EXPECTED:
TEST OF OPERATIONAL HYPOTHESIS 4.a.1

INTERACTION EFFECTS ARE EXPECTED TO BE SIGNIFICANT:
TEST OF OPERATIONAL HYPOTHESIS 4.a.3

TEST OF OPERATIONAL HYPOTHESIS 4.a.3 REQUIRES THE FOLLOWING COMPARISONS:

Ho: Mean of A = Mean of D	H1: Mean of A is greater than D
Ho: Mean of A = Mean of B	H1: Mean of A is greater than B
Ho: Mean of A = Mean of C	H1: Mean of A is greater than C

Figure 7: Test of Theoretical Hypothesis Four (a)
(Based on Research Design One)

		NEGATIVE INCONGRUITY	
		HIGH	LOW
		ANTAGONISM	
		YES	YES
SALIENCE	HIGH	A	B
	LOW	C	D

MAIN EFFECTS
EXPECTED:

TEST OF
OPERATIONAL
HYPOTHESIS 4.b.2

MAIN EFFECTS EXPECTED:

TEST OF OPERATIONAL HYPOTHESIS 4.b.1

INTERACTION EFFECTS ARE EXPECTED TO BE SIGNIFICANT:

TEST OF OPERATIONAL HYPOTHESIS 4.b.3

TEST OF OPERATIONAL HYPOTHESIS 4.b.3 REQUIRES THE FOLLOWING COMPARISONS:

- Ho: Mean of A = Mean of D

Ho: Mean of A = Mean of B

Ho: Mean of A = Mean of C
- H1: Mean of A is greater than D

H1: Mean of A is greater than B

H1: Mean of A is greater than C

Figure 8: Test of Theoretical Hypothesis Four (b)
(Based on Cells 5, 7, 9, and 11 of Research Design Two)

		POSITIVE INCONGRUITY	
		HIGH	LOW
		ANTAGONISM	
		NO	NO
SALIENCE	HIGH	A	B
	LOW	C	D

MAIN EFFECTS
EXPECTED:

TEST OF
OPERATIONAL
HYPOTHESIS 5.2

MAIN EFFECTS EXPECTED:

TEST OF OPERATIONAL HYPOTHESIS 5.1

INTERACTION EFFECTS ARE EXPECTED TO BE SIGNIFICANT:

TEST OF OPERATIONAL HYPOTHESIS 5.3

TEST OF OPERATIONAL HYPOTHESIS 5.3 REQUIRES THE FOLLOWING COMPARISONS:

Ho: Mean of A = Mean of D

H1: Mean of A is greater than D

Ho: Mean of A = Mean of B

H1: Mean of A is greater than B

Ho: Mean of A = Mean of C

H1: Mean of A is greater than C

Figure 9: Test of Theoretical Hypothesis Five

(Based on Cells 6, 8, 10, and 12 of Research Design Two)

In the following subsections, results of the manipulation checks are first reported, and followed by the discussion of the preliminary procedures for evaluation of the measurement scales. These procedures involve the assessment of reliabilities and unidimensionality.

Manipulation Checks

The chief manipulation checks concern the assessment of the emergence of an "organizational context within a classroom," i.e., whether the participants perceived a formal structure, hierarchy, functional specialization, and interdependence. The scales employed by Stern, Sternthal and Craig (1973a) for this check were administered as part of the final rating-scale questionnaire at the end of experiment. There were a total of thirteen such 7-point Likert type scales (Appendix C).

Table 13 summarizes the 13 organizational scales for the pretest sample. The scales were coded such that small values denote agreement. Two comparisons are made: (i) with a base-score of 4.0 representing the midpoint of neither-agree-nor-disagree, and (ii) with Stern's obtained average scores in parasimulation. The comparison with the base score is made using a one-sided one-sample t-test (H_1 : score is smaller than 4.0); the second comparison is made using a two-sided t-test. The results suggest that an "or-

TABLE 13
MANIPULATION CHECKS FOR ORGANIZATIONAL CONTEXT
PRETEST SAMPLE (N = 34)

TOPIC	MEAN	STANDARD DEVIATION	STERN'S MEAN	SIGNIFICANCE WITH BASE OF 4.0	WITH STERN
HIERARCHY					
Manager had more say	2.84	2.72	2.88	.01	0.80
Analyst had more say	2.50	2.47	4.04	.005	0.001
PA/SR had more say	4.47	1.85	5.48	.09	0.002
FORMALIZATION					
Understood coordination	1.94	1.18	2.25	.0001	0.18
Members understood roles	2.56	2.16	6.10	.0001	0.001
FUNCTIONAL DIFFERENTIATION					
Unique functions	2.03	1.43	2.45	.0001	0.05
Division of labor	2.47	1.58	5.20	.0001	0.001
Functions clear	1.47	0.96	6.05	.0001	0.001
EVALUATION OF COMMUNICATIONS					
Understood firm's working	2.74	1.83	3.00	.0001	0.30
Understood intra-firm memos	3.03	1.47	5.20	.0001	0.001
GROUP COHESIVENESS					
Within team cooperation	1.53	1.02	1.90	.0001	0.05
Enjoyed team members	1.47	0.90	2.40	.0001	0.001
Within interdependence	2.91	2.05	3.05	.003	0.60

NOTE: PA/SR refers to Purchasing Agent or Sales Representative.

ganizational context" was manipulated since all scores were significantly different from 4.0 and directionally correct.

In addition to these, questions were included in the same questionnaire to check (i) if power imbalance between the two firms was perceived (2 scales); (ii) whether the product negotiated was familiar (as familiarity could reduce credibility over price-quantity matrices; 1 scale); (iii) if the other firm was antagonistic at bargaining (as such a perception could heighten the perceptions of conflict; 1 scale); (iv) if the bargaining influenced the judgment of issues and the other firm (2 scales); and finally, (v) if the bargaining was like real life (1 scale).

Both the questions on power indicated that the other firm was not rated to be more powerful. When compared to a base score of 4.0 (representing the neither-agree-nor-disagree response) using one-sided tests, the results are (the other team was better at negotiations: $t=6.07$, $DF=33$, p -value less than 0.0001; and, other firm was more powerful: $t=3.66$; $DF=33$, p -value less than 0.0001). The laser-scalpels were not perceived to be familiar ($t=4.09$; $DF=33$; p -value less than 0.0001). The mean score on whether the other firm was antagonistic at bargaining was exactly 4.0. The mean on the real-life question was 3.9 (not significant). There was significant agreement on bargaining having changed

the issue perceptions ($t=4.08$; p -value less than 0.0001), and the opinion about the other firm ($t=3.98$; p -value less 0.0001). Several participants after the experiment mentioned that they had no basis for evaluating if the bargaining was life-like.

One final manipulation was explicitly checked for using the magnitude estimates (numerical method). The participants were asked to rate the salience of the four issues using the infra-red issue as the anchor (100 points before log transformation), and also, the importance of the overall interfirm relationship. The results, presented in Table 14, indicate that the infra-red and the meal-allowance issue were perceived to be less important than the other two issues. The importance of the overall relationship, as hypothesized, was considered significantly more important than any of the issues. Hence, the manipulation checks indicated that the respondents did perceive differences in levels of salience.

Inter-Judge Reliabilities for Content Analysis

As previously mentioned, categories 1, 2, and 3 of Bales are purported to capture the indicators of satisfaction/cooperation while categories 10, 11, and 12 are designed to measure dissatisfaction/conflict. For the purposes of this investigation, there was no need to make distinctions bet-

TABLE 14
MANIPULATION CHECK FOR SALIENCE
(Pretest Sample: N = 28)

ISSUE	MEAN	MEAN (log)	STANDARD DEVIATION
A. Infra-Red (Anchor)	100.00	2.00	0.000
B. Meal-Allowance	104.71	2.02	0.131
C. Inventory	338.84	2.53	0.273
D. Cooperative Promotion	389.04	2.59	0.250
OVERALL RELATIONS	1161.45	3.06	0.440
1. Comparison of A and B:	t = 0.625	p greater than 0.50	
2. Comparison of C and D:	t = 0.858	p greater than 0.30	
3. Comparison of Average of A and B with Average of C and D:	t = 2.619	p less than 0.015	
4. Comparison of Overall Relations with D:	t = 1.313	p less than 0.090	

NOTES: Standard deviations refer to the log-transformed data. Comparisons between issues were carried out using two-sided t-tests. The mean overall relations was compared with the mean of cooperative promotion issue as this issue was rated most important of the four issues. This latter t-test was a one-sided test. The mean of overall relations was expected to be higher.

ween individual categories because in the construction of Expressed Out-Group Evaluation (EOE) and Expressive Malintegrative Behavior (EMB), they have to be combined any way. Hence, the contents of the memos were coded dichotomously as either belonging to the composite category 1+2+3 or to the group 10+11+12. Pretest memos were not coded separately. Four trial training sessions were held with each judge coding 10 memos each for reliability estimation. At the fourth session the inter-judge reliability had climbed to 0.9412. After the trial sessions both judges coded the remaining memos separately. The inter-judge reliability of all the memos together was 0.9773 (Table 15).

Ratio Judgment Checks for Magnitude Scales

A precondition to using the responses to magnitude scales was to establish that the respondents were capable of making ratio judgments. This assumption was assessed by analyzing the training exercise involving matching numbers to metric stimuli (i.e., different line-lengths) presented to all participants (Appendix B). The first line "A" (actual length 68 millimeters) was used as the anchor and was assigned 100 points. Other lines had to be rated using "A" as the reference point.

On regressing the logs of the assigned scores on the actual lengths, the regression coefficient was 0.00809435

TABLE 15
CONTENT ANALYSIS: RELIABILITY ESTIMATION

COMPOSITE INTER-JUDGE RELIABILITY COEFFICIENTS

A. TRAINING SESSIONS:		RELIABILITY COEFFICIENTS
Trial #1		0.8439
Trial #2		0.9130
Trial #3		0.9305
Trial #4		0.9412
B. RELIABILITIES BY MEMO-TYPE:		
Infra-Red Issue		0.9710
Inventory Issue		0.9826
Cooperative Promotion Issue		0.9832
Meal Allowance Issue		0.9804
Final Memo		0.9749
C. COMPOSITE TOTAL RELIABILITY:		0.9773

NOTE: The reliabilities were computed using the method proposed by Holsti (1969, page 137).

which yielded a regression exponent of 1.01 (antilog of the coefficient). Normally, this regression exponent would be 1.00; however, aberrations of this size are to be expected due to the "noise" in data (Lodge 1981, page 10). Since the predicted exponent for numeric estimates of metric stimuli like length is unity (Lodge 1981), it can be said with confidence that the respondents were making ratio judgments. The second exercise on crimes (Appendix B) was merely to familiarize the participants with making ratio judgments on social stimuli, and was not analyzed.

Unidimensionality Assessment of Theoretical Constructs

Measurement Models

Seven indicators each for the constructs of cooperation, conflict and dissatisfaction were used in the pretest and are presented in Table 16. The same indicators were used in the magnitude estimation procedures and rating scales (instruments in Appendix C). Positive and negative scales were intermixed; moreover the direction of scales was reversed in several cases. The scales were seven-point Likert-type scales. The instruments following the introduction of each issue included issue-specific measures of satisfaction/dissatisfaction and issue-specific questions on either conflict or cooperation, depending upon the nature of the issue. The order of presentation of issue-specific sca-

TABLE 16
INDICATORS USED IN PRETEST: RATING SCALES

THEORETICAL VARIABLE: SATISFACTION/DISSATISFACTION	THEORETICAL VARIABLE:	
	CONFLICT	COOPERATION
	<u>INDICATORS</u>	<u>INDICATORS</u>
# 1 Fair	#12 Frustrating (2)	# 8 Team-Player (4)
2 Unfriendly	8 Threatening (5)	9 Work-Together (6)
3 Supportive	13 Hostile (7)	10 Balanced Relations (8)
4 Satisfying	10 Antagonistic (9)	12 Interests of the other party looked after (1)
5 Discouraging	14 Tense (10)	13 Harmonious (3)
6 Considerate	11 Conflictful (11)	15 Cooperative (14)
7 Reasonable	9 Ill-will (12)	14 Mutually Beneficial (13)

NOTES: # Represents the order of presentation in issue-specific scales.
() Represents the order of presentation in overall scales.

les is indicated in Table 16 by a "#" symbol. The same descriptors of conflict and cooperation were used to measure overall conflict and cooperation. The presentation order of the overall scales is indicated in Table 16 by enclosing the order number in parentheses on the right. The scale values were coded such that higher numbers denote agreement with the questionnaire items. Overall satisfaction/dissatisfaction was not measured.

Reliability of Rating Scales

The reliability (Cronbach's alpha) for the indicators of satisfaction/dissatisfaction was measured separately four times: once for each issue. The reliabilities for the cooperation and conflict constructs were separately assessed eight times: four times in the context of issue-specific measures; and another four times in the context of overall measures. The program PACKAGE (Hunter and Cohen 1971) was used for this purpose.

Two indicators of dissatisfaction/satisfaction (unfriendly and discouraging) were consistently poor and were deleted. For the issue-specific measures of conflict one indicator (ill-will) was deleted for unreliability reasons in every case. In the case of overall measures of conflict and cooperation, all the indicators were found to be reliable. Table 17 shows the final reliability of the scales

TABLE 17
RATING SCALES: RELIABILITY
CRONBACH'S ALPHA
(Pretest Sample)

ISSUE-SPECIFIC MEASURES		
<u>SATISFACTION</u>	<u>Number of Indicators</u>	<u>Cronbach's Alpha</u>
Measured Under	5	0.90
<u>Infra-Red</u>	5	0.91
Inventory	5	0.75
Meal-Allowance	5	0.75
Promotion		
<u>CONFLICT</u>		
Measured Under	6	0.87
<u>Infra-Red</u>	6	0.88
Inventory		
<u>COOPERATION</u>		
Measured Under	7	0.89
Meal-Allowance	7	0.97
Promotion		
OVERALL MEASURES		
<u>CONFLICT</u>		
Measured Under	7	0.83
<u>Infra-Red</u>	7	0.89
Inventory	7	0.91
Meal-Allowance	7	0.94
Promotion		
<u>COOPERATION</u>		
Measured Under	7	0.89
<u>Infra-Red</u>	7	0.91
Inventory	7	0.93
Meal-Allowance	7	0.97
Promotion		

NOTE: The reliability coefficients have been taken from the PACKAGE outputs.

after the poor indicators had been removed. These reliabilities ranged from 0.75 to 0.97.

Unidimensionality

Unidimensionality, implying the demonstration of internal and external consistency, was also assessed using the PACKAGE program. Three criteria indicators are available for this assessment: (i) the factor intercorrelation and loading matrix, representing how indicators of a trait correlate with each other, is examined to determine whether the indicators correlate with each other by about the same magnitude ("flatness"); (ii) the matrix with similarity coefficients (ϕ), a summary index for external consistency or "parallelism" (Hunter and Gerbing 1982) is examined for the magnitude of coefficients (the model is perfectly externally consistent if the coefficients are 1 or -1); and finally, (iii) the matrix with correlations between indicators with the effect of the trait partialled out is used to check for internal consistency. The ideal for internal consistency is zero (which corresponds to perfectly internally consistent) once the sampling error has been corrected for.

The PACKAGE output does not correct for sampling error. Currently no suitable statistical test appears to be available to check for the significance of these partial correlations. Past experience indicates that the suggested chi-

square test leads to the acceptance of the null hypothesis (the null hypothesis says partial correlations equal zero which should be accepted to demonstrate internal consistency) very easily because the degrees of freedom are defined by the number of comparisons made, making it unsuitable when there are several indicators (Dant and Danes 1983).

One set of PACKAGE outputs (pertaining to issue-specific measures of satisfaction/dissatisfaction and conflict on the infra-red issue) is presented and discussed below (Tables 18 through 20) to demonstrate a sample of unidimensionality assessment procedures. (Note: The program does not print decimal points in the Factor Inter-correlations and Loading Matrix). Similar outputs for the three remaining issue-specific measures and the four overall measures are presented in Appendix D.

The indicators modelling traits are indicated with the Factor Inter-correlations and Loading Matrix (Table 18). Abbreviated names have been used to specify the traits; i.e., SATIS=satisfaction; CONFL=conflict. In Appendix D, one other abbreviation appears: COOP=cooperation. The numbers in parentheses following the trait names identify the individual indicators. These numbers correspond to the indicator numbers presented earlier in Table 16. When the unidimensionality assessment pertains to issue-specific measures,

TABLE 18

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE

MULTIPLE GROUPS PROGRAM

SATIS(1,3,4,6,7)*
 CONFL(9-14)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.90 0.87

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	7	9	10	11	12	13	14	501	502
1	58	56	71	62	62	-60	-66	-53	-32	-36	-33	76	-65
3	56	66	75	56	76	-37	-33	-30	-35	-13	-38	81	-43
4	71	75	87	78	68	-53	-64	-47	-42	-37	-55	94	-69
6	62	56	78	56	51	-56	-67	-29	-12	-40	-48	75	-58
7	62	76	68	51	63	-50	-43	-35	-48	-27	-47	79	-58
9	-60	-37	-53	-56	-50	52	78	52	34	47	50	-63	72
10	-66	-33	-64	-67	-43	78	59	58	37	54	48	-67	77
11	-53	-30	-47	-29	-35	52	58	52	58	47	46	-48	72
12	-32	-35	-42	-12	-48	34	37	58	39	48	55	-42	62
13	-36	-13	-37	-40	-27	47	54	47	48	56	73	-38	75
14	-33	-38	-55	-48	-47	50	48	46	55	73	58	-54	76
501	76	81	94	75	79	-63	-67	-48	-42	-38	-54	100	-72
502	-65	-43	-69	-58	-58	72	77	72	62	75	76	-72	100

tables are titled by indicating the sample and the issue names. For example, Tables 18, 19 and 20 are titled "PRETEST: INFRA-RED ISSUE." Corresponding assessments pertaining to overall measures identify this by the inclusion of the word "overall" in the title. For example, in Appendix D, matrices on overall measures obtained in the pretest after the introduction of the infra-red issue are labelled "PRETEST: INFRA-RED ISSUE: OVERALL."

After the model specification statements as described above, the reliabilities are reported (see Table 18). These are Cronbach's alphas and have already been summarized in Table 17. In all matrices presented (Tables 18-20 and in Appendix D), indicators modelling each trait have been boxed for the convenience of the reader.

The "flatness" of indicator inter-correlations is assessed by "eye-balling" the numbers within the boxes in the Factor Inter-correlations and Loading Matrix (Table 18). Both the boxes indicate that the individual indicators inter-correlate with each other by about the same magnitude: a trend consistently uncovered in all such matrices attached to Appendix D as well. The diagonal in Table 18 indicates the individual item reliabilities. Though in themselves, the latter typically do not exceed 0.80, the obtained individual item reliabilities compare favorably with those of

the published empirical studies analyzed for unidimensionality (Dant and Danes 1983). This pattern, too, is consistent in the remaining analyses in Appendix D.

Table 18 also includes two matrix rows and columns labelled "501" and "502." The PACKAGE program routinely labels the trait scores with numbers commencing from 501 onwards because a maximum of 500 by 500 correlation matrix is acceptable under the program. The order of these trait-labels is the same as the order in which the model is specified. Hence, in Table 18, 501 refers to SATIS while 502 refers to CONFL. The entries under these traits, then, denote how individual indicators "load" onto traits or constructs. These correlations are consistently high (in the case of Table 18, the lowest is a single 0.62; all others are 0.72 or higher).

Finally, the right lower corner of the matrix (Table 18) should be noted as it represents the manner in which the traits themselves correlate with each other. In the case of Table 18, the correlation between satisfaction and conflict is -0.72. This is consistent with the correlations found between the indicators of satisfaction and the indicators of conflict, or the correlations between the indicators of satisfaction and the trait conflict (labelled 502). A summary of such inter-trait correlations is presented later in Table

21 documenting all PACKAGE runs for the pretest. All such correlations are high and in the anticipated direction.

Table 19 presents the similarity coefficients used for making inferences about the external consistency of the measurement models. Once again, the boxes enclosing indicators of the same trait are visually examined for the phi values. The ideal, as mentioned before, is -1 or 1. The diagonal is not interpreted because it merely shows the individual item reliabilities. The table shows that phi values are 0.90 or higher suggesting externally consistent measurement models; a trend also observable in other outputs enclosed in Appendix D. Once again, these results are superior to those of other marketing studies analyzed for unidimensionality (Dant and Danes 1983).

Table 20 presents the matrix of partial correlations among the indicators with the trait-effects partialled out. Once again the diagonal showing item-reliabilities is ignored and indicator-intercorrelations within boxes are analyzed. The plus and minus signs within boxes are inconsequential as they merely show residual correlations once trait effects are partialled out. The partial correlations are non-zero but small for a majority of cases since they still contain the sampling errors.

TABLE 19

SIMILARITY COEFFICIENTS: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	7	9	10	11	12	13	14
1	0.585	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.953	0.660	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.987	0.977	0.871	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.979	0.940	0.981	0.562	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.970	0.983	0.988	0.957	0.628	0.000	0.000	0.000	0.000	0.000	0.000
9	-0.978	-0.898	-0.963	-0.966	-0.935	0.521	0.000	0.000	0.000	0.000	0.000
10	-0.972	-0.889	-0.954	-0.956	-0.928	0.980	0.589	0.000	0.000	0.000	0.000
11	-0.940	-0.859	-0.925	-0.911	-0.921	0.970	0.964	0.521	0.000	0.000	0.000
12	-0.904	-0.853	-0.896	-0.876	-0.902	0.926	0.909	0.956	0.389	0.000	0.000
13	-0.876	-0.780	-0.870	-0.867	-0.848	0.941	0.936	0.962	0.937	0.557	0.000
14	-0.928	-0.864	-0.925	-0.910	-0.915	0.951	0.952	0.966	0.960	0.965	0.576

TABLE 20
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	7	9	10	11	12	13	14
1	0.585	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	-0.167	0.660	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.018	-0.037	0.871	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.103	-0.121	0.325	0.562	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.046	0.323	-0.258	-0.199	0.628	0.000	0.000	0.000	0.000	0.000	0.000
9	-2.590	-2.366	-4.863	-2.405	-2.535	0.521	0.000	0.000	0.000	0.000	0.000
10	-3.013	-2.554	-5.905	-2.932	-2.666	0.509	0.589	0.000	0.000	0.000	0.000
11	-2.428	-2.190	-4.623	-1.822	-2.184	0.003	0.056	0.521	0.000	0.000	0.000
12	-1.581	-1.884	-3.565	-1.140	-2.049	-0.202	-0.221	0.232	0.389	0.000	0.000
13	-2.168	-1.885	-4.446	-2.185	-2.110	-0.150	-0.078	-0.155	0.023	0.557	0.000
14	-2.173	-2.622	-5.363	-2.429	-2.691	-0.112	-0.256	-0.183	0.155	0.371	0.576

As pointed out before, the available chi-square test for statistically checking if these partial correlations are significant yields supportive results very easily. Consequently, it is not a vigorous test of significance (Dant and Danes 1983, page 10). However, this chi-square test was carried out for the matrix in Table 20 for illustrative purposes. The computed chi-squares were 5.19 (df=10; for satisfaction) and 4.81 (df=15; for conflict) and were compared with the critical chi-square table values of 18.31 ($\alpha=0.05$; df=10) and 25.00 ($\alpha=0.05$; df=15), respectively. Since the demonstration of internal consistency requires the acceptance of the null hypothesis (i.e., partial correlations equal zero), and since the computed test-statistics were smaller than the critical table values, it can be claimed that the partial correlations are not significantly different from zero. In other words, the models are internally consistent.

Similar chi-square tests were not carried out for the remaining matrices in Appendix D because of the known lack of rigor of the inferential test. However, as in Table 20, the partial correlations are non-zero but small in the remaining matrices as well; and hence, it can be inferred that the measurement models are internally consistent.

Inter-Trait Correlations

Table 21 presents the observed correlations between the constructs of satisfaction, cooperation, and conflict. The correlations are in the expected direction in each case and substantial (range 0.71 to -0.99). Each of the correlations was significant beyond the 0.00001 level. Since the dependent variables were correlated, MANOVA procedures were first used to assess the effect of the independent variables on the three dependent variables.

Since the satisfaction, cooperation, and conflict indicators were found to be reliable and unidimensional, the indicators were averaged within each construct to create composite indices to be used as dependent variables before MANOVA, ANOVA, and t-tests. All subsequent discussions refer to these composite dependent variables.

IMPLICATIONS OF DATA CHARACTERISTICS

Due to the special characteristics of the data obtained by each of the three different methods employed, the procedures adopted for testing some of the hypotheses had to be varied across methods. This section documents these characteristic features and their implications for the subsequent statistical analyses.

TABLE 21
 RATING SCALES: INTER-TRAIT CORRELATIONS
 (Pretest Sample)

	<u>IN ISSUE MEASURES</u>	<u>IN OVERALL MEASURES</u>
<u>SATISFACTION - CONFLICT</u>		
UNDER Infra-Red Issue	-0.72	
Inventory Issue	-0.95	
<u>SATISFACTION - COOPERATION</u>		
UNDER Meal Allowance Issue	0.80	
Promotion Issue	0.71	
<u>CONFLICT - COOPERATION</u>		
UNDER Infra-Red Issue		-0.91
Inventory Issue		-0.99
Meal-Allowance Issue		-0.95
Promotion Issue		-0.96

NOTE: These correlations have been taken from the PACKAGE outputs.

Content Analysis

The MANOVA and the subsequent ANOVA analyses were not carried out for the content data because their nominal nature did not fulfil the data-requirements of either the multivariate or the univariate analyses of variance procedures. Consequently, the pairwise comparisons and the marginal means comparisons using t-tests, as visualized in Figures 7, 8, and 9, were carried out directly. The procedure adopted for testing hypothesis eight is discussed later under the results section.

A major qualification which needs to be stressed about content analysis is that Bales' schema does not conceptually distinguish between dissatisfaction and conflict or satisfaction and cooperation. As such, the content analysis results do not, strictly speaking, permit us to make inferences about the isolated dependent variables of this research; i.e., conflict, cooperation and satisfaction/dissatisfaction. However, they do shed light on (i) whether the independent variables succeeded in generating positive and negative perceptions; (ii) whether issue-specific perceptions are distinct from overall perceptions; and (iii) whether operational hypothesis 8 is valid.

Inferences based on the d-statistic are also presented later under the results section. The means reported with the

d-statistics refer to the averages of frequencies of negative or positive thoughts rather than proportions of positive and negative thoughts as in the EMB and EOE indices.

Magnitude Estimates

For reasons explained below, the magnitude data also did not permit the MANOVA and ANOVA analyses. Consequently, as with the content data, the pairwise comparisons and the marginal means comparisons using t-tests were carried out directly. The procedure adopted for testing hypothesis eight is discussed later under the results section.

Since the descriptors of cooperation were different from the descriptors of conflict, the respondents had to be anchored by the meal-allowance issue and the infra-red issue for cooperation and conflict scales, respectively. In other words, since they could not be told to allocate 100 points for the cooperative nature of infra-red issue when it was clearly a negative issue, they had to be told to allocate 100 points to meal-allowance issue for an anchor. This had the effect of making scores of infra-red issue and the meal-allowance issue into constants because they were both used as anchors (i.e., assigned 100 points/50 mm).

In RD-1, the only issue-specific measures with variance were for the inventory issue. The availability of the overall measures of conflict did not alleviate the problem.

Since these instruments were administered after the parasimulation, no multivariate model could be fitted to such overall perceptions. Hence, in the absence of more than one modelled dependent variable, MANOVA could not be run and the analysis-level of results was restricted to main effects and interaction effect. Also, as conflict and cooperation measures were obtained in only two cells each (i.e., in the negative and positive incongruity cells, respectively) the analysis-level of results was reduced to main effects of salience and incongruity along with the interaction effect.

In the case of RD-2, the case was similar. Among the negative issue-specific measures, there remained only the measures of dissatisfaction and conflict for the inventory issue. Among the positive issue-specific measures, there remained only the cooperation measures on the promotion issue. Measures on the meal issue and infra-red issue were constants. Since the overall measures were obtained in the end, no multivariate model could be fitted. Further, as conflict and cooperation measures were obtained in only two cells each (i.e., in the negative and positive incongruity cells, respectively) the analysis-level of results was reduced to main effects of salience and incongruity along with along with the interaction effect.

Rating Scales

MANOVA and ANOVA procedures were carried out for the rating scales data. Thereafter, the marginal means and the pairwise comparisons (as shown in Figures 7, 8, and 9) employing t-tests were carried out. However, the results and inferences are principally discussed with reference to the t-tests rather than MANOVA and ANOVA because the t-test results of the rating scales data make them directly comparable to the results of the data from magnitude scales and content analysis. The effect size estimates were also directly obtained from the t-tests for comparability reasons. The procedure adopted for testing hypothesis eight is discussed later under the results section.

The participants in RD-1 were measured on three theoretical variables: issue-specific perceptions of dissatisfaction and conflict, and the overall perceptions of conflict. Measures of issue-specific perceptions of conflict were also included in the rating scales and magnitude scales to facilitate inferences about the impact of antagonism as a variable in RD-2 even though hypotheses pertaining to RD-1 make no predictions about conflict as a construct. Since the variable antagonism is completely confounded within the negative incongruity issues in RD-2, the only way inferences can be made about antagonism effect is to compare negative issue-specific perceptions in RD-1 and RD-2.

TEST OF HYPOTHESES

The results of the MANOVA and ANOVA procedures, only possible for the rating scales data, are discussed first. Thereafter, the presentation is organized by the relationships tested. In addition to testing hypotheses four (a), four (b), five, and eight, analyses were also carried out to assess (i) the impact of antagonism as a variable, and (ii) the dichotomy of issue-specific and overall perceptions. Under each tested relationship, the findings by different methods are discussed separately. Subsequently, the results are summarized. All summary statistics are presented in Appendix E.

In RD-1 where both issues administered were negative, the process of averaging across the indicators within the same constructs, resulted in two issue-specific dependent measures of dissatisfaction and conflict; and one dependent measure of overall conflict. All three measures were analyzed within a single MANOVA model since they were obtained with the administration of each issue.

In RD-2 two new dependent variables were measured: issue-specific cooperation and overall cooperation. Of the five variables, three (dissatisfaction on issue, overall cooperation, and overall conflict) were analyzed together in one MANOVA model because they were measured in each cell.

Two separate univariate F-tests were run on issue-specific conflict and issue-specific cooperation because they were measured only in negative incongruity and positive incongruity cells, respectively.

MANOVA Results for Research Design One

Table 22 summarizes the MANOVA results for RD-1 together with the corresponding univariate F-tests. While the effects of incongruity and salience were significant at 0.0384 and 0.0712 levels respectively, the interaction of the two was not significant ($p\text{-value}=0.2500$).

In the ANOVA results, incongruity effect was significant in the case of all three dependent variables. However, salience effect was significant only for the overall conflict variable. The interactions were not significant.

MANOVA Results for Research Design Two

Table 23 presents the MANOVA results for RD-2 (where the dependent variables modelled were issue-specific satisfaction, overall conflict and overall cooperation) together with the corresponding ANOVA results. MANOVA suggests that only incongruity effect was significant. The subsequent ANOVA results support this by showing consistently strong incongruity effects. Salience and the interaction effects were weak and statistically not significant.

TABLE 22
MANOVA AND ANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN I
(Pretest Sample)

SUMMARY OF MANOVA

Model: Dependent Variables: Issue-specific Dissatisfaction
Issue-specific Conflict
Overall Conflict

SOURCE OF VARIATION	DF	WILKS' LAMBDA CONVERTED TO F	p-VALUE
INCONGRUITY	(3, 7)	4.90	0.0384
SALIENCE	(3, 7)	3.67	0.0712
INTERACTION	(3, 7)	1.72	0.2500

UNIVARIATE ANOVA SUMMARY

DEPENDENT VARIABLE	SOURCE OF VARIATION		
	INCONGRUITY	SALIENCE	INTERACTION
	F	F	F
DISSATISFACTION (I.S.)	4.61 (0.0603)	0.01 (0.9086)	0.22 (0.6491)
CONFLICT (I.S.)	8.43 (0.0175)	0.01 (0.9439)	0.15 (0.7101)
CONFLICT (O)	15.81 (0.0032)	4.16 (0.0717)	0.03 (0.8666)

NOTES: (I.S.) stands for issue-specific; and (O) stands for overall. Numbers in parentheses are p-values.

TABLE 23
MANOVA AND ANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN II
(Pretest Sample)

SUMMARY OF MANOVA

Model: Dependent Variables: Issue-specific Satisfaction
Overall Conflict
Overall Cooperation

SOURCE OF VARIATION	DF	WILKS' LAMBDA CONVERTED TO F	p-VALUE
INCONGRUITY	(3,13)	8.25	0.0025
SALIENCE	(3,13)	1.29	0.3200
INTERACTION	(3,13)	1.07	0.3975

UNIVARIATE ANOVA SUMMARY

DEPENDENT VARIABLE	SOURCE OF VARIATION		
	INCONGRUITY	SALIENCE	INTERACTION
	F	F	F
DISSATISFACTION (I.S.)	19.63 (0.0005)	2.27 (0.1523)	1.20 (0.2905)
CONFLICT (I.S.)	25.37 (0.0001)	1.97 (0.1808)	0.85 (0.3719)
CONFLICT (O)	19.65 (0.0005)	0.80 (0.3844)	0.07 (0.7898)

NOTES: (I.S.) stands for issue-specific; and (O) stands for overall. Numbers in parentheses are p-values.

Table 24 shows the ANOVA results for the dependent variables issue-specific conflict and issue-specific cooperation. The incongruity effects are significant for both. The salience effects are weaker (significant at 0.0923 for cooperation, and 0.1430 for conflict).

These MANOVA and ANOVA results for the rating scales data were inconsistent with the general support received for the effects of the independent variables by content analysis and magnitude estimation methods (presented later). Consequently, further analyses of the rating scales data were continued. Some possible explanations for the differences in results are discussed later.

For the RD-2 MANOVA model (since there were four cells involved), the Student-Newman-Keuls multiple comparison tests were carried out controlling for the experimentwise error rate at 0.10. As shown in Table 25, means of all three dependent variables were significantly different across levels of incongruity as well as salience. They continued to be significantly different even when the experimentwise error-rate was lowered to 0.05 level. Subsequently, marginal means comparisons for main effects and cell-wise means comparisons for interaction effects were carried out (presented later). For the dependent variables issue-specific conflict and cooperation (analyzed by ANOVA

TABLE 24
ANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN II
(Pretest Sample)

Dependent Variable: Issue-Specific Conflict

SOURCE OF VARIATION	DF	F	p-VALUE
INCONGRUITY	(1,15)	8.54	0.0105
SALIENCE	(1,15)	2.39	0.1430
INTERACTION	(1,15)	1.35	0.2634

Dependent Variable: Issue-Specific Cooperation

SOURCE OF VARIATION	DF	F	p-VALUE
INCONGRUITY	(1,15)	4.54	0.0503
SALIENCE	(1,15)	3.17	0.0923
INTERACTION	(1,15)	0.69	0.4196

TABLE 25
STUDENT-NEUMAN-KEULS TESTS: RESEARCH DESIGN II
PRETEST SAMPLE

DEPENDENT VARIABLES: ISSUE SPECIFIC DISSATISFACTION, OVERALL CONFLICT, OVERALL COOPERATION				
<u>INCONGRUITY EFFECT</u>				
Dependent Variable	Incongruity Level	Means	Mean Square Error	p-value*
Dissatisfaction (I.S)	High	5.0912	0.94529	0.05
	Low	4.7712		
Conflict (O)	High	3.8971	0.93267	0.05
	Low	3.4013		
Cooperation (O)	High	4.6933	0.96529	0.05
	Low	4.3067		
<u>SALIENCE EFFECT</u>				
Dependent Variable	Salience Level	Means	Mean Square Error	p-value*
Dissatisfaction (I.S)	High	5.0450	0.94529	0.05
	Low	4.7050		
Conflict (O)	High	3.8893	0.93267	0.05
	Low	3.4568		
Cooperation (O)	High	4.6235	0.96529	0.05
	Low	4.2036		

NOTES: * Refers to experiment-wise error rate of 0.05.
(I.S.) Stands for Issue-Specific; (O) Stands for Overall.

only; Table 24), since there were only two cells each for both variables, the Student-Newman-Keuls comparisons were not made and the marginal means were directly compared.

Test of Hypothesis Four (a)

Three operational hypotheses were derived from the theoretical statement of hypothesis four (a) which postulated that the higher negative incongruity condition (H4.a.1) and higher salience condition (H4.a.2) will generate greater dissatisfaction. A synergistic interaction of negative incongruity and salience was also predicted (H4.a.3). Table 26 presents the content analysis results based on the chi-square tests on EMBs for hypothesis four (a). Tables 27, 28, and 29 present the results for H4.a.1, H4.a.2, and H4.a.3, respectively, based on magnitude scales, rating scales, and t-tests on the frequency means of content data. The effect size estimates in d statistics are also included in the latter three tables (see Appendix E for the summary statistics tables).

Content Analysis

As mentioned earlier, the content data were analyzed using the chi-square tests on the Expressive Malintegrative Behavior (EMB) and the Expressed Out-group Evaluation (EOE) indices, as well as t-tests on the frequency means of nega-

tive and positive statements. For hypothesis four (a), to the extent EMB frequency of high negative incongruity cells is consistently higher than that of low incongruity cells, and the EMB frequency of high salience cells is consistently higher than that of low salience cells, an inference can be made that levels of negative incongruity (H4.a.1) and salience (H4.a.2) have made a difference.

Using the terminology based on Figure 7, the presence of negative incongruity effect implies that cell A EMB will be greater than cell B EMB, and cell C EMB will be greater than cell D EMB. Similarly, successful salience effect would imply that cell A EMB will be greater than cell C EMB, and cell B EMB will be greater than cell D EMB. An interaction effect (H 4.a.3) would translate to cell A EMB being greater than all other cells' EMBs.

In the pretest-data all three hypotheses were supported by the content analysis. The chi-square test results reported in Table 26 show that the two independent variables (negative incongruity and salience) succeeded in generating perceptions of dissatisfaction/conflict: all the EMB percentages were significantly higher than the expected frequency of 50%; further, all the expected inequalities in EMBs discussed above were supported by the data. The t-test approach (Tables 27, 28, and 29), presents a more direct test

TABLE 26
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB)
INFERENCES ABOUT HYPOTHESIS FOUR (a)
RESEARCH DESIGN 1: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
EMB %	86.66	71.43	81.82	64.29
Chi-Square Statistic	53.76	18.36	40.50	8.16
p for Chi-Square	0.0000	0.0001	0.0000	0.0043
Sample Size	5	6	5	6

NOTES: In RD-1, antagonism was not manipulated as a variable. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected Frequency is 50%. All chi-square statistics have a single degree of freedom. The cell labels A, B, C, and D correspond to Figure 7. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

of the three operational hypotheses. All comparisons were significant beyond the 0.10 level, and accompanied by moderate to large effect sizes. In all the pair-wise comparisons for H 4.a.3 the effect size exceeded 1.0.

Magnitude Scales

Both types of measures (numbers and lengths) and both dependent variables (dissatisfaction and conflict) provide support for all three hypotheses. No negative effects were found and in general the effects were large. Although salience effects were also in the anticipated direction, the magnitude of effects was much smaller than the incongruity effects across both dependent variables and methods. No perceptible pattern of differences was found in the size of effects across the two methods.

Rating Scales

While the t-tests were usually not significant for a majority of comparisons at the planned alpha-level of 0.10, the d-statistics indicate that all effects were in the expected direction (i.e., no negative effects were found). The magnitude of effects for salience is consistently small while that of incongruity is consistently large, supporting the ANOVA results. Interactions effects were large when the comparisons involved means of different incongruity levels,

TABLE 27
 TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.a.1
 RESEARCH DESIGN 1: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES		LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES		DISSATISFACTION	CONFLICT	DISSATISFACTION	CONFLICT	DISSATISFACTION	CONFLICT
HIGH NEGATIVE INCONGRUITY							
Marginal Mean	2.09	2.873	2.388	2.545	2.475	5.71	5.30
Standard Deviation	0.91	0.354	0.316	0.243	0.205	1.184	0.844
Sample Size	11	11	11	11	11	11	11
LOW NEGATIVE INCONGRUITY							
Marginal Mean	1.64	2.00	2.00	2.00	2.00	5.29	4.58
Standard Deviation	0.29	0.00	0.00	0.00	0.00	0.831	1.113
Sample Size	11	11	11	11	11	11	11
EFFECT SIZE (d)	0.67	2.47	1.23	2.24	2.32	0.41	0.73
t-STATISTIC	1.56	5.78	2.88	5.26	5.43	0.96	1.71
p FOR t-STATISTIC	0.07	0.0005	0.005	0.0005	0.0005	0.15	0.05

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7. See Appendix E for summary statistics.

TABLE 28
TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.a.2
RESEARCH DESIGN 1: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES			DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT
HIGH SALIENCE						
Marginal Mean	2.20	2.478	2.199	2.333	2.260	4.96
Standard Deviation	0.75	0.345	0.162	0.281	0.199	0.725
Sample Size	5	5	5	5	5	5
LOW SALIENCE						
Marginal Mean	1.59	2.402	2.191	2.222	2.219	4.92
Standard Deviation	0.61	0.362	0.399	0.208	0.209	1.267
Sample Size	6	6	6	6	6	6
EFFECT SIZE (d)	0.90	0.21	0.03	0.46	0.20	0.04
t-STATISTIC	1.49	0.35	0.04	0.75	0.33	0.06
p FOR t-STATISTIC	0.08	0.30	0.50	0.25	0.40	0.50

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7. See Appendix E for summary statistics.

TABLE 29
TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.a.3
RESEARCH DESIGN I: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES		DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT	CONFLICT
CELLS A AND D						
Effect Size (d)	1.56	2.77	2.45	2.37	0.49	0.60
t-Statistic	2.58 (9)	4.57	4.05	3.92	0.81	1.00
p for t-Statistic	0.02	0.0005	0.0025	0.002	0.22	0.17
CELLS A AND B						
Effect Size (d)	1.07	2.77	2.45	2.37	0.74	1.44
t-Statistic	1.68 (8)	4.38	3.87	3.75	1.18	2.27
p for t-Statistic	0.07	0.0005	0.0025	0.002	0.12	0.02
CELLS A AND C						
Effect Size (d)	1.02	0.43	0.05	0.92	0.14	0.06
t-Statistic	1.69 (9)	0.70	0.08	1.52	0.24	0.10
p for t-Statistic	0.07	0.25	0.40	0.10	0.45	0.50

NOTES: The tests required three comparisons between pairs of cells as shown in Figure 7. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

but small in the comparisons involving cells A and C within the same incongruity level. This result further suggests that salience had a weak impact on perceptions.

Test of Hypothesis Four (b)

Three operational hypotheses were derived from the theoretical statement of hypothesis four (b) which asserts that in the presence of antagonism higher negative incongruity condition (H4.b.1) and higher salience condition (H4.b.2) will generate greater levels of issue-specific conflict. Further, a synergistic interaction of negative incongruity and salience was also postulated (H4.b.3).

Table 30 presents the content analysis results based on the chi-square tests on EMBs for hypothesis four (b). Tables 31, 32, and 33 present the results for H4.b.1, H4.b.2, and H4.b.3, respectively, based on magnitude scales, rating scales, and t-tests on the frequency means of content data. The effect size estimates in d statistics are also included in the latter three tables (summary statistics are presented in Appendix E).

Content Analysis

All the cell-wise comparisons (Table 30) once again support the main effects hypotheses (H4.b.1 and H4.b.2) as well as the expectation of an interaction effect (H 4.b.3).

TABLE 30
 CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB)
 INFERENCES ABOUT HYPOTHESIS FOUR (b)
 RESEARCH DESIGN II: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High		Low	
	High (CELL A)	SALIENCE Low (CELL C)	High (CELL B)	Low (CELL D)
EMB %	95.00	88.89	73.91	70.37
Chi-Square Statistic	81.00	60.50	22.86	16.60
p for Chi-Square	0.0000	0.0001	0.0000	0.0001
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected Frequency is 50%. All chi-square statistics have a single degree of freedom. The cell labels A, B, C, and D correspond to Figure 8. A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

Highly significant EMB frequencies suggest a strong emergence of negative perceptions. However, the t-test and the d-statistic findings (Tables 31, 32, and 33) were not as supportive.

The magnitude of effects was not large. Three of the effects were negative although EMB based directions of these effects was correct (Table 30). Two of three negative effects were insignificant even at the 0.20 level while all the positive effects were significant (p-values less than 0.01).

Magnitude Scales

All the effects were comparatively larger. Incongruity effect and the interaction effects were strong. Salience effects were positive but small. Once again, no perceptible pattern of differences was found across the two dependent variables or across the two methods.

Rating Scales

Consistent with MANOVA and ANOVA results presented earlier, the incongruity effects were significant and magnitude of effects large. Although the salience effect for both dependent variables is about $d=0.50$ the significance levels are about 0.16. All the tests for interaction effect except one were significant beyond 0.10 level and the magnitude of

TABLE 31
TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.b.1
RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES		DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT	CONFLICT
HIGH NEGATIVE INCONGRUITY						
Marginal Mean	1.33	3.129	2.517	2.713	2.629	5.64
Standard Deviation	0.43	0.243	0.279	0.223	0.176	1.269
Sample Size	17	17	17	17	17	17
LOW NEGATIVE INCONGRUITY						
Marginal Mean	1.51	2.00	2.00	2.00	2.00	4.89
Standard Deviation	0.34	0.00	0.00	0.00	0.00	0.903
Sample Size	17	17	17	17	17	17
EFFECT SIZE (d)	-.46	4.65	1.85	3.20	3.57	0.68
t-STATISTIC	1.35	13.54	5.40	9.32	10.42	1.98
p FOR t-STATISTIC	0.08	0.0001	0.0005	0.0005	0.0005	0.025

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8. See Appendix E for summary statistics.

TABLE 32
 TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.b.2
 RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES		LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES		DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT
HIGH SALIENCE							
Marginal Mean	1.12	2.577	2.294	2.396	2.343	5.69	5.45
Standard Deviation	0.30	0.259	0.291	0.209	0.135	1.084	1.084
Sample Size	12	12	12	12	12	12	12
LOW SALIENCE							
Marginal Mean	1.23	2.537	2.173	2.263	2.247	5.21	4.85
Standard Deviation	0.56	0.192	0.244	0.258	0.256	1.144	1.269
Sample Size	5	5	5	5	5	5	5
EFFECT SIZE (d)	-.28	0.16	0.43	0.60	0.54	0.49	0.53
t-STATISTIC	0.53	0.31	0.81	1.12	1.03	0.93	0.99
p FOR t-STATISTIC	0.25	0.40	0.20	0.15	0.15	0.17	0.16

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8. See Appendix E for summary statistics.

TABLE 33
TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT: OPERATIONAL HYPOTHESIS 4.b.3
RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES		LINE-LENGTH ESTIMATES		RATING SCALES	
DEPENDENT VARIABLES		DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT	DISSATIS-FACTION	CONFLICT
CELLS A AND D							
Effect Size (d)	-.41	4.45	2.02	3.79	5.08	1.15	1.25
t-Statistic	0.76 (15)	8.36	3.80	7.13	9.53	2.17	2.34
p for t-Statistic	0.20	0.0005	0.001	0.0005	0.0005	0.025	0.015
CELLS A AND B							
Effect Size (d)	0.51	4.45	2.02	3.79	5.08	1.14	0.71
t-Statistic	1.31 (22)	10.90	4.96	9.28	12.45	2.78	1.74
p for t-Statistic	0.01	0.0005	0.0005	0.0005	0.0005	0.008	0.05
CELLS A AND C							
Effect Size (d)	2.00	0.33	0.87	1.20	1.10	0.79	0.50
t-Statistic	3.71 (15)	0.62	1.63	2.24	2.06	1.49	0.93
p for t-Statistic	0.001	0.30	0.05	0.01	0.05	0.07	0.20

NOTES: The tests required three comparisons between pairs of cells as shown in Figure 8. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

effects were large (smallest $d=0.50$; p -value about 0.20). It can only be surmised that the overpowering influence of the incongruity effect made the interactions significant despite the weaker salience effects. The direction of all the effects was consistently correct.

Test of Hypothesis Five

Three operational hypotheses were deduced from the theoretical statement of hypothesis five which postulates that higher positive incongruity condition (H5.1) and higher salience condition (H5.2) will generate greater levels of issue-specific cooperation. Further, a synergistic interaction of negative incongruity and salience was also expected (H5.3).

Table 34 presents the content analysis results based on the chi-square tests on EOE's for hypothesis five. Tables 35, 36, and 37 present the results for H5.1, H5.2, and H5.3, respectively, based on magnitude scales, rating scales, and t -tests on the frequency means of content data. The effect size estimates in d statistics are also included in the latter three tables (summary statistics are presented in Appendix E).

Content Analysis

Positive incongruity and salience brought about a strong perception of satisfaction/cooperation (as evidenced by highly significant EOE percentages; Table 34). In all cells the proportion of positive thoughts as compared to total thoughts expressed was at least 80%. However, as regards the main effects of salience and positive incongruity levels, one of two inequalities in each case did not hold up. Nevertheless, the inequality directionality was not reversed; instead cell B was equal to cell D and cell C was equal to cell D. The interaction effect (H 5.3) was supported.

The magnitude of effects was comparatively lower in terms of d statistics (Tables 35, 36, and 37), but the directionality of results corroborate the EOE based findings discussed above (Table 34). Salience effect was negative and one of the comparisons for H5.3 was also negative.

Magnitude Scales

Positive incongruity effect was positive across both methods for issue-specific perception of cooperation with a magnitude larger than 1.0. However, the salience effect was positive only when measured by the number system but negative using the line-length estimation. However the negative effect was not statistically significant. The only other ne-

TABLE 34
 CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF SATISFACTION/COOPERATION (EOE)
 INFERENCES ABOUT HYPOTHESIS FIVE
 RESEARCH DESIGN II: PRETEST SAMPLE

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
EOE %	87.50	80.00	80.00	80.00
Chi-Square Statistic	56.26	36.00	36.00	36.00
p for Chi-Square	0.0000	0.0000	0.0000	0.0000
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected frequency is 50%. All chi-square statistics have a single degree of freedom. The cell labels A, B, C, and D correspond to Figure 9. A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE 35
TEST OF POSITIVE INCONGRUITY EFFECT ON COOPERATION: OPERATIONAL HYPOTHESIS 5.1
RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES	RATING SCALES
HIGH POSITIVE INCONGRUITY				
Marginal Mean	1.30	2.472	2.425	5.77
Standard Deviation	0.36	0.289	0.219	0.830
Sample Size	17	17	17	17
LOW POSITIVE INCONGRUITY				
Marginal Mean	1.03	2.00	2.00	5.49
Standard Deviation	0.30	0.00	0.00	1.034
Sample Size	17	17	17	17
EFFECT SIZE (d)	0.82	1.63	1.94	0.30
t-STATISTIC	2.38	4.76	5.66	0.87
p FOR t-STATISTIC	0.01	0.0005	0.0005	0.20

NOTES: For content analysis, the dependent variable is satisfaction/cooperation. The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9. See Appendix E for summary statistics.

TABLE 36

TEST OF SALIENCE EFFECT ON COOPERATION: OPERATIONAL HYPOTHESIS 5.2

RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES	RATING SCALES
HIGH SALIENCE				
Marginal Mean	1.09	2.278	2.192	5.66
Standard Deviation	0.36	0.221	0.200	0.994
Sample Size	12	12	12	12
LOW SALIENCE				
Marginal Mean	1.35	2.137	2.263	5.57
Standard Deviation	0.21	0.423	0.263	0.761
Sample Size	5	5	5	5
EFFECT SIZE (d)	-.80	0.49	-.32	0.10
t-STATISTIC	1.49	0.92	0.16	0.18
p FOR t-STATISTIC	0.05	0.15	0.50	0.50

NOTES: For content analysis, the dependent variable is satisfaction/cooperation. The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9. See Appendix E for summary statistics.

TABLE 37
TEST OF INTERACTION EFFECT ON COOPERATION: OPERATIONAL HYPOTHESIS 5.3
RESEARCH DESIGN II: PRETEST SAMPLE

METHOD	CONTENT ANALYSIS	NUMERICAL ESTIMATES	LINE-LENGTH ESTIMATES	RATING SCALES
CELLS A AND D				
Effect Size (d)	0.21	2.51	1.92	0.43
t-Statistic	0.40 (15)	4.70	3.61	0.80
p for t-Statistic	0.35	0.0005	0.0025	0.30
CELLS A AND B				
Effect Size (d)	0.47	2.51	1.92	0.39
t-Statistic	1.16 (22)	6.15	4.69	0.96
p for t-Statistic	0.10	0.0005	0.0005	0.35
CELLS A AND C				
Effect Size (d)	-1.18	0.98	-0.65	0.33
t-Statistic	2.44 (15)	1.83	1.23	0.61
p for t-Statistic	0.01	0.05	0.15	0.32

NOTES: For content analysis, the dependent variable is satisfaction/cooperation. The tests required three comparisons between pairs of cells as shown in Figure 9. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

gative effect (also under the length system) to be found was one of the three comparisons for hypothesis 5.3 dealing with the interaction effect of positive incongruity and salience.

Rating Scales

None of the effects were significant at 0.10 level and the magnitude of effects were small. However, the directionality of findings were always correct. The perceptions caused by positive issues appear to be high regardless of the salience or incongruity levels as reflected in high mean values in all cells.

Test of Hypothesis Eight

Hypothesis eight sought to test the premise of cooperative bias. It was hypothesized that if the participants were exposed to a parallel series of perceptions of issue-specific conflict and cooperation, the residual final perception would be cooperative.

Content Analysis

To test the nature of residual perceptions, the final (the fifth) memo written after the end of the parasimulation was content-analyzed. If the overriding perceptions of cooperation and conflict do not exist, we would expect the proportions of positive and negative thoughts to be about equal. However, as shown in Table 38, 63.51% of thoughts

TABLE 38
 CONTENT ANALYSIS: TEST OF OPERATIONAL HYPOTHESIS EIGHT
 RESEARCH DESIGN II
 (Pretest Sample)

BASED ON THE FINAL MEMO

Sample Size	17
Total Statements	74
Total Positive Statements	47
Total Negative Statements	27
Final EMB (%)	36.49
Final EOE (%)	63.51
Chi-Square Statistic	7.30
P-Value	0.0069
DF	1
Directionality	Positive

NOTES: Only the participants who were exposed to matching positive and negative issues have been included; i.e., those exposed to only three issues were excluded. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected Frequency of Final EMB and EOE is 50%.

expressed were positive suggesting a strong support for hypothesis eight ($p=0.0069$).

Magnitude Scales

Unlike the content analysis, given the nature of magnitude scales, there were no mean base-scores against which to compare the final overall measures of cooperation. Hence, the overall measures of cooperation were compared with the overall measures of conflict for the participants in RD-2. Since both these measures were relative to issues anchored with same number of points, if the overall cooperation perception was larger than the overall perception of conflict, the mean magnitude of cooperation measures could be expected to be higher. The results are contained in Table 39 and support this hypothesis strongly. No perceptible differences are evident due to salience effect or due to the methods. A priori there was no difference expected due to a salience effect because the variable would affect both measures.

Rating Scales

In testing operational hypothesis eight with the rating scales data, the obtained final measures of overall perceptions were compared to the mid-point of the rating scales representing the hypothetical mean of a base-line score i.e., the score of 4.0 representing the neutral point on the

TABLE 39
MAGNITUDE ESTIMATES: TEST OF OPERATIONAL HYPOTHESIS EIGHT
RESEARCH DESIGN II
PRETEST SAMPLE

METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t	p
NUMERICAL METHOD							
<u>HIGH SALIENCE</u> Cooperation	12	2.404	0.206	0.403	+1.45	3.55	.001
Conflict	12	1.819	0.532				
<u>LOW SALIENCE</u> Cooperation	5	2.170	0.046	0.335	+1.62	2.56	.025
Conflict	5	1.627	0.471				
LINE-LENGTH METHOD							
<u>HIGH SALIENCE</u> Cooperation	12	2.474	0.260	0.569	+1.80	4.40	.0005
Conflict	12	1.452	0.762				
<u>LOW SALIENCE</u> Cooperation	5	2.400	0.408	0.650	+1.43	2.26	.05
Conflict	5	1.471	0.824				

NOTES: Only the participants who were exposed to matching positive and negative issues have been included. The t-statistics refer to two-sample one-sided tests against the H_0 : The Means of Cooperation are equal to the Means of Conflict. Cooperation means were expected to be higher.

seven-point scale. Similar procedures were employed by Stern et al. (1973a), and Hunger and Stern (1976). A priori the expectation was to find cooperation perceptions to be larger than 4.0 and the conflict perceptions to be lower than 4.0.

Incorporating provisions for actual control groups for the operational hypothesis eight in RD-2 would have resulted in expanding the RD-2 so that some participants were exposed to a situation where the issue-specific perceptions of conflict and cooperation were not neutralized. As discussed in Chapter III, doing the above operationally becomes a very involved exercise due to the possibilities of threshold effects. As shown in Table 40, the magnitude of effects ranges from 0.59 to 1.27 except in the case of overall conflict perceptions in the low salience condition which was $d=0.03$. All directions, however, are correct.

Inferences on Antagonism

Since antagonism, as a variable, is fully confounded within the negative incongruity condition, any inferences on its effect have to be made by comparing the effects for hypothesis four (a) with those of hypothesis four (b). The only new variable operative in hypothesis four (b) was antagonism. A priori the expectation was to uncover greater negative perceptions with the inclusion of antagonism.

TABLE 40
 RATING SCALES: TEST OF OPERATIONAL HYPOTHESIS EIGHT
 RESEARCH DESIGN II
 PRETEST SAMPLE

CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	d	t	p
<u>HIGH SALIENCE</u>						
Cooperation	12	5.49	1.173	1.27	4.40	0.001
Conflict	12	3.29	1.207	0.59	2.04	0.04
<u>LOW SALIENCE</u>						
Cooperation	5	4.52	0.769	0.68	1.51	0.10
Conflict	5	3.97	0.930	0.03	0.07	0.50

NOTES: The t-statistics refer to one-sample one-sided tests. For Cooperation: H1 was Mean is greater than 4.0. For Conflict: H1 was Mean is less than 4.0. The d-statistic is also computed with reference to 4.0. The standard deviation of the experimental group has been used. Only the participants who were exposed to matching positive and negative issues have been included.

Content Analysis

Tests were made based on the chi-square statistic as well as the d-statistic. As shown in Table 41, three of four comparisons based on EMB were directionally correct although only one d-statistic was directionally right. In general, then, the effect of antagonism appears to have been weak as far as the content data are concerned.

Magnitude Scales

The infra-red issue scores were not relevant because the issue was used as an anchor in magnitude scales. As presented in Table 42, in the case of numerically estimated conflict in low-salience condition, the perceptions in RD-1 were stronger than those in RD-2 leading to a negative effect. However, the effect was small and statistically not significant. All the other effects were in the expected direction. Hence the presence of antagonism appears to have made the expected impact on negative perceptions though the effects were not statistically significant in all cases at the 0.10 level.

Rating Scales

The mode of inference for the antagonism effect was the same as that adopted for content analysis and magnitude estimation with some differences due to differences in meth-

TABLE 41

CONTENT ANALYSIS: INFERENCES ABOUT THE EFFECT OF ANTAGONISM
ON DISSATISFACTION AND CONFLICT

(Pretest Sample)

EMB BASED COMPARISON

	EMB(RD-2) %	EMB(RD-1) %	Difference	Chi-Square Statistic	DF	p
CELL A	95.00	86.66	+ 8.34	1.61	1	0.1722
B	73.91	81.82	- 7.91	1.53	1	0.1783
C	88.89	71.43	+17.46	8.54	1	0.0034
D	70.37	64.29	+ 6.08	1.15	1	0.2815

d-STATISTIC BASED COMPARISON

	Mean(RD-2)	Mean(RD-1)	Pooled Standard Deviation	d	t
CELL A	1.58	2.60	0.59	-1.73	3.25 a
B	1.42	1.80	0.29	-1.31	2.46 a
C	0.73	1.67	0.75	-1.25	2.09 a
D	1.73	1.51	0.37	0.59	0.98 b

NOTES: The chi-square tests and the t-tests were carried out against the H_0 : EMB percentages and means of RD-2 are equal to EMB percentages and means and RD-1, respectively. The tests were one-sided as the effects of RD-2 were expected to be larger than those of RD-1. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2.

a: p-value less than 0.05.

b: p-value approximatey 0.15.

TABLE 42
MAGNITUDE ESTIMATES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
PRETEST SAMPLE

METHODS/ VARIABLES	Mean (RD-2)	Mean (RD-1)	Pooled Standard Deviation	d	t	p
<u>NUMERICAL METHOD</u>						
Dissatisfaction	3.153	2.955	0.284	+0.70	1.31	0.10
CELL-A	3.073	2.804	0.299	+0.90	1.48	0.10
CELL-C	2.589	2.397	0.263	+0.73	1.37	0.10
Conflict	2.347	2.381	0.339	-0.10	0.16	0.50
CELL-A						
CELL-C						
<u>LINE-LENGTH METHOD</u>						
Dissatisfaction	2.792	2.667	0.230	+0.54	1.02	0.15
CELL-A	2.525	2.444	0.232	+0.35	0.58	0.30
CELL-C	2.686	2.520	0.155	+1.07	2.01	0.05
Conflict	2.493	2.437	0.231	+0.24	0.40	0.40
CELL-A						
CELL-C						

NOTES: The differences between the means are computed as (Mean of RD-2) - (Mean of RD-1) and are expected to be positive. Degrees of freedom for Cell A is 15 and degrees of freedom for Cell C is 9. The t-statistics refer to two sample one-sided tests against the H_0 : Magnitude of effects (RD-1) is equal to the magnitude of effects (RD-2). The cell labels A and C correspond to Figure 7 for RD-1 and Figure 8 for RD-2.

ods. A comparison of cell means was carried out separately for the infra-red and the inventory issue. The results presented in Table 43, in general, do not support an antagonism effect. Five of eight effects are negative, though none of the effects were statistically significant.

Issue-Specific Vs. Overall Perceptions

Although not directly related to the hypotheses selected for the investigation, but very important to the central premise of the conceptualization guiding these hypotheses, another set of analyses were carried out to test the dichotomy premise (i.e., that issue-specific perceptions are distinct from overall perceptions). If the dichotomy does not exist one would expect the overall perceptions to be mirroring issue-specific perceptions.

Content Analysis

Since each of the memos (except final memo) asked for issue-specific as well as overall perceptions, issue-specific EMBs and EOE's were compared to overall EMBs and EOE's to test this dichotomy. Under the null hypothesis, the expected frequency of overall EMBs and EOE's was expected to equal the observed frequency of issue specific EMBs and EOE's.

As documented in Table 44, in the case of both negative issues, the overall negative perceptions were significantly

TABLE 43
RATING SCALES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
PRETEST SAMPLE

<u>INFRA-RED ISSUE</u>					
DEPENDENT VARIABLES	(Mean of RD-2)	(Mean of RD-1)	d	t	p
Dissatisfaction					
CELL-B	5.18	5.28	-0.15	0.27	0.30
CELL-D	5.10	5.30	-0.20	0.33	0.30
Conflict					
CELL-B	5.06	4.50	0.67	1.26	0.12
CELL-D	4.50	4.64	-0.12	0.22	0.30
<u>INVENTORY ISSUE</u>					
DEPENDENT VARIABLES	(Mean of RD-2)	(Mean of RD-1)	d	t	p
Dissatisfaction					
CELL-A	6.20	5.80	0.41	0.78	0.20
CELL-C	5.32	5.63	-0.22	0.37	0.30
Conflict					
CELL-A	5.83	5.33	0.49	0.92	0.20
CELL-C	5.20	5.28	-0.06	0.10	0.30

NOTE: The t-statistics refer to two-sample one-sided tests against the H_0 : Means of RD-1 are equal to Means of RD-2. The means of RD-2 were expected to be larger. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2.

lower than the issue-specific negative perceptions. The correct directionality has been noted by the word "Positive" indicating lowered negative overall perceptions.

In the case of positive issues, two possibilities existed. The respondents could consider the overall relationship more positive (under the influence of positive issues) than the issues themselves. Alternatively, the overall relationship would not be rated as high as the issues themselves but would still be considered more positive than negative. The second possibility is also conceptually consistent with the dichotomy premise and should be expected, as the teams were being exposed to both positive and negative issues. Further, in the background materials (Appendix B), the inter-firm relationship had been characterized as a give-and-take relationship. Finally, the premise of a differentiation between issue-outcomes and overall relationships is still supported when the above occurs. In three out of four positive cells, this dichotomy has been significantly supported. In the discrepant case, the two perceptions were exactly equal. When either of the two possibilities occurred, "correct" has been entered against directionality.

TABLE 44
CONTENT ANALYSIS: RESEARCH DESIGN II: PRETEST SAMPLE

TEST FOR THE DIFFERENCES IN ISSUE-SPECIFIC AND OVERALL PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB) AND SATISFACTION/COOPERATION (EOE)											
INCONGRUITY	High Negative				High Positive				Low Negative		Low Positive
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	LOW
ANTAGONISM	YES				NO				YES		NO
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	LOW
CELL SIZE	12	5	12	5	12	5	12	5	12	5	5
ISSUE-SPECIFIC EMB (%)	95.00	88.89	12.50	20.00	73.41	70.37	20.00	20.00	20.00	20.00	20.00
ISSUE-SPECIFIC EOE (%)	5.00	11.11	87.50	80.00	26.09	29.63	80.00	80.00	80.00	80.00	80.00
OVERALL EMB (%)	79.31	71.43	34.48	20.00	48.57	58.33	13.74	44.00	13.74	44.00	44.00
OVERALL EOE (%)	20.69	28.57	65.62	80.00	51.43	41.67	86.21	56.00	86.21	56.00	56.00
CHI-SQUARE STATISTIC	51.82	30.87	44.17	0.00	33.30	6.97	2.41	30.25	6.97	2.41	30.25
P-VALUE	0.0000	0.0000	0.0000	1.0000	0.0000	0.0083	0.1206	0.0000	0.0083	0.1206	0.0000
DIRECTIONALITY	POSITIVE	POSITIVE	CORRECT	-	POSITIVE	POSITIVE	CORRECT	CORRECT	POSITIVE	CORRECT	CORRECT

NOTES: Degrees of freedom for all chi-square statistics is one. The chi-square tests were carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the Ho: Expected frequency of overall EMB and EOE is equal to the observed frequencies of issue-specific EMB and EOE.

Magnitude Scales

To test this dichotomy, the overall measures of conflict and cooperation were compared with issue-specific measures on the inventory and the cooperative promotion issue. Inclusion of the infra-red and meal-allowance issues would have been redundant because these issues were used as anchors. Moreover, comparing overall measures to the larger issues makes the comparison more stringent.

It was expected to find lower overall perceptions of conflict as compared to the inventory issue and to find higher overall perception of cooperation than the promotion issue (if the overall perceptions were lower they would be higher than overall conflict measures). The latter possibility has already been ruled out by the findings of Table 39 discussed earlier.

As shown in Table 45, the dichotomy premise holds in every case. The change in perceptions, as far as conflict is concerned, moved toward lowered overall conflict perceptions and the lowest effect was $d=1.68$. In the case of perception of cooperation, the issue was perceived as more cooperative than overall relationship except in one case. In all cases, overall cooperation perceptions were stronger than conflict.

TABLE 45
MAGNITUDE ESTIMATES: RESEARCH DESIGN II: PRETEST SAMPLE

TEST FOR DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t p
NUMERICAL METHOD						
HIGH SALIENCE						
Cooperation	12	2.555	0.221	0.214	-0.69*	1.73 0.05
Conflict	12	2.404	0.206			
OVERALL	12	2.589	0.291	0.429	+1.80*	4.39 0.0005
ISSUE	12	1.819	0.532			
LOW SALIENCE						
Cooperation	5	2.273	0.423	0.301	-0.34*	0.54 0.30
Conflict	5	2.170	0.046			
OVERALL	5	2.347	0.244	0.375	+1.92*	3.03 0.01
ISSUE	5	1.627	0.471			
LINE-LENGTH METHOD						
HIGH SALIENCE						
Cooperation	12	2.383	0.200	0.232	+0.39*	0.96 0.15
Conflict	12	2.474	0.260			
OVERALL	12	2.686	0.135	0.547	+2.26*	5.52 0.0005
ISSUE	12	1.452	0.762			
LOW SALIENCE						
Cooperation	5	2.526	0.263	0.343	-0.37*	0.58 0.30
Conflict	5	2.400	0.408			
OVERALL	5	2.493	0.256	0.610	+1.68*	2.65 0.025
ISSUE	5	1.471	0.824			

NOTES: * Indicates that the direction of the effect is correct. The plus and minus signs show the nature of perceptual change.

Rating Scales

The overall perceptions after the administration of the inventory and the promotion issue were compared with issue-specific measures on the same issues in RD-2. It was reasoned before that in the case of perceptions of cooperation two outcomes are acceptable: (i) the overall relations may be rated more cooperative than the promotion issue; or (ii) they may be rated less cooperative than the issue but still cooperative. In rating scales, the second situation would translate to the means of overall cooperation being higher than the mid-point of the scale, 4.0.

As shown in Table 46, the dichotomy premise is strongly supported by the data. The directionality of all perceptual changes is in the hypothesized direction; i.e., overall conflict was perceived as much lower than the conflict over the inventory issue; and, though overall cooperation was consistently lower than the promotion issue, the overall relations continued to be perceived as cooperative (i.e., significantly larger than 4.0). The latter statistical tests are not presented here in a tabular form. The magnitude of effects was large in all cases.

TABLE 46
RATING SCALES: RESEARCH DESIGN II: PRETEST SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t
<u>HIGH SALIENCE</u>						
Cooperation:	12	5.85	0.772	0.607	-1.71	4.20 (0.0005)
: Overall	12	4.81	0.377			
Conflict :	12	5.83	1.135	0.869	+2.14	5.24 (0.0005)
: Overall	12	3.97	0.473			
<u>LOW SALIENCE</u>						
Cooperation:	5	5.58	0.973	0.758	-0.98	1.54 (0.15)
: Overall	5	4.84	0.449			
Conflict :	5	5.20	1.581	1.195	+1.67	2.21 (0.03)
: Overall	5	3.53	0.597			

NOTES: Issue refers to the inventory issue for conflict and the promotion issue for cooperation. Values in parentheses below t-statistics are significance levels for one-sided tests. The signs preceding the d-statistic merely record the direction of change from issue perceptions to overall perceptions and NOT negative or positive effects. All effects were in hypothesized direction.

SUMMARY OF RESULTS

Content Analysis

In general, the content analysis has provided mixed support for the tested hypotheses. However, the antagonism effect was not found. The d-statistic based results for positive incongruity effect and salience effect in RD-2 were also not supportive for antagonism effect. The dichotomy premise and hypothesis eight were strongly supported.

A drawback of this technique (as suggested by Bales' and used here) seems to be the total reliance on frequency of statements for inferences. During coding many strong phrases were encountered (e.g., "sack 'em," "get rid of them," "this is crazy," "how dare they") that were counted as equal to milder negative statements. A system of weighting could considerably improve the robustness of the technique.

The magnitude of effects (d-statistics) computed from the frequency means have been lower than what one would get if d was computed by transforming the chi-square statistics used for EMBs and EOE's. As pointed out earlier in the chapter, the d-statistic based tests were more stringent and in some cases do not corroborate the chi square based results.

Magnitude Scales

The magnitude scales have provided strong support for all the hypotheses tested. The manipulations appear to have worked and the strength of support (as reflected in larger *d*-statistics throughout) was noteworthy. This was particularly heartening because magnitude estimates were obtained by two methods and hence provide a form of validation for the results. Like the content analysis, the fundamental issue of dichotomy between issue-specific and overall perceptions and the premise of cooperative bias (hypothesis eight) were supported.

Rating Scales

The rating scales yielded a mixed set of results. The MANOVA and ANOVA results, in general, tended to suggest that the effect of the independent variables other than incongruity (i.e., salience and antagonism) was very weak, and this was generally corroborated by the comparison of means in the test of hypotheses. Although the magnitude estimates had strongly supported the presence of salience and antagonism effects, and the support from content analysis was generally positive but mixed in significance, the rating scales results were often unsupportive. Pitted against the more supportive findings of content analysis and magnitude estimation, the rating scales results were surprising.

Two possible explanations emerge as plausible. Since incongruity was operationalized by associating higher or lower dollar gains/losses, it is possible that the participants inferred salience as well as incongruity from the dollar-cue. Consequently, the low salience manipulation memo (see Appendix B) was either ignored or too weak to offset the impact of dollar differences. However, it will be noticed from Appendix B that the low salience manipulation memo went on to say that in light of a good financial year, the loss would not adversely affect the overall firm performance. Moreover, this explanation does not explain why salience effect was found in content analysis and magnitude estimation, or why the manipulation check on salience yielded positive results.

The alternative powerful explanation is one of method-artifact. Since the content analysis and the magnitude estimation methods have generally supported the salience effect, the lack of salience effect in the case of rating-scales may have been caused by the artificial restrictions imposed by the response categories (in the present research, seven). As Lodge (1981, page 5) notes:

"[B]ecause of the limited resolution of categories [e]ven when respondents can clearly distinguish between two objects, category scaling forces them ... [to] place items judged to be "more or less" alike into the same category"

The latter might explain the discrepancy of findings between the rating scales and the other two methods. In short, the possibility of a method-artifact being operative cannot be ruled out. However, it was shown even by the rating scales data that the residual perceptions after a series of parallel positive and negative issues tended to be cooperative rather than conflictful (hypothesis eight). The dichotomy premise also found a strong support.

DEMAND ARTIFACTS

As proposed, some space was provided at the end of the final rating questionnaire on experimental experience for the participants to guess the purpose of the experiment. The research hypotheses were not guessed. The most common response was about testing out the magnitude scales. This may have been so because most of the respondents were fairly mystified with this technique when the training exercises were administered. Some other more interesting guesses included studying the impact of issues on bargaining; how teams responded to pressures of making a profit; and how teams responded to an unpredictable business partner.

CHAPTER SUMMARY

The chapter presented the discussion of the methodology employed for testing the operational hypotheses derived from

the selected theoretical hypotheses. Further, the results of the pretest were analyzed using three different methods.

The use of parasimulation appears to have been vindicated by the manipulation checks carried out for the emergence of an "organizational context" in an experimental setting. Inasmuch as the indicators purported to be measuring such a context by earlier researchers (notably, Stern et al. 1973a) suggest, the organizational context was indeed simulated. The background scenarios did not present one firm as being more powerful than the other, thereby removing the confound of power imbalance influencing the outcomes. While the bargaining seems to have influenced both the issue-appraisals and the opinion about the other firm, this makes the context more rather than less relevant and realistic for testing theoretical propositions for channel behavior.

The manipulation check for the salience of the different issues confirmed that the two low incongruities and the two high incongruities were considered significantly different between them but not significantly different among themselves. This check provided the acceptable setting for the test of operational hypothesis eight. Operational hypothesis eight was supported by all three methods with the exception of one effect in the rating-scales data. An even more basic and supportive finding was the demonstrated di-

chotomy between issue-specific and overall perceptions substantially supported by all three methods.

Tested hypotheses stemming from theoretical hypotheses 4.a, 4.b and 5 were attempts at modelling the building blocks of the perceptions of dissatisfaction, conflict and cooperation. The results based on the magnitude estimation methods were supportive of all the tested hypotheses. Content analysis was generally supportive but findings about the antagonism effect were mixed in the sense that EMB based results were directionally correct, but three of four d-statistic based results were not. Rating-scaled data was least supportive. On comparing the results obtained by the three methods, the probability of a method-artifact contaminating the rating-scaled data (i.e., due to the restrictions in the range of response-categories) cannot be ruled out.

Since two of the three methods were generally supportive of the effects anticipated and the manipulation checks had yielded strong positive results, no changes were made as a result of the pretest experience. Chapter V presents the details of the actual experiment and the related results.

Chapter V

RESULTS AND ANALYSES

This chapter begins with a description of the nature of the samples employed for the main experiment. After the discussion of the manipulation checks, the results of the experiment are presented. Since three different methods were employed and four different samples were used, the results were quantitatively integrated at the end to assess the extent to which the findings are homogeneous.

The analytical procedures employed for the experimental data remain unchanged from the procedures followed for the pretest analyses.

SAMPLES FOR THE EXPERIMENT

As discussed in Chapter IV, the primary reliance was to be placed on students for the conduct of the experiment. The industrial sample was proposed as an additional sample for an imperfect replication of the experiment. The nature of the "scenario sample" has already been discussed in the preceding chapter. The data of undergraduate respondents were analyzed separately from the data of graduate students. Consequently, excluding the pretest sample, there were four different data sets available for the test of the chosen hypotheses: undergraduate data, graduate data, industry data,

and scenario data. The breakdown of samples with reference to the research designs is summarized in Table 47.

Undergraduate Sample

Altogether 42 undergraduates took part in the experiment but only two of them belonged to RD-2. The balance of 40 belonged to RD-1. Consequently, no analyses were carried out for the undergraduate data in the context of RD-2 for the testing of the hypotheses. Responses of one respondent in RD-1 were dropped from all analyses because large sections of several questionnaires had been left unanswered. However, respondents of RD-2 have been included in the assessment of the measurement models and the manipulation checks because research design is not a discriminating variable for these exercises. The undergraduates were used in RD-1 purposely. Since the hypotheses pertaining to conflict and cooperation, the key variables in this research, were all tested within RD-2, it was considered better to save RD-2 for the graduates and the industrial sample. However, as more than planned for graduates and industry people were available, some groups of latter were also assigned to RD-1.

All the undergraduates were from Virginia Tech and all of them were of senior class-standing. Six of the participants were enrolled in management courses. All others were enrolled in marketing research, communications, or retailing

TABLE 47
SUMMARY OF SAMPLE DISTRIBUTION IN RESEARCH DESIGNS

SAMPLE	Research Design				TOTAL
	ONE		TWO		
	Salience				
	HIGH	LOW	HIGH	LOW	
Undergraduates	33	6	-	-	39
Graduates	6	13	18	19	56
Industrial	6	2	28	28	64
Scenario	5	3	8	8	24
TOTAL	50	24	54	55	183
Pretest	5	6	12	5	28
TOTAL	55	30	66	60	211

NOTES: The table summarizes the final sample sizes used in analyses. Two undergraduates assigned to RD-2 have not been counted. Seventeen industrial subjects have also been omitted for reasons explained in the text.

courses. The data were collected on June 28, July 5, 6, and 17, 1984. Concurrent sessions were held as the classroom availability had improved considerably. All participants were given extra credit in their courses for agreeing to take part in the study.

Graduate Sample

A total of 56 subjects took part in the experiment and most of them were allocated to RD-2. None of the observations had to be dropped due to invalid responses. Of the 56, thirteen subjects belonged to Appalachian State University (ASU) and the balance were from Virginia Tech.

All the ASU subjects were enrolled in a graduate marketing strategy course. The experiments at ASU were carried out on June 29. Of the 43 Virginia Tech subjects, 17 were enrolled in management courses; and the balance of 26 were taking graduate marketing courses. The experiments involving the graduate students at Virginia Tech were conducted on June 28, July 2, 5, and 17. Multiple concurrent sessions were held at both institutions. All participants at both campuses received extra course credits for volunteering.

A test was performed to see if there were response differences between the various student samples. The test involved a comparison of scores using t-tests on the experimental experience scales used for manipulation checks. No

differences were evident across the three subject pools. Thereafter, the groups were combined and analyzed as a single data-set, the graduate sample.

Industrial Sample

Eighty-one working people enrolled in MBA extension programs of ASU (at Winston-Salem) and Virginia Tech (Northern Virginia Campus) took part in the experiment. Of these, twelve (four teams) could only be exposed to three issues each before agreements were reached. While these observations could have been used for the test of some hypotheses, they were ineligible for the testing of hypothesis eight which required exposure to parallel matching issues. Moreover, for MANOVA procedures, their inclusion would have resulted in missing data points on within subject variables. Consequently, these twelve (all from Northern Virginia Campus) were excluded from all analyses except manipulation checks.

Of the remaining 69 subjects, responses of 4 subjects could not be used because they inadvertently carried away several of the instruments with them. They were later contacted for the instruments. However, the missing instruments could not be retrieved. All four respondents belonged to low salience conditions in RD-1, and were enrolled at the Northern Virginia Campus. Responses of one other subject

(of RD-2 from Winston-Salem group) could not be included because large sections of several issue-questionnaires had been left blank.

Consequently, the usable industry sample was reduced to 64 although all eighty-one responses are used in the manipulation check as the relevant instruments were available for all. Of the remaining 64, six were from the Northern Virginia Campus MBA program enrolled in a graduate finance class. Of the 58 subjects from the Winston-Salem group, nine were part of the graduate marketing strategy class, and the remaining 49 were enrolled in a graduate accounting class.

Scores on the experimental experience scales were compared across the two sub-groups. Since no differences were found by t-tests, all 64 subjects were treated as a single group for all subsequent analyses.

The data were collected on July 3 and 14 at the Northern Virginia campus; and on June 11 and July 16 at the Winston-Salem campus. Concurrent sessions were held, and the participants were given extra course-credits for volunteering at both places.

Scenario Sample

The nature of scenario data has already been explained in Chapter IV. Of the 26 total subjects, only 24 are used for all the analyses pertaining to the hypotheses because

two subjects rated only three issues, and hence, were excluded.

Of the 24 subjects, two were industry-people; eight were undergraduates; and the remaining fourteen were graduates. A comparison of scores on experimental experience could not be made for these sub-groups because the scenario sample did not answer the final questionnaire. However, given the small group sizes and since the objective behind the scenario sample was to provide a backdrop for comparison, the three subject-pools were combined and analyzed as one group.

All the subjects were administered both the training exercises on magnitude estimation seven to ten days prior to actual experiments.

MANIPULATION CHECKS

As in the pretest, the manipulation check was to verify the emergence of an "organizational context;" perceived power imbalances; familiarity with the negotiated product, laser-scalpels; and the impact of bargaining on the appraisal of the issues and inter-firm relations. In addition numerical estimation was used to assess the salience of the four issues used in the experiment. The rationale for these manipulation checks was presented in Chapter IV.

Check for "Organizational Context"

Table 48 documents the manipulation checks (13 scales) for the emergence of an "organizational context." The scores from these scales are compared with the midpoint of the seven-point scale (4.0) and the scores obtained by Stern et al. (1973a) on these scales. The comparisons with 4.0 are carried out using a one-sample, one-sided t-test with an a priori assumption that the obtained scores would be lower than 4.0 (smaller numbers indicate agreement). The comparisons with Stern's scores are carried out using one-sample, two-sided t-tests. Since the scenario data comprises of respondents who did not partake in the experiment, Table 48 only presents scores of the undergraduate, graduate, and the industry samples.

When compared to the score of 4.0 all the scores (except one) were in the hypothesized direction and statistically significant, attesting to a successful simulation of organizational context. A priori it was expected that the "manager had more say in decisions" scale would have the most support, followed, in order, by the "analyst had more say in decisions" scale, and the purchasing agents/sales representatives having more say, respectively. This result did occur in all three samples.

TABLE 48

MANIPULATION CHECKS FOR ORGANIZATIONAL CONTEXT

TOPIC	STERN'S MEAN	UNDERGRADUATES (N = 41)	GRADUATES (N = 56)	INDUSTRIAL (N = 81)
HIERARCHY				
Manager had more say	2.88	*1.39a	*1.46a	*1.80a
Analyst had more say	4.04	*2.83a	*2.57a	*2.70a
PA/SR had more say	5.48	3.54a	*2.96a	**3.52a
FORMALIZATION				
Understood coordination	2.25	*2.42b	*2.18b	*1.99a
Members understood roles	6.10	*2.20a	*2.06a	*1.87a
FUNCTIONAL DIFFERENTIATION				
Unique functions	2.45	*2.20b	*2.33b	*2.14a
Division of labor	5.20	*2.49a	*2.52a	*2.46a
Functions clear	6.05	*2.27a	*1.83a	*1.99a
EVALUATION OF COMMUNICATIONS				
Understood firm's working	3.00	*3.35b	*3.07b	*2.87b
Understood intra-firm memos	5.20	*3.07a	*3.09a	*2.58a
GROUP COHESIVENESS				
Within team cooperation	1.90	*1.54a	*1.67a	*1.52a
Enjoyed team members	2.40	*1.44a	*1.72a	*1.52a
Within interdependence	3.05	*2.88b	*2.86b	*1.30a

NOTES: The table presents the mean scores for scales. PA/SR means Purchasing Agent or Sales Representative.

a: significant at p of 0.05 or lower as compared to Stern

b: not significant at p of 0.10 as compared to Stern

*: significant at p of 0.005 or lower as compared to 4.0

** : significant at p of 0.10 as compared to 4.0

No asterix means not significant at p of 0.10 as compared to 4.0

The scores on these thirteen scales for all three samples compare favorably with the obtained scores by Stern in most cases and are usually significantly better. Some scores were not significantly different from Stern's, but all scores were in the expected direction.

Other Manipulation Checks on Experimental Experience

Table 49 presents the results of the remaining manipulation checks using the rating scales methods. These results were compared to the scale midpoint, 4.0, using one-sample, one-sided t-tests. All three samples strongly rejected the possibility of the other firm being more powerful, and disclaimed familiarity with laser-scalpels. While the undergraduate students felt that the other firm was antagonistic at bargaining, the graduate and industry samples did not think so. The latter opinion is consistent with the pretest results which indicated that antagonism at bargaining was not perceived. As a result, the undergraduate sample may have inflated opinions about the conflict in inter-firm relationships. This may have occurred because all the subjects, except two, belonged to RD-1 where they were exposed only to negative issues.

There was general agreement that the bargaining influenced the appraisals of issues and inter-firm relations. In the industry sample, the mean score of the scale "bargaining

TABLE 49
OTHER MANIPULATION CHECKS ON EXPERIMENTAL EXPERIENCE

TOPIC	UNDERGRADUATES (N = 41)	GRADUATES (N = 56)	INDUSTRIAL (N = 81)
POWER IMBALANCE			
Other firm better at negotiations	5.22a	5.34a	5.65a
Other firm more powerful	4.54a	4.98a	5.21a
PRODUCT FAMILIARITY			
Familiar with laser-scalpels	5.05a	4.89a	5.11a
ANTAGONISM			
Other firm antagonistic at bargaining	4.32a	4.02b	4.10b
INFLUENCE OF BARGAINING			
Influenced issue appraisals	3.02a	3.55a	3.60a
Influenced appraisals of other firm	2.80a	3.39a	3.91b
REALISM			
Bargaining was life-like	4.14b	3.02a	4.00b

NOTES: The table presents the mean scores for the scales. The significance values as coded (explained below) refer to t-tests with the base-score of 4.0.

a: significant at p of 0.05 or lower.

b: not significant at p of 0.10.

influenced the other firm's appraisal" was not significantly different from 4.0 although the direction of the mean was correct. As pointed out in Chapter IV, the bargaining influencing the appraisals makes the experimental context closer to the channel context. Finally, regarding the realism of the bargaining task resembling the real-life, only the graduate data was supportive. However, other two samples were merely indifferent on this issue and did not reject the suggestion. The industry mean was exactly 4.0. Several undergraduates in the pretest had pointed out that they had no basis for judging this issue. In summary, the results of these manipulation check scales were also generally supportive.

Manipulation Check for Salience

Table 50 documents the results of the manipulation checks on the salience of the different issues. Since the undergraduate data has been analyzed only for RD-1, their ratings on the meal-allowance and the promotion issue were not available. Consistent with the pretest, all four samples indicate that they considered the two low incongruity issues to be equivalent in salience and the two high incongruity also to be equivalent. However, the high and low incongruity issues were rated significantly different from each other affirming the manipulation of salience.

TABLE 50
MANIPULATION CHECK FOR SALIENCE

SAMPLE	UNDERGRADUATES (N = 41)		GRADUATES (N = 56)		INDUSTRIAL (N = 81)		SCENARIO (N = 26)	
ISSUE	MEAN	MEAN*	MEAN	MEAN*	MEAN	MEAN*	MEAN	MEAN*
A. Infra-Red (Anchor)	100.00	2.00	100.00	2.00	100.00	2.00	100.00	2.00
B. Meal Allowance	NA	NA	104.71	2.02	105.68	2.02	114.81	2.06
C. Inventory	311.17	2.49	323.59	2.51	450.82	2.65	389.04	2.59
D. Cooperative Promotion	NA	NA	407.38	2.61	438.53	2.64	457.09	2.66
OVERALL RELATIONS	912.01	2.96	1380.38	3.14	1442.11	3.14	1995.26	3.30
Comparison of A and B	t = NA		t = 0.667 (p = 0.600)		t = 0.156 (p = 0.800)		t = 0.968 (p = 0.350)	
Comparison of C and D	t = NA		t = 0.669 (p = 0.600)		t = 0.040 (p = 0.900)		t = 0.242 (p = 0.700)	
Comparison of Average of A and B with Average of C and D	t = 11.14 (p = 0.001)		t = 3.940 (p = 0.001)		t = 3.200 (p = 0.002)		t = 2.660 (p = 0.010)	
Comparison of Overall Relations with Largest Issue-Mean	t = 1.32 (p = 0.10)		t = 1.31 (p = 0.10)		t = 1.30 (p = 0.10)		t = 1.94 (p = 0.05)	

NOTES: All comparisons were carried out using the log-transformed means indicated by an asterisk (*). Comparisons between issue-means were carried out using two-sided t-tests. Comparisons between the mean of overall relations with the largest issue-mean were made using one-sided t-tests; the a priori expectation was to find the mean of overall relations to be larger than any issue means. Since the undergraduates were only analyzed in RD-1, they did not appraise the meal-allowance and the promotion issues. This has been indicated by NA (not applicable).

The overall relationships were consistently rated far more important: in raw-scores, about four times more than the high incongruity issues. The scenario sample rated the overall relations to be about four-and-half times more salient than high incongruity issues. The discrepancy is easily explained. Previously discussed manipulation checks had shown that the bargaining experience had influenced the appraisal of the inter-firm relations. This diluting effect was absent in the case of scenario sample.

In summary, the manipulation checks suggest that the premeditated effects were successfully induced in the course of the experiments. Particularly noteworthy is the generally consistent nature of the findings not only among the four samples used in the main experiment but also when compared to the pretest sample. This confirms that the decision of not altering any experimental procedures on manipulations between the pretest and the main experiment was justifiable.

PRELIMINARY PROCEDURES

This section discusses the tests carried out on the measurement scales to assess their reliability and unidimensionality; and in the case of magnitude scales, the test for ratio judgments. The inter-trait correlations between the dependent variables are also presented.

Content Analysis

As explained in Chapter IV, Bales' schema does not distinguish between dissatisfaction and conflict or between satisfaction and cooperation. Consequently, the dependent variables for content analysis are dissatisfaction/conflict and satisfaction/cooperation. Following Stern et al. (1975), and Hunger and Stern (1976), EMB and EOE indices were computed and tested by the one-sample chi-square test for nominal data (Siegel 1956, page 42). To test the magnitude of effects, the d-statistics were also computed following t-tests on frequency means of negative and positive statements. As reported earlier, the inter-judge reliability for the coding task was 0.9773 (Table 15; Chapter IV). The method of analysis followed was described in Chapter IV.

Magnitude Scales

Test For Ratio Judgments

As mentioned in Chapter IV, a customary precondition to using the responses to magnitude scales is to establish that the respondents are capable of making ratio judgments. This assumption was investigated by analyzing the training exercise entailing the matching of numbers to line lengths. The obtained scores were regressed on the actual line-lengths to compute the regression exponents. A priori the expectation was to obtain an exponent close to 1.0 since the predicted

exponent for numeric estimates of metric stimuli like visual length is unity (Lodge 1981).

Table 51 shows the regression coefficients and the corresponding exponents for all four data sets. The computed exponents range from 1.01 to 1.02 and are within the acceptable range of aberrations caused by "noise" in the data (Lodge 1981, page 10). Consequently, it can be confidently surmised that the participants were capable of making ratio judgments.

The Nature of Data

Each participant responded to two instruments: one constructed using the numeric system and the second employing the length allotment system (Appendix C). The dependent variables were issue-specific perceptions of dissatisfaction/satisfaction and conflict, and the overall perceptions of conflict in RD-1. In RD-2, two additional dependent variables, issue-specific and overall perceptions of cooperation, were measured. The magnitude scales were administered at the end of the experiment.

The infra-red and the meal-allowance issues were used as anchor issues for the negative and positive scales respectively. As explained in Chapter IV, the nature of data did not permit the use of MANOVA.

TABLE 51
 TEST FOR RATIO JUDGMENTS : NUMERICAL ESTIMATION
 (Line Exercise)

SAMPLE	REGRESSION COEFFICIENT	REGRESSION EXPONENT
Undergraduates	0.00850645	1.01
Graduates	0.00930507	1.02
Industrial	0.00830919	1.01
Scenario	0.00769935	1.01

NOTES: The regression coefficients were computed by regressing the numerical estimates of line-lengths on the actual line-lengths. The line exercise was taken from Lodge (1981).

The descriptors of dissatisfaction/satisfaction, conflict and cooperation are exactly the same as those used in the rating scales discussed below. Since the measurement models resulting from the retained indicators were unidimensional and highly reliable, composite indices were first created by averaging the scores across reliable indicators. Subsequent data analyses used these indices as new variables and all discussions allude to these composite variables.

Rating Scales

Measurement Models

Table 52 presents the indicators retained for the experiment after the pretest. Five indicators were used for each of the constructs of conflict and cooperation, while four indicators were retained for the dissatisfaction/satisfaction variable. The issue-specific scales on satisfaction/dissatisfaction were administered with each issue, while the issue-specific scales on conflict and cooperation were administered only in negative and positive issues, respectively.

The scales on overall perceptions of dissatisfaction/satisfaction, conflict and cooperation were administered with every issue. The indicators used in the overall scales are exactly the same as those for issue-specific measures. The overall dissatisfaction/satisfaction measures have not

TABLE 52

INDICATORS USED IN THE FINAL EXPERIMENTS: RATING SCALES

THEORETICAL VARIABLE: SATISFACTION/DISSATISFACTION

INDICATORS

- #1 Considerate (1)
- 2 Supportive (2)
- 4 Discouraging (3)
- 5 Satisfying (4)

THEORETICAL VARIABLE: CONFLICT

INDICATORS

- #3 Threatening (10)
- 6 Frustrating (5)
- 7 Antagonistic (8)
- 8 Conflictful (11)
- 9 Tense (13)

THEORETICAL VARIABLE: COOPERATION

INDICATORS

- #3 Work Together (9)
- 6 Balanced Relations (7)
- 7 Mutually Beneficial Relations (12)
- 9 Harmonious Relations (6)
- 10 Cooperative (14)

NOTES: # Represents the order of presentation in issue-specific scales.
 () Represents the order of presentation in overall scales.

been used in analyses as they were not relevant to the research hypotheses.

Reliability Assessment. As in the pretest analyses, the reliability estimation employed Cronbach's alpha and was computed by the PACKAGE program. The reliabilities of all three constructs were assessed eight times for each sample: four times in the context of the issue-specific scales and four times in the context of the overall scales. The one exception to this was the undergraduate sample where there were only two subjects in RD-2, and which has not been analyzed. Since the positive issues were not appraised in RD-1, no reliability could be assessed for cooperation scales for the undergraduates. Table 53 presents the reliabilities.

One indicator of satisfaction/dissatisfaction (i.e., discouraging) was dropped from all analyses for unreliability reasons. No indicators had to be dropped for conflict and cooperation. The table presents the reliabilities after the removal of the poor indicator. Except in two instances the reliabilities were very high and ranged from 0.75 to 0.95. The exceptions occurred in the undergraduate and the industry samples where one assessment of dissatisfaction/satisfaction yielded alpha values of 0.65 and 0.63, respectively. The reliabilities, in general, tended to be higher

TABLE 53
RATING SCALES: RELIABILITY
CRONBACH'S ALPHA

ISSUE-SPECIFIC MEASURES	Number of Indicators	Undergraduate Sample	Graduate Sample	Industrial Sample	Scenario Sample
DISSATISFACTION					
Measured Under	3	0.75	0.78	0.63	0.82
Infra-Red Issue	3	0.65	0.83	0.75	0.79
Inventory Issue	3	N.A.	0.84	0.83	0.87
Meal-Allowance Issue	3	N.A.	0.84	0.85	0.84
Promotion Issue					
CONFLICT					
Measured Under	5	0.75	0.82	0.79	0.87
Infra-Red Issue	5	0.75	0.81	0.85	0.86
Inventory Issue					
COOPERATION					
Measured Under	5	N.A.	0.88	0.78	0.80
Meal Allowance Issue	5	N.A.	0.89	0.95	0.76
Promotion Issue					
OVERALL MEASURES					
CONFLICT					
Measured Under	5	0.86	0.95	0.93	0.94
Infra-Red Issue	5	0.86	0.92	0.95	0.91
Inventory Issue	5	N.A.	0.89	0.81	0.83
Meal Allowance Issue	5	N.A.	0.87	0.94	0.82
Promotion Issue					
COOPERATION					
Measured Under	5	0.86	0.92	0.84	0.93
Infra-Red Issue	5	0.90	0.89	0.93	0.92
Inventory Issue	5	N.A.	0.91	0.86	0.83
Meal Allowance Issue	5	N.A.	0.78	0.91	0.77
Promotion Issue					

NOTES: The reliability coefficients have been taken from the PACKAGE outputs. N.A. stands for Not Applicable and appears for the undergraduate sample for the positive issues since they were not analyzed in RD-2.

for overall scales. Fourteen of fifteen coefficients higher than 0.90 were found in the overall scales. No other patterns were discernible.

Unidimensionality. As discussed in Chapter IV, the unidimensionality checks were carried out by using the PACKAGE program and the results are presented in Appendix D.

The nature of results parallels the pretest analyses: (i) the factor inter-correlations and loading matrices indicate that the indicators inter-correlate by about the same magnitude attesting to the "flatness" criterion; (ii) the similarity coefficients (ϕ) are high and typically greater than 0.80 strongly suggesting externally consistent measurement models; and finally (iii) the matrices of partial correlations show small residual values lending credence to internal consistency of the measurement models.

Inter-Trait Correlations

Table 54 presents the correlations between the constructs of satisfaction, cooperation, and conflict. All the correlations are in the expected direction and each of them was significant beyond the 0.0005 level. The range of these inter-trait correlations is considerable (absolute values range from 0.32 to 0.99). The smallest correlation (-0.32) between satisfaction and conflict was found in the undergraduate sample. In general, the largest coefficients were

TABLE 54
RATING SCALES: INTER-TRAIT CORRELATIONS

SAMPLES	UNDERGRADUATES	GRADUATES	INDUSTRIAL	SCENARIO
ISSUE-SPECIFIC MEASURES				
SATISFACTION-CONFLICT				
Under: Infra-Red Issue	-0.32	-0.64	-0.67	-0.63
Inventory Issue	-0.65	-0.64	-0.83	-0.51
SATISFACTION-COOPERATION				
Under: Meal-Allowance Issue	N.A.	0.83	0.57	0.72
Promotion Issue	N.A.	0.67	0.82	0.80
OVERALL MEASURES				
CONFLICT-COOPERATION				
UNDER: Infra-Red Issue	-0.90	-0.98	-0.99	-0.93
Inventory Issue	-0.82	-0.71	-0.92	-0.97
Meal Allowance Issue	N.A.	-0.97	-0.79	-0.97
Promotion Issue	N.A.	-0.82	-0.90	-0.99

NOTES: These correlations have been taken from the PACKAGE outputs. N.A. stands for Not Applicable and appears for the undergraduate sample for positive measures since they were not analyzed in RD-2.

found between the constructs conflict and cooperation (range: -0.71 to -0.99) in overall measures attesting that overall perceptions of conflict and cooperation could not coexist. A similar effect was found in the pretest sample. No patterns were discernible across samples.

Preliminary MANOVA Procedures

Since the dependent variables were correlated, MANOVA procedures were first carried out to examine the joint effect of independent variables on the dependent variables. Because the indicators were reliable and unidimensional they were averaged to create composite indices of dissatisfaction/satisfaction, conflict and cooperation before the MANOVA runs. All subsequent discussions pertain to these composite indices.

As detailed in Chapter IV, RD-1 yielded three dependent variables: issue-specific perceptions of dissatisfaction and conflict; and overall perception of conflict. All three variables were analyzed in a single MANOVA model. In RD-2, two additional dependent variables were included: issue-specific and overall perceptions of cooperation. Of these five variables, overall cooperation, overall conflict and issue-specific dissatisfaction were analyzed within a single model while two separate univariate F-tests were run on issue-specific conflict and cooperation.

TEST OF HYPOTHESES

The results of the MANOVA and ANOVA procedures, only possible for the rating scales data (as discussed in Chapter IV), are presented first. Thereafter, the results are organized by hypotheses. Under each hypothesis findings by different methods are discussed. All summary statistics are presented in Appendix E.

MANOVA Results for Research Design One

Tables 55 and 56 report on the MANOVA results and the accompanying univariate F-tests on individual dependent measures, respectively. As shown in Table 55, the incongruity effect in the MANOVA analysis was statistically significant for the undergraduate and the industry data. The scenario data effect was significant at 0.13, while the graduate data effect was not statistically insignificant ($p=0.89$). The salience effect was significant only in the scenario sample ($p=0.0770$). The interaction effects were supported for the undergraduate and the graduate samples at the 0.10 level. Consequently, at the 0.10 level, only the undergraduate data had two significant effects (incongruity and interaction); the graduate, industry and the scenario samples had one significant effect each: interaction, incongruity and salience, respectively. In the pretest data (Table 22; Chapter IV), both the incongruity and salience were significant at

TABLE 55
MANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN I

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Issue-Specific Conflict, Overall Conflict			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCY	INTERACTION
UNDERGRADUATE SAMPLE			
F(3,35)	10.80	1.11	3.21
p for F	0.0001	0.3569	0.0346
GRADUATE SAMPLE			
F(3,15)	0.21	0.16	4.53
p for F	0.8909	0.9244	0.0188
INDUSTRIAL SAMPLE			
F(3,4)	12.69	0.42	0.34
p for F	0.0164	0.7499	0.7981
SCENARIO SAMPLE			
F(3,4)	3.47	5.00	1.79
p for F	0.1301	0.0770	0.2876

NOTE: F refers to Wilks' Lambda converted to F.

the 0.10 level. This result was not replicated within the same data-set in any of the experimental samples.

In the univariate ANOVA results (Table 56), the incongruity effect was significant for issue-specific dissatisfaction at $\alpha=0.10$ for the undergraduate and the scenario samples; for issue-specific conflict for the undergraduate and industry samples; and for overall conflict in all but the graduate data-set. The salience effect was significant in the undergraduate sample for only issue-specific dissatisfaction. The interaction effect was significant at 0.10 level for the graduate and the industry samples for two dependent variables of issue-specific conflict and overall conflict; and in the undergraduate data for the issue-specific dissatisfaction measures.

MANOVA Results for Research Design Two

Tables 57 and 58 report the MANOVA results (for overall conflict and cooperation, and issue-specific dissatisfaction) along with the corresponding univariate ANOVA results, respectively. Tables 59 and 60 present the F-test results for issue-specific conflict and cooperation, respectively.

None of the MANOVA effects were significant at the 0.10 level for any of the three samples. Univariate F-tests on the variables modelled under MANOVA largely corroborate the multivariate findings. The incongruity effect was signifi-

TABLE 56

UNIVARIATE ANOVA SUMMARIES FOR MANOVA RESULTS: RATING SCALES
RESEARCH DESIGN I

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Issue-Specific Conflict, Overall Conflict			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCE	INTERACTION
UNDERGRADUATE SAMPLE			
Dissatisfaction (I.S.) F p for F	2.83 0.1012	3.61 0.0812	8.56 0.0058
Conflict (I.S.) F p for F	8.80 0.0053	0.13 0.7249	0.02 0.8823
Conflict (O) F p for F	30.47 0.0001	0.18 0.6772	1.10 0.3006
GRADUATE SAMPLE			
Dissatisfaction (I.S.) F p for F	0.07 0.7894	0.30 0.5925	1.13 0.3034
Conflict (I.S.) F p for F	0.60 0.4476	0.14 0.7177	6.07 0.0247
Conflict (O) F p for F	0.08 0.7777	0.37 0.5505	9.25 0.0074

NOTES: (I.S.) stands for Issue-Specific; and (O) stands for Overall.

TABLE 56 (Continued)
UNIVARIATE ANOVA SUMMARIES FOR MANOVA RESULTS: RATING SCALES
RESEARCH DESIGN I

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Issue-Specific Conflict, Overall Conflict			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCE	INTERACTION
INDUSTRIAL SAMPLE			
Dissatisfaction (I.S.) F p for F	2.93 0.1380	0.01 0.9738	1.25 0.3071
Conflict (I.S.) F p for F	11.28 0.0153	0.27 0.6189	1.12 0.3314
Conflict (O) F p for F	9.70 0.0207	0.03 0.8748	0.29 0.6071
SCENARIO SAMPLE			
Dissatisfaction (I.S.) F p for F	14.88 0.0084	0.48 0.5127	2.79 0.1457
Conflict (I.S.) F p for F	1.04 0.3462	0.07 0.7966	5.27 0.0614
Conflict (O) F p for F	5.53 0.0570	0.69 0.4373	6.98 0.0384

NOTES: (I.S.) stands for Issue-Specific; and (O) stands for Overall.

TABLE 57
MANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN II

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Overall Conflict, Overall Cooperation			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCE	INTERACTION
GRADUATE SAMPLE			
F(3,33)	0.28	2.04	0.14
p for F	0.8424	0.1272	0.9367
INDUSTRIAL SAMPLE			
F(3,52)	1.87	1.48	0.23
p for F	0.1446	0.2303	0.8756
SCENARIO SAMPLE			
F(3,12)	0.95	0.35	0.60
p for F	0.4494	0.7897	0.6256

NOTE: F refers to Wilks' Lambda converted to F.

TABLE 58
UNIVARIATE ANOVA SUMMARIES FOR MANOVA RESULTS: RATING SCALES
RESEARCH DESIGN II

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Overall Conflict, Overall Cooperation			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCE	INTERACTION
GRADUATE SAMPLE			
Dissatisfaction (I.S.) F p for F	0.75 0.3924	1.47 0.2328	0.35 0.5585
Conflict (O) F p for F	0.01 0.9406	0.01 0.9864	0.01 0.9407
Cooperation (O) F p for F	0.01 0.9823	0.21 0.6504	0.01 0.9823
INDUSTRIAL SAMPLE			
Dissatisfaction (I.S.) F p for F	4.45 0.0396	0.10 0.7565	0.01 0.9725
Conflict (O) F p for F	3.31 0.0744	0.63 0.4298	0.13 0.7174
Cooperation (O) F p for F	4.41 0.0405	2.54 0.1171	0.02 0.9426

NOTES: (I.S.) stands for Issue-Specific; and (O) stands for Overall.

TABLE 58 (Continued)
 UNIVARIATE ANOVA SUMMARIES FOR MANOVA RESULTS: RATING SCALES
 RESEARCH DESIGN II

MODEL: Dependent Variables: Issue-Specific Dissatisfaction, Overall Conflict, Overall Cooperation		SOURCE OF VARIATION		
		INCONGRUITY	SALIENCE	INTERACTION
SCENARIO SAMPLE				
Dissatisfaction (I.S.)				
F		1.69	1.13	1.73
p for F		0.2145	0.3065	0.2091
Conflict (O)				
F		3.30	0.17	1.91
p for F		0.0909	0.6850	0.1886
Cooperation (O)				
F		2.81	0.33	1.49
p for F		0.1161	0.5727	0.2418
NOTES: (I.S.) stands for Issue-Specific; and (O) stands for Overall.				

cant at 0.10 level for all three dependent variables only in the industry sample. The incongruity effect was also significant for overall conflict for the scenario data-set (Table 58). No other effects were significant. No pattern of effects was noticeable across the three dependent variables.

In the univariate F-tests for issue-conflict (Table 59) and cooperation (Table 60), the incongruity effect was significant only in the industrial sample for issue-specific conflict ($p=0.0169$); and the salience effect was significant only for the graduate data for the same dependent variable (Table 59); other effects were not statistically significant.

Multiple Comparisons

For reasons cited earlier in Chapter IV, subsequent analyses were continued despite the insignificance of several MANOVA and ANOVA results. For the MANOVA model, the Student-Newman-Keuls tests were carried out controlling the experimentwise error rate at 0.10; and subsequently at $\alpha=0.05$. As shown in Table 61, none of the incongruity and salience effects was significant at the 0.10 level for the graduate and the scenario samples. In the industrial sample, incongruity and salience effects were significant only for overall cooperation at 0.10 level. An iteration with $\alpha=0.05$ revealed that the same effects continued to be significant.

TABLE 59
ANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN II

MODEL: Dependent Variable: Issue-Specific Conflict			
	SOURCE OF VARIATION		
	INCONGRUITY	SALIENCE	INTERACTION
GRADUATE SAMPLE			
F(1,35)	0.40	3.13	0.62
p for F	0.5337	0.0858	0.4374
INDUSTRIAL SAMPLE			
F(1,54)	6.08	0.36	0.09
p for F	0.0169	0.5535	0.7672
SCENARIO SAMPLE			
F(1,14)	0.13	1.64	0.01
p for F	0.7277	0.2215	0.9150

TABLE 60

ANOVA SUMMARIES: RATING SCALES
RESEARCH DESIGN II

MODEL: Dependent Variable: Issue-Specific Cooperation			
SOURCE OF VARIATION			
	INCONGRUITY	SALIENCE	INTERACTION
GRADUATE SAMPLE			
F(1,35)	0.68	0.01	0.86
p for F	0.4145	0.9887	0.3611
INDUSTRIAL SAMPLE			
F(1,54)	0.59	1.40	0.85
p for F	0.4459	0.2423	0.3593
SCENARIO SAMPLE			
F(1,14)	0.01	0.02	1.56
p for F	0.9535	0.8919	0.2317

TABLE 61
STUDENT-NEUMAN-KEULS TESTS: RESEARCH DESIGN II
GRADUATE SAMPLE

DEPENDENT VARIABLES: ISSUE SPECIFIC DISSATISFACTION, OVERALL CONFLICT, OVERALL COOPERATION				
<u>INCONGRUITY EFFECT</u>				
Dependent Variable	Incongruity Level	Means	Mean Square Error	p-value*
Dissatisfaction (I.S)	High	3.5631	1.350350	N.S.
Conflict (O)	Low	3.6036		
	High	4.6365	0.628649	N.S.
Cooperation (O)	Low	4.6446		
	High	3.3243	0.530180	N.S.
	Low	3.3216		
<u>SALIENCE EFFECT</u>				
Dependent Variable	Salience Level	Means	Mean Square Error	p-value*
Dissatisfaction (I.S)	High	3.4745	1.350350	N.S.
Conflict (O)	Low	3.6864		
	High	4.6389	0.628649	N.S.
Cooperation (O)	Low	4.6421		
	High	3.3639	0.530180	N.S.
	Low	3.2842		

NOTES: * Refers to experiment-wise error rate of 0.10. (I.S.) Stands for Issue-Specific; and (O) Stands for Overall.

TABLE 61 (Continued)
STUDENT-NEUMAN-KEULS TESTS: RESEARCH DESIGN II
INDUSTRIAL SAMPLE

DEPENDENT VARIABLES: ISSUE SPECIFIC DISSATISFACTION, OVERALL CONFLICT, OVERALL COOPERATION						
<u>INCONGRUITY EFFECT</u>						
Dependent	Incongruity Level	Means	Square Error	Mean	Variable p-value*	
Dissatisfaction (I.S)	High	3.6845	1.413110		N.S.	
	Low	3.5937	Conflict (O)			High
	4.5732	0.809018	N.S.			
	Low	4.4170	Cooperation (O)			High
	3.5134	0.732441	0.05			
	Low	3.3062				
<u>SALIENCE EFFECT</u>						
Dependent	Salience Level	Means	Square Error	Mean	Variable p-value*	
Dissatisfaction (I.S)	High	3.6176	1.413110		N.S.	
	Low	3.6607	Conflict (O)			High
	4.5661	0.809018	N.S.			
	Low	4.4241	Cooperation (O)			High
	3.5411	0.732441	0.05			
	Low	3.2786				

NOTES: * Refers to experiment-wise error rate of 0.10. (I.S.) Stands for Issue-Specific; and (O) Stands for Overall.

TABLE 61 (Continued)
STUDENT-NEUMAN-KEULS TESTS: RESEARCH DESIGN II
SCENARIO SAMPLE

DEPENDENT VARIABLES: ISSUE SPECIFIC DISSATISFACTION, OVERALL CONFLICT, OVERALL COOPERATION						
<u>INCONGRUITY EFFECT</u>						
Dependent	Incongruity Level	Means	Square Error	Mean	Variable p-value*	
Dissatisfaction (I.S)	High	3.4635	1.722220		N.S.	
	Low	3.4010	Conflict (0)			High
	4.5906	0.646562	N.S.			
	Low	4.4062	Cooperation (0)			High
	3.4750	0.723959	N.S.			
	Low	3.2375				
<u>SALIENCE EFFECT</u>						
Dependent	Salience Level	Means	Square Error	Mean	Variable p-value*	
Dissatisfaction (I.S)	High	3.5833	1.722220		N.S.	
	Low	3.3148	Conflict (0)			High
	4.5361	0.646562	N.S.			
	Low	4.4500	Cooperation (0)			High
	3.4321	0.723959	N.S.			
	Low	3.2972				

NOTES: * Refers to experiment-wise error rate of 0.10. (I.S.) Stands for Issue-Specific; and (0) Stands for Overall.

Test of Hypothesis Four (a)

Three operational hypotheses were derived from the theoretical statement of hypothesis four (a) which postulated that higher negative incongruity (H4.a.1) and higher salience (H4.a.2) will cause greater dissatisfaction. A synergistic interaction of negative incongruity and salience was also predicted (H4.a.3).

Content Analysis

Table 62 presents the content analysis results based on the chi-square tests on EMBs for hypothesis four (a). Tables 63, 64, and 65 present the results for H4.a.1, H4.a.2, and H4.a.3, respectively, using t-tests on the frequency means of content data. The effect size estimates (in d statistics) are also included in the latter three tables (Appendix E contains the summary statistics tables).

Incongruity effect (H4.a.1) as tested by EMB was supported in all data sets with the exception of one of the two comparisons in the graduate data where the EMB in a low incongruity cell was higher than the EMB in a high incongruity cell (Table 62). The salience effect (H4.a.2) was found to hold in all EMB-based comparisons except in the graduate sample where one of the two comparisons show the EMB in a low salience cell to be higher than a high salience cell.

TABLE 62

CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB)
 INFERENCES ABOUT HYPOTHESIS FOUR (a)
 RESEARCH DESIGN I

SAMPLES	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
UNDERGRADUATES				
EMB %	87.37	76.47	75.82	75.00
Chi-Square Statistic	55.86	28.02	26.66	25.00
p for Chi-Square	0.0000	0.0000	0.0000	0.0000
Sample Size	33	6	33	6
GRADUATES				
EMB %	69.23	59.26	57.14	70.00
Chi-Square Statistic	14.80	3.42	2.04	16.00
p for Chi-Square	0.0001	0.0644	0.1532	0.0000
Sample Size	6	13	6	13
INDUSTRIAL				
EMB %	66.67	64.29	61.54	57.14
Chi-Square Statistic	11.12	8.16	5.32	2.04
p for Chi-Square	0.0008	0.0043	0.0210	0.1532
Sample Size	6	2	6	2
SCENARIO				
EMB %	70.00	66.67	66.67	57.14
Chi-Square Statistic	16.00	11.12	11.12	2.04
p for Chi-Square	0.0000	0.0008	0.0008	0.1532
Sample Size	5	3	5	3

NOTES: In RD-1, antagonism was not manipulated. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected frequency is 50%. All chi-square statistics have one degree of freedom. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

The interaction effect (H4.a.3) was demonstrated in all samples by the EMB comparisons except in the graduate data where one of three inequalities did not hold. This result was expected in light of the two unsupportive comparisons discussed earlier.

The d statistics support an incongruity effect in all cases, although some of the effect sizes are small (Table 63). Except the scenario data where the marginal mean of low salience condition was higher than the marginal mean of high salience condition, the d -statistics support the salience effect. Though the latter resulted in a negative effect, the t -test indicated that the difference in the marginal means was not significant at 0.10 level (Table 64). The d -statistics show that the interaction effect was present and directionally correct in all comparisons across the four samples (Table 65). However, some t -tests were not statistically significant at $p=0.10$.

Curiously, among the samples, the average magnitude of interaction effect was the largest for the graduate data despite the EMB results discussed earlier. This discrepancy between the EMB and d statistic results can be best explained by referring to the manner in which the EMB indices are constructed. Since EMB represents the proportion of negative statements as compared to the total statements writ-

TABLE 63
CONTENT ANALYSIS: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION/CONFLICT
OPERATIONAL HYPOTHESIS 4.a.1
RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH NEGATIVE INCONGRUITY				
Marginal Mean	2.47	1.31	1.87	1.37
Standard Deviation	0.70	0.90	0.48	0.53
Sample Size	39	19	8	8
LOW NEGATIVE INCONGRUITY				
Marginal Mean	2.08	1.16	1.25	1.25
Standard Deviation	0.71	0.26	0.17	0.72
Sample Size	39	19	8	8
EFFECT SIZE (d)	0.55	0.23	1.72	0.19
t-STATISTIC	2.44	2.57	2.42	0.38
p FOR t-STATISTIC	0.025	0.01	0.025	0.50

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

TABLE 64
 CONTENT ANALYSIS: TEST OF SALIENCE EFFECT ON DISSATISFACTION/CONFLICT
 OPERATIONAL HYPOTHESIS 4.a.2
 RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH SALIENCE				
Marginal Mean	2.30	1.41	1.67	1.30
Standard Deviation	0.73	0.51	0.40	0.38
Sample Size	33	6	6	5
LOW SALIENCE				
Marginal Mean	2.08	1.16	1.25	1.33
Standard Deviation	0.52	0.72	0.00	0.96
Sample Size	6	13	2	3
EFFECT SIZE (d)	0.31	0.38	3.15	-0.05
t-STATISTIC	0.70	0.77	3.84	0.06
p FOR t-STATISTIC	0.25	0.20	0.005	0.80

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

TABLE 65
CONTENT ANALYSIS: TEST OF INTERACTION EFFECT ON DISSATISFACTION/CONFLICT
OPERATIONAL HYPOTHESIS 4.a.3
RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES	GRADUATES	INDUSTRIAL	SCENARIO
CELLS A AND D				
Effect Size (d)	0.72	1.27	2.07	0.10
t-Statistic	1.63 (37)	2.57 (17)	2.52 (6)	0.14 (6)
p for t-Statistic	0.05	0.01	0.025	0.50
CELLS A AND B				
Effect Size (d)	0.59	0.33	1.67	0.53
t-Statistic	2.40 (64)	0.58 (10)	2.90 (10)	0.84 (8)
p for t-Statistic	0.01	0.25	0.01	0.20
CELLS A AND C				
Effect Size (d)	0.50	0.30	1.04	0.13
t-Statistic	1.13 (37)	0.61 (17)	1.27 (6)	0.18 (6)
p for t-Statistic	0.15	0.25	0.15	0.70

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 7 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

ten, this index can become high if the total number of statements is small. On the other hand, as discussed in Chapter IV, the d statistics presented in the context of hypothesis four (a) were computed by a comparison of mean frequencies of negative statements in different cells, and as such, are not subject to an inflationary effect because of small frequencies of positive statements.

In summary, considering the four samples together, content analysis has provided support for all three hypotheses even though they were not always statistically significant. No pattern of differences is evident between the scenario data and the other groups that were exposed to the bargaining exercise.

Magnitude Scales

Tables 66, 67, and 68 present the results for H4.a.1, H4.a.2 and H4.a.3, respectively. Across all four samples, the incongruity effect on dissatisfaction was supported using numerical estimation (Table 66). The line-length estimation also consistently supported this effect although the magnitude of effects was smaller. The incongruity effect on conflict was also about equally strong across both methods. Unlike dissatisfaction, the magnitude of effects was not smaller using the line-length estimation. No systematic pattern of effects or significance was discernible across the four samples.

TABLE 66
MAGNITUDE ESTIMATES: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT: HYPOTHESIS 4.a.1
RESEARCH DESIGN 1

SAMPLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO		
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
NUMERICAL ESTIMATION												
HIGH NEGATIVE INCONGRUITY												
Marginal Mean	2.55	2.63		2.50	2.50		2.64	2.65		2.55	2.69	
Standard Deviation	0.246	0.263		0.204	0.214		0.316	0.316		0.329	0.370	
Sample Size	39	39		19	19		8	8		8	8	
LOW NEGATIVE INCONGRUITY												
Marginal Mean	2.00	2.00		2.00	2.00		2.00	2.00		2.00	2.00	
Standard Deviation	0.00	0.00		0.00	0.00		0.00	0.00		0.20	0.00	
Sample Size	39	39		19	19		8	8		8	8	
EFFECT SIZE (d)	2.24	2.39		2.45	2.33		2.02	2.06		1.67	1.86	
t-STATISTIC	5.09	5.43		4.99	4.76		2.47	2.50		2.29	2.55	
p FOR t-STATISTIC	0.0005	0.0005		0.0005	0.0005		0.025	0.025		0.05	0.025	
LINE-LENGTH ESTIMATION												
HIGH NEGATIVE INCONGRUITY												
Marginal Mean	2.67	2.65		2.52	2.52		2.58	2.58		2.60	2.62	
Standard Deviation	0.265	0.242		0.308	0.249		0.312	0.312		0.316	0.322	
Sample Size	39	39		19	19		8	8		8	8	
LOW NEGATIVE INCONGRUITY												
Marginal Mean	2.00	2.00		2.00	2.00		2.00	2.00		2.00	2.00	
Standard Deviation	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
Sample Size	39	39		19	19		8	8		8	8	
EFFECT SIZE (d)	2.52	2.68		1.69	2.08		1.86	1.86		1.90	1.92	
t-STATISTIC	5.73	6.10		3.45	4.25		2.27	2.27		2.60	2.63	
p FOR t-STATISTIC	0.0005	0.0005		0.0025	0.0005		0.05	0.05		0.025	0.025	

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

The salience effect was consistently weak across the four samples and both methods (Table 67). Although all the effects were positive, the d statistic ranged from 0.06 to 0.52. Typically, the p -values were 0.15 or higher, several being larger than 0.40. No differences were apparent between the samples or the methods or the two dependent variables.

In general, the interaction effect was strong, lending support to hypothesis 4.a.3, (Table 68). However, a pattern was apparent: the interaction effects were the weakest when the high incongruity cells (A and C) were compared to each other across the two salience conditions. In ten out of sixteen comparisons, the p -value exceeded 0.15 and the d -statistic was consistently lower. Other comparisons (A with B, and A with D) yielded highly significant d -statistics. This pattern of effects, holding across all four samples and across both methods, is consistent with the weak salience effects and strong incongruity effects presented above. Whenever the tests required the comparisons across incongruity conditions the effects were strong; and comparisons within the same incongruity condition yielded weak effects. This result suggests that in the former case the strong incongruity effect offset the weak salience effect and pulled up the scores. This pattern held across both dependent variables of dissatisfaction and conflict.

TABLE 67
MAGNITUDE ESTIMATES: TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT: HYPOTHESIS 4.a.2
RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO		
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
NUMERICAL ESTIMATION												
HIGH SALIENCE												
Marginal Mean	2.29	2.32		2.31	2.31		2.34	2.36		2.32	2.40	
Standard Deviation	0.247	0.269		0.197	0.235		0.322	0.322		0.350	0.423	
Sample Size	33	33		6	6		6	6		5	5	
LOW SALIENCE												
Marginal Mean	2.20	2.27		2.23	2.22		2.25	2.24		2.21	2.27	
Standard Deviation	0.236	0.228		0.207	0.205		0.283	0.283		0.282	0.231	
Sample Size	6	6		13	13		2	2		3	3	
EFFECT SIZE (d)	0.37	0.20		0.39	0.42		0.28	0.38		0.33	0.35	
t-STATISTIC	0.83	0.43		0.80	0.86		0.35	0.46		0.46	0.48	
p FOR t-STATISTIC	0.20	0.25		0.15	0.15		0.40	0.40		0.40	0.40	
LINE-LENGTH ESTIMATION												
HIGH SALIENCE												
Marginal Mean	2.34	2.34		2.37	2.35		2.30	2.30		2.31	2.32	
Standard Deviation	0.275	0.252		0.353	0.226		0.310	0.310		0.353	0.352	
Sample Size	33	33		6	6		6	6		5	5	
LOW SALIENCE												
Marginal Mean	2.28	2.26		2.22	2.22		2.25	2.25		2.28	2.30	
Standard Deviation	0.195	0.165		0.287	0.259		0.322	0.322		0.223	0.253	
Sample Size	6	6		13	13		2	2		3	3	
EFFECT SIZE (d)	0.23	0.33		0.49	0.52		0.16	0.16		0.10	0.06	
t-STATISTIC	0.51	0.75		0.99	1.06		0.19	0.19		0.13	0.08	
p FOR t-STATISTIC	0.25	0.20		0.15	0.12		0.50	0.50		0.60	0.80	

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

TABLE 68

MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
OPERATIONAL HYPOTHESIS 4.a.3
RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO		
	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
NUMERICAL ESTIMATION												
CELLS A AND D												
Effect Size (d)	2.35	2.38		3.15	2.64		2.11	2.20		1.83	1.87	
t-Statistic	5.33 (37)	5.41		6.42 (17)	5.38		2.57 (6)	2.69		2.50 (6)	2.56	
p for t-Statistic	0.0005	0.0005		0.0005	0.0005		0.025	0.025		0.025	0.025	
CELLS A AND B												
Effect Size (d)	2.35	2.38		3.15	2.64		2.11	2.20		1.83	1.87	
t-Statistic	9.39 (64)	9.52		5.43 (10)	4.55		3.64 (10)	3.80		2.90 (8)	2.96	
p for t-Statistic	0.0005	0.0005		0.0005	0.0005		0.0025	0.0025		0.01	0.01	
CELLS A AND C												
Effect Size (d)	0.69	0.34		0.83	0.84		0.57	0.73		0.70	0.70	
t-Statistic	1.57 (37)	0.78		1.70 (17)	1.71		0.69 (6)	0.89		0.96 (6)	0.96	
p for t-Statistic	0.10	0.20		0.10	0.10		0.30	0.20		0.15	0.15	

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 7 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

TABLE 68 (Continued)
MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
OPERATIONAL HYPOTHESIS 4.a.3
RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO			
	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		
LINE-LENGTH ESTIMATION													
CELLS A AND D													
Effect Size (d)	2.50	2.66		2.07	3.09		1.93	1.93		1.76	1.79		
t-Statistic	5.70 (37)	6.04		4.22 (17)	6.32		2.36 (6)	2.36		2.38 (6)	2.45		
p for t-Statistic	0.0005	0.0005		0.0005	0.0005		0.05	0.05		0.05	0.025		
CELLS A AND B													
Effect Size (d)	2.50	2.66		2.07	3.09		1.93	1.93		1.76	1.79		
t-Statistic	10.04 (64)	10.63		3.56 (10)	5.34		3.34 (10)	3.34		2.79 (8)	2.84		
p for t-Statistic	0.0005	0.0005		0.005	0.0005		0.005	0.005		0.025	0.025		
CELLS A AND C													
Effect Size (d)	0.49	0.58		0.97	1.08		0.32	0.32		0.19	0.12		
t-Statistic	1.11 (37)	1.31		1.98 (17)	2.21		0.39 (6)	0.39		0.23 (6)	0.17		
p for t-Statistic	0.15	0.10		0.05	0.025		0.40	0.40		0.50	0.50		

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 7 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

Rating Scales

Tables 69, 70, and 71 report the results for the tests for hypotheses 4.a.1, 4.a.2, and 4.a.3, respectively. None of the effects for dissatisfaction was statistically significant at 0.10 level for the graduate and the industry samples even though four of ten effects in these samples were negative. The undergraduate sample results were in stark contrast with the above and all the effects were positive and significant. In the scenario data the outcomes were mixed in that the incongruity effect was significant while the salience effect was not significant. Two of three interaction effects were significant, but one of these was negative.

The results based on the dependent variable conflict were different from the outcomes based on dissatisfaction. No effects were statistically significant for the graduates; only one interaction effect was significant for the scenario data but the direction was negative. For the undergraduates and the industry data the incongruity effect was significant, but not the salience effect. This result manifested itself in the interaction effects for these data-sets. Comparisons across incongruity conditions (i.e., cell A with D or B) were significant, but not within the same incongruity condition (cells A and C). Table 72 summarizes the obtained

TABLE 69
 RATING SCALES: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.a.1
 RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO		
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
HIGH NEGATIVE INCONGRUITY												
Marginal Mean	5.93	5.37		5.10	4.37		5.04	4.65		5.46	4.21	
Standard Deviation	0.603	0.859		0.848	0.966		1.004	1.081		0.664	1.549	
Sample Size	39	39		19	19		8	8		8	8	
LOW NEGATIVE INCONGRUITY												
Marginal Mean	5.29	4.72		5.22	4.63		4.83	3.76		4.62	3.88	
Standard Deviation	0.866	0.978		0.862	1.031		1.031	1.183		0.648	1.538	
Sample Size	39	39		19	19		8	8		8	8	
EFFECT SIZE (d)	0.87	0.71		-0.14	-0.26		0.21	0.78		1.28	0.21	
t-STATISTIC	3.78	3.07		0.44	0.53		0.41	1.57		2.56	0.43	
p FOR t-STATISTIC	0.0005	0.0025		0.30	0.30		0.30	0.08		0.025	0.30	

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

TABLE 70
 RATING SCALES: TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.a.2
 RESEARCH DESIGN I

SAMPLES	UNDERGRADUATES	GRADUATES	INDUSTRIAL	SCENARIO
DEPENDENT VARIABLES	DISSATIS- FACTION CONFLICT	DISSATIS- FACTION CONFLICT	DISSATIS- FACTION CONFLICT	DISSATIS- FACTION CONFLICT
HIGH SALIENCE				
Marginal Mean	5.69	5.03	4.39	4.93
Standard Deviation	0.773	0.831	0.769	1.679
Sample Size	33	6	6	5
3.95			4.32	3.95
0.647			1.167	0.647
5			6	5
LOW SALIENCE				
Marginal Mean	5.20	5.23	4.56	5.22
Standard Deviation	0.546	0.865	1.080	0.608
Sample Size	6	13	13	3
4.20			3.85	4.20
1.311			0.943	1.311
3			2	3
EFFECT SIZE (d)	0.66	-0.23	-0.20	-0.44
t-STATISTIC	1.49	0.48	0.41	0.60
p FOR t-STATISTIC	0.07	0.30	0.40	0.35
0.22			0.51	0.22
0.70			0.30	0.70

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 7 of Chapter IV. See Appendix E for summary statistics.

TABLE 71
 RATING SCALES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.a.3
 RESEARCH DESIGN 1

SAMPLES DEPENDENT VARIABLES	UNDERGRADUATES			GRADUATES			INDUSTRIAL			SCENARIO		
	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
CELLS A AND D												
Effect Size (d)	1.27	0.88		-0.24	-0.28		0.34	1.08		1.39	0.27	
t-Statistic	2.89 (37)	1.99		0.50 (17)	0.57		0.41 (6)	1.32		1.90 (6)	0.38	
p for t-Statistic	0.005	0.05		0.30	0.30		0.50	0.08		0.08	0.50	
CELLS A AND B												
Effect Size (d)	1.05	0.69		0.20	0.38		0.10	0.87		0.78	0.41	
t-Statistic	4.19 (64)	2.75		0.35 (10)	0.65		0.17 (10)	1.51		1.24 (8)	0.65	
p for t-Statistic	0.0005	0.005		0.30	0.30		0.80	0.07		0.12	0.30	
CELLS A AND C												
Effect Size (d)	1.71	0.19		0.01	0.24		0.17	0.67		-1.04	-1.03	
t-Statistic	3.84 (37)	0.42		0.02 (17)	0.48		0.21 (6)	0.82		1.42 (6)	1.41	
p for t-Statistic	0.0005	0.40		0.80	0.30		0.70	0.20		0.10	0.10	

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 7 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

effects for hypothesis four (a) across different methods and samples.

Test of Hypothesis Four (b)

Three operational hypotheses were derived from the theoretical statement of hypothesis four (b) which asserts that in presence of antagonism higher negative incongruity condition (H4.b.1) and higher salience condition (H4.b.2) will bring about greater levels of issue-specific conflict. Further, a synergistic interaction of negative incongruity and salience was also postulated (H4.b.3).

Content Analysis

Table 73 presents the content analysis results based on the chi-square tests on EMBs for hypothesis four (b). Tables 74, 75, and 76 present the results for H4.a.1, H4.a.2, and H4.a.3, respectively, using t-tests on the frequency means of content data. The effect size estimates and statistics are also included in the latter three tables (see Appendix E for the summary statistics tables). Since the undergraduate data was not analyzed for RD-2, the tables only refers to the graduate, industry and scenario samples.

The EMB based results (Table 73) when compared to the t-test results (Tables 74, 75, and 76), show a discrepancy similar to the one discussed in the preceding section, this

TABLE 72
SUMMARY OF EFFECTS: TEST OF HYPOTHESIS FOUR (a)
d STATISTICS

OPERATIONAL HYPOTHESES	INCONGRUITY H ₄ .a.1		SALIENCE H ₄ .a.2		INTERACTION H ₄ .a.3	
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT
<u>CONTENT ANALYSIS</u>						
Undergraduates			0.31		0.60	
Graduates	0.55		0.38		0.68	
Industrial	0.23		3.15		1.61	
Scenario	1.72		-0.05		0.28	
	0.19					
<u>NUMERICAL ESTIMATION</u>						
Undergraduates	2.24	2.39	0.37	0.20	1.90	1.83
Graduates	2.45	2.33	0.39	0.42	2.25	1.94
Industrial	2.02	2.06	0.28	0.38	1.69	1.80
Scenario	1.67	1.86	0.33	0.35	1.49	1.52
<u>LINE LENGTH ESTIMATION</u>						
Undergraduates	2.52	2.68	0.23	0.33	1.96	2.07
Graduates	1.69	2.08	0.49	0.52	1.64	2.31
Industrial	1.86	1.86	0.16	0.16	1.49	1.49
Scenario	1.90	1.92	0.10	0.06	1.29	1.29
<u>RATING SCALES</u>						
Undergraduates	0.87	0.71	0.66	0.13	1.28	0.61
Graduates	-0.14	-0.26	-0.23	-0.20	-0.04	0.07
Industrial	0.21	0.78	0.03	0.41	0.18	0.87
Scenario	1.28	0.21	-0.44	-0.16	0.42	-0.06

NOTES: Since Bales' schema does not differentiate between dissatisfaction and conflict, the dependent variable for content analysis should be strictly labeled dissatisfaction/conflict. The d statistics reported under content analysis were obtained by transforming the t-statistics from tests on frequency means. Since three pairwise comparisons were made in testing the interaction effect, the d statistics presented are sample-weighted average of the three effects.

TABLE 73
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB)
INFERENCES ABOUT HYPOTHESIS FOUR (b)

RESEARCH DESIGN II

SAMPLES	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
GRADUATES				
EMB %	74.19	69.57	71.43	60.00
Chi-Square Statistic	23.40	15.32	18.36	4.00
p for Chi-Square	0.0000	0.0000	0.0000	0.0455
Sample Size	18	19	18	19
INDUSTRIAL				
EMB %	69.96	55.36	57.29	75.51
Chi-Square Statistic	15.94	1.14	2.12	26.02
p for Chi-Square	0.0000	0.2857	0.1454	0.0000
Sample Size	28	28	28	28
SCENARIO				
EMB %	82.61	62.50	76.92	61.54
Chi-Square Statistic	45.54	6.26	28.98	5.32
p for Chi-Square	0.0000	0.0123	0.0000	0.0211
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the Ho: Expected Frequency is 50%. All chi-square statistics have a single degree of freedom. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE 74
 CONTENT ANALYSIS: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION/CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.1
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH NEGATIVE INCONGRUITY			
Marginal Mean	1.86	1.96	2.62
Standard Deviation	0.64	0.66	0.67
Sample Size	37	56	16
LOW NEGATIVE INCONGRUITY			
Marginal Mean	1.43	1.74	1.94
Standard Deviation	0.58	0.35	0.54
Sample Size	37	56	16
EFFECT SIZE (d)	0.70	0.42	1.12
t-STATISTIC	3.06	2.19	3.19
p FOR t-STATISTIC	0.0025	0.025	0.0025

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

TABLE 75
 CONTENT ANALYSIS: TEST OF SALIENCE EFFECT ON DISSATISFACTION/CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.2
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH SALIENCE			
Marginal Mean	1.80	2.06	2.62
Standard Deviation	0.37	0.39	0.30
Sample Size	18	28	8
LOW SALIENCE			
Marginal Mean	1.50	1.64	1.94
Standard Deviation	0.77	0.64	0.80
Sample Size	19	28	8
EFFECT SIZE (d)	0.49	0.79	1.13
t-STATISTIC	1.49	2.93	2.25
p FOR t-STATISTIC	0.10	0.0025	0.025

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

TABLE 76
 CONTENT ANALYSIS: TEST OF INTERACTION EFFECT ON DISSATISFACTION/CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
CELLS A AND D			
Effect Size (d)	1.31	1.55	2.50
t-Statistic	3.96 (35)	5.74 (54)	5.00 (14)
p for t-Statistics	0.0005	0.0005	0.0005
CELLS A AND B			
Effect Size (d)	0.73	1.79	0.83
t-Statistic	2.21 (34)	6.67 (54)	1.66 (14)
p for t-Statistics	0.025	0.0005	0.10
CELLS A AND C			
Effect Size (d)	0.25	1.38	0.37
t-Statistic	0.76 (35)	5.11 (54)	0.74 (14)
p for t-Statistics	0.25	0.0005	0.20

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 8 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

time involving the industry data. This anomaly has resulted in one of two inequalities in the case of incongruity effect as well as in the salience effect not meeting the expected directionality supported by the d statistics; and consequently one of three comparisons for the interaction effect is also not supportive. Otherwise, all three hypotheses are supported in the case of all three data sets by the chi square tests.

The d -statistic based tests indicate a positive support for all three hypotheses in all three samples. The magnitude of effects ranges from $d=0.25$ to $d=2.50$. The direction of effects is as hypothesized.

Magnitude Scales

Tables 77, 78, and 79 present the results for H4.b.1, H4.b.2, and H4.b.3, respectively. As previously mentioned, since the undergraduate data were not analyzed for RD-2, the tables summarizing the tests for the above hypotheses only present the results for the other three data-sets.

The incongruity effect was strong across all three samples and both methods regardless of whether the dependent variable was dissatisfaction or conflict (Table 77). No inconsistent patterns of effects were discernible. The effects consistently were larger than those found in the context of RD-1 as presented above. Perhaps the inclusion of antagon-

TABLE 77

MAGNITUDE ESTIMATES: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT: HYPOTHESIS 4.b.1
RESEARCH DESIGN II

SAMPLES	GRADUATES			INDUSTRIAL			SCENARIO	
	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT
NUMERICAL ESTIMATION								
HIGH NEGATIVE INCONGRUITY								
Marginal Mean	2.66	2.59		2.67	2.66		2.60	2.70
Standard Deviation	0.202	0.177		0.128	0.128		0.210	0.163
Sample Size	37	37		56	56		16	16
LOW NEGATIVE INCONGRUITY								
Marginal Mean	2.00	2.00		2.00	2.00		2.00	2.00
Standard Deviation	0.00	0.00		0.00	0.00		0.00	0.00
Sample Size	37	37		56	56		16	16
EFFECT SIZE (d)	3.26	3.33		5.25	5.17		2.86	4.28
t-STATISTIC	9.89	10.09		19.43	19.15		5.72	8.56
p FOR t-STATISTIC	0.0005	0.0005		0.0005	0.0005		0.0005	0.0005
LINE-LENGTH ESTIMATION								
HIGH NEGATIVE INCONGRUITY								
Marginal Mean	2.70	2.64		2.63	2.64		2.61	2.67
Standard Deviation	0.216	0.175		0.104	0.104		0.068	0.298
Sample Size	37	37		56	56		16	16
LOW NEGATIVE INCONGRUITY								
Marginal Mean	2.00	2.00		2.00	2.00		2.00	2.00
Standard Deviation	0.00	0.00		0.00	0.00		0.00	0.00
Sample Size	37	37		56	56		16	16
EFFECT SIZE (d)	3.24	3.65		6.09	6.18		8.96	2.24
t-STATISTIC	9.81	11.06		22.54	22.89		17.94	4.49
p FOR t-STATISTIC	0.0005	0.0005		0.0005	0.0005		0.0005	0.0005

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

ism as a variable served to increase the strength of negative perceptions.

The tests for salience effect (Table 78) yielded mixed results although the salience effect was somewhat stronger than discovered in the context of RD-1. The d statistics were larger, the p -values were smaller, and six of the twelve effects were significant at 0.10 level. However, as in RD-1, all the effects were positive and ranged from $d=0.23$ to $d=0.63$. No other patterns of effects were noted across the three different samples, the two methods, or the two dependent variables.

The interaction effects (Table 79) were also larger when compared to the effects found in RD-1. Like RD-1, all interaction effects involving comparisons of means in different incongruity conditions (i.e., cell A with B or D) were statistically significant. However, in RD-2, these effects were stronger when the comparisons entailed cells within the same incongruity condition (i.e., cell A with cell C). Only two of twelve p -values were larger than 0.10 level and the magnitude of effects ranged from $d=0.44$ to $d=1.31$.

As mentioned above, it appears that the introduction of antagonism as a variable did impact on the incongruity, salience and the interaction effects. No patterns were discernible in the interaction effects across samples, methods or dependent variables.

TABLE 78
MAGNITUDE ESTIMATES: TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT: HYPOTHESIS 4.b.2
RESEARCH DESIGN II

SAMPLES	GRADUATES		INDUSTRIAL		SCENARIO	
	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT
NUMERICAL ESTIMATION						
HIGH SALIENCE						
Marginal Mean	2.36	2.34	2.37	2.37	2.34	2.40
Standard Deviation	0.197	0.132	0.096	0.096	0.092	0.011
Sample Size	18	18	28	28	8	8
LOW SALIENCE						
Marginal Mean	2.30	2.26	2.30	2.30	2.27	2.30
Standard Deviation	0.207	0.211	0.153	0.153	0.282	0.231
Sample Size	19	19	28	28	8	8
EFFECT SIZE (d)	0.30	0.45	0.55	0.55	0.33	0.61
t-STATISTIC	0.90	1.37	2.03	2.03	0.67	1.22
p FOR t-STATISTIC	0.15	0.08	0.025	0.025	0.30	0.15
LINE-LENGTH ESTIMATION						
HIGH SALIENCE						
Marginal Mean	2.41	2.38	2.33	2.34	2.32	2.37
Standard Deviation	0.197	0.221	0.102	0.102	0.095	0.352
Sample Size	18	18	28	28	8	8
LOW SALIENCE						
Marginal Mean	2.30	2.27	2.30	2.30	2.29	2.30
Standard Deviation	0.233	0.117	0.105	0.105	0.015	0.233
Sample Size	19	19	28	28	8	8
EFFECT SIZE (d)	0.51	0.63	0.30	0.39	0.44	0.23
t-STATISTIC	1.54	1.90	1.07	1.43	0.88	0.47
p FOR t-STATISTIC	0.07	0.02	0.15	0.08	0.20	0.40

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

TABLE 79

MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
OPERATIONAL HYPOTHESIS 4.b.3
RESEARCH DESIGN II

SAMPLES	GRADUATES			INDUSTRIAL			SCENARIO		
	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	CONFLICT
NUMERICAL ESTIMATION									
CELLS A AND D									
Effect Size (d)	3.70	5.15	7.60	7.60	7.28	72.72			
t-Statistic	11.23 (35)	15.61	28.16 (54)	28.16	14.56 (14)	145.45			
p for t-Statistic	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005			
CELLS A AND B									
Effect Size (d)	3.70	5.15	7.60	7.60	7.28	72.72			
t-Statistic	11.23 (34)	15.61	28.16 (54)	28.16	14.56 (14)	145.45			
p for t-Statistic	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005			
CELLS A AND C									
Effect Size (d)	0.64	0.96	1.02	1.09	0.67	1.22			
t-Statistic	1.95 (35)	2.91	3.77 (54)	4.06	1.33 (14)	2.45			
p for t-Statistic	0.05	0.005	0.0005	0.0005	0.15	0.025			

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 8 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

TABLE 79 (Continued)
 MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES			INDUSTRIAL		SCENARIO	
	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	
LINE-LENGTH ESTIMATION							
CELLS A AND D							
Effect Size (d)	4.11	3.44	6.47	6.67	6.74	2.07	
t-Statistic	12.46 (35)	10.42	23.96 (54)	24.69	13.47 (14)	4.15	
p for t-Statistic	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
CELLS A AND B							
Effect Size (d)	4.11	3.44	6.47	6.67	6.74	2.07	
t-Statistic	12.46 (34)	10.42	23.96 (54)	24.69	13.47 (14)	4.15	
p for t-Statistic	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
CELLS A AND C							
Effect Size (d)	0.97	1.31	0.68	0.77	1.03	0.44	
t-Statistic	2.94 (35)	3.97	2.50 (54)	2.68	2.06 (14)	0.87	
p for t-Statistic	0.005	0.0005	0.01	0.005	0.05	0.20	

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 8 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

Rating Scales

Tests for hypotheses H4.b.1, H4.b.2, and H4.b.3 are reported in Tables 80, 81, and 82, respectively. None of the comparisons entailing dissatisfaction was significant and the p-values exceeded the 0.30 level for all comparisons. The magnitude of effects was consistently small and eight of fifteen effects were negative. No other pattern of effects was evident across samples.

The conflict results were mixed. The incongruity effect was not statistically significant in all three samples though the industry sample was close with $p=0.12$ (Table 80). The salience effect was significant except in the industry sample (Table 81). Interaction effects (Table 82) were present in the graduate sample but absent in the industry sample. Two of three comparisons for interaction effects in the scenario sample were significant at 0.10. Two effects were negative in the industry sample but were not statistically significant. No trends were noticed across the three samples. Table 83 summarizes the observed effects for hypothesis four (b) across the different methods and samples.

Test of Hypothesis Five

The theoretical statement of hypothesis five had postulated that higher positive incongruity condition (H5.1) and

TABLE 80
 RATING SCALES: TEST OF NEGATIVE INCONGRUITY EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.1
 RESEARCH DESIGN II

SAMPLES	GRADUATES		INDUSTRIAL		SCENARIO	
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT
HIGH NEGATIVE INCONGRUITY						
Marginal Mean	3.70	4.24	3.68	4.66	3.43	4.38
Standard Deviation	1.186	0.669	1.208	1.048	1.264	0.639
Sample Size	37	37	56	56	16	16
LOW NEGATIVE INCONGRUITY						
Marginal Mean	3.56	4.20	3.59	4.45	3.37	4.35
Standard Deviation	1.107	0.626	1.119	0.936	1.264	0.621
Sample Size	37	37	56	56	16	16
EFFECT SIZE (d)	0.12	0.06	0.08	0.21	0.05	0.05
t-STATISTIC	0.52	0.27	0.41	1.11	0.14	0.14
p FOR t-STATISTIC	0.30	0.50	0.40	0.12	0.80	0.60

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

TABLE 81
 RATING SCALES: TEST OF SALIENCE EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.2
 RESEARCH DESIGN II

SAMPLES DEPENDENT VARIABLES	GRADUATES		INDUSTRIAL		SCENARIO	
	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT
HIGH SALIENCE						
Marginal Mean	3.48	4.38	3.62	4.49	3.26	4.58
Standard Deviation	1.194	0.759	1.193	1.074	1.442	0.760
Sample Size	18	18	28	28	8	8
LOW SALIENCE						
Marginal Mean	3.68	4.07	3.66	4.62	3.54	4.15
Standard Deviation	1.100	0.522	1.134	0.906	1.056	0.467
Sample Size	19	19	28	28	8	8
EFFECT SIZE (d)	-0.17	0.48	-0.03	-0.13	-0.22	0.68
t-STATISTIC	0.53	1.45	0.12	0.48	0.44	1.36
p FOR t-STATISTIC	0.30	0.07	0.80	0.30	0.40	0.09

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 8 of Chapter IV. See Appendix E for summary statistics.

TABLE 82
 RATING SCALES: TEST OF INTERACTION EFFECT ON DISSATISFACTION AND CONFLICT
 OPERATIONAL HYPOTHESIS 4.b.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES			INDUSTRIAL			SCENARIO		
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT		DISSATIS- FACTION	CONFLICT	
CELLS A AND D									
Effect Size (d)	-0.13	0.52		0.04	0.07		-0.15	0.67	
t-Statistic	0.40 (35)	1.59		0.15 (54)	0.25		0.30 (14)	1.34	
p for t-Statistic	0.40	0.06		0.80	0.50		0.60	0.10	
CELLS A AND B									
Effect Size (d)	0.07	0.14		0.08	0.21		0.01	0.06	
t-Statistic	0.18 (34)	0.44		0.28 (54)	0.79		0.03 (14)	0.13	
p for t-Statistic	0.70	0.07		0.60	0.20		0.90	0.80	
CELLS A AND C									
Effect Size (d)	-0.15	0.55		-0.03	-0.10		-0.25	0.70	
t-Statistic	0.46 (35)	1.68		0.12 (54)	0.39		0.51 (14)	1.41	
p for t-Statistic	0.40	0.05		0.80	0.40		0.50	0.08	

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 8 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

TABLE 83
SUMMARY OF EFFECTS: TEST OF HYPOTHESIS FOUR (b)
d STATISTICS

OPERATIONAL HYPOTHESES	INCONGRUITY H4. b. 1		SALIENCE H4. b. 2		INTERACTION H4. b. 3	
DEPENDENT VARIABLES	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT	DISSATIS- FACTION	CONFLICT
<u>CONTENT ANALYSIS</u>						
Graduates		0.70		0.49		0.76
Industrial		0.42		0.79		1.57
Scenario		1.12		1.13		1.23
<u>NUMERICAL ESTIMATION</u>						
Graduates	3.26	3.33	0.30	0.45	2.68	3.75
Industrial	5.25	5.17	0.55	0.55	5.41	5.43
Scenario	2.86	4.28	0.33	0.61	5.08	48.89
<u>LINE LENGTH ESTIMATION</u>						
Graduates	3.24	3.65	0.51	0.63	3.06	2.73
Industrial	6.09	6.18	0.30	0.39	4.54	4.70
Scenario	8.96	2.24	0.44	0.23	4.84	1.53
<u>RATING SCALES</u>						
Graduates	0.12	0.06	-0.17	0.48	-0.07	0.40
Industrial	0.08	0.21	-0.03	-0.13	0.03	0.06
Scenario	0.05	0.05	-0.22	0.68	-0.13	0.48

NOTES: Since Bales' schema does not differentiate between dissatisfaction and conflict, the dependent variable for content analysis should be strictly labeled dissatisfaction/conflict. The d statistics reported under content analysis were obtained by transforming the t-statistics from tests on frequency means. Since three pairwise comparisons were made in testing the interaction effect, the d statistics presented are sample-weighted average of the three effects.

higher salience condition (H5.2) will cause greater levels of issue-specific cooperation; and, further, a synergistic interaction of positive incongruity and salience (H5.3) would occur.

Content Analysis

Table 84 presents the content analysis results based on the chi-square tests on EOE's for hypothesis five. Tables 85, 86, and 87 present the results for H5.1, H5.2, and H5.3, respectively, using t-tests on the frequency means of content data. The effect size estimates in d statistics are also included in the latter three tables (see Appendix E for the summary statistics tables).

The chi-square tests reveal a strong support for all three hypotheses in all three data sets. The significance levels associated with the chi-squares were consistently high, and were directionally correct. The d -statistic based results corroborate the EOE-based results presented above in terms of directionality, though several of the p -values exceed the 0.10 level.

Magnitude Scales

Tables 88, 89, and 90 summarize the tests for hypotheses 5.1, 5.2, and 5.3, respectively. The positive incongruity effect was strong and positive in all three samples and

TABLE 84
 CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF SATISFACTION/COOPERATION (EOE)
 INFERENCE ABOUT HYPOTHESIS FIVE
 RESEARCH DESIGN II

SAMPLES	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
GRADUATES				
EOE %	85.00	75.00	77.78	71.43
Chi-Square Statistic	49.00	25.00	30.86	18.36
p for Chi-Square	0.0000	0.0000	0.0000	0.0000
Sample Size	18	19	18	19
INDUSTRIAL				
EOE %	80.95	74.42	80.77	69.57
Chi-Square Statistic	38.32	23.86	37.86	15.32
p for Chi-Square	0.0000	0.0000	0.0000	0.0001
Sample Size	28	28	28	28
SCENARIO				
EOE %	85.71	77.78	70.00	61.54
Chi-Square Statistic	51.00	30.86	16.00	5.32
p for Chi-Square	0.0000	0.0000	0.0000	0.0211
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the Ho: Expected Frequency is 50%. All chi-square statistics have a single degree of freedom. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE 85
CONTENT ANALYSIS: TEST OF POSITIVE INCONGRUITY EFFECT ON SATISFACTION/COOPERATION
OPERATIONAL HYPOTHESIS 5.1
RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH POSITIVE INCONGRUITY			
Marginal Mean	1.26	1.64	1.87
Standard Deviation	0.53	0.72	0.72
Sample Size	37	56	16
LOW POSITIVE INCONGRUITY			
Marginal Mean	1.18	1.41	1.67
Standard Deviation	0.47	0.22	0.22
Sample Size	37	56	16
EFFECT SIZE (d)	0.16	0.43	0.38
t-STATISTIC	0.69	2.27	1.07
p FOR t-STATISTIC	0.22	0.01	0.15

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 86
CONTENT ANALYSIS: TEST OF SALIENCE EFFECT ON SATISFACTION/COOPERATION
OPERATIONAL HYPOTHESIS 5.2
RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH SALIENCE			
Marginal Mean	1.29	1.54	1.87
Standard Deviation	0.44	0.61	0.54
Sample Size	18	28	8
LOW SALIENCE			
Marginal Mean	1.16	1.51	1.67
Standard Deviation	0.56	0.45	0.53
Sample Size	19	28	8
EFFECT SIZE (d)	0.26	0.06	0.37
t-STATISTIC	0.78	0.21	0.75
p FOR t-STATISTIC	0.20	0.50	0.20

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 87
 CONTENT ANALYSIS: TEST OF INTERACTION EFFECT ON SATISFACTION/COOPERATION
 OPERATIONAL HYPOTHESIS 5.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
CELLS A AND D			
Effect Size (d)	0.48	0.45	0.74
t-Statistic	1.44 (35)	1.66 (54)	1.47 (14)
p for t-Statistics	0.08	0.07	0.07
CELLS A AND B			
Effect Size (d)	0.54	0.74	0.46
t-Statistic	1.65 (34)	2.74 (54)	0.93 (14)
p for t-Statistics	0.07	0.005	0.15
CELLS A AND C			
Effect Size (d)	0.56	0.33	0.35
t-Statistic	1.70 (35)	1.22 (54)	0.70 (14)
p for t-Statistics	0.05	0.11	0.25

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 9 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

across both methods. The smallest magnitude of effect was $d=2.42$ and all effects were significant beyond 0.0005 level (Table 88).

In the pretest sample, one of the salience effects was negative. This anomaly did not occur in the experimental samples though the magnitude of effects was small (range of d -statistic was 0.14 to 0.45) and the t -tests indicated that none of the differences were significant at the 0.10 level (Table 89). It is difficult to explain the lack of significant salience effects for cooperation in light of the better results for conflict and dissatisfaction discussed earlier. It can only be surmised that the positive issues were so welcome when juxtaposed with negative issues that the respondents only noticed the incongruity differential but not the salience differential.

The interaction effect found much better support from the data (Table 90). All comparisons entailing the pairing of high and low incongruity cells were highly significant across all samples and both methods (p -value was always less than 0.0005). However, when the tests involved the comparisons of means of cell A with cell C, the results were not always significant though all effects were positive. In the latter case, three of six t -tests were not significant at the 0.10 level and the magnitude of effects ranged from

TABLE 88
MAGNITUDE ESTIMATES: TEST OF POSITIVE INCONGRUITY EFFECT ON COOPERATION: HYPOTHESIS 5.1

RESEARCH DESIGN II		SCENARIO	
SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
NUMERICAL ESTIMATION			
HIGH POSITIVE INCONGRUITY			
Marginal Mean	2.64	2.62	2.62
Standard Deviation	0.050	0.212	0.088
Sample Size	37	56	16
LOW POSITIVE INCONGRUITY			
Marginal Mean	2.00	2.00	2.00
Standard Deviation	0.00	0.00	0.00
Sample Size	37	56	16
EFFECT SIZE (d)			
t-STATISTIC	12.80	2.92	7.05
p FOR t-STATISTIC	38.80	10.83	14.01
	0.0005	0.0005	0.0005
LINE-LENGTH ESTIMATION			
HIGH POSITIVE INCONGRUITY			
Marginal Mean	2.64	2.66	2.62
Standard Deviation	0.047	0.220	0.097
Sample Size	37	56	16
LOW POSITIVE INCONGRUITY			
Marginal Mean	2.00	2.00	2.00
Standard Deviation	0.00	0.00	0.00
Sample Size	37	56	16
EFFECT SIZE (d)			
t-STATISTIC	13.60	2.99	6.39
p FOR t-STATISTIC	41.22	11.10	12.78
	0.0005	0.0005	0.0005

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 89
MAGNITUDE ESTIMATES: TEST OF SALIENCE EFFECT ON COOPERATION: HYPOTHESIS 5.2
RESEARCH DESIGN 11

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
NUMERICAL ESTIMATION			
HIGH SALIENCE			
Marginal Mean	2.33	2.33	2.33
Standard Deviation	0.051	0.096	0.052
Sample Size	18	28	8
LOW SALIENCE			
Marginal Mean	2.32	2.30	2.29
Standard Deviation	0.049	0.284	0.113
Sample Size	19	28	8
EFFECT SIZE (d)	0.20	0.14	0.45
t-STATISTIC	0.61	0.52	0.90
p FOR t-STATISTIC	0.35	0.30	0.20
LINE-LENGTH ESTIMATION			
HIGH SALIENCE			
Marginal Mean	2.33	2.36	2.33
Standard Deviation	0.051	0.150	0.052
Sample Size	18	28	8
LOW SALIENCE			
Marginal Mean	2.32	2.31	2.29
Standard Deviation	0.043	0.273	0.127
Sample Size	19	28	8
EFFECT SIZE (d)	0.21	0.23	0.41
t-STATISTIC	0.64	0.84	0.82
p FOR t-STATISTIC	0.35	0.15	0.20

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 90
MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON COOPERATION
OPERATIONAL HYPOTHESIS 5.3
RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
NUMERICAL ESTIMATION			
CELLS A AND D			
Effect Size (d)	12.74	6.77	12.69
t-Statistic	38.62 (35)	25.08 (54)	25.38 (14)
p for t-Statistics	0.0005	0.0005	0.0005
CELLS A AND B			
Effect Size (d)	12.74	6.77	12.69
t-Statistic	38.62 (34)	25.08 (54)	25.38 (14)
p for t-Statistics	0.0005	0.0005	0.0005
CELLS A AND C			
Effect Size (d)	0.40	0.28	0.91
t-Statistic	1.21 (35)	1.05 (54)	1.82 (14)
p for t-Statistics	0.15	0.18	0.05

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 9 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

TABLE 90 (Continued)
 MAGNITUDE ESTIMATES: TEST OF INTERACTION EFFECT ON COOPERATION
 OPERATIONAL HYPOTHESIS 5.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
LINE-LENGTH ESTIMATION			
CELLS A AND D			
Effect Size (d)	12.75	4.73	12.69
t-Statistic	38.62 (35)	17.53 (54)	25.38 (14)
p for t-Statistics	0.0005	0.0005	0.0005
CELLS A AND B			
Effect Size (d)	12.75	4.73	12.69
t-Statistic	38.62 (34)	17.53 (54)	25.38 (14)
p for t-Statistics	0.0005	0.0005	0.0005
CELLS A AND C			
Effect Size (d)	0.43	0.45	0.82
t-Statistic	1.29 (35)	1.68 (54)	1.65 (14)
p for t-Statistics	0.15	0.05	0.08

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 9 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

$d=0.28$ to $d=0.91$. This pattern can be attributed to the weak salience effects discussed previously. As cells A and C belong to the same incongruity level, the strong incongruity effect appears to have pulled all the means up.

No patterns were noticeable across different samples or different methods for the incongruity, salience or the interaction effects.

Rating Scales

Tables 91, 92, and 93 report on the tests for H5.1, H5.2, and H5.3, respectively. Incongruity and salience effects were not statistically significant in all three datasets, and, the magnitude of effects was correspondingly small. Only two of nine comparisons for the interaction effect (Table 93) were significant at 0.10; one each in the graduate and the industry samples. Table 94 summarizes the observed effects for hypothesis five across different methods and samples.

Test of Hypothesis Eight

Hypothesis eight sought to assess the premise of cooperative bias. The hypothesis postulated that if the participants were exposed to a parallel series of conflictful and cooperative perceptions, the residual perception would be cooperative.

TABLE 91
RATING SCALES: TEST OF POSITIVE INCONGRUITY EFFECT ON COOPERATION
OPERATIONAL HYPOTHESIS 5.1
RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH POSITIVE INCONGRUITY			
Marginal Mean	4.86	4.66	5.00
Standard Deviation	0.970	0.986	1.028
Sample Size	37	56	16
LOW POSITIVE INCONGRUITY			
Marginal Mean	4.62	4.84	4.96
Standard Deviation	0.949	0.954	1.015
Sample Size	37	56	16
EFFECT SIZE (d)	0.25	-0.19	0.04
t-STATISTIC	1.09	0.98	0.11
p FOR t-STATISTIC	0.15	0.15	0.60

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 92
 RATING SCALES: TEST OF SALIENCE EFFECT ON COOPERATION
 OPERATIONAL HYPOTHESIS 5.2
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
HIGH SALIENCE			
Marginal Mean	4.74	4.82	4.99
Standard Deviation	0.925	1.028	0.944
Sample Size	18	28	8
LOW SALIENCE			
Marginal Mean	4.74	4.68	4.97
Standard Deviation	0.992	0.908	1.094
Sample Size	19	28	8
EFFECT SIZE (d)	0.00	0.14	0.02
t-STATISTIC	0.00	0.53	0.04
p FOR t-STATISTIC	1.00	0.40	0.90

NOTES: The marginal means were computed after weighting the cell means by their sample sizes. The t-tests required were one-sided tests as shown in Figure 9 of Chapter IV. See Appendix E for summary statistics.

TABLE 93
 RATING SCALES: TEST OF INTERACTION EFFECT ON COOPERATION
 OPERATIONAL HYPOTHESIS 5.3
 RESEARCH DESIGN II

SAMPLES	GRADUATES	INDUSTRIAL	SCENARIO
CELLS A AND D			
Effect Size (d)	0.24	-0.03	0.08
t-Statistic	0.73 (35)	0.11 (54)	0.15 (14)
p for t-Statistics	0.20	0.70	0.80
CELLS A AND B			
Effect Size (d)	0.54	0.04	0.34
t-Statistic	1.64 (34)	0.14 (54)	0.68 (14)
p for t-Statistics	0.08	0.70	0.30
CELLS A AND C			
Effect Size (d)	0.27	0.37	0.29
t-Statistic	0.81 (35)	1.35 (54)	0.58 (14)
p for t-Statistics	0.18	0.08	0.30

NOTES: The tests require three comparisons between pairs of cells as shown in Figure 9 of Chapter IV. The means for Cell A were expected to be larger than means of Cells B, C, and D. See summary statistics in Appendix E for cell-wise information. The numbers in parentheses next to t-statistics are degrees of freedom.

TABLE 94
SUMMARY OF EFFECTS: TEST OF HYPOTHESIS FIVE
d STATISTICS

OPERATIONAL HYPOTHESES	INCONGRUITY H4.b.1	SALIENCE H4.b.2	INTERACTION H4.b.3
DEPENDENT VARIABLES	COOPERA- TION	COOPERA- TION	COOPERA- TION
<u>CONTENT ANALYSIS</u>			
Graduates	0.16	0.26	0.53
Industrial	0.43	0.06	0.51
Scenario	0.38	0.37	0.52
<u>NUMERICAL ESTIMATION</u>			
Graduates	12.80	0.20	8.63
Industrial	2.92	0.14	4.61
Scenario	7.05	0.45	8.76
<u>LINE LENGTH ESTIMATION</u>			
Graduates	13.60	0.21	8.64
Industrial	2.99	0.23	3.30
Scenario	6.39	0.41	8.73
<u>RATING SCALES</u>			
Graduates	0.25	0.00	0.35
Industrial	-0.19	0.14	0.13
Scenario	0.04	0.02	0.24

NOTES: Since Bales' schema does not differentiate between satisfaction and cooperation, the dependent variable for content analysis should be strictly labeled satisfaction/cooperation. The d statistics reported under content analysis were obtained by transforming the t-statistics from tests on frequency means. Since three pairwise comparisons were made in testing the interaction effect, the d statistics presented are sample-weighted average of the three effects.

Content Analysis

To test the nature of final perceptions after the participants had been exposed to a parallel set of positive and negative issues, the final (the fifth) memo written after the para-simulation was content analyzed. If the overriding perceptions of cooperation do not exist, we would expect the proportions of positive and negative statements to be about equal, i.e., about 50% each. As Table 95 indicates, the final EMB percentage did not go beyond 37% suggesting reduced negative perceptions in the end. It follows that the lowest EOE was 63%, suggesting a strong positive residual perception. The chi-squares were statistically significant and hypothesis eight received a consistently strong support for all three data sets.

Magnitude Scales

As discussed in Chapter IV, the mode of testing operational hypothesis eight is different from that employed for the content analysis. For magnitude estimates, the overall perceptions of conflict and cooperation are compared. Since both these scores are relative to issues anchored with the same number of points, if the cooperation perception is larger than the conflict perception, the cooperation means can be expected to be larger than the conflict means. The procedure is repeated for both methods. The results are presented in Table 96.

TABLE 95

CONTENT ANALYSIS: TEST OF OPERATIONAL HYPOTHESIS EIGHT
RESEARCH DESIGN II

BASED ON THE FINAL MEMO

SAMPLES	GRADUATE	INDUSTRIAL	SCENARIO
Sample Size	37	56	16
Total Statements	144	224	108
Total Positive Statements	98	142	79
Total Negative Statements	46	82	29
Final EMB (%)	31.94	36.61	26.85
Final EOE (%)	68.06	63.39	73.15
Chi-Square Statistic	13.05	7.17	21.44
P-Value	0.0003	0.0074	0.0000
DF	1	1	1
Directionality	Positive	Positive	Positive

NOTES: Only the participants who were exposed to matching positive and negative issues have been included; i.e., those exposed to only three issues were excluded. The chi-square test was carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected Frequency of Final EMB and EOE is 50%.

TABLE 96
MAGNITUDE ESTIMATES: TEST OF OPERATIONAL HYPOTHESIS EIGHT
RESEARCH DESIGN II
GRADUATE SAMPLE

METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t	p
NUMERICAL METHOD							
<u>HIGH SALIENCE</u> Cooperation	18	2.71	0.187	0.216	+5.14	15.42	.0005
Conflict	18	1.60	0.242				
<u>LOW SALIENCE</u> Cooperation	19	2.84	0.285	0.243	+5.23	16.11	.0005
Conflict	19	1.57	0.193				
LINE-LENGTH METHOD							
<u>HIGH SALIENCE</u> Cooperation	18	2.76	0.192	0.194	+5.98	17.94	.0005
Conflict	18	1.60	0.197				
<u>LOW SALIENCE</u> Cooperation	19	2.63	0.284	0.259	+4.36	13.45	.0005
Conflict	19	1.50	0.231				

NOTES: Only the participants who were exposed to matching positive and negative issues have been included. The t-statistics refer to two-sample one-sided tests against the Ho: The Means of Cooperation are equal to the Means of Conflict. Cooperation means were expected to be higher.

TABLE 96 (Continued)

MAGNITUDE ESTIMATES: TEST OF OPERATIONAL HYPOTHESIS EIGHT

RESEARCH DESIGN II

INDUSTRIAL SAMPLE

METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t	p
NUMERICAL METHOD							
<u>HIGH SALLIENCE</u>							
Cooperation	28	2.79	0.261	0.380	+2.63	9.85	.0005
Conflict	28	1.79	0.469				
<u>LOW SALLIENCE</u>							
Cooperation	28	2.64	0.368	0.513	+1.91	7.15	.0005
Conflict	28	1.66	0.625				
LINE-LENGTH METHOD							
<u>HIGH SALLIENCE</u>							
Cooperation	28	2.85	0.129	0.222	+2.97	11.12	.0005
Conflict	28	2.19	0.287				
<u>LOW SALLIENCE</u>							
Cooperation	28	2.81	0.066	0.263	+2.40	8.96	.0005
Conflict	28	2.18	0.366				

NOTES: Only the participants who were exposed to matching positive and negative issues have been included. The t-statistics refer to two-sample one-sided tests against the Ho: The Means of Cooperation are equal to the Means of Conflict. Cooperation means were expected to be higher.

TABLE 96 (Continued)
 MAGNITUDE ESTIMATES: TEST OF OPERATIONAL HYPOTHESIS EIGHT
 RESEARCH DESIGN II
 SCENARIO SAMPLE

METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t	p
NUMERICAL METHOD							
<u>HIGH SALIENCE</u> Cooperation Conflict	8 8	2.89 1.36	0.458 0.552	0.507	+3.02	6.04	.0005
<u>LOW SALIENCE</u> Cooperation Conflict	8 8	2.66 1.49	0.291 0.595	0.468	+2.50	5.00	.0005
LINE-LENGTH METHOD							
<u>HIGH SALIENCE</u> Cooperation Conflict	8 8	2.88 1.54	0.372 0.651	0.530	+2.53	5.06	.0005
<u>LOW SALIENCE</u> Cooperation Conflict	8 8	2.64 1.49	0.250 0.575	0.443	+2.60	5.19	.0005

NOTES: Only the participants who were exposed to matching positive and negative issues have been included. The t-statistics refer to two-sample one-sided tests against the Ho: The Means of Cooperation are equal to the Means of Conflict. Cooperation means were expected to be higher.

The strength of support for this hypothesis exceeds the support found in the pretest sample. In the pretest sample, the magnitude of effect did not exceed $d=2.0$. In the experimental samples the d -statistic was always higher than 2.0 except in one case within the industry sample where $d=1.91$. All the effects were significant beyond the 0.0005 level.

A pattern of effects was noticeable across the different experimental samples though the method did not make a difference. The magnitude of effects was unusually high for the graduate sample (d -statistic range: 4.36 to 5.98) and, comparatively, the smallest for the industrial sample (range of d : 1.91 to 2.97). The effects for the scenario sample were slightly larger than the industry sample (d -statistic ranged from 2.50 to 3.02). In light of the lack of patterns found for other tests, no plausible explanation could be located for these differences.

Rating Scales

As explained in Chapter IV, the test of this hypothesis entailed one-sample, one-sided t -tests between the scores on the final perceptions (after the subjects had been exposed to parallel positive and negative issues) with the midpoint scale value of 4.0. The results are reported in Table 97.

The t -tests as well as the d -statistics provide strong support for hypothesis eight across all three experimental

TABLE 97
RATING SCALES: TEST OF OPERATIONAL HYPOTHESIS EIGHT
RESEARCH DESIGN II

SAMPLES/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	d	t	p
<u>GRADUATE SAMPLE</u>						
HIGH SALIENCE Cooperation	18	4.81	0.784	+1.03	4.38	0.0005
Conflict	18	3.15	0.961	+0.88	3.75	0.001
LOW SALIENCE Cooperation	19	4.76	0.951	+0.80	3.48	0.0025
Conflict	19	3.27	0.946	+0.77	3.36	0.0025
<u>INDUSTRIAL SAMPLE</u>						
HIGH SALIENCE Cooperation	28	4.73	1.040	+0.70	3.71	0.0005
Conflict	28	3.43	1.061	+0.54	2.84	0.005
LOW SALIENCE Cooperation	28	4.46	1.021	+0.45	2.38	0.025
Conflict	28	3.58	1.080	+0.39	2.06	0.025
<u>SCENARIO SAMPLE</u>						
HIGH SALIENCE Cooperation	8	4.61	0.830	+0.73	2.08	0.05
Conflict	8	3.52	0.814	+0.59	1.67	0.07
LOW SALIENCE Cooperation	8	4.70	1.021	+0.69	1.94	0.05
Conflict	8	3.42	0.940	+0.62	1.75	0.06

NOTES: The t-statistics refer to one-sample one-sided tests. For cooperation, H1 was: Mean is greater than 4.0; for conflict, H1 was: Mean is less than 4.0. The d-statistic is also computed with reference to 4.0. The standard deviation of the experimental group has been used.

samples. In general, the effects were larger than those found in the pretest sample. The d-statistic ranged from 0.39 to 1.03 with ten of twelve values exceeding 0.50. Significance levels were also higher than the pretest data and the p-values were 0.07 or lower suggesting strong support. While no trends were evident across the samples, the effects in the low salience condition were typically lower than in the high salience condition.

Inferences on Antagonism

As explained in Chapter IV, since antagonism as a variable is completely confounded within the negative incongruity conditions in RD-2, any inferences on its effect require a comparison of effects for hypotheses four (a) with those of hypotheses four (b). The variable antagonism was manipulated only for the latter hypothesis.

Content Analysis

The comparison was carried out using the EMB as well as the d-statistics (Table 98). Seven EMB comparisons across the three samples yielded non-significant results at $p=0.10$. Four effects were negative but none of them was significant. Five comparisons were positive as well as significant. The d-statistic results were more supportive and only two of twelve effects were negative, both in the industry sample.

TABLE 98

CONTENT ANALYSIS: INFERENCES ABOUT THE EFFECT OF ANTAGONISM
ON DISSATISFACTION AND CONFLICT

GRADUATE SAMPLE

EMB BASED COMPARISON

		EMB(RD-2) %	EMB(RD-1) %	Difference	Chi-Square Statistic	DF	p
CELL A		74.19	69.23	+ 4.96	0.71	1	0.4241
B		71.43	57.14	+14.29	7.15	1	0.0075
C		69.57	59.26	+10.31	3.59	1	0.0551
D		60.00	70.00	-10.00	2.86	1	0.1001

d-STATISTIC BASED COMPARISON

		Mean(RD-2)	Mean(RD-1)	Pooled Standard Deviation	d	t
CELL A		1.94	1.50	0.425	+1.03	2.20 a
B		1.67	1.33	0.436	+0.78	1.65 a
C		1.78	1.23	0.937	+0.59	1.63 a
D		1.21	1.08	0.571	+0.23	0.63 b

NOTES: The chi-square tests and the t-tests were carried out against the H_0 : EMB percentages and means of RD-2 are equal to EMB percentages and means and RD-1, respectively. The tests were one-sided as the effects of RD-2 were expected to be larger than those of RD-1. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

a: p-value less than 0.10.

b: p-value greater than 0.25.

TABLE 98 (Continued)

CONTENT ANALYSIS: INFERENCES ABOUT THE EFFECT OF ANTAGONISM
ON DISSATISFACTION AND CONFLICT

INDUSTRIAL SAMPLE

EMB BASED COMPARISON

	EMB(RD-2) %	EMB(RD-1) %	Difference	Chi-Square Statistic	DF	p
CELL A	69.96	66.67	+ 3.30	0.33	1	0.5585
B	57.29	61.54	- 4.25	0.59	1	0.4587
C	55.36	64.29	- 8.93	2.48	1	0.1146
D	75.51	57.14	+18.37	11.81	1	0.0006

d-STATISTIC BASED COMPARISON

	Mean(RD-2)	Mean(RD-1)	Pooled Standard Deviation	d	t
CELL A	2.41	2.00	0.471	+0.87	1.93 a
B	1.71	1.33	0.319	+1.19	2.65 a
C	1.50	1.50	0.820	0.00	0.00 b
D	1.78	1.00	0.370	+2.11	2.88 a

NOTES: The chi-square tests and the t-tests were carried out against the H_0 : EMB percentages and means of RD-2 are equal to EMB percentages and means and RD-1, respectively. The tests were one-sided as the effects of RD-2 were expected to be larger than those of RD-1. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

a: p-value less than 0.10.

b: p-value greater than 0.25.

TABLE 98 (Continued)

CONTENT ANALYSIS: INFERENCES ABOUT THE EFFECT OF ANTAGONISM
ON DISSATISFACTION AND CONFLICT

SCENARIO SAMPLE

EMB BASED COMPARISON

	EMB(RD-2) %	EMB(RD-1) %	Difference	Chi-Square Statistic	DF	p
CELL A	82.61	70.00	+12.61	4.54	1	0.0304
B	76.92	66.67	+10.25	3.15	1	0.0744
C	62.50	66.67	- 4.17	0.52	1	0.4683
D	61.54	57.14	+ 4.40	0.68	1	0.4331

d-STATISTIC BASED COMPARISON

	Mean(RD-2)	Mean(RD-1)	Pooled Standard Deviation	d	t
CELL A	2.75	1.40	0.350	+3.86	6.78 a
B	2.50	1.20	0.371	+3.50	6.15 a
C	2.50	1.33	0.955	+1.22	1.81 a
D	1.38	1.33	0.923	+0.05	0.08 b

NOTES: The chi-square tests and the t-tests were carried out against the H_0 : EMB percentages and means of RD-2 are equal to EMB percentages and means and RD-1, respectively. The tests were one-sided as the effects of RD-2 were expected to be larger than those of RD-1. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

a: p-value less than 0.10.

b: p-value greater than 0.25.

However, the t-tests revealed that both these negative effects were not statistically significant (p-value greater than 0.25). Eight of the ten positive effects were statistically significant.

This finding presents somewhat of a contrast with the pretest findings. Though the emergence of an antagonism effect was not fully supported in the pretest as well, the refutations came mostly from the d-statistic based comparisons. In the experimental samples, mean comparisons were generally supportive. As far as content analysis is concerned, then, the support for an antagonism remains tenuous.

Magnitude Scales

The test results are presented in Table 99 and involve a comparison of scores on the inventory issue in the high as well as the low salience conditions. Comparisons involving the infra-red issue could not be made because the issue was used as the anchor issue and had no variance.

All the effects across different samples and methods were positive. The magnitude of effects for the industrial and the graduate samples were similar and ranged from $d=0.13$ to $d=0.83$ with all but two effects exceeding $d=0.30$. However, the scenario sample effects were consistently smaller (d range 0.04 to 0.43) with five of eight effects being smaller than $d=0.15$.

TABLE 99
MAGNITUDE ESTIMATES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
GRADUATE SAMPLE

METHODS/ VARIABLES	Mean (RD-2)	Mean (RD-1)	Pooled Standard Deviation	d	t	p
<u>NUMERICAL METHOD</u>						
Dissatisfaction	2.73	2.62	0.197	+0.56	1.19	0.15
CELL-A	2.60	2.45	0.207	+0.72	2.01	0.05
CELL-C	2.68	2.62	0.161	+0.37	0.79	0.20
Conflict	2.51	2.44	0.209	+0.33	0.93	0.15
CELL-A						
CELL-C						
<u>LINE-LENGTH METHOD</u>						
Dissatisfaction	2.81	2.73	0.241	+0.33	0.71	0.22
CELL-A	2.60	2.43	0.256	+0.66	1.84	0.05
CELL-C	2.76	2.70	0.222	+0.27	0.26	0.50
Conflict	2.53	2.43	0.187	+0.53	1.48	0.10
CELL-A						
CELL-C						

NOTES: The differences between the means are computed as (Mean of RD-2) - (Mean of RD-1) and are expected to be positive. Degrees of freedom for Cell A is 22 and degrees of freedom for Cell C is 30. The t-statistics refer to two sample one-sided tests against the H_0 : Magnitude of effects (RD-1) is equal to the magnitude of effects (RD-2). The cell labels A and C correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

TABLE 99 (Continued)

MAGNITUDE ESTIMATES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT

INDUSTRIAL SAMPLE

METHODS/ VARIABLES		Mean (RD-2)	Mean (RD-1)	Pooled Standard Deviation	d	t	p
<u>NUMERICAL METHOD</u>							
Dissatisfaction	CELL-A	2.73	2.68	0.155	+0.32	0.72	0.22
	CELL-C	2.60	2.50	0.159	+0.63	0.73	0.22
Conflict	CELL-A	2.73	2.71	0.155	+0.13	0.29	0.50
	CELL-C	2.59	2.48	0.159	+0.69	0.80	0.20
<u>LINE-LENGTH METHOD</u>							
Dissatisfaction	CELL-A	2.66	2.60	0.154	+0.39	0.87	0.20
	CELL-C	2.59	2.50	0.119	+0.76	0.88	0.18
Conflict	CELL-A	2.68	2.60	0.154	+0.52	1.15	0.15
	CELL-C	2.60	2.50	0.120	+0.83	0.97	0.15

NOTES: The differences between the means are computed as (Mean of RD-2) - (Mean of RD-1) and are expected to be positive. Degrees of freedom for Cell A is 32 and degrees of freedom for Cell C is 28. The t-statistics refer to two sample one-sided tests against the H_0 : Magnitude of effects (RD-1) is equal to the magnitude of effects (RD-2). The cell labels A and C correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

TABLE 99 (Continued)
MAGNITUDE ESTIMATES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
SCENARIO SAMPLE

METHODS/ VARIABLES	Mean (RD-2)	Mean (RD-1)	Pooled Standard Deviation	d	t	p
<u>NUMERICAL METHOD</u>						
Dissatisfaction	2.67	2.64	0.223	+0.13	0.24	0.50
CELL-A						
CELL-C	2.53	2.41	0.282	+0.43	0.63	0.30
Conflict	2.80	2.79	0.255	+0.04	0.07	0.80
CELL-A						
CELL-C	2.60	2.53	0.231	+0.30	0.45	0.40
<u>LINE-LENGTH METHOD</u>						
Dissatisfaction	2.64	2.62	0.226	+0.09	0.16	0.60
CELL-A						
CELL-C	2.57	2.56	0.106	+0.09	0.14	0.80
Conflict	2.73	2.63	0.352	+0.28	0.50	0.40
CELL-A						
CELL-C	2.60	2.59	0.238	+0.04	0.06	0.90

NOTES: The differences between the means are computed as (Mean of RD-2) - (Mean of RD-1) and are expected to be positive. Degrees of freedom for Cell A is 11 and degrees of freedom for Cell C is 9. The t-statistics refer to two sample one-sided tests against the H_0 : Magnitude of effects (RD-1) is equal to the magnitude of effects (RD-2). The cell labels A and C correspond to Figure 7 for RD-1 and Figure 8 for RD-2 as presented in Chapter IV.

Although the effects were positive, a large majority of them were not significant at the 0.10 level. For the scenario data, the smallest p-value was about 0.30 while the typical significance level for the industry sample was about 0.20. In the graduate sample three of eight comparisons were significant at 0.10 level.

In summary, it can be claimed that antagonism as a variable had the desired effect on the perceptions of dissatisfaction and conflict though the strength of this impact was not consistently significant. The perceptible relative weakness of the impact in the case of the scenario sample is intriguing and no plausible explanation could be uncovered.

Rating Scales

The results for the rating scales data are presented in Table 100. For the dissatisfaction construct, the antagonism effect was always negative, and except in one instance, statistically significant in all comparisons across all three samples. The results for the conflict construct were mixed. Five of twelve effects were negative though only two of these negative effects were statistically significant. Three of the seven positive effects were statistically significant. No trends were evident across the samples.

The discrepancy of results for the antagonism effect across the three methods was also noticed in the pretest

TABLE 100
RATING SCALES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
GRADUATE SAMPLE

<u>INFRA-RED ISSUE</u>					
DEPENDENT VARIABLES	(Mean of RD-2)	(Mean of RD-1)	d	t	p
Dissatisfaction					
CELL-B	3.44	4.94	-1.53	3.24	0.0025
CELL-D	3.67	5.35	-1.57	4.37	0.0005
Conflict					
CELL-B	4.32	4.24	+0.11	0.23	0.60
CELL-D	4.08	4.82	-0.90	2.51	0.01
<u>INVENTORY ISSUE</u>					
DEPENDENT VARIABLES					
Dissatisfaction					
CELL-A	3.51	5.11	-1.28	2.73	0.01
CELL-C	3.69	5.10	-1.48	4.11	0.0005
Conflict					
CELL-A	4.43	4.53	-0.13	0.27	0.60
CELL-C	4.06	4.30	-0.31	0.87	0.20

NOTES: The t-statistics refer to two-sample one-sided tests against the H0: Means of RD-1 are equal to Means of RD-2. The means of RD-2 were expected to be larger. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2. The figures are presented in Chapter IV.

TABLE 100 (Continued)
 RATING SCALES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT
 INDUSTRIAL SAMPLE

<u>INFRA-RED ISSUE</u>					
DEPENDENT VARIABLES	(Mean of RD-2)	(Mean of RD-1)	d	t	p
Dissatisfaction	3.57	4.89	-1.19	2.65	0.01
CELL-B	3.61	4.66	-0.94	1.29	0.15
CELL-D	4.37	3.81	+0.56	1.24	0.15
Conflict	4.53	3.60	+1.02	1.39	0.08
CELL-B					
CELL-D					
<u>INVENTORY ISSUE</u>					
DEPENDENT VARIABLES					
Dissatisfaction	3.66	5.00	-1.07	2.38	0.025
CELL-A	3.70	5.17	-1.32	1.80	0.05
CELL-C	4.60	4.83	-0.20	0.44	0.40
Conflict	4.71	4.10	+0.68	0.93	0.15
CELL-A					
CELL-C					

NOTES: The t-statistics refer to two-sample one-sided tests against the H0: Means of RD-1 are equal to Means of RD-2. The means of RD-2 were expected to be larger. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2. The figures are presented in Chapter IV.

TABLE 100 (Continued)

RATING SCALES: INFERENCES ABOUT THE EFFECT OF ANTAGONISM ON DISSATISFACTION AND CONFLICT

SCENARIO SAMPLE

<u>INFRA-RED ISSUE</u>		(Mean of RD-2)	(Mean of RD-1)	d	t	p
DEPENDENT VARIABLES						
Dissatisfaction	CELL-B	3.25	4.67	-1.20	2.11	0.05
	CELL-D	3.48	4.55	-1.04	1.53	0.07
	CELL-B	4.55	4.28	+0.23	0.41	0.40
	CELL-D	4.15	3.20	+1.31	1.93	0.05
Conflict						
<u>INVENTORY ISSUE</u>						
DEPENDENT VARIABLES						
Dissatisfaction	CELL-A	3.27	5.20	-1.53	2.68	0.025
	CELL-C	3.59	5.89	-2.51	3.69	0.0025
	CELL-A	4.60	3.61	+1.17	2.05	0.05
Conflict	CELL-C	4.15	5.20	-1.38	2.04	0.05

NOTES: The t-statistics refer to two-sample one-sided tests against the H0: Means of RD-1 are equal to Means of RD-2. The means of RD-2 were expected to be larger. The cell labels A, B, C, and D correspond to Figure 7 for RD-1 and Figure 8 for RD-2. The figures are presented in Chapter IV.

analyses. The same discrepancy appears to manifest itself in the experimental samples. When assessed through content analysis, the effect was supported relatively better while the magnitude estimation provided the best support. However, the trend noticed in the rating scales with reference to dissatisfaction and conflict constructs had not surfaced before.

Issue-Specific Vs. Overall Perceptions

Although a comparison between issue-specific and overall perceptions was not mandated by any of the selected research hypotheses, the assessment of the dichotomy premise (i.e., that issue-specific perceptions are distinct from overall perceptions) is central to the new conceptualization offered in this dissertation. Therefore, comparisons similar to those made for the pretest data were carried out for the experimental samples as well.

Content Analysis

Table 101 reports the content analysis results for the dichotomy premise. Though some of the effects were statistically not significant at 0.10 level, all the effects were in the hypothesized direction. In every comparison, the overall EMB was lower than the issue-specific EMB for the negative incongruities and is indicated in the tables by the en-

TABLE 101

CONTENT ANALYSIS: RESEARCH DESIGN II: GRADUATE SAMPLE

TEST FOR THE DIFFERENCES IN ISSUE-SPECIFIC AND OVERALL PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB) AND SATISFACTION/COOPERATION (EOE)									
INCONGRUITY	High Negative		High Positive		Low Negative		Low Positive		
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	
ANTAGONISM	YES		NO		YES		NO		
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	
SALIENCE	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	
CELL SIZE	18	19	18	19	18	19	18	19	
ISSUE-SPECIFIC EMB (%)	74.19	69.57	15.00	25.00	71.43	60.00	22.22	28.57	
ISSUE-SPECIFIC EOE (%)	25.81	30.43	85.00	75.00	28.57	40.00	77.78	71.43	
OVERALL EMB (%)	65.22	36.00	11.11	17.65	31.25	50.00	10.00	26.92	
OVERALL EOE (%)	34.78	64.00	88.89	82.35	68.75	50.00	90.00	73.08	
CHI-SQUARE STATISTIC	4.20	53.23	1.19	2.88	79.11	4.13	8.64	0.13	
P-VALUE	0.0404	0.0000	0.2753	0.0783	0.0000	0.0421	0.0033	0.7112	
DIRECTIONALITY	POSITIVE	POSITIVE	CORRECT	CORRECT	POSITIVE	POSITIVE	CORRECT	CORRECT	

NOTES: Degrees of freedom for all chi-square statistics is one. The chi-square tests were carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the Ho: Expected frequency of overall EMB and EOE is equal to the observed frequencies of issue-specific EMB and EOE.

TABLE 101 (Continued)

CONTENT ANALYSIS: RESEARCH DESIGN II: INDUSTRIAL SAMPLE

TEST FOR THE DIFFERENCES IN ISSUE-SPECIFIC AND OVERALL PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB) AND SATISFACTION/COOPERATION (EOE)

INCONGRUITY	High Negative				High Positive				Low Negative				Low Positive			
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
ANTAGONISM	YES				NO				YES				NO			
SALIENCE	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
CELL SIZE	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
ISSUE-SPECIFIC EMB (%)	69.96	55.36	19.05	25.58	57.29	75.51							19.23	30.43		
ISSUE-SPECIFIC EOE (%)	30.04	44.64	80.95	74.42	42.71	24.49							80.77	69.57		
OVERALL EMB (%)	38.81	50.00	26.67	23.26	32.88	37.70							28.57	28.57		
OVERALL EOE (%)	61.19	50.00	73.33	76.74	67.12	62.30							71.43	71.43		
CHI-SQUARE STATISTIC	46.17	1.16	3.77	0.28	24.35	77.30							5.62	0.16		
P-VALUE	0.0000	0.2815	0.0522	0.6161	0.0000	0.0000							0.0178	0.6423		
DIRECTIONALITY	POSITIVE	POSITIVE	CORRECT	CORRECT	POSITIVE	POSITIVE	CORRECT	CORRECT	POSITIVE	POSITIVE	CORRECT	CORRECT	CORRECT	CORRECT	CORRECT	CORRECT

NOTES: Degrees of freedom for all the chi-square statistics is one. The chi-square tests were carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the Ho: Expected frequency of overall EMB and EOE is equal to the observed frequencies of issue-specific EMB and EOE.

TABLE 101 (Continued)

CONTENT ANALYSIS: RESEARCH DESIGN II: SCENARIO SAMPLE

TEST FOR THE DIFFERENCES IN ISSUE-SPECIFIC AND OVERALL PERCEPTIONS OF DISSATISFACTION/CONFLICT (EMB) AND SATISFACTION/COOPERATION (EOE)										
INCONGRUITY	High Negative		High Positive		Low Negative		Low Positive			
ANTAGONISM	YES		NO		YES		NO			
SALIENCE	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
CELL SIZE	8	8	8	8	8	8	8	8	8	8
ISSUE-SPECIFIC EMB (%)	82.61	62.50	14.29	22.22	76.92	61.54	30.00	38.46		
ISSUE-SPECIFIC EOE (%)	17.39	37.50	85.71	77.78	23.08	38.46	70.00	61.54		
OVERALL EMB (%)	56.00	10.00	25.00	12.50	33.33	16.67	27.27	23.08		
OVERALL EOE (%)	44.00	90.00	75.00	87.50	66.67	83.33	72.73	76.92		
CHI-SQUARE STATISTIC	49.29	117.60	9.37	5.46	107.03	85.07	0.36	9.99		
P-VALUE	0.0000	0.0000	0.0022	0.0195	0.0000	0.0000	0.5485	0.0016		
DIRECTIONALITY	POSITIVE	POSITIVE	CORRECT	CORRECT	POSITIVE	POSITIVE	CORRECT	CORRECT		

NOTES: Degrees of freedom for all chi-square statistics is one. The chi-square tests were carried out using the one-sample test for nominal data (Siegel 1956, page 42) against the H_0 : Expected frequency of overall EMB and EOE is equal to the observed frequencies of issue-specific EMB and EOE.

try "positive" under directionality. For positive incongruities the overall EOE percentages were either higher than the issue-specific EOE percentages; or, if they were lower, they were consistently higher than corresponding EMB percentages. Both situations are supportive of the expected effects (see Chapter IV; page 265 for rationale). To point this out, an entry of "correct" has been made against directionality in the table signifying the effects are in the anticipated direction for the positive issues. Thus, the dichotomy premise was supported by the research results.

Magnitude Scales

The test procedure for the magnitude scales data involved the comparison of issue-specific measures of conflict and cooperation on the inventory and the promotion issue with overall measures of conflict and cooperation, respectively. The comparison with the infra-red and the meal allowance scores would have been meaningless as the latter were used as anchor issues. Further, the comparison with the high incongruity scores makes the tests more stringent. The results are presented in Table 102.

The expectation was to find overall conflict perceptions to be lower than issue-specific conflict perceptions, and the overall cooperation perceptions to be either (i) higher than issue-specific cooperation perceptions, or (ii)

TABLE 102
MAGNITUDE ESTIMATES: RESEARCH DESIGN II: GRADUATE SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t p
NUMERICAL METHOD						
HIGH SALIENCE Cooperation	18	2.65	0.051	0.137	+0.44*	1.33 0.10
ISSUE	18	2.71	0.187			
OVERALL	18	2.68	0.132	0.195	+5.54*	16.78 0.0005
Conflict	18	1.60	0.242			
LOW SALIENCE Cooperation	19	2.63	0.049	0.204	+1.03*	3.22 0.0025
ISSUE	19	2.84	0.285			
OVERALL	19	2.51	0.211	0.202	+4.65*	14.54 0.0005
Conflict	19	1.57	0.193			
LINE-LENGTH METHOD						
HIGH SALIENCE Cooperation	18	2.65	0.051	0.140	+0.79*	2.38 0.025
ISSUE	18	2.76	0.192			
OVERALL	18	2.76	0.221	0.209	+5.55*	16.82 0.0005
Conflict	18	1.60	0.197			
LOW SALIENCE Cooperation	19	2.63	0.043	0.203	0.00*	0.00 0.999
ISSUE	19	2.63	0.284			
OVERALL	19	2.53	0.117	0.183	+5.63*	17.59 0.0005
Conflict	19	1.50	0.231			

NOTES: * Indicates that the direction of the effect is correct. The plus and minus signs show the nature of perceptual change.

TABLE 102 (Continued)
MAGNITUDE ESTIMATES: RESEARCH DESIGN II: INDUSTRIAL SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t p
NUMERICAL METHOD						
HIGH SALIENCE Cooperation	28	2.65	0.096	0.197	+0.71*	2.63 0.01
ISSUE	28	2.79	0.261			
OVERALL	28	2.73	0.096	0.339	+2.77*	10.27 0.0005
Conflict	28	1.79	0.469			
LOW SALIENCE Cooperation	28	2.59	0.284	0.329	+0.15*	0.56 0.40
ISSUE	28	2.64	0.368			
OVERALL	28	2.59	0.153	0.455	+2.04*	7.57 0.0005
Conflict	28	1.66	0.625			
LINE-LENGTH METHOD						
HIGH SALIENCE Cooperation	28	2.71	0.150	0.140	+1.00*	3.70 0.0005
ISSUE	28	2.85	0.129			
OVERALL	28	2.68	0.102	0.215	+2.28*	8.44 0.0005
Conflict	28	2.19	0.287			
LOW SALIENCE Cooperation	28	2.61	0.273	0.199	+1.00*	3.72 0.0005
ISSUE	28	2.81	0.066			
OVERALL	28	2.60	0.105	0.269	+1.56*	5.78 0.0005
Conflict	28	2.18	0.366			

NOTES: * Indicates that the direction of the effect is correct. The plus and minus signs show the nature of perceptual change.

TABLE 102 (Continued)
MAGNITUDE ESTIMATES: RESEARCH DESIGN II: SCENARIO SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
METHODS/ CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t
NUMERICAL METHOD						
HIGH SALIENCE						
Cooperation	8	2.66	0.052	0.326	+0.71*	1.41
ISSUE	8	2.89	0.458			0.10
OVERALL	8	2.80	0.011	0.390	+3.69*	7.38
Conflict	8	1.36	0.552			0.0005
LOW SALIENCE						
Cooperation	8	2.58	0.113	0.221	+0.36*	0.72
ISSUE	8	2.66	0.291			0.22
OVERALL	8	2.60	0.231	0.451	+2.46*	4.92
Conflict	8	1.49	0.595			0.0005
LINE-LENGTH METHOD						
HIGH SALIENCE						
Cooperation	8	2.66	0.052	0.266	+0.83*	1.65
ISSUE	8	2.88	0.372			0.10
OVERALL	8	2.73	0.352	0.523	+2.28*	4.55
Conflict	8	1.54	0.651			0.0005
LOW SALIENCE						
Cooperation	8	2.58	0.127	0.198	+0.30*	0.61
ISSUE	8	2.64	0.250			0.30
OVERALL	8	2.60	0.233	0.439	+2.53*	5.06
Conflict	8	1.49	0.575			0.0005

NOTES: * Indicates that the direction of the effect is correct. The plus and minus signs show the nature of perceptual change.

if they were lower than issue-specific perceptions, for them to be higher than overall conflict perceptions (see Chapter IV; page 267 for the rationale). The latter possibility has already been ruled out by the results shown in Table 96.

The data indicates that the dichotomy premise was supported in all comparisons in terms of the directionality of effects. In two comparisons in the scenario data, one in the industry data, and one in the graduate data, the magnitude of effects did not meet the significance criteria of 0.10. In the majority of cases, the effects were significant beyond the 0.0005 level. No patterns were discernible across samples or methods. These findings are consistent with those of the pretest sample.

Rating Scales

The assessment of the dichotomy was carried out by comparing scores of conflict and cooperation on the inventory and the promotion issue with the ratings obtained on the overall relations immediately after these issues had been appraised. The findings are reported in Table 103. The results strongly support the premise except for one comparison on conflict in the graduate sample.

For conflict the expectation was to find lower overall conflict perceptions as compared to the inventory issue. In every case, this result occurred and is indicated in the ta-

TABLE 103
RATING SCALES: RESEARCH DESIGN II: GRADUATE SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t
<u>HIGH SALIENCE</u>						
Cooperation: Issue	18	4.99	0.976	0.915	-0.38	1.16
: Overall	18	4.64	0.850			(0.15)
Conflict: Issue	18	4.43	0.796	0.876	+0.07	0.21
: Overall	18	3.37	0.950			(0.70)
<u>LOW SALIENCE</u>						
Cooperation: Issue	19	4.73	0.964	0.944	-0.01	0.03
: Overall	19	4.72	0.924			(0.90)
Conflict: Issue	19	4.06	0.522	0.753	+0.93	2.90
: Overall	19	3.36	0.929			(0.005)

NOTES: Issue refers to the inventory issue for conflict and the promotion issue for cooperation. Values in parentheses below t-statistics are one-sided p-values. The signs preceding the d-statistic merely record the direction of change from issue perceptions to overall perceptions and NOT negative or positive effects.

TABLE 103 (Continued)
RATING SCALES: RESEARCH DESIGN II: INDUSTRIAL SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t
<u>HIGH SALIENCE</u>						
Cooperation: Issue	28	4.84	1.107	1.056	-0.06	0.21
: Overall	28	4.78	1.003			(0.60)
Conflict : Issue	28	4.60	1.171	1.104	+1.18	4.36
: Overall	28	3.30	1.033			(0.0005)
<u>LOW SALIENCE</u>						
Cooperation: Issue	28	4.48	0.847	0.908	+0.02	0.08
: Overall	28	4.50	0.966			(0.80)
Conflict : Issue	28	4.71	0.909	0.972	+1.30	4.80
: Overall	28	3.45	1.031			(0.0005)

NOTES: Issue refers to the inventory issue for conflict and the promotion issue for cooperation. Values in parentheses below t-statistics are one-sided p-values. The signs preceding the d-statistic merely record the direction of change from issue perceptions to overall perceptions and NOT negative or positive effects.

TABLE 103 (Continued)
RATING SCALES: RESEARCH DESIGN II: SCENARIO SAMPLE

TEST FOR THE DIFFERENCES IN THE ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT AND COOPERATION AND THE OVERALL PERCEPTIONS OF CONFLICT AND COOPERATION						
CONDITIONS/ VARIABLES	Sample Size	Mean	Standard Deviation	Pooled Standard Deviation	d	t
<u>HIGH SALIENCE</u>						
Cooperation: Issue	8	5.15	0.846	0.730	-0.44	0.88
: Overall	8	4.83	0.591			(0.20)
Conflict: Issue	8	4.60	0.800	0.716	+1.84	3.69
: Overall	8	3.28	0.620			(0.0025)
<u>LOW SALIENCE</u>						
Cooperation: Issue	8	4.85	1.184	1.078	-0.14	0.28
: Overall	8	4.70	0.961			(0.50)
Conflict: Issue	8	4.15	0.422	0.731	+1.09	2.19
: Overall	8	3.35	0.944			(0.025)

NOTES: Issue refers to the inventory issue for conflict and the promotion issue for cooperation. Values in parentheses below t-statistics are one-sided p-values. The signs preceding the d-statistic merely record the direction of change from issue perceptions to overall perceptions and NOT negative or positive effects.

ble by a (+) signifying a more positive appraisal of the overall relations than the issue. Except in the graduate sample where one of the two effects was not significant (although the direction was correct), all other effects were significant.

Regarding the perceptions of cooperation, two kinds of acceptable results were expected. The overall perceptions could surpass the issue perceptions resulting in higher means. (see Chapter IV; page 269). This happened only once in the industry data. The second possibility was to find positive overall perceptions but not as positive as the issue perceptions. This was the common finding.

In the rating scales the second situation translates to the overall cooperation perceptions being higher than 4.0 (the indifference point). Although the comparison is not reported in a tabular form here, one-sample, one-sided t-tests comparing the overall cooperation scores with 4.0 were significant (p-value less than 0.0005) in every case. No variations across samples were noticeable.

SUMMARY OF RESULTS

Content Analysis

In general, the experimental data sets have provided stronger support for the effects pertaining to hypotheses

four (a), four (b), and five than the pretest data. While the effect of antagonism was not fully supported, the results were nonetheless better than those of the pretest data. Hypothesis eight was supported by all data sets, as was the dichotomy premise. Unlike the pretest, the d-statistics have been more corroborative of the EMB/EOE based results in the experimental samples.

Magnitude Scales

In general, the support for expected effects has been strong from the magnitude estimation methodology. The weakest support (though directionally correct) was extended to the antagonism effect although the test results were superior to those found by the pretest sample. In general, the test results are comparatively more supportive than the content analysis results. Barring a few exceptions noted earlier, the nature of positive results is consistent across all samples. Since, the magnitude estimates were obtained using the numerical as well as the length allotment methods, a test-retest validation process was implicit. This is particularly noteworthy since no differences were found across the two methods.

Rating Scales

The results of the rating scales were very mixed. The MANOVA and ANOVA results tended to be largely unsupportive, and were poorer than the pretest results. The detailed comparisons of means generally corroborated the analysis of variance results.

However, operational hypothesis eight and the dichotomy premise were well-supported. The measurement models, as in the pretest, were found to be reliable and unidimensional.

When compared to the results obtained by the content analysis and the magnitude estimation methodologies, the presence of a method artifact in rating scales appears to be a distinct possibility.

DEMAND ARTIFACTS

The possibilities of demand artifacts were checked for by asking the subjects to guess the purpose of the experiment in the final questionnaire (on experimental experience) administered to them. The hypotheses were not guessed and the responses were similar to the pretest findings across all samples, including the industry sample.

QUANTITATIVE INTEGRATION OF RESULTS

Methodology

The integration of effects was carried out using the d-statistics. In the case of content analysis where both the chi-square based effects and the d-statistics had been computed, the d-statistic results were used as inputs. This selection was made because the chi-square based results had, in general, been more liberal in indicating support for hypotheses than the d-statistics. On the other hand, hypothesis eight and the dichotomy premise about issue-specific and overall perceptions for the content data were only testable using the chi-square tests (reasons cited in Chapter IV). In the latter tests, the chi-square statistics were transformed into d-statistics using the conversion formula proposed by Kendall and Stuart (1967) as presented by Glass, McGaw and Smith (1982, page 150).

The test of interaction effects (operational hypotheses 4.a.3, 4.b.3 and 5.3) had entailed three pair-wise comparisons each. In the tests for hypothesis eight, antagonism effect, and the dichotomy premise, separate comparisons were carried out for the high and low salience cells because salience was a between-subjects variable. Where multiple comparisons were made between the same subjects (as in the interaction effect) the effects were averaged to avoid the

problem of interdependence and artificial inflation of sample sizes (Monroe and Krishnan 1983b; Hunter, Schmidt and Jackson 1982). Where comparisons involved different subjects, each effect was separately entered into the cumulation process (Monroe and Krishnan 1983b); however, a weighted average was computed to get a single statistic on each proposition from each data-set. This procedure had the effect of reducing the degrees of freedom and thereby enhancing the rigor of the tests.

Hedges (1980) has pointed out that the d-statistic is usually a positively biased estimator of effect size in the case of sample sizes less than fifty. Consequently, before the actual integration, all effects were deflated by the correction factor proposed by Hedges as reproduced in Glass, McGaw and Smith (1982, page 113). Since the correction factor is based on the size of the control group, it also eliminates biases due to differences in the size of control and experimental groups.

One final averaging was required prior to the integration. Since the effects were estimated using content analysis, magnitude estimates (numerical and the length methods) and the rating scales, each data-set had yielded four estimates of the effects for each proposition. These estimates were combined by a simple averaging as the sample sizes across the four methods were identical within each data-set.

Throughout this chapter and the preceding chapter the presented results had revealed a variation in effects across different methods. In particular, it was noticed that the effects obtained were generally the smallest for rating scales followed by the content analysis. The magnitude estimation had yielded the largest effects. The pattern seemed to suggest that different methods have different method artifacts associated with them. The rating scales had tended to suppress the variations due to the restrictions of limited response categories while the magnitude estimation had tended to inflate them by allowing for unrestricted response ranges. Hence, the simple averaging of the effects across the methods provides the best indicators for genuine estimates of effect sizes by eliminating extreme values.

The method-wise effects across all samples are also reported to document the presence of these method artifacts. These are sample weighted averages as the number of subjects varied across different samples.

Results of the pretest data were integrated with the results of the four experimental data-sets. Consequently, for hypothesis four (a) five data-points were available for integration. Since the undergraduate data for RD-2 were not analyzed, all the remaining propositions were assessed by combining four data-points each.

The actual integration process involved the following steps: (i) the weighted average effect sizes for each proposition were obtained in terms of d-statistics as well as their correlation equivalents; (ii) the variances in effects were computed using the correlation equivalents; (iii) the sampling errors were estimated using the approach suggested by Hunter, Schmidt and Jackson (1982, page 44); (iv) the variations due to sampling error were subtracted from the computed variances to estimate variance in population correlations; and finally (v) the chi-square tests for homogeneity of effects (Hunter, Schmidt and Jackson 1982, page 47) were carried out.

Results

Table 104 presents the twenty theoretical propositions whose effects were quantitatively integrated. Table 105 shows the effect sizes by samples averaged across methods that were used as inputs to the meta-analysis. The numbers under the column titled, "Theoretical Propositions" in Table 105 pertain to the code numbers given to the propositions in Table 104. All subsequent tables also refer to the propositions by the code numbers given in Table 104. Table 106 shows the results of integration for the propositions stemming from RD-1 (code numbers 1 through 6), antagonism effects (#'s 17 and 18), and dichotomy effects (#'s 19 and

20). Table 107 presents the quantitative integration of the results for RD-2. Table 108 reports the mean effect sizes broken down by methods across all samples.

In all cases, the variations in effects across the samples were explained completely by sampling error indicating that the results came from the same distribution of results. The chi-square tests for homogeneity corroborated this claim, and every test was insignificant attesting to the homogeneity of effects across samples.

Power of the tests was also estimated for the integrated results. Since all the tests were one-sided, power estimates were obtained for the one-sided alpha level of 0.05 using Cohen's tables (1977). Thirteen of twenty results had the statistical power of 0.995; for another three propositions power estimates ranged from 0.816 to 0.947. The remaining four integrations had power ranging from 0.235 to 0.620.

Mean effects for twelve out of twenty propositions were larger than $d=1.0$ and thereby exceeded the 0.80 mark considered to be "large" effect size for new areas of inquiry (Cohen 1977, pp. 25-27). All the incongruity effects (propositions 1, 4, 7, 10, and 13 pertaining to hypotheses 4.a.1, 4.b.1 and 5.1) and all the interaction effects (propositions 3, 6, 9, 12 and 15 pertaining to hypotheses 4.a.3, 4.b.3 and

TABLE 104
LIST OF PROPOSITIONS FOR QUANTITATIVE INTEGRATION

THEORETICAL PROPOSITIONS	CODE NUMBER
Incongruity Effect on Issue-Specific Dissatisfaction (RD-1)	1
Salience Effect on Issue-Specific Dissatisfaction (RD-1)	2
Interaction Effect on Issue-Specific Dissatisfaction (RD-1)	3
Incongruity Effect on Issue-Specific Conflict (RD-1)	4
Salience Effect on Issue-Specific Conflict (RD-1)	5
Interaction Effect on Issue-Specific Conflict (RD-1)	6
Incongruity Effect on Issue-Specific Dissatisfaction (RD-2)	7
Salience Effect on Issue-Specific Dissatisfaction (RD-2)	8
Interaction Effect on Issue-Specific Dissatisfaction (RD-2)	9
Incongruity Effect on Issue-Specific Conflict (RD-2)	10
Salience Effect on Issue-Specific Conflict (RD-2)	11
Interaction Effect on Issue-Specific Conflict (RD-2)	12
Incongruity Effect on Issue-Specific Cooperation (RD-2)	13
Salience Effect on Issue-Specific Cooperation (RD-2)	14
Interaction Effect on Issue-Specific Cooperation (RD-2)	15
Cooperative Final Overall Perception: Hypothesis Eight (RD-2)	16
Antagonism Effect on Issue-Specific Dissatisfaction	17
Antagonism Effect on Issue-Specific Conflict	18
Dichotomy of Issue-Specific and Overall Conflict	19
Dichotomy of Issue-Specific and Overall Cooperation	20

TABLE 105
LIST OF EFFECTS ENTERED IN THE QUANTITATIVE INTEGRATION
(d-statistics)

THEORETICAL PROPOSITION	SAMPLES				SCENARIO
	PRETEST	UNDERGRADUATES	GRADUATES	INDUSTRIAL	
1	1.34	1.51	1.01	1.29	1.12
2	0.35	0.33	0.24	0.51	-0.005
3	1.14	1.31	1.03	0.85	0.60
4	1.14	1.55	1.05	1.43	0.93
5	0.25	0.21	0.26	0.58	0.03
6	1.10	1.18	1.14	1.08	0.52
7	1.95	-	1.79	2.96	3.08
8	0.20	-	0.27	0.40	0.37
9	1.73	-	1.54	2.81	2.45
10	1.34	-	1.90	3.00	1.83
11	0.24	-	0.49	0.39	0.59
12	1.53	-	1.82	2.86	11.57
13	1.12	-	6.56	1.54	3.29
14	-0.11	-	0.16	0.14	0.28
15	0.77	-	4.32	2.07	4.05
16	1.20	-	2.97	1.51	1.89
17	0.28	-	0.05	0.05	-0.04
18	0.32	-	0.21	0.33	0.30
19	1.90	-	3.34	1.91	2.98
20	0.71	-	0.50	0.48	0.70

TABLE 106
RESULTS OF QUANTITATIVE INTEGRATION
(PROPOSITIONS FROM RD-1, ANTAGONISM EFFECT AND DICHOTOMY EFFECT)

Theoretical Proposition	Number of Effects	Total Sample Size	Weighted Mean d	Weighted Effect r	Variance of Effects	Variance Due to Sampling Error	Chi-Square Statistic	Degrees of Freedom	P-value	Power (alpha = 0.05)
1	5	85	1.320	0.48	0.0050	100%	0.7176	4	0.95	0.995
2	5	85	0.300	0.14	0.0027	100%	0.2388	4	0.99	0.620
3	5	85	1.120	0.45	0.0062	100%	0.8286	4	0.96	0.995
4	5	85	1.320	0.48	0.0068	100%	0.9759	4	0.96	0.995
5	5	85	0.240	0.11	0.0023	100%	0.2003	4	0.99	0.470
6	4	85	1.090	0.44	0.0044	100%	0.5751	4	0.98	0.995
17	4	172	0.070	0.05	0.0019	100%	0.3284	3	0.96	0.235
18	4	172	0.290	0.14	0.0007	100%	0.1253	3	0.99	0.836
19	4	126	2.460	0.69	0.0012	100%	0.5509	3	0.91	0.995
20	4	126	0.540	0.25	0.0015	100%	0.2150	3	0.98	0.995

NOTE: All power estimates are based on one-sided alpha level.

TABLE 107
RESULTS OF QUANTITATIVE INTEGRATION
(PROPOSITIONS FROM RD-2)

Theoretical Proposition	Number of Effects	Total Sample Size	Weighted Mean	Effect r	Variance of Effects	Variance Due to Sampling Error	Chi-Square Statistic	Degrees of Freedom	P-value	Power (alpha =0.05)
7	4	126	2.500	0.53	0.0006	100%	0.1461	3	0.99	0.995
8	4	126	0.330	0.16	0.0013	100%	0.1725	3	0.98	0.816
9	4	126	2.250	0.56	0.0035	100%	0.9360	3	0.80	0.995
10	4	126	2.300	0.52	0.0020	100%	0.4734	3	0.93	0.995
11	4	126	0.420	0.21	0.0022	100%	0.3034	3	0.96	0.947
12	4	126	3.480	0.58	0.0017	100%	0.4864	3	0.93	0.995
13	4	126	3.180	0.49	0.0022	100%	0.4800	3	0.92	0.995
14	4	126	0.130	0.07	0.0023	100%	0.2927	3	0.96	0.278
15	4	126	2.810	0.52	0.0072	100%	1.7042	3	0.60	0.995
16	4	126	1.950	0.59	0.0059	100%	1.7493	3	0.60	0.995

NOTE: All power estimates are based on one-sided alpha level.

5.3) surpassed $d=1.0$ with the power of tests exceeding 0.995. The salience effects (propositions 2, 5, 8, 11 and 14 on hypotheses 4.a.2, 4.b.2 and 5.2) were considerably lower (range of d -bar: 0.13 to 0.42) and in three of five cases the power of the test was lower than 0.80.

Hypothesis eight yielded a large mean effect ($d=1.950$; power=0.995) supporting the proposition that the overall final perceptions of subjects exposed to parallel positive and negative issues were cooperative. However, the antagonism effects were weak, particularly on the dependent variable dissatisfaction (mean $d=0.07$; power=0.235). Antagonism effect on conflict, though "small" in itself was considerably larger than for dissatisfaction (mean $d=0.29$; power=0.836).

The dichotomy premise was strongly supported for differences in issue-specific and overall perceptions of conflict (mean $d=2.46$; power=0.995). The corresponding premise about the perceptions of cooperation yielded a "medium" effect (Cohen 1977) with a mean d of 0.540 (power=0.995).

In conclusion, the meta-analysis has indicated that despite some differences found in the detailed discussion of results, the results across the samples are homogeneous. Sixty percent of the effects exceeded $d=1.0$. In general, the integrated findings support the detailed findings: (i) incongruity effect and interaction effects are large; (ii)

salience effects are small suggesting that the incongruity effects were responsible for making the interaction effects large; (iii) antagonism effects were also poor; (iv) hypothesis eight was supported by a large effect size; and (v) the dichotomy premise was also supported. For reasons cited earlier in this chapter and Chapter IV, the dichotomy effect on cooperation was not expected to be large as two alternative patterns of results are consistent with the dichotomy premise. Consequently, the mean d of 0.54 for this proposition should be interpreted charitably. As regards the power of the tests, 80% of the propositions had the statistical power of 0.80 or more.

Table 108 was prepared to highlight in a summary form the differences in the magnitude of effects across different methods discussed at several points in this chapter. Barring a few exceptions, the rating scales results yielded the smallest effect (mean d across the twenty propositions was 0.20) followed by the content analysis (mean $d=0.70$). The magnitude estimation procedure yielded the largest effects (mean d for the numerical method was 2.46; and 2.23 for the length approach).

SUMMARY OF CHAPTER

This chapter has presented the analyses carried out to test the ten proposed operational hypotheses and the dichotomy

TABLE 108
LIST OF EFFECTS ACCORDING TO METHODS (d-statistics)
(Weighted Averages Across All Relevant Samples Used)

THEORETICAL PROPOSITIONS	CONTENT ANALYSIS	MAGNITUDE ESTIMATION (NUMERICAL)	ESTIMATION (LINE-LENGTH)	RATING SCALES	NUMBERS OF SAMPLES
1	0.54	2.13	2.08	0.54	5
2	0.46	0.28	0.26	0.19	5
3	0.64	1.67	1.54	0.60	5
4	0.54	2.05	2.24	0.02	5
5	0.46	0.21	0.27	0.03	5
6	0.64	1.55	1.74	0.42	5
7	0.46	4.21	5.13	0.18	4
8	0.58	0.38	0.40	-0.03	4
9	1.11	4.04	3.72	0.10	4
10	0.46	4.00	4.53	0.21	4
11	0.58	0.48	0.43	0.21	4
12	1.11	9.10	3.42	0.29	4
13	0.39	6.04	6.26	0.03	4
14	0.06	0.22	0.17	0.08	4
15	0.42	5.63	4.96	0.22	4
16	1.11	2.92	3.10	0.64	4
17	0.39	0.43	0.36	-0.88	4
18	0.39	0.26	0.41	0.08	4
19	2.93	3.03	2.92	0.96	4
20	0.82	0.53	0.65	0.18	4
Mean d	0.70	2.46	2.23	0.20	

NOTES: The mean effect size has been computed by a simple average of effects across the twenty propositions.

tomy premise. Given several samples and different methods, a final verdict on the tested propositions would have been difficult without a quantitative integration of separate results. Consequently, a meta-analysis of obtained effects was carried out in which the pretest results were also included.

The separate findings for different samples and methods had revealed a wide range of effect sizes and prominently pointed toward the presence of method artifacts. The quantitative integration found all the results to be homogeneous once the sampling errors were removed from the variances. Salience and antagonism effects were small although the direction of effects was correct. All other tested propositions were supported. Stated in terms of operational hypotheses, all hypotheses except 4.a.2, 4.b.2, and 5.2, were supported. Even in the case of the latter three hypotheses, the direction of results was correct.

Chapter VI reports the conclusions and the implications arising from the obtained results. In particular, the substantive, theoretical and methodological contributions are discussed. Finally, the limitations of this research and suggestions for the future directions of research in this content area are presented.

Chapter VI

CONCLUSIONS

This final chapter discusses the substantive findings of this research, and its theoretical and methodological contributions. Finally, the limitations of the study and the directions for future research are identified.

SUMMARY OF DISSERTATION

This dissertation was concerned with exploring the nature of relationships between channel conflict and cooperation. Explicitly, three chief conceptual issues were investigated: (1) whether the presence of a perception of conflict necessarily implied the absence of a perception of cooperation; (2) whether the issue-specific and the overall perceptions of conflict and cooperation are different constructs; and (3) whether incongruities and salience, as constructs, explain the emergence of cooperation and dissatisfaction or of conflict when antagonism was included as a construct.

The channels of distribution, behaviorally, represent a non-zero-sum game context. Interdependence and superordinate goals are generally acknowledged. Although cooperation is the commonplace and dominant behavior in channel relationships, empirical understanding of the phenomenon of channel

cooperation is currently minimal. Moreover, the observed channel realities suggest that channel members may often disagree on specific issues and yet continue to work together as a channel, implying a simultaneous presence of issue-specific conflicts with overall cooperation. This research empirically tested for the presence of such a cooperative bias as well as the dichotomy between issue-specific and overall perceptions.

The third conceptual thrust of this dissertation was to understand the causes of dissatisfaction, conflict, and cooperation. The channel conflict research stream has empirically investigated several causes of conflict. However, structural causes like interdependencies and power imbalances merely describe the typical context of channels. Any actual immediate causes of channel conflict would occur within such conditions of interdependency and power imbalances.

In the conceptual discussion it was argued that incongruity between the expectations and the actual outcomes leading to antagonism appears to be the central endogenous cause of conflict; and that a host of issues can trigger this perception of incongruence. The various issues, then, become more of operational details and exogenous variables rather than the immediate cause of conflict. A shortcoming of the current conceptual and empirical research on causes

of conflict has been an absence of works that explain (i) why some issues are perceived as incongruent; (ii) the types of incongruities that lead to perceptions of antagonism, and hence conflict; and (iii) the process that converts incongruities into perceptions of conflict. Incongruity per se may not result in conflict if the incongruity was expected from past experiences and expectations, or if the issues have low salience. The present research makes a contribution in this direction by testing for the causes of dissatisfaction, conflict and cooperation from an exchange theory perspective. It was hypothesized that perceived dissatisfaction is caused by negative incongruity and salience, and that dissatisfaction would lead to perceived conflict if antagonism was also experienced. On the other hand, positive incongruity and salience were postulated as the causes of perceived cooperation.

The technique of parasimulation was employed to test the research hypotheses using both students and industry people as experimental subjects. The dependent measures were obtained using three different methods: content analysis, magnitude estimates, and traditional rating scales. Multiple indicators for all measured variables were used and assessed for reliability and unidimensionality. Since five different samples and three different methods were employed,

the results of the investigation were integrated quantitatively to summarize the results of the tested propositions.

The experimental procedure involved two research designs. The first research design (RD-1), a 2X2 factorial design, was employed to test theoretical hypothesis four (a); the second research design (RD-2), a 2X2X2 nested factorial design, was used to test theoretical hypotheses four (b), five and eight.

FINDINGS

The results of this investigation have empirically demonstrated that: (i) issue-specific perceptions of conflict can coexist with overall perceptions of cooperation; (ii) issue-specific and overall perceptions of conflict and cooperation are distinct perceptions; (iii) inter-firm relations can be characterized as cooperative even when there are parallel positive and negative issue-outcomes; and (iv) incongruities can explain the emergence of perceptions of dissatisfaction, conflict and cooperation. However, the salience and antagonism variables had directionally correct but weaker explanatory power for the emergence of the above perceptions.

The results of the quantitative integration of effects show that in all cases, the variations in effects across the samples were completely explained by sampling error, indi-

cating that the results came from the same distribution of results. The chi-square tests for homogeneity corroborated this claim, and every test was insignificant attesting to the homogeneity of effects across samples.

Power of the tests was also estimated for the integrated results. Thirteen of twenty results had the statistical power of 0.995; for another three tests power estimates ranged from 0.816 to 0.947. The remaining four integrations had power ranging from 0.235 to 0.620. Mean effects for twelve out of twenty results were larger than $d=1.0$ thereby exceeding the 0.80 mark considered to be a "large" effect size for new areas of inquiry. All the incongruity effects and interaction effects surpassed $d=1.0$ with the power of tests exceeding 0.995. The salience effects were considerably lower and in three of five cases the power of the test was lower than 0.80.

Hypothesis eight on the cooperative bias yielded a large mean effect ($d=1.95$; $\text{power}=0.995$) supporting the proposition that the overall final perceptions of subjects exposed to parallel positive and negative issues were cooperative. However, the antagonism effects were weak, particularly on the dependent variable dissatisfaction (mean $d=0.07$; $\text{power}=0.235$). The antagonism effect on conflict, though "small" in itself was larger than for dissatisfaction (mean $d=0.29$; $\text{power}=0.836$).

The dichotomy premise was strongly supported for differences in issue-specific and overall perceptions of conflict (mean $d=2.46$; power=0.995). The corresponding premise about the perceptions of cooperation yielded a "medium" effect (Cohen 1977) with a mean d of 0.540 (power=0.995).

The results prominently pointed toward differences in the magnitude of effects across different methods. Barring a few exceptions, the rating scales results yielded the smallest effect (mean $d=0.20$) followed by the content analysis (mean $d=0.70$). The magnitude estimation procedure yielded the largest effects (mean d for the numerical method was 2.46; and 2.23 for the line-length approach).

CONCEPTUAL CONTRIBUTIONS

As mentioned earlier, there is little empirical understanding of the channel cooperation phenomenon. Primarily, channel researchers have focussed on investigating channel conflict. However, considering the pervasive nature of cooperation in channel relationships, the above orientation has resulted in a conceptual void in the understanding of channel behavior. This investigation, therefore, represents a pioneering effort toward understanding channel cooperation.

Past channel conflict literature conceptually suffers from some other shortcomings as well. Foremost, since coop-

eration is sometimes regarded as the relative absence of conflict, the latter is considered as generally undesirable. In this conception, not only has the relationship between conflict and cooperation been oversimplified, but the supposed detrimental effects of conflict may have been overrated.

The results of this study show that perceptions of conflict and cooperation can coexist and differences between the channel members' expectations and the actual outcomes play an important role in explaining these perceptions. Hence, theory development on conflict and cooperation nested in exchange theory precepts can provide rich insights into these constructs. An attractive feature of the new conceptualization guiding the tested propositions is that it also explains some of the anomalies of earlier research.

Relevance of Superordinate Goals

Following Sherif (1958), some channel conflict researchers have tended to see superordinate goals as a major answer to the channel conflict problem; however empirical results have not substantiated this expectation. Such a conception fails to notice the important contextual differences between the channels setting and the setting of Sherif's experiments. Sherif was able to show the conflict-reducing role of superordinate goals in a zero-sum game context. The

channels setting, however, is typically a non-zero-sum game context, and the superordinate goals already exist. The results of this research have also pointed toward a cooperative bias.

Nonetheless, the superordinate issues may have failed to reduce conflict in the channels context because (i) the issues were not salient; and (ii) behavioral expectations and previous experiences led the parties to expect cooperation on such issues, and as such, they only caused issue-specific perceptions of cooperation that did not reduce the overall conflict perception. If the superordinate issues were important and typically disagreed upon, their successful resolution could have had the desired effect. In other words, the new conceptualization tested may also be seen as an alternative explanation of Sherif's Realistic Group Conflict Theory (1958).

Conflict and Performance

It is generally believed that conflict may be good or bad for performance. This belief has been reified in the form of the inverted U-shaped curve (Rosenbloom, 1973) which simply asserts that while conflict may initially stimulate performance, beyond a certain level it can be dysfunctional. Rosenbloom has also proposed a tolerance range at which conflict was said to have no effect on channel efficiency.

Beyond this range the effect of conflict begins to influence channel efficiency. The conception of a tolerance level implies a cumulative effect, i.e., the cumulative impact of certain levels of conflict is thought to be inadequate to alter efficiency; only when the tolerance level is outweighed by the accumulated conflict does it begin to affect efficiency. Rosenbloom offered the following explanation for the tolerance level: "the parties may feel that their need for each other to achieve their respective goals is so great that the conflict can have no more than a superficial effect ... In other words, the channel members learn to live with the conflict" (page 28, emphasis added). The explanation is cloaked in economic rationality.

The conceptualization tested in this effort offers an alternative behavioral explanation for the inverted U-shaped curve. It may be that simple increases in conflict levels will not undermine performance, if such conflict is expected on those issues and/or if they are unimportant issues. The latter situation may only cause issue-specific perceptions of conflict. On the other hand, performance levels may drop only when the overall relationships begin to be characterized as conflictful.

Moreover, issue-specific conflict may be related to overall conflict in a cumulative manner only under special

conditions. The tolerance range may exist only for unimportant conflictful events or for events which are expected as part of the role set. The tolerance levels may themselves change as channel members adapt to their experiences and modify their expectations or if the salience associated with issues is altered in light of new organizational priorities.

Satisfaction and Cooperation

Satisfaction in the channel context has been defined as (i) positive affective evaluations and attitudes concerning channel arrangements (Schul et al. 1981), and (ii) the degree to which expectations about goals are met (Brown and Frazier 1978). It is easy to see how such experiences of satisfaction are likely to enhance a channel member's expectations of balanced exchange relationship (definitionally, cooperation). Although no empirical investigations of the relationship between channel satisfaction and channel cooperation were found in the available literature, the two constructs were hypothesized to be closely related (see Chapter III).

It was argued that when channel members evaluate the issue-outcomes, they may experience satisfaction if the outcomes please them. Hence, satisfaction is experienced after the issue-outcomes are evaluated. On the other hand, a perception of cooperation goes beyond satisfaction. Now the

channel members are making inferences about how the satisfaction they have experienced has strengthened their expectations of balanced exchange relationships.

Although this relationship was not formally tested in this investigation, the findings nevertheless hint toward support for the above conception. All the inter-trait correlations between satisfaction and cooperation (Table 21, Chapter IV; Table 54, Chapter V) were positive and ranged from 0.52 to 0.83.

Relevance of Frequency Dimension

It was noted in Chapter II that in addition to the four states of conflict, three dimensions of conflict, i.e., intensity, frequency, and importance, have been identified for each conflict state. The various dimensions have not been conceived as substitutable alternate methods of measuring conflict, but rather as complementary measures of a conflict state. It follows that the operational indicators of any conflict state are inadequate individually and the construct is underidentified unless all three aspects of the construct have been measured.

However, given the demonstrated dichotomy between the issue-specific and overall conflict perceptions, the relevance of the frequency dimension requires a reexamination. In the context of issue-specific perceptions, the relevance

of the frequency dimension may be minimal. The channel members may come to expect the outcomes that occur frequently, and consequently, may not experience conflict on such outcomes since they may have become part of their comparison levels. As regards the overall conflict, the frequency dimension may be relevant only when the negative perceptions are not neutralized by positive perceptions. In other words, before the frequency measures on conflictful issues are used for inferences on conflict, the frequency of cooperative issues should be ascertained. Theoretical hypothesis nine (not tested in this dissertation) proposes a possible relationship between the frequencies of these two types of perceptions (Chapter III).

METHODOLOGICAL CONTRIBUTIONS

The methodology employed attempted to correct for some flaws in the available channel literature; the chief contributions being in the area of reliability-validity assessment and correction for scaling assumptions.

Ratio Scales and Different Methods

A common feature of behavioral channel research (and indeed, most marketing studies) has been the violations of data-requirement assumptions associated with statistical techniques. The traditional rating scales only yield ordi-

nal level data, thereby denying the legitimate use of powerful statistical methods based on intervally scaled data assumptions. This deficiency, in turn, undermines the statistical conclusion validity of results. Consequently, magnitude scaling methods were also employed in this investigation. The subjects have demonstrated the ability to make ratio-level judgments suggesting that such techniques are viable and practically usable. The implication is that at least for the assessment of new theoretical relationships, magnitude scales should also be employed in the data-collection to legitimize the use of powerful inferential tools and to enhance the statistical conclusion validity of findings.

As mentioned earlier, the results of this investigation have shown marked differences in the method artifacts associated with the three methods employed. The rating scales yielded small effects while magnitude estimation provided large effect-sizes. The content analysis effects were moderate. The pattern seems to suggest that different methods have different method artifacts associated with them. The rating scales had tended to suppress the variations due to the restrictions of limited response categories while the magnitude estimation had tended to increase them by allowing for unrestricted response ranges. The sole reliance on the

rating scales in this research would have led to a very different set of conclusions, i.e., the evidence for several relationships tested would have been considered very weak. Once again, the implication is that specially when new theoretical propositions are tested, greater confidence can be placed on the evidence when the data are collected using different methods.

Power-Based Sample Size Determination

Table 8 in Chapter II had presented a contrast between the actual sample sizes used in the channel conflict studies and the required sample sizes to obtain the power levels of 0.50 and 0.80. Of the tested propositions of the past studies, 56.9% needed greater sample sizes than actually used to obtain the power level of 0.80; while 41.2% needed larger samples to obtain the power level of 0.50. It was suggested that the sample sizes should be determined on the basis of power requirements since power-based sample size determination is relatively easy and the statistical power can enhance the confidence in conclusion validity of results.

In this research, a priori estimates using Cohen's power tables and the effect sizes observed in past studies were used to guide the determination of sample size to ensure adequate power for statistical tests. Post hoc estimates show that this procedure resulted in 80% of the tested pro-

positions having the statistical power greater than 0.80 and enhanced the confidence in the statistical conclusion validity of the results. This procedure is easy to implement, and is specially recommended for new areas of inquiry where a key legitimate concern should be the statistical power of tests that form the basis for theoretical inferences.

Need for Multiple Indicators

Multiple indicators are needed so that the measurement models are properly identified to permit satisfactory assessment of the reliability, unidimensionality, and validity of the instruments. In this investigation, multiple indicators were included for all the measured dependent variables. The measurement models were refined after checking the reliabilities and unidimensionality at the pretest as well as the experimental stage. Repeated assessment of reliability and unidimensionality with positive results have yielded tested measurement instruments for the constructs of conflict, cooperation and dissatisfaction.

The general need for multiple indicators in empirical research is generally acknowledged and accepted within marketing (e.g., Churchill 1979). This caveat is particularly important when new instruments are developed or when the constructs being measured are given new definitions.

The use of multiple indicators (together with different methods) also lends the data to rigorous convergent and discriminant validity assessment employing the powerful Multi-Trait Multi-Method approach to validation. Though not attempted in this research for space reasons, such checks are strongly recommended to enhance the confidence in theoretical inferences and measurement instruments.

Relevance of Parasimulation to Channel Research

The parasimulation approach to testing channel theory was extended in this dissertation. In the past, the parasimulation experience has been used to generate the dependent behavioral variables of interest. In this research, the technique was used to simulate the channel context rather than to generate dependent theoretical variables. The manipulation checks indicate that the "organizational context" was indeed simulated in all the samples used in the experiment. As such, the parasimulation approach promises to be an effective tool for theory-tests in channels. The technique was used with an industrial sample of graduate students for the first time in this dissertation.

As pointed out in the justification for the use of parasimulation (Chapter IV), access to behavioral channel data is often difficult because of the sensitive and proprietary nature of the information. Isolating key informants and

waiting for certain behaviors to emerge can be a very time-consuming and expensive exercise. Moreover, the extreme diversity of channels of distribution can make obtaining the required sample size of comparable channels a frustrating endeavor. Under such conditions, parasimulation emerges as a viable alternative.

The above recommendation is not meant to imply that the field alternative should be abandoned. However, when the field research is undesirable because it may introduce various sources of unreliability and invalidity, parasimulation should be employed. This recommendation is, again, specially relevant for new areas of inquiry at the theory-testing stage where reliability, internal validity, and construct validity (not external validity) are of central importance. Judging by the available channel research, the potential of the parasimulation technique currently remains untapped.

LIMITATIONS

The chief limitations concern the issue of external validity arising out of the use of parasimulation and the main reliance on student subjects. These choices have been justified on the basis of the nature of the hypotheses and the theory-testing stage of the propositions. The approach presumes that (i) students can internalize the role-sets of the channel members in the course of the experiments; and

(ii) three member groups will succeed in the induction of an organizational context. Though the past uses of parasimulation would suggest that the latter is not a concern, and the manipulation checks carried out for the "organizational context" have revalidated the parasimulation approach, an argument can be made that the participants were not channel members being observed in their actual work environment. A replication of this study in a real channel context would not, however, necessarily bring about external validity. Given the extreme diversity in channels of distribution, the generalizability issue is likely to remain a moot point.

Another assumption which cannot be fully checked for from this effort is the manipulation of the contextual "on-going channel relationship" stated in all the theoretical hypotheses. Some effort to overcome this is evident in the somewhat elaborate descriptions of the background scenarios (Appendix B). The participants were asked in the final questionnaire whether they found the experiment credibly similar to what they might expect to find in real life channels. The answers were affirmative only for the graduate sample. However, the response of the other samples (including industrial) was neither agree nor disagree, and none of the means was significantly different from the midpoint of the rating scales (Table 49, Chapter V).

Another important limitation to this research is imposed by the contexts described in the background scenarios. The firms are envisioned as equals with no evidence of power imbalances (empirically demonstrated by the manipulation checks; Table 49, Chapter V). Their relationship had been characterized as relatively smooth, and one of give and take in the past. Consequently, the effects found are bounded by such a context; indeed, they may be different in other contexts.

Finally, methodologically, the student subjects can be expected to be relatively homogeneous, imposing an unnatural restriction on subject-variation. Clearly, the range of the stimuli themselves is restricted, and one may question the validity of dichotomizing of the independent variables. The methodology too, in other words, represents compromises required to keep the investigation manageable.

FUTURE RESEARCH

A scarcity of research in the area of channel cooperation, the dominant behavior in channel relationships, provides a fertile area for future research. To the extent this void is eliminated, the research literature on channels will move closer to the channel realities. In turn, a more balanced understanding of this content area would emerge, and the principles of channel management can become richer and more complete.

The demonstrated dichotomy between the issue-specific and the overall perceptions provides the possibilities of a new stream of research. The relationships between conflict and other constructs like performance, power, and dissatisfaction should be examined in the context of such a dichotomy.

Visualizing cooperation as the absence of conflict has had far reaching implications for practitioners. In the interest of cooperation, it is thought to be managerially critical to understand the causes of conflict, its various forms, and ways and means of reducing conflict. A survey reported by Thomas and Schmidt (1976) revealed that managers devote more than 20% of their general management time to conflict management and rate this managerial function as equal to other managerial activities. The results show that the conflict-management may have to be redefined in terms of separate issue-specific and overall conflicts if the findings of this investigation extend to other contexts as well.

Although a general distinction is usually made between functional and dysfunctional conflict (as far as channel performance is concerned), the usual normative bias against conflict is evident. Hunger and Stern (1976,591-2) underscore this very point:

"Although conflict is no longer considered to be necessarily dysfunctional to organizations or groups,...the practical research orientation con-

tinues to be the management of conflict through its reduction."

This normative bias is also evident in managerial books (e.g., Stern and El-Ansary 1982, 292; Bowersox et al. 1980, 32).

One explanation for this bias may be the problem of determining levels of conflict that are functional. Bowersox et al. (1980, 81), stressing this, write :

"The normal assumption in marketing literature is that conflict will influence the operating performance of channel members. Although conceptually appealing, attempts to identify a level of conflict which promotes greater goal attainment for individual channel members generally have been unsuccessful."

The conceptualization guiding this research resolves the above problem by shifting the focus from "levels of conflict that are functional" to the theoretical distinction between issue-specific and overall perceptions for both conflict and cooperation.

Determining optimal levels of conflict can be difficult and costly; indeed, even impossible practically. Different industry channels, different channel relationships, and different channel segments may have different optimal points; the levels may change as personnel change. Moreover, to determine such levels, they must be surpassed, an expensive exercise. Not surprisingly, then, after acknowledging the functional aspects of conflict, the normative literature reverts to conflict-resolution.

However, if both conflict and cooperation can be issue-specific and related to incongruity perceptions, salience, and antagonism, business executives can turn to assessing the behavioral expectations, the previous experience, and the importance attached to issues that form the comparison levels of the channel boundary personnel. Not only are these variables relatively easier to estimate, but they represent variables that can be managerially controlled. For instance, salience of issues can be re-defined if needed; and the role-sets can be suitably altered by providing appropriate job-descriptions. Such controls would further ensure that the boundary personnel perceive overall conflict or cooperation, and issue-specific conflict or cooperation at appropriate times in consonance with the firm's priorities, thereby facilitating better performance.

Exchange theory framework for conceptualizing issues of channel behavior appears to be workable as shown by the results. Several other theoretical propositions on conflict and cooperation were derived from an exchange theory perspective and were identified in Chapter III. These propositions remain to be investigated empirically.

While the frequency dimension of conflict, as argued above, may have limited relevance in the measurement of channel conflict, the importance dimension needs incorpora-

tion in future efforts. This investigation was limited to the intensity dimension. Similarly, this effort was confined to the perceived state of conflict. Additional effort with the affective and the manifest states of conflict is required.

The variable antagonism was manipulated in the current research by its presence and absence. Future research would benefit by manipulating antagonism at different levels to fully understand the effects of this variable.

The effects of salience and antagonism variables, though directionally correct, were much weaker than the effects of incongruities. Several rival hypotheses can be presented for this pattern. The manipulation of the incongruities may have overwhelmed the manipulations of salience and antagonism. This possibility requires empirical settlement. There may well be an hierarchy of effects associated with the incongruity and salience variables; and incongruity may be the dominant psychological cue to elicit perceptions of conflict, dissatisfaction, and cooperation. Exchange theory does not clarify which of these two variables is likely to be more important, although the central arguments are offered in terms of incongruities. A judgment on such a hierarchy must await evidence from future investigations where salience and incongruities are manipulated at different lev-

els. Antagonism, as a variable, was conceptualized as the critical variable for distinguishing between dissatisfaction and conflict. Past empirical investigations have found a close relationship between these two constructs (e.g., Brown and Day, 1981). Hence, it is possible that the psychological distinction between the two constructs, though theoretically relevant, is substantively small. However, this premise cannot be accepted unless the possibility of inadequate manipulation strength is first ruled out.

The variable, recency, was not operationalized in this effort even though exchange theory includes it as a variable. Future effort within the exchange theory framework would benefit from the incorporation of this variable.

The questions and issues requiring investigation are many, and the opportunity ripe. The inclination to reify old principles must be checked by our professional obligation as an emerging science to empirically examine the relationships from alternative perspectives before these concepts are considered "true."

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APPENDIX A
DETAILED CODING OF EMPIRICAL STUDIES

TABLE A.1
Summary of Empirical Research on Channel Conflict

Study Reference	Research Design	Empirical Setting	Conflict State	Conflict Dimension
1. Asael (1968)	Content Analysis Period 1947-1965	Conflict documented in congressional hearings and trade publications for nine industries as national associations attempted to resolve distributive issues.	Manifest	Intensity
2. Pruden (1969)	Field Study Four West Coast Cities	A wood building products manufacturer and distributor responding about channel relations and structure in personal interviews; sales calls by manufacturer's 6 salesmen observed; exchange and linkage variables measures from 91 salesmen in a national survey.	Affective	Intensity
3. Rosenberg and Stern (1971)	Field Study Ohio 1969	Manufacturers, dealers and wholesalers of household durables responding on 32 behavioral and business issues descriptive of channel relationships in a mail survey or in personal interviews.	Perceived	Intensity
4. Pearson (1973)	Field Study Rocky Mountain Region	Wholesalers and retail outlets of a regional grocery chain respond on the applicability of 30 statements descriptive of conflict (15 items) and cooperation (15 items) in their channel in a personally administered questionnaire.	Affective	Intensity
5. Stern, Sternthal and Craig (1973a)	Laboratory Parasimulation Ohio	Student manufacturers and wholesalers of microscalpels respond to 23 semantic differentials containing adjectives describing conflict and cooperation in administered questionnaires following the parasimulation.	Perceived	Intensity

TABLE A.2
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Independent Variables	Operational Definitions	Dependent Variables	Operational Definitions
1	a) Manufacturer's requirements b) Absorption of distributive functions c) Role Dissensus	a) Pressures to increase sales volumes b) Assuming control over decision variables and functions earlier performed by others. c) Differing interpretations of the role of wholesalers and retailers.	Manifest Conflict	Various conflicts which prompted political and legislative efforts by trade associations in attempting to resolve them or conflict resolution efforts within the trade associations.
2	Affective Conflict	Median scores of ratings on 12 6-point scales with conflict and cooperation as poles; the items pertained to information, structure and attitudes descriptive of channel relations.	a) Linkage b) Exchange	a) The frequency of communications, balance and decision making obtained using 4 6-point Likert type scales. b) Self-ratings by salesmen in four performance categories.
3	a) Goal Incompatibility b) Domain Dissensus c) Perceptions of reality d) Other factors	The absolute distance between reciprocal channel members' perceptions on 8 issues on each of the 4 variables; measures obtained on five-point Likert type scales.	Perceived Conflict	The absolute distance between reciprocal channel members' perceptions of issues which are symptomatic of conflict; 32 items measured on Likert type scales.
4	Affective Conflict	Retail vendors' ratings of the applicability of 30 descriptive statements to their channel using a 10-point Stapel scale.	Channel Operational Performance	a) Service level defined as ratio of number of orders filled to the total orders placed. b) Traditional product turnover c) Adjusted turnover defined as turnover adjusted for service levels.
5	a) Goal Incompatibility b) Superordinate Goals c) Exchange of Persons Program	a) Number and value of mutually profitable calls in the payoff matrices, performance of previous teams, and comparison of thinking styles of the two firms. b) Need to complete negotiations fast due to the entry of a new competitor. c) Exchange of the salesman and the purchasing agent for 20 minutes.	Affective Conflict	Ratings on 23-item 7-point semantic differentials containing adjectives characteristic of channel conflict and cooperation.

TABLE A.3
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Unit of Analysis	Research Hypotheses	Not specified or clear.	Relationships Found
1	Industry			The reviewed article provided descriptive details of hypothesized causes resulting in manifest conflict. In particular, absorption of distributive functions as a cause was found to be applicable to all nine industries.
2	Dyads	a) As the level of interorganizational conflict increases, the level of inter-organizational linking process increases. b) As the level of interorganizational linking process increases, the level of interorganizational exchange increases.	a) The proposition was not supported by data. The correlation was moderately negative (0.08) instead of positive, and significant at .10 level. b) The proposition was supported by the data. The positive correlation (0.16) was significant at .10 level.	
3	Dyads	a) The level of perceived conflict varies directly with goal incompatibility. b) The level of perceived conflict varies directly with domain dissensus. c) The level of perceived conflict varies directly with differences in perceptions of reality.	a) Partially supported. Significant for dealer manufacturer, and wholesaler-manufacturer dyads at .01 level. b) Partially supported. Significant for dealer manufacturer, and wholesaler-dealer dyads at .01 and .05 levels respectively. c) Partially supported. Significant for dealer wholesaler, and wholesaler-manufacturer dyads at .01 and .05 respectively.	
4	Dyads	a) The channel segments characterized by conflict are operationally superior to those characterized by cooperation. b) The channel segments characterized by cooperation are operationally superior to those characterized by conflict.	a) Not supported by data. Only conflict-service level relationship was in the hypothesized direction, but insignificant at .05 level. b) Not supported by data. Though conflict-product turnover conflict-adjusted turnover relationships were directionally correct, they were insignificant at .10 level.	
5	Participants	a) Affective conflict varies directly with goal incompatibility. b) Affective conflict varies inversely with the emergence of superordinate goals. c) Affective conflict varies inversely with exchange of personnel between firms.	a) Supported by data. 22 items out of 23 were significant at .01 level. b) Very weakly supported by data. 3 out of 23 items were significant at .05 level. c) Partially supported by data. 4 of 23 items were significant at .05 level; 6 items were significant at .01 level.	

TABLE A.4
Summary of Empirical Research on Channel Conflict

Study Reference	Research Design	Empirical Setting	Conflict State	Conflict Dimension
6. Foster and Shuprine (1974)	Field Study 6 Medium-sized Southeastern Cities	Single-line specialty retailers asked to respond in personal interviews to 20 statements indicative of 5 wholesaler service dimensions, assessing the applicability of statements on 4-point rating scales. Retailers also responded to 9-item 3-point rating scales assessing manufacturers' performance. The investigation was limited to 4 manufacturers and their 4 principal wholesalers.	Manifest	Frequency
7. Hunger and Stern (1976)	Laboratory Parasimulation Ohio	Student manufacturers and wholesalers of microscalpels respond to 17-item Likert type scales reflecting traits characteristic of affective conflict, and to two 5-point Likert type scales on relationships between the two firms to indicate perceived conflict. The questionnaires were administered after the parasimulation. Inter-firm memos were content analyzed.	a) Affective b) Perceived c) Manifest	a) Intensity b) Intensity c) Frequency and Intensity
8. Lusch (1976a)	Field Study National Survey November-December 1974	New car dealers asked to indicate the frequency of disagreement between manufacturers and the dealers over 20 issues on 4-point scales (neutral point omitted). Two measures of dealer operating performance were also obtained.	Manifest	Frequency
9. Lusch (1976b)	Field Study National Survey November-December 1974	New car dealers asked to indicate the frequency of disagreement between manufacturers and the dealers over 20 issues on 4-point scales (neutral point omitted). Measures of non-coercive power (by a 16-item 5-point Likert type scale) and coercive power (by a 6-item 7-point Likert type scale) were also obtained.	Manifest	Frequency

TABLE A.5
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Independent Variables	Operational Definitions	Dependent Variables	Operational Definitions
6	Comparative evaluation of a) Manufacturers, and their b) Wholesalers	Retailer assessment of a) Display services provided by the manufacturers. b) 5 wholesaler service dimensions: management knowledge and integrity, pricing and discounts, service responsiveness, delivery, and sales representation.	Manifest Conflict	Differences in mean ratings and average ranks of 4 manufacturers and their 4 principal wholesalers.
7	a) Goal incompatibility b) Achieved c) Non-achieved Superordinate Goals	a) Absence of mutually profitable points in payoff matrices, and inflated accounts of performance of past teams. b) Threats from new entrant in the market, and compatible payoff matrices. c) Same threat with incompatible payoff matrices.	a) Perceived Conflict b) Affective Conflict c) Manifest Conflict	a) Ratings on 2 statements on the relationship between the two firms. b) Ratings of team members and the firms on the issues dealing with conflict and cooperation. c) Content analysis of inter-firm memos using Bates' techniques.
8	Manifest Conflict	Frequency of disagreements between the manufacturers and the dealers over 20 business issues as perceived by dealers.	Dealer Operating Performance	a) Return on assets b) Asset turnover computed as 1974 sales of dealers divided by their total assets.
9	a) Non-coercive Power b) Coercive Power	a) 16 assistances frequently provided to dealers by the manufacturers. b) 6 coercive actions frequently taken by the manufacturers to gain control.	Manifest Conflict	Frequency of disagreements between the dealers and the manufacturers over 20 business issues as perceived by the dealers.

TABLE A.6
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Unit of Analysis	Research Hypotheses	Relationships Found
6	Retailers	As the discrepancy between performances of interdependent channel members (i.e., here manufacturers and their wholesalers) increases, potential of manifest conflict also increases.	Descriptive details from unstructured interviews, anecdotes, and comparison of means and ranks were cited as evidence toward the hypotheses. Even so, the relationship was found to hold only for 1 out of 4 manufacturer-wholesaler pairs. No inferential statistics were used.
7	Participants	a) Goal incompatibility will result in attitudinal bias against the out-group, and positive bias for the in-group. b) Goal incompatibility will result in behavioral indications of conflict. c) Nevertheless, with the introduction of a superordinate goal, firms will cooperate for the common goals. d) Achieved superordinate goal will reduce subsequent perceived conflict, despite unresolved original issues. e) Achieved superordinate goal will reduce more conflict than non-achieved superordinate goal condition. f) Conflict after non-achieved superordinate goal will exceed the control group conflict.	a) Partially supported. In-group bias at .05 level was insignificant; 14 of 17 indicators of out-group bias were significant at .05 level. b) Supported. Both content-analytic indices were significant at .06 and .01 respectively. c) Supported by data. Indications from Likert type scales cited but details or data were not provided. d) Not supported by data. The perceived conflict measures were not significantly different from the control group at .05 level. e) Partially supported. ANOVA F was significant at .05 level, but direct t-tests were not significant. f) Not supported by data. No significant difference was noticed between the two groups.
8	Dealers	The operating performance of dealers will : a) increase as conflict increases; b) decrease as conflict increases; c) increase with increased conflict to a point and then decrease will conflict.	a) Not supported by regression analysis. b) Mixed evidence. Supported for some dealers. c) Not supported by regression analysis for both measures of performance.
9	Dealers	a) The stronger the coercive sources of power that A has over B, the more frequent the disagreements that B will have with A. b) The stronger the non-coercive sources of power A has over B, the fewer the disagreements that B will have with A. c) Coercive sources of power will explain more intrachannel conflict than non-coercive sources of power.	a) Partially supported. 3 out of 6 regression slopes were positive as hypothesized and significant at .001 level; the other 3 were negative but significant only beyond .20. b) Partially supported. 10 out of 16 slopes were negative as hypothesized; 4 of those significant at .05. The other 6 were positive but significant only beyond .20 level. c) Supported by data. R square under H1 was .211 ($p=.001$); and .155 ($p=.001$) under H2. Combined R square was .266.

TABLE A.7
Summary of Empirical Research on Channel Conflict

Study Reference	Research Design	Empirical Setting	Conflict State	Conflict Dimension
10. Pearson and Monoky (1976)	Field Study Rocky Mountain Region	Wholesalers and retail outlets of a regional grocery chain respond on the applicability of 30 statements descriptive of conflict (15 items) and cooperation (15 items) in their channel in a personally administered questionnaire using 10-point Likert type scales.	Affective	Intensity
11. Kelly and Peters (1977)	Field Study Chicago Area	Franchisees from 3 lines of business, and independent distributors from two lines of business respond to 21-item 4-point scales aimed at measuring the frequency of disagreements over 21 business issues in personal interviews.	Manifest	Frequency
12. Brown and Frazier (1978)	Field Study Large Midwestern City	Owners of general managers of new car dealerships asked to indicate the percentage of monthly contacts with manufacturers that are characterized by disagreements over 4 business issues, and the importance of those issues on 11-point scales in personal interviews. Measures of manufacturer power and dealer satisfaction were also obtained.	Manifest	Frequency and Importance
13. Ligar (1979)	Field Study Large Northeastern Metropolitan Area 1976	Managers and owners of locally based independent dealers from six lines of business relying primarily on one product category respond to 48-item 6-point Likert type scales aimed at measuring attitudinal and structural causes of perceived conflict in personal interviews. Affective conflict measures (using 3-item 5-point scales) and manifest conflict measures (frequency of 3 conflictful behaviors in last 3 years) were also obtained.	a) Affective b) Perceived c) Manifest	a) Intensity b) Intensity c) Frequency

TABLE A.8
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Independent Variables	Operational Definitions	Dependent Variables	Operational Definitions
10	Affective Conflict	Retail vendors' ratings of applicability of 30 descriptive statements to their channel using a 10-point Stapel scale.	Channel Operational Performance	Service level defined as the ratio of number of orders filled to the total orders placed.
11	a) Differences in franchise Types b) Differences in Channel Types	a) Diversified sample selection: fast food (n=44); automotive service (n=24); and 26 hotel/motel franchisees. b) inclusion of contractual franchise systems and independent distributors (26 industrial goods distributors and 25 consumer goods distributors.)	Manifest Conflict	Frequency ratings on disagreements over 21 business issues.
12	Influence Strategies of Manufacturers	Percentage of monthly contacts in which the manufacturers' representatives applied the influence strategies of reward, coercion, legalistic or direct statement.	a) Power b) Perceived Conflict c) Satisfaction	a) Dealers' dependence measured in terms of manufacturers' operational and behavioral role performance. b) Frequency and issue-importance of disagreements on 4 issues. c) Overall index obtained by a 7-point scale on satisfaction with the channel relationship.
13	a) Attitudinal Causes b) Structural Causes	a) Ratings on 31 statements dealing with assessment of channel relations. b) Ratings on 17 statements on goal divergence, autonomy drive, and competition over channel resources.	a) Affective Conflict b) Manifest Conflict c) Perceived Conflict	a) Ratings on 3 5-point scales on harmoniousness, satisfaction, and willingness to change policies of suppliers. b) Number of instances of 3 types of conflict behaviors within last three years. c) Nine mean indices constructed from 48 6-point Likert-type scales

TABLE A.9
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Unit of Analysis	Research Hypotheses	Relationships Found
10	Dyads	The channel performance covaries with : a) Perceived conflict positively; b) Perceived conflict negatively; c) Perceived cooperation positively; and d) Perceived cooperation negatively.	a) Only 1 of 10 factors had positive covariation. b) Partially supported by data. c) Generally supported by data. d) Only 1 of 10 factors had negative covariation.
11	Franchisees and Distributors	a) The levels of conflict will vary between contractual franchise system and the independent distribution system. b) The level of conflict will be different for different franchise types.	a) Weakly supported by data. In 14 out of 21 issues conflict were not significant at the .05 level. b) Partially supported. 29 out of 42 pairwise comparisons were insignificant at .05 level.
12	Dealers	Firm J's power over firm I is : a) inversely related to use of rewards b) inversely related to use of coercions c) inversely related to use of legalities d) unrelated to use of direct strategies. Firm J's perceptions of conflict are : a) positively related to use of rewards b) positively related to use of coercions c) positively related to use of legalities d) unrelated to use of direct strategies. Firm I's satisfaction with the channel is : a) inversely related to J's use of rewards b) inversely related to J's use of coercion c) inversely related to J's use of legalistic strategies d) unrelated to J's use of direct strategies.	a) Supported for all 4 issues. b) Supported for 3 issues. c) Supported for 3 issues. d) Not supported by data. a) Supported for all 4 issues. b) Supported for 3 issues. c) Supported for all 4 issues. d) Supported by data. a) Supported for all 4 issues. b) Supported for all 4 issues. c) Supported for all 4 issues. d) Supported for all four issues. d) Supported by data.
13	Dealers	Not specified. The objective was to assess which of the two types of conflict causes is more associated with affective conflict and manifest conflict.	a) Attitudinal causes were more correlated with affective conflict (canonical root=.5) than manifest conflict. b) Structural causes were more correlated with manifest conflict (canonical root=.328) than affective conflict.

TABLE A.10
Summary of Empirical Research on Channel Conflict

Study Reference	Research Design	Empirical Setting	Conflict State	Conflict Dimension
14. Rosson and Ford (1979)	Field Study Canada	Senior executives (for smaller firms) and middle managers (for larger corporations) of Canadian firms exporting various types of goods to U.K. respond to measures of stake, conflict and performance in personal interviews. Scales were not reported.	Manifest	Frequency
15. Brown and Day (1981)	Field Study Illinois, Indiana, Kentucky and Ohio	Franchised distribution channel dealers of new cars of domestic brands asked to assess the importance, frequency and intensity of fifteen potentially conflict-laden issues in a mail survey using 3-item 11-point Likert type scales for each conflict dimension.	Manifest	Frequency, Importance, and Intensity
16. Schul, Lamb and Little (1981)	Field Study Texas, Arkansas, and Oklahoma	Franchisees of franchised real estate brokerage industry indicate the frequency with which they disagree on 13 business issues with their franchisors using 4-point rating scales. Measures of past performance, autonomy, and initiating structure were also obtained.	Manifest	Frequency
17. Ross and Lusch (1982)	Field Study National Survey	Broker - Wholesaler dyads from the general grocery channels rate the applicability of 10 adjectives descriptive of conflict (5 items) and cooperation (5 items) in their channel using 10-point Stapel scales in a mail survey. Measures of domain dissensus and perceptual incongruity were also obtained.	Affective	Intensity

TABLE A.11
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Independent Variables	Operational Definitions	Dependent Variables	Operational Definitions
14	a) Stake b) Manifest Conflict	a) Percentage of sales exported, distributor replacement time, and distributor importance. b) Frequency of disagreements, relative frequency of such disagreements, frequency of disagreement resolutions, and mutuality of relationship.	a) Manifest Conflict b) Performance	a) Frequency of disagreements, relative frequency of such disagreements, frequency of disagreement resolutions, and mutuality of relationship. b) Perceived and real gains from export relationship.
15	a) Latent Conflict b) Perceived Conflict c) Affective Conflict	a) Extent of goal incompatibility perceived (7-point ratings). b) Amount of conflict and extent of goal impediment perceived (7-point ratings). c) Extent of tension felt by the dealers surveyed (7-point ratings).	Manifest Conflict	Frequency, importance and intensity measures of 15 conflict-laden issues used to develop six synthetic measures of manifest conflict.
16	a) Past Performance b) Autonomy c) Initiating Structure d) Satisfaction	a) Ratio of 1979 pre-tax net profits to 1979 gross receipts. b) 5-point ratings of 7 descriptive items. c) 5-point ratings of seven descriptive items. d) 5-point ratings of 23 descriptive items.	a) Satisfaction b) Manifest Conflict	a) 5-point ratings of 23 descriptive items. b) Frequency of disagreements over 13 conflict-specific issues on 4-point scales over past year.
17	a) Domain Dissensus b) Perceptual Incongruity	a) Absolute dyadic differences on a 5-point rating scale over 5 issues. b) Absolute dyadic differences on a 9-point rating scale over 5 issues.	a) Affective Conflict b) Cooperation	a) 10-point Stapel scale ratings of 5 conflictful descriptors. b) 10-point Stapel scale ratings of 5 cooperative descriptors.

TABLE A.12
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Unit of Analysis	Research Hypotheses	Relationships Found
14	Manufacturers	a) As the manufacturer's stake in the export relationship increases, the level of conflict decreases. b) As the level of conflict reduces, the export marketing channel's performance improves.	a) Weak support from data. Only 3 out of 12 correlations were significant at .05 level but 10 out of 12 had the hypothesized direction. b) Weakly supported by data. 6 out of 16 correlations were significant at .05 level and 14 out of 16 were significant at .10 level.
15	Dealers	The level of manifest conflict varies: a) Directly with latent conflict b) Directly with perceived conflict c) Directly with affective conflict	All three sub-propositions were supported by the data. Correlations with all 6 measures developed were significant at .01 level and in the hypothesized direction.
16	Franchisees	a) Franchisees' perceptions of (1) past performance, (2) autonomy, and (3) initiating structure effects their satisfaction with the channel set-up. b) Franchisees' perceptions of (1) past performance, (2) autonomy, and (3) initiating structure effects the level of intrachannel conflict. c) Franchisees' satisfaction with the channel arrangement effects the level of intrachannel conflict. d) Higher the level of channel satisfaction, the stronger the relationship between the conflict antecedents and intrachannel conflict.	a) Supported by data. 25% of variation in the satisfaction was explained; significance level was .001. Autonomy was most strongly related to satisfaction of the 3 variables. b) Not supported by data. At .10 level none of the three variables were significantly related to intrachannel conflict. c) Supported by data. The path coefficient was .7413 and significant at .001 level. 54% of variance in conflict was explained by differences in satisfaction. d) Supported by data.
17	Dyads	The greater the domain dissensus between channel members A & B, a) the higher the level of conflict in the A - B dyad; b) the lower the level of cooperation in the A - B dyad. The greater the perceptual incongruity between channel members A & B, c) the higher the level of conflict in the A - B dyad; d) the lower the level of cooperation in the A - B dyad.	a) Not supported by data. Correlation of .05 ($p=.30$) between dissensus and conflict found. b) Supported by data. Correlation of -.026 ($p=.007$) found between domain dissensus and cooperation scales. c) Not supported by data. Correlation of .01 ($p=.45$) found between incongruity and conflict. d) Supported by data. Correlation of -.025 ($p=.007$) found between perceptual incongruity and cooperation scales.

TABLE A.13
Summary of Empirical Research on Channel Conflict

Study Reference	Research Design	Empirical Setting	Conflict State	Conflict Dimension
18. Brown, Lusch and Muchling (1983)	Field Study Large Eastern Metropolitan Area	Managers and Assistant Managers of 139 retail outlets selling beer, fast foods, shoes, tires, automobiles, and lawn mowers rate the extent to which their major suppliers possessed different bases of power (25-item 7-point rating scales); dyadic power (16-item 7-point rating scales); conflict frequency on 16 business issues (7-point rating scales); and dependence.	Perceived	Frequency
19. Ellashberg and Michie (1984)	Field Study National Survey	Franchisees and regional managers of a large industrial installations manufacturer indicate the frequency and intensity of disagreements over 20 business issues using two separate 5-point rating scales. Measures of preference incongruities and perceptual differences were also obtained.	Perceived	Frequency and Intensity

TABLE A.14
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Independent Variables	Operational Definitions	Dependent Variables	Operational Definitions
18	a) Perceived Power	a) Sum of 11 out of 16 original items pertaining to the retail marketing-mix.	a) Dependence	a) five 7-point scales measuring number of alternate brands, percent of sales and profits from the major brands, and difficulty in finding alternative suppliers.
	b) Perceived Economic Power	b) Sum of scales used to measure reward, coercive, and legitimate sources of power.	b) Perceived Power	b) As described under independent variable.
	c) Perceived Non-economic Power	c) Sum of scales used to measure expert, referent, and information sources of power.	c) Perceived Conflict	c) Sum of sixteen 7-point rating scales on typical potentially conflictful business issues.
19	a) Preference Incongruity	a) Norm of importance rating differences on business goals between franchisees and regional managers. Importance ratings obtained by asking the respondents to allocate 100 points over system and own business goals.	Perceived Conflict	Frequency and intensity measures of disagreements over 20 business issues using two separate 5-point rating scales.
	b) Perceptual Differences	b) Norm of importance rating differences on business goals between the respondents and the dyadic members' expectations. Importance ratings were obtained as above.		

TABLE A.15
Summary of Empirical Research on Channel Conflict (Continued)

Study Number	Unit of Analysis	Research Hypotheses	Relationships Found
18	Retailers	a) Retailer's dependence on the supplier is directly determined by the perceptions of the supplier's power. Perceived economic power bases of the supplier directly determine the retailer's perceptions of: b) the supplier's power c) the extent of dependence on the supplier, and d) the extent of conflict. Perceived non-economic power bases of the supplier determine the retailer's perceptions of: e) directly, the supplier's power f) directly, the extent of dependence on the supplier, and g) inversely, the extent of conflict. h) Retailer's perception of the supplier's power directly affects the perceptions of channel conflict.	a) Directionally supported. LISREL coefficient 0.427; but not significant at alpha of 0.05 b) Supported. LISREL coefficient 0.409; significant at alpha of 0.01 c) Supported. LISREL coefficient 0.131; significant at alpha of 0.05 d) Supported. LISREL coefficient 0.307; significant at alpha of 0.05 e) Not supported. LISREL coefficient 0.038 f) Directionally supported. LISREL coefficient 0.155; but not significant at alpha of 0.05 g) Directionally supported. LISREL coefficient = 0.338; but not significant at alpha of 0.05 h) Directionally supported. LISREL coefficient 0.379; but not significant at alpha of 0.05
19	Dyads	In a channel of distribution, the level of conflict perceived by the channel members on certain business issues is related positively to: a) actual preference incongruity on the system set of business goals; b) actual and perceived preference of business goals; c) perceptual differences on reference structures for the operative set of business goals.	a) Partly supported by data. 2 of 8 correlations were significant at .10 and .05. 6 correlations had the hypothesized direction. b) Partly supported by data. 2 of 16 correlations had the hypothesized direction. c) Partly supported by data. 3 of 8 correlations were significant: 2 at .10 and 1 at .01. 6 correlations had the hypothesized sign.

APPENDIX B
EXPERIMENTAL MATERIALS AND MANIPULATIONS

MAGNITUDE SCALING TRAINING EXERCISE

Instructions

On the following page you will find a set of line lengths, labelled A to L. Note that some of the lines are longer than the first line, A, and some are shorter. The first line is your reference. Let us give it the number 100. Your task is to say how much longer or shorter the lines are compared to the first line by giving each line a number compared to 100. The longer a line appears to be compared to the reference line, the bigger the number you will give it compared to 100. The shorter a line compared to the first line, the smaller the number you should give it compared to 100.

No rulers, please. Just give each line a number that seems appropriate. If a line seems to be about twice as long as line A, give it a number about two times bigger than 100, that is, about 200. If a line appears about one-fourth as long as your reference line, give it a number about one-quarter of 100, or about 25.

	Magnitude Estimate
A (REFERENCE LINE)	Line A=100
B	Line B=
C	Line C=
D	Line D=
E	Line E=
F	Line F=
G	Line G=
H	Line H=
I	Line I=
J	Line J=
K	Line K=
L	Line L=

MAGNITUDE SCALING TRAINING EXERCISE

Instructions

On the following page you will find a number of crime descriptions labelled A to O. Some of the crimes described are more serious than others. We would like to get your opinion about how serious *YOU* think them to be. For a moment, let us consider the following crime:

A person steals a bicycle parked on the street.

Let us give this crime a score of 50 millimeters to indicate its seriousness. Use this example crime given a length-score of 50 millimeters to judge the the seriousness of all the other crimes described on the next page. For example, if you think a crime is 20 TIMES MORE SERIOUS than the bicycle theft, you should give it a score of about 1000 millimeters (50 X 20); or if you think the crime is only HALF AS SERIOUS, the length you should assign to that crime should be about 25 millimeters. In other words, the more serious the crime appears to be as compared to the bicycle theft crime, the greater should be the length-score in millimeters you assign to it. Similarly, the less serious the crime seems as compared to the bicycle theft crime, the smaller should be the length-score you give it.

There are no upper limits to the length-scores you can assign to the crimes. Use ANY length-score so long as it shows how serious YOU think the crime is RELATIVE to the bicycle-theft crime. If YOU think something is not a crime, give it a length-score of ZERO millimeters.

YOUR NAME : _____

YOUR LOCAL TELEPHONE NUMBER : _____

THE FIRM YOU WORK FOR : _____

YOUR POSITION AT WORK : _____

CRIME DESCRIPTION	YOUR SCORE
A. A person using force, robs a victim of \$ 10. The victim struggles and is shot to death.	_____ mm
B. A person disturbs the neighborhood with loud and noisy behavior.	_____ mm
C. A person steals property worth \$ 1000 from outside a building.	_____ mm
D. A parent beats his young child with fists. The child requires hospitalization.	_____ mm
E. A man forcibly rapes a woman. Her physical injuries require hospitalization.	_____ mm
F. A person steals property worth \$ 10 from outside a building.	_____ mm
G. A person, using force, robs a victim of \$ 10. No physical harm occurs.	_____ mm
H. A person plants a bomb in a public building. The bomb explodes and 20 people are killed.	_____ mm
I. A person steals property worth \$ 10,000 from outside a building.	_____ mm
J. A person smuggles heroin into the country.	_____ mm
K. A person steals property worth \$ 50 from outside a building.	_____ mm
L. A factory knowingly gets rid of its wastes in a way that pollutes the water supply of a city. As a result, 20 people become ill but none requires medical treatment.	_____ mm
M. A person steals an unlocked car and later abandons it.	_____ mm
N. A person steals property worth \$ 100 from outside a building.	_____ mm
O. A person, using force, robs a victim of \$ 10. The victim is hurt and requires hospitalization.	_____ mm

Virginia Surgical Manufacturing Company

INTRODUCTION AND BACKGROUND OF PAST RELATIONSHIPS

The purpose of this study, broadly speaking, is to determine how a manufacturing firm and a wholesaling firm interact with each other in the marketing of a given product. We are interested in the decisions *YOU arrive at* during this study. There are no RIGHT or WRONG ways to behave.

Your group has been assigned the role of *Virginia Surgical Manufacturing Company*, a medium-sized producer of a large variety of surgery-related hospital instruments located at Roanoke. The products of *Virginia Surgical Manufacturing Company* are distributed throughout the South Atlantic region of United States. The firm's distribution is handled by exclusive dealers located in Washington, D.C., Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. In Virginia, the exclusive dealership is handled by *Wholesale Hospital Supply Company of Virginia*, a medium-sized wholesaler distributing hospital products manufactured by *Virginia Surgical Manufacturing Company*, and several other firms.

This partnership in distribution between *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia* has been going on successfully for the past twelve years. Both firms have steadily grown in these years, and the current turnovers (dollar sales per year) of both firms now stand at approximately \$ 6,000,000 (six million) each. Needless to say, *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia* depend on each other in many ways for the successful marketing of the products of *Virginia Surgical Manufacturing Company*. In time, both firms have come to value this mutually-beneficial relationship, and have sought to settle their differences through negotiations, accomodating each other's wishes and demands where possible. The inter-firm relationship would be best described as cooperative; and in times of difficulty, both firms have been known to 'bail each other out'.

As may be expected in an ongoing business relationship, several issues are under discussion between the partner firms at any point in time. For instance, in the recent past, some of the more important issues discussed between *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia* have been:

- (1) *Wholesale Hospital Supply Company of Virginia* suggested that *Virginia Surgical Manufacturing Company* deliver its products directly to their three warehouses located at Richmond, Charlottesville, and Roanoke. The usual practice has been to deliver all the products to the distributor's main warehouse at Roanoke. It was estimated that the extra costs (in transportation) to be borne by *Virginia Surgical Manufacturing Company*, if this request is accepted, will be approximately \$ 18,000 per annum.

- (2) *Virginia Surgical Manufacturing Company* suggested that *Wholesale Hospital Supply Company of Virginia* increase their contributions to the cooperative local promotions and advertising by 33%. (To sell the products of *Virginia Surgical Manufacturing Company*, the two firms jointly finance promotional activities like medical-detailing and demonstrations at hospitals and clinics, sponsorships of medical conventions and conferences, advertising in special medical journals, and periodic distribution of reminder-mementos and descriptive brochures to surgeons and hospital-administrators.) If accepted, *Virginia Surgical Manufacturing Company* will save approximately \$ 20,000 per annum. *Wholesale Hospital Supply Company of Virginia* currently contribute \$ 60,000 each year toward this activity.
- (3) *Wholesale Hospital Supply Company of Virginia* wanted to reduce the average value of paid-up stocks (inventory) they carry of *Virginia Surgical Manufacturing Company's* products by 33%. If *Virginia Surgical Manufacturing Company* accepts their request, it will be spending approximately \$ 20,000 more annually in additional warehousing and inventory carrying costs toward handling these stocks.
- (4) *Virginia Surgical Manufacturing Company* wanted *Wholesale Hospital Supply Company of Virginia* to double the frequency with which their medical-representatives call on independent surgeons at private clinics for medical detailing and order-booking. Currently, the representatives of *Wholesale Hospital Supply Company of Virginia* visit the independent surgeons once every 30 days. It was estimated that if *Wholesale Hospital Supply Company of Virginia* comply with this request, they will incur an additional cost of approximately \$ 19,000 per annum.

Several other issues of lesser importance have also been discussed with the Virginia distributors lately. Some of these were:

- (1) *Virginia Surgical Manufacturing Company* wanted *Wholesale Hospital Supply Company of Virginia* to reimburse the meal-allowances paid to the management trainees of *Virginia Surgical Manufacturing Company* while they are attached to *Wholesale Hospital Supply Company of Virginia* for training. (Each firm sends their management trainees to the other firm for a duration of three months so that the future executives gain an understanding of each other's operations and problems. When these trainees are outside their headquarter towns, they are paid for travel costs, boarding, and lodging in addition to their fixed salaries.) If *Wholesale Hospital Supply Company of Virginia* complies with this request, *Virginia Surgical Manufacturing Company* will save approximately \$ 5,000 per annum.
- (2) *Wholesale Hospital Supply Company of Virginia* wanted *Virginia Surgical Manufacturing Company* to reimburse them for the insurance costs incurred by them on the the products of *Virginia Surgical Manufacturing Company*. (The inventory of *Virginia Surgical Manufacturing Company* is continuously insured by the distributors against theft and damage while it is in transit, or at the warehouses: upto the time the title is formally transferred to a customer.) If the request of *Wholesale Hospital Supply Company of Virginia* is accepted, the extra expenditure to *Virginia Surgical Manufacturing Company* will be approximately \$ 4,900 per annum.

- (3) *Virginia Surgical Manufacturing Company* wanted *Wholesale Hospital Supply Company of Virginia* to bear 50% of the costs incurred in procuring the calendars that are distributed to all the past customers and future prospects in Virginia each year as a goodwill gesture. Currently, this expense is borne by *Virginia Surgical Manufacturing Company*. In dollar terms, the requested contribution amounts to \$ 5,100 per annum at the current prices. If accepted by *Wholesale Hospital Supply Company of Virginia*, *Virginia Surgical Manufacturing Company* will get a straight saving of \$ 5,100 annually.
- (4) *Wholesale Hospital Supply Company of Virginia* wanted to reduce the price at which it purchases the infra-red lamps of *Virginia Surgical Manufacturing Company* by \$ 100 per unit. If this request is accommodated, *Virginia Surgical Manufacturing Company* will lose approximately \$ 5,000 in revenues annually.

Of specific interest at this time is the launch of an important new product of *Virginia Surgical Manufacturing Company*, the LASER-SCALPELS, in Virginia. Your group will be discussing (with the representatives of *Wholesale Hospital Supply Company of Virginia*) the price and quantity of laser-scalpels to be sold for distribution to *Wholesale Hospital Supply Company of Virginia*.

As in real life, the negotiations are to be based on a Profit-Loss matrix to be supplied by your Vice President of Marketing on the day of study. However, to familiarize you with the concept of Profit-Loss matrices, the matrix supplied to guide the negotiations on the price and quantity of a new kind of forceps with *Wholesale Hospital Supply Company of Virginia* sometime back is presented and explained below. These matrices are strictly CONFIDENTIAL financial information, internal to the firm.

PROFIT / LOSS (Price - Quantity) MATRIX

If we sell the
following quantity
of Forceps:

If we sell Forceps at:
We will make a Profit/Loss of:

UNITS / PRICES->	\$ 20	\$ 22	\$ 24
10,000	-\$150,000	-\$75,000	-\$20,000
20,000	-\$110,000	+\$30,000	+\$70,000
30,000	-\$30,000	+\$40,000	+\$110,000

The cells of the matrix indicate the amount of profit (indicated by a + sign) or the amount of loss (indicated by a - sign) *Virginia Surgical Manufacturing Company* stood to make for the different price and quantity combinations at which it could make an offer to sell forceps to *Wholesale Hospital Supply Company of Virginia*. For example, consider the first top-left cell in the matrix. This cell indicates that *Virginia Surgical Manufacturing Company* would lose \$150,000 if it sold 10,000 units of forceps at the per unit price of \$20 to *Wholesale Hospital Supply Company of Virginia*. On the other hand, the right-hand bottom corner cell indicates that *Virginia Surgical Manufacturing Company* would make a profit of \$110,000 if it sold 30,000 units of forceps at the per unit price of \$24 to *Wholesale Hospital Supply Company of Virginia*. As you may have guessed, these matrices are computed on the basis of numerous production and financial factors. In general, profits INCREASE with higher selling prices and larger quantities sold. The goal of the negotiating teams was to choose the prices and quantities of forceps that best satisfied the corporate goals; and to convince the distributors to buy at those price-quantity combinations. Of-course, before coming to any negotiations of this type, *Wholesale Hospital Supply Company of Virginia* would also conduct their own study of the market conditions, and generate their own Profit-Loss matrix to aid them in the bargaining.

The price-quantity most profitable to *Virginia Surgical Manufacturing Company* may not be the most profitable price-quantity combination for *Wholesale Hospital Supply Company of Virginia*. The goal of such negotiations is to find those price-quantity combinations at which both firms make reasonable profits. However, such combinations are DISCOVERED only through a back and forth system of bids and counterbids as both sides consider such matrices confidential information not to be shared. For instance, the agreement about forceps was reached after seven rounds of offers and counter-offers. In the real life situations, the matrices are more detailed, and indicate the profits/losses at many more prices and quantities. For example, if forceps were being negotiated, they would also indicate profits or losses at 15,000 units and \$ 21 price combination, and many other such intermediate combinations. However, in the project, you will NOT BE ALLOWED to bid any combination not indicated in the matrix supplied to you.

If the bid of *Virginia Surgical Manufacturing Company* is accepted by *Wholesale Hospital Supply Company of Virginia* right away, the study will immediately stop. However, if the bid is met by a counterbid, you would probably consider it, note the profit it yields to *Virginia Surgical Manufacturing Company*, and either accept the offer or make a counter-offer. Suppose, for example, *Wholesale Hospital Supply Company of Virginia* had offered to buy 20,000 forceps at \$ 22 each, you could either accept the offer and settle for a profit of \$30,000; or you could make counterbids for the 30,000 units-\$ 22 or 30,000 units-\$24 combinations at which *Virginia Surgical Manufacturing Company* stood to make even more profits. Your actual decision would probably depend on whether the more profitable offers had been made earlier or not, and also, the reaction you received from *Wholesale Hospital Supply Company of Virginia* to those more profitable combinations. As you may have guessed, it makes good business sense to start with the best combinations, and then gradually compromise to settle on a mutually profitable combination.

Other procedures you will be required to follow during the project are discussed in the attached *INSTRUCTIONS*. However, first a quick note on another matter. *Virginia Surgical Manufacturing Company* follows an open-door management policy. This means that the firm encourages direct dialogue between its officers. Hence, for example, it is common for the Vice President of Marketing to write directly to salespersons or marketing analyst on various issues without NECESSARILY routing such letters through the marketing manager, though a copy of such direct letters would always be sent to the marketing manager. In particular, the Vice President of Marketing believes in getting opinions of people who interact frequently and directly with *Wholesale Hospital Supply Company of Virginia* on issues that concern the relations between *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia*. Hence, it is possible that in the middle of the bargaining session, you may receive memos from the Vice President inviting your opinion on some issues that involve you. If this happens, you should temporarily suspend the negotiations to reply to the Vice President. For instance, the Vice President may want to know your thoughts on some decision taken by *Wholesale Hospital Supply Company of Virginia*.

(Please *SAVE* and *BRING* these sheets with you on the *DAY OF THE PROJECT*. You may need to refer to them to refresh your memory. *THANK YOU.*)

Wholesale Hospital Supply Company of Virginia

INTRODUCTION AND BACKGROUND OF PAST RELATIONSHIPS

The purpose of this study, broadly speaking, is to determine how a manufacturing firm and a wholesaling firm interact with each other in the marketing of a given product. We are interested in the decisions *YOU* arrive at during this study. There are no RIGHT or WRONG ways to behave.

Your group has been assigned the role of *Wholesale Hospital Supply Company of Virginia*, a medium-sized wholesaler of a large variety of surgery-related hospital instruments located at Roanoke. Typically, *Wholesale Hospital Supply Company of Virginia* distributes the products it handles throughout the state of Virginia. Indeed, the firm is the exclusive dealers in Virginia for several reputable manufacturers of surgical products located in different parts of the United States. *Wholesale Hospital Supply Company of Virginia* is also the exclusive dealer in Virginia for *Virginia Surgical Manufacturing Company*, a medium-sized producer of a large range of surgery-related hospital instruments also located in the Roanoke.

This partnership in distribution between *Wholesale Hospital Supply Company of Virginia* and *Virginia Surgical Manufacturing Company* has been going on successfully for the past twelve years. Both firms have steadily grown in these years, and the current turnovers (dollar sales per year) of both firms now stand at approximately \$ 6,000,000 (six million) each. Needless to say, *Wholesale Hospital Supply Company of Virginia* and *Virginia Surgical Manufacturing Company* depend on each other in many ways for the successful marketing of the products of *Virginia Surgical Manufacturing Company*. In time, both firms have come to value this mutually-beneficial relationship, and have sought to settle their differences through negotiations, accomodating each other's wishes and demands where possible. The inter-firm relationship would be best described as cooperative; and in times of difficulty, both firms have been known to 'bail each other out'.

As may be expected in an ongoing business relationship, several issues are under discussion between the partner firms at any point in time. For instance, in the recent past, some of the more important issues discussed between *Wholesale Hospital Supply Company of Virginia* and *Virginia Surgical Manufacturing Company* have been:

- (1) *Wholesale Hospital Supply Company of Virginia* suggested that *Virginia Surgical Manufacturing Company* deliver its products directly to their three warehouses located at Richmond, Charlottesville, and Roanoke. The usual practice of *Virginia Surgical Manufacturing Company* has been to deliver all its products to the main warehouse of *Wholesale Hospital Supply Company of Virginia* at Roanoke. It was estimated that the savings (in transportation) to *Wholesale Hospital Supply Company of Virginia*, if this request is accepted, will be approximately \$ 18,000 per annum.

- (2) *Virginia Surgical Manufacturing Company* wanted to increase the average value of paid-up stocks (inventory) *Wholesale Hospital Supply Company of Virginia* carries of *Virginia Surgical Manufacturing Company's* products by 33%. If *Wholesale Hospital Supply Company of Virginia* accepts their request, it will be spending approximately \$ 20,000 more annually in additional warehousing and inventory carrying costs toward handling these extra stocks.
- (3) *Wholesale Hospital Supply Company of Virginia* suggested that *Virginia Surgical Manufacturing Company* increase their contributions to the cooperative local promotions and advertising by 33%. (To sell the products of *Virginia Surgical Manufacturing Company*, the two firms jointly finance promotional activities like medical-detailing and demonstrations at hospitals and clinics, sponsorships of medical conventions and conferences, advertising in special medical journals, and periodic distribution of reminder-mementos and descriptive brochures to surgeons and hospital-administrators.) If accepted, *Wholesale Hospital Supply Company of Virginia* will save approximately \$ 20,000 per annum. *Virginia Surgical Manufacturing Company* currently contribute \$ 60,000 each year for this.
- (4) *Virginia Surgical Manufacturing Company* wanted *Wholesale Hospital Supply Company of Virginia* to double the frequency with which their medical-representatives call on independent surgeons at private clinics for medical detailing and order-booking. Currently, the representatives of *Wholesale Hospital Supply Company of Virginia* visit the independent surgeons once every 30 days. It was estimated that if *Wholesale Hospital Supply Company of Virginia* comply with this request, they will incur an additional cost of approximately \$ 19,000 per annum.

Several other issues of lesser importance have also been discussed with *Virginia Surgical Manufacturing Company* lately. Some of these were:

- (1) *Wholesale Hospital Supply Company of Virginia* wanted *Virginia Surgical Manufacturing Company* to reimburse the meal-allowances paid to the management trainees of *Wholesale Hospital Supply Company of Virginia* while they are attached to *Virginia Surgical Manufacturing Company* for training. (Each firm sends their management trainees to the other firm for a duration of three months so that the future executives gain an understanding of each other's operations and problems. When these trainees are outside their headquarter towns, they are paid for travel costs, boarding, and lodging in addition to their fixed salaries.) If *Virginia Surgical Manufacturing Company* complies with this request, *Wholesale Hospital Supply Company of Virginia* will save approximately \$ 5,000 p.a..
- (2) *Virginia Surgical Manufacturing Company* wanted *Wholesale Hospital Supply Company of Virginia* to bear 50% of the costs incurred in procuring the calendars that are distributed to all the past customers and future prospects in Virginia each year as a goodwill gesture. Currently, this expense is borne by *Virginia Surgical Manufacturing Company*. In dollar terms, the requested contribution amounts to \$ 5,100 per annum at the current prices. Hence, if the request is accepted by *Wholesale Hospital Supply Company of Virginia*, it will be incurring an extra expenditure of \$ 5,100 annually.

- (3) *Wholesale Hospital Supply Company of Virginia* wanted *Virginia Surgical Manufacturing Company* to reimburse them for the insurance costs incurred by them on the the products of *Virginia Surgical Manufacturing Company*. (The inventory of *Virginia Surgical Manufacturing Company* is continuously insured by *Wholesale Hospital Supply Company of Virginia* against theft and damage while it is in transit, or at the warehouses: upto the time the title is formally transferred to a customer.) If *Virginia Surgical Manufacturing Company* accepts this request, the savings to *Wholesale Hospital Supply Company of Virginia* will be approximately \$ 4,900 per annum.
- (4) *Virginia Surgical Manufacturing Company* wanted to increase the price at which it sells its infra-red lamps to *Wholesale Hospital Supply Company of Virginia* by \$ 100 per unit. If this request is accommodated, *Wholesale Hospital Supply Company of Virginia* will lose approximately \$ 5,000 in profits annually.

Of specific interest at this time is the launch of an important new product of *Virginia Surgical Manufacturing Company*, the LASER-SCALPELS, in Virginia. Your group will be discussing (with the representatives of *Virginia Surgical Manufacturing Company*) the price and quantity of laser-scalpels to be purchased for by *Wholesale Hospital Supply Company of Virginia*.

As in real life, the negotiations are to be based on a Profit-Loss matrix to be supplied by your Vice President of Marketing on the day of study. However, to familiarize you with the concept of Profit-Loss matrices, the matrix supplied to guide the negotiations on the price and quantity of a new kind of forceps with *Virginia Surgical Manufacturing Company* sometime back, is presented and explained below. These matrices are strictly CONFIDENTIAL financial information, internal to the firm.

PROFIT / LOSS (Price - Quantity) MATRIX

If we buy the
following quantity
of Forceps:

If we buy Forceps at:
We will make a Profit/Loss of:

UNITS / PRICES->	\$ 20	\$ 22	\$ 24
10,000	+\$80,000	+\$50,000	-\$80,000
20,000	+\$30,000	+\$20,000	-\$100,000
30,000	+\$10,000	-\$70,000	-\$110,000

The cells of the matrix indicate the amount of profit (indicated by a + sign) or the amount of loss (indicated by a - sign) *Wholesale Hospital Supply Company of Virginia* stood to make for the different price and quantity combinations at which it could make an offer to buy forceps from *Virginia Surgical Manufacturing Company*. For example, consider the first top-left cell in the matrix. This cell indicates that *Wholesale Hospital Supply Company of Virginia* would make a profit of \$80,000 if it bought 10,000 units of forceps at the per unit price of \$20 from *Virginia Surgical Manufacturing Company*. On the other hand, the right-hand bottom corner cell indicates that *Wholesale Hospital Supply Company of Virginia* would lose an amount \$110,000 if it purchased 30,000 units of forceps at the per unit price of \$24 from *Virginia Surgical Manufacturing Company*. As you may have guessed, these matrices are computed on the basis of a careful feasibility study involving an assessment of market conditions. In general, profits DECREASE as the purchase price increases and the quantities bought are larger. This happens because to sell larger quantities, the prices one can charge have to be reduced; also, inventory carrying costs go up very considerably. Often, some inventory remains unsold and these possible losses are also taken into account while computing such matrices. The goal of the negotiating teams was to choose the prices and quantities of forceps that best satisfied the corporate goals; and to convince the principals to sell at those price-quantity combinations. Of-course, before coming to any negotiations of this type, *Virginia Surgical Manufacturing Company* would also generate their own Profit-Loss matrix on the basis of their production projections and other factors to aid them in the bargaining.

The price-quantity most profitable to *Wholesale Hospital Supply Company of Virginia* may not be the most profitable price-quantity combination for *Virginia Surgical Manufacturing Company*. The goal of such negotiations is to find those price-quantity combinations at which both firms make reasonable profits. However, such combinations are DISCOVERED only through a back and forth system of bids and counterbids as both sides consider such matrices confidential information not to be shared. For instance, the agreement about forceps was reached after seven rounds of offers and counter-offers. In the real life situations, the matrices are more detailed, and indicate the profits/losses at many more prices and quantities. For example, if forceps were being negotiated, they would also indicate profits or losses at 15,000 units and \$ 21 price combination, and many other such intermediate combinations. However, in the study, you will NOT BE ALLOWED to bid any combination not indicated in the matrix supplied to you.

If the bid of *Wholesale Hospital Supply Company of Virginia* is accepted by *Virginia Surgical Manufacturing Company* right away, the project will immediately stop. However, if the bid is met by a counterbid, you would probably consider it, note the profit it yields to *Wholesale Hospital Supply Company of Virginia*, and either accept the offer or make a counter-offer. Suppose, for example, *Virginia Surgical Manufacturing Company* had offered to sell 20,000 forceps at \$ 22 each, you could either accept the offer and settle for a profit of \$20,000; or you could make counterbids for the 10,000 units-\$ 20 or 10,000 units-\$22 combinations at which *Wholesale Hospital Supply Company of Virginia* stood to make even more profits. Your actual decision would probably depend on whether the more profitable offers had been made earlier or not, and also, the reaction you received from *Virginia Surgical Manufacturing Company* to those more profitable combinations. As you may have

guessed, it makes good business sense to start with the best combinations, and then gradually compromise to settle on a mutually profitable combination.

Other procedures you will be required to follow during the project are discussed in the attached *INSTRUCTIONS*. However, first a quick note on another matter. *Wholesale Hospital Supply Company of Virginia* follows an open-door management policy. This means that the firm encourages direct dialogue between its officers. Hence, for example, it is common for the Vice President of Marketing to write directly to purchasing agents or marketing analyst on various issues without NECESSARILY routing such letters through the marketing manager, though a copy of such direct letters would always be sent to the marketing manager. In particular, the Vice President of Marketing believes in getting opinions of people who interact frequently and directly with *Virginia Surgical Manufacturing Company* on issues that concern the relations between *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia*. Hence, it is possible that in the middle of the bargaining session, you may receive memos from the Vice President inviting your opinion on some issues that involve you. If this happens, you should temporarily suspend the negotiations to reply to the Vice President. For instance, the Vice President may want to know your thoughts on some decision taken by *Virginia Surgical Manufacturing Company*.

(Please *SAVE* and *BRING* these sheets with you on the *DAY OF THE PROJECT*. You may need to refer to them to refresh your memory. *THANK YOU.*)

Virginia Surgical Manufacturing Company

INSTRUCTIONS

On the day of the project, before starting the negotiations on *LASER SCALPELS* with *Wholesale Hospital Supply Company of Virginia*, *Virginia Surgical Manufacturing Company* must assign the three team-members to the positions of *MARKETING MANAGER*, *MARKETING ANALYST*, and *SALESPERSON*. Read the following descriptions of these three jobs or organizational *POSITIONS* carefully. On the day of the study, you will have to *DECIDE AMONG YOURSELVES* which position each of you will fill.

MARKETING MANAGER: The Marketing Manager is responsible for the ultimate decisions as to the price and the quantity of *LASER SCALPELS* to be offered to *Wholesale Hospital Supply Company of Virginia*. To make this decision effectively, the Marketing Manager will be supplied information and aided by the Marketing Analyst and the Salesperson.

MARKETING ANALYST: The Marketing Analyst will be given the *PROFIT-LOSS MATRIX* (something like the one you saw in the previous sheets) indicating the profitability associated with different prices and quantities of *LASER SCALPELS*. This profit/loss information should be shared by the Marketing Analyst with his Marketing Manager. Traditionally, the Marketing Analysts in *Virginia Surgical Manufacturing Company* have passed along information for *THREE* price-quantity combinations at one time in order to take the burden of analysis off the Marketing Manager, at least to some degree. Specific profit requirements can be specified by the Marketing Manager.

SALESPERSON: The Salesperson is the only member of his firm to deal directly with *Wholesale Hospital Supply Company of Virginia*. As such, his actions, which involve the passing of messages and bids between companies, may be crucial to the outcomes of the decision-making process. He may use his powers of persuasion to affect the actions by the members of his own firm as well as the members of *Wholesale Hospital Supply Company of Virginia*.

In the real-life situations too, most bargaining interactions occur mainly between the Salesperson and the Purchasing Agent of the buying firm. Moreover, the job-descriptions provided above are representative of the kinds of tasks performed by such officers in a bargaining task.

On the day of the project, you will be given *TEN MINUTES* to discuss and decide who will assume which role. After ten minutes, the *PROJECT COORDINATOR* will come back to find out what you have decided and hand over to each of you a *FOLDER* containing various materials you will be needing to start the negotiations. The Marketing Analyst will also be supplied the *PROFIT-LOSS MATRIX* on *LASER SCALPELS* from your Vice President of Marketing. Once you have decided on the positions and the study has

started, you can only communicate with each other and with the members of *Wholesale Hospital Supply Company of Virginia*, through written memos. The two teams will be housed in different rooms. Your own firm's members will be separated from each other by partitions so that you cannot see one another. In other words, you will **NOT BE ALLOWED TO TALK TO ONE ANOTHER** once the bargaining process has started. The memos written to each other in *Virginia Surgical Manufacturing Company* can be passed by sliding them under the partitions. The PROJECT COORDINATOR will be at hand to pass on your communications to *Wholesale Hospital Supply Company of Virginia*.

The folder will contain the following materials:

- (1) **INTRA-FIRM MEMOS:** These must be used by EACH of you if you wish to communicate with other members of your firm. You may use them to write about anything related to the bargaining or *Wholesale Hospital Supply Company of Virginia*, or you may use them to ask questions from each other or to get clarifications. Anybody can write to anyone in the firm using these memos with one condition: if the Salesperson directly writes to the Marketing Analyst, another copy of the memo must be made and sent to the Marketing Manager too. A sample of the INTRA-FIRM MEMO is attached.
- (2) **INTER-FIRM MEMOS:** These are intended for use **ONLY** by the Salesperson to communicate with the Purchasing Agent of *Wholesale Hospital Supply Company of Virginia*. If the Marketing Manager or the Marketing Analyst wish to convey something to the Purchasing Agent of *Wholesale Hospital Supply Company of Virginia*, they must write it down on an INTRA-FIRM MEMO and pass it on to the Salesperson. The Salesperson may choose to either simply copy it on an INTER-FIRM MEMO and send it to Purchasing Agent of *Wholesale Hospital Supply Company of Virginia*, or he may wish to hold it and first seek more details, send suggestions and so forth to other members of his team. A sample of this INTER-FIRM MEMO is also attached. On the day of the study, the folders of the Marketing Manager and Marketing Analyst will **NOT** contain these INTER-FIRM MEMOS.
- (3) **OFFER TO SELL FORMS:** These are intended for the use of **ONLY** by the Marketing Manager who will enter **ONE** price and quantity combination of LASER SCALPELS in the OFFER TO SELL form and pass it on to the Salesperson along with any comments he might have concerning the bid. The comments, if any, must be made on a separate INTRA-FIRM MEMO. The Salesperson can either forward the OFFER TO SELL to the Purchasing Agent of *Wholesale Hospital Supply Company of Virginia*, or first react to bid and/or comments of the Marketing Manager by using INTRA-FIRM MEMOS. In other words, only **ONE** price and quantity combination are to be entered on the OFFER TO SELL form. All other information, even if it is intended for *Wholesale Hospital Supply Company of Virginia*, must be written on INTRA-FIRM MEMOS; the Salesperson is responsible for copying information intended for *Wholesale Hospital Supply Company of Virginia*, on an INTER-FIRM MEMO before forwarding it. A sample of OFFER TO SELL is attached. On the day of the project, the folders of the Salesperson and the Marketing Analyst will **NOT** contain this form.

Each folder will also contain a scratch-pad and a pencil.

What follows is simply to familiarize you with the procedures of the study to which each firm will adhere once the bargaining is underway.

THE SUCCEEDING STEPS SHOULD BE CLOSELY FOLLOWED:

- (1) To open the bargaining, *Virginia Surgical Manufacturing Company* will first send a price-quantity bid on an OFFER TO SELL form to *Wholesale Hospital Supply Company of Virginia* through the Salesperson to the Purchasing Agent of *Wholesale Hospital Supply Company of Virginia*. As indicated earlier, in order to prepare this bid, the Marketing Analyst of *Virginia Surgical Manufacturing Company* will be supplied with a PROFIT-LOSS MATRIX. Using an INTRA-FIRM MEMO, the Marketing Analyst should recommend to his Marketing Manager no more than *THREE* price-quantity combinations for *EACH BID*. It is probably best from the bargaining standpoint to start with a high bid.
- (2) The Marketing Manager will then decide which specific price-quantity position to bid (he may request clarification from the Analyst, if he wishes) and fill out COMPLETELY the chosen position on an OFFER TO SELL form. Any comments the Manager wishes to make either to the Salesperson or the personnel of *Wholesale Hospital Supply Company of Virginia* should be made on an INTRA-FIRM MEMO. These forms will be passed on to the Salesperson.
- (3) The Salesperson can react to the bid and the comments, if any, of the Manager via an INTRA-FIRM MEMO, but must eventually follow the Manager's wishes and send the bid to *Wholesale Hospital Supply Company of Virginia*. To do this, he will place the bid in an envelope (supplied in the folder) and also place in the envelope any message he or his Manager wants to send to *Wholesale Hospital Supply Company of Virginia*. However, since all inter-firm communication must be written on an INTER-FIRM MEMO form; therefore, the Salesperson will need to transcribe the Manager's message (though not his OFFER TO SELL) on an INTER-FIRM MEMO. The Salesperson then will seal the envelope and knock on the door. The PROJECT COORDINATOR will pick up the sealed bid and/or any INTER-FIRM MEMOS and transport it to *Wholesale Hospital Supply Company of Virginia*.
- (4) If the *Wholesale Hospital Supply Company of Virginia* accepts your offer, the bargaining is over. If, however, they make a counter-offer, this offer will first be received by your Salesperson, who should pass the offer along with any comments supplied by *Wholesale Hospital Supply Company of Virginia* or his own comments, to his Marketing Manager. To minimize the time required to assess the bid, it is suggested that the Salesperson record the bids (both his firm's and the other firm's) on the scratch-pad supplied, and pass the original to his Manager IMMEDIATELY. The Salesperson could then write any comments to his Manager or to the other firm's Purchasing Agent at his own leisure.

The Manager then can read the actual OFFER TO BUY form sent by *Wholesale Hospital Supply Company of Virginia* and any INTER-FIRM MEMOS

as well ask for the Salesperson's reactions if needed. Next, the manager passes the OFFER TO BUY and the messages from *Wholesale Hospital Supply Company of Virginia* to the Analyst along with any comments of his own, if any. The Analyst will study the bid and messages sent to him, and make his recommendations as to what should be done in the next round - whether to accept and, if not, what to bid instead next. The procedure from here onwards is identical to that spelled out under (1) above, and so forth.

- (5) Communications between team members can be as extensive and frequent as desired. However, the bids must be prepared and passed as described above; that is:

(BID RECEIVED)-----> SALESPERSON-----> MARKETING MANAGER----->

MARKETING ANALYST-----> MARKETING MANAGER (NEW BID PREPARED

FOR SENDING)-----> SALESPERSON-----> TO THE OTHER FIRM.

All communications and bids that are sent should include the time the memo or bid is sent and the position or the title of the person sending it. At no time should there be any VERBAL COMMUNICATION between your firm's members once the study has started. Please use the memos supplied.

When you receive a communication from *Wholesale Hospital Supply Company of Virginia*, you should immediately sign your initials in the appropriate place on the memo.

- (6) For any given bid or offer, only one price and one quantity may be indicated. Multiple bids (i.e., using a single bid form for more than one price-quantity combination or sending MORE THAN ONE bid form at any one time) are not allowed.

The bargaining will cease as soon as both firms agree on a price and quantity. It has been found that the greater the number of bids passed, the higher is the probability of reaching an equitable agreement. After the bargaining is over, please stay back to answer a questionnaire. Once again, thank you for agreeing to participate. Your participation will be very valuable for this study.

(Please SAVE and BRING these INSTRUCTIONS with you on the DAY OF THE PROJECT. You may need to refer to them to refresh your memory. THANK YOU.)

Virginia Surgical Manufacturing Company

INTRA-FIRM MEMO

Date : _____

Time : _____

From the desk of: (Please Check)

To: (Please Check)

Salesperson []
Marketing Analyst []
Marketing Manager []

Salesperson []
Marketing Analyst []
Marketing Manager []

SUBJECT :

You may use the flip side of this memo if needed.

Virginia Surgical Manufacturing Company

INTER-FIRM MEMO

Date : _____

Time : _____

TO : Wholesale Hospital Supply Company of Virginia

SUBJECT :

*Wholesale Hospital Supply
Company of Virginia*
Received By: (Please Check)

Purchasing Agent _____
Marketing Analyst _____
Marketing Manager _____

You may use the flip side of this memo if needed.

Virginia Surgical Manufacturing Company

OFFER TO SELL

Date : _____

Time : _____

TO : Wholesale Hospital Supply Company of Virginia

SUBJECT : Laser Scalpels

Dear Sirs :

We would like to make the following offer of sale :

Price : _____ DOLLARS

Quantity: _____ UNITS

*Wholesale Hospital Supply
Company of Virginia*
Received By: (Please Check)

Purchasing Agent _____
Marketing Analyst _____
Marketing Manager _____

Wholesale Hospital Supply Company of Virginia

INSTRUCTIONS

On the day of the project, before starting the negotiations on *LASER SCALPELS* with *Virginia Surgical Manufacturing Company*, *Wholesale Hospital Supply Company of Virginia* must assign the three team-members to the positions of *MARKETING MANAGER*, *MARKETING ANALYST*, and *PURCHASING AGENT*. Read the following descriptions of these three jobs or organizational *POSITIONS* carefully. On the day of the study, you will have to *DECIDE AMONG YOURSELVES* which position each of you will fill.

MARKETING MANAGER: The Marketing Manager is responsible for the ultimate decisions as to the price and the quantity of *LASER SCALPELS* to be purchased from *Virginia Surgical Manufacturing Company*. To make this decision effectively, the Marketing Manager will be supplied information and aided by the Marketing Analyst and the Purchasing Agent.

MARKETING ANALYST: The Marketing Analyst will be given the *PROFIT-LOSS MATRIX* (something like the one you saw in the previous sheets) indicating the profitability associated with different prices and quantities of *LASER SCALPELS*. This profit/loss information should be shared by the Marketing Analyst with his Marketing Manager. Traditionally, the Marketing Analysts in *Wholesale Hospital Supply Company of Virginia* have passed along information for *THREE* price-quantity combinations at one time in order to take the burden of analysis off the Marketing Manager, at least to some degree. Specific profit requirements can be specified by the Marketing Manager.

PURCHASING AGENT: The Purchasing Agent is the only member of his firm to deal directly with *Virginia Surgical Manufacturing Company*. As such, his actions, which involve the passing of messages and bids between companies, may be crucial to the outcomes of the decision-making process. He may use his powers of persuasion to affect the actions by the members of his own firm as well as the members of *Virginia Surgical Manufacturing Company*. The Purchasing Agent will deal directly, and on a continuing basis with the Salesperson of *Virginia Surgical Manufacturing Company*.

In the real-life situations too, most bargaining interactions occur mainly between the Purchasing Agent and the Salesperson of the selling firm. Moreover, the job-descriptions provided above are representative of the kinds of tasks performed by such officers in a bargaining task.

On the day of the project, you will be given *TEN MINUTES* to discuss and decide who will assume which role. After ten minutes, the *PROJECT COORDINATOR* will come back to find out what you have decided and hand over to each of you a *FOLDER* containing various materials you will be need-

ing to start the negotiations. The Marketing Analyst will also be supplied the PROFIT-LOSS MATRIX on LASER SCALPELS from your Vice President of Marketing. Once you have decided on the positions and the project has started, you can only communicate with each other and with the members of *Virginia Surgical Manufacturing Company*, through written memos. The two teams will be housed in different rooms. Your own firm's members will be separated from each other by partitions so that you cannot see one another. In other words, you will **NOT BE ALLOWED TO TALK TO ONE ANOTHER** once the bargaining process has started. The memos written to each other in *Wholesale Hospital Supply Company of Virginia* can be passed by sliding them under the partitions. The PROJECT COORDINATOR will be at hand to pass on your communications to *Virginia Surgical Manufacturing Company*.

The folder will contain the following materials:

- (1) INTRA-FIRM MEMOS: These must be used by EACH of you if you wish to communicate with other members of your firm. You may use them to write about anything related to the bargaining or *Virginia Surgical Manufacturing Company*, or you may use them to ask questions from each other or to get clarifications. Anybody can write to anyone in the firm using these memos with one condition: if the Purchasing Agent directly writes to the Marketing Analyst, another copy of the memo must be made and sent to the Marketing Manager too. A sample of the INTRA-FIRM MEMO is attached.
- (2) INTER-FIRM MEMOS: These are intended for use **ONLY** by the Purchasing Agent to communicate with the Salesperson of *Virginia Surgical Manufacturing Company*. If the Marketing Manager or the Marketing Analyst wish to convey something to the Salesperson of *Virginia Surgical Manufacturing Company*, they must write it down on an INTRA-FIRM MEMO and pass it on to the Purchasing Agent. The Purchasing Agent may choose to either simply copy it on an INTER-FIRM MEMO and send it to Salesperson of *Virginia Surgical Manufacturing Company*, or he may wish to hold it and first seek more details, send suggestions and so forth to other members of his team. A sample of this INTER-FIRM MEMO is also attached. On the day of the study, the folders of the Marketing Manager and Marketing Analyst will **NOT** contain these INTER-FIRM MEMOS.
- (3) OFFER TO BUY FORMS: These are intended for the use of **ONLY** by the Marketing Manager who will enter **ONE** price and quantity combination of LASER SCALPELS in the OFFER TO BUY form and pass it on to the Purchasing Agent along with any comments he might have concerning the bid. The comments, if any, must be made on a separate INTRA-FIRM MEMO. The Purchasing Agent can either forward the OFFER TO BUY to the Salesperson of *Virginia Surgical Manufacturing Company*, or first react to bid and/or comments of the Marketing Manager by using INTRA-FIRM MEMOS. In other words, only **ONE** price and quantity combination are to be entered on the OFFER TO BUY form. All other information, even if it is intended for *Virginia Surgical Manufacturing Company*, must be written on INTRA-FIRM MEMOS; the Purchasing Agent is responsible for copying information intended for *Virginia Surgical Manufacturing Company*, on an INTER-FIRM MEMO before forwarding it. A

sample of OFFER TO BUY is attached. On the day of the study, the folders of the Purchasing Agent and the Marketing Analyst will *NOT* contain this form.

Each folder will also contain a scratch-pad and a pencil.

What follows is simply to familiarize you with the procedure of study to which each firm will adhere once the bargaining is underway.

THE SUCCEEDING STEPS SHOULD BE CLOSELY FOLLOWED:

- (1) To open the bargaining, *Virginia Surgical Manufacturing Company* will first send a price-quantity bid to *Wholesale Hospital Supply Company of Virginia*. This bid will obviously be based on *Virginia Surgical Manufacturing Company's* profit picture which will probably be different from that of *Wholesale Hospital Supply Company of Virginia*.
- (2) The Purchasing Agent of *Wholesale Hospital Supply Company of Virginia* will receive the bid and add any comments on the bid that he might have on an INTRA-FIRM MEMO. He will then pass the bid of *Virginia Surgical Manufacturing Company* and his comments, if any, as well as any comments sent along with the bid by *Virginia Surgical Manufacturing Company* to his Marketing Manager. To minimize the time required to assess the bid, it is suggested that the Purchasing Agent record the bids (both his firm's and the other firm's) on the scratch-pad supplied, and pass the original to his Manager IMMEDIATELY. The Purchasing Agent could then write any comments to his Manager or to the other firm's Salesperson at his own leisure.
- (3) The Marketing Manager decides on the type of bid (e.g., high, medium, or low in terms of profit or price or quantity) he wants to return to *Virginia Surgical Manufacturing Company*, or he may accept the bid sent by them. If he chooses the former course of action (i.e., refuse the bid of *Virginia Surgical Manufacturing Company*) he should then request, using an INTRA-FIRM MEMO, bid suggestions from the Marketing Analyst. When he does this, the Manager should also pass along all the communications received from *Virginia Surgical Manufacturing Company*, to the Analyst so as to keep the Analyst fully informed as to *Virginia Surgical Manufacturing Company's* orientation and approach. It is best from a bargaining standpoint to start with a bid most profitable to *Wholesale Hospital Supply Company of Virginia*. Thus the Manager may ask the Analyst for the bid that produces the highest and/or the next highest profit for *Wholesale Hospital Supply Company of Virginia*. He can add any additional comments he wishes to make on an INTRA-FIRM MEMO he passes to the Analyst.
- (4) The Analyst then looks at *Virginia Surgical Manufacturing Company's* bid and the messages received from his Manager, and gives the Manager the requested information along with any comments he might wish to make. He must use a new INTRA-FIRM MEMO in making his responses to the Manager. As mentioned before, the Analyst will be supplied a Profit-Loss Matrix from your Vice President of Marketing. With the aid of this matrix and keeping in mind any specific requirements of his Manager, the Ana-

lyst should pass along to the Manager no more than three recommendations in response to the bid of *Virginia Surgical Manufacturing Company*.

- (5) The Manager then chooses the bid he wishes to submit to *Virginia Surgical Manufacturing Company* (he may request clarifications from the Analyst, if he wishes) and fill out COMPLETELY the chosen position on an OFFER TO BUY form. Any comments the Manager wishes to make either to the Purchasing Agent or the personnel of *Virginia Surgical Manufacturing Company* should be made on an INTRA-FIRM MEMOS. These forms will be passed on to the Purchasing Agent.
- (6) The Purchasing Agent can react to the bid and the comments, if any, of the Manager via an INTRA-FIRM MEMO, but must eventually follow the Manager's wishes and send the bid to *Virginia Surgical Manufacturing Company*. To do this, he will place the bid in an envelope (supplied in the folder) and also place in the envelope any message he or his Manager wants to send to *Wholesale Hospital Supply Company of Virginia*. However, since all inter-firm communication must be written on an INTER-FIRM MEMO form; therefore, the Purchasing Agent will need to transcribe the Manager's message (though not his OFFER TO BUY) on an INTER-FIRM MEMO. The Purchasing Agent then will seal the envelope and knock on the door. The PROJECT COORDINATOR will pick up the sealed bid and/or any INTER-FIRM MEMOS and transport it to *Virginia Surgical Manufacturing Company*.
- (7) If the *Virginia Surgical Manufacturing Company* accepts your offer, the bargaining is over. If, however, they make a counter-offer, the process described above will start all over again.

Communications between team members can be as extensive and frequent as desired. However, the bids must be prepared and passed as described above; that is:

(BID RECEIVED)-----> PURCHASING AGENT-----> MARKETING MANAGER----->

MARKETING ANALYST-----> MARKETING MANAGER (NEW BID PREPARED FOR

SENDING)-----> PURCHASING AGENT-----> TO THE OTHER FIRM.

All communications and bids that are sent should include the time the memo or bid is sent and the position or the title of the person sending it. At no time should there be any VERBAL COMMUNICATION between your firm's members once the study has started. Please use the memos supplied.

When you receive a communication from *Virginia Surgical Manufacturing Company*, you should immediately sign your initials in the appropriate place on the memo.

- (8) For any given bid or offer, only one price and one quantity may be indicated. Multiple bids (i.e., using a single bid form for more than one price-quantity combination or sending MORE THAN ONE bid form at any one time) are not allowed.

The bargaining will cease as soon as both firms agree on a price and quantity. It has been found that the greater the number of bids passed, the higher is the probability of reaching an equitable agreement. After the bargaining is over, please stay back to answer a questionnaire. Once again, thank you for agreeing to participate. Your participation will be very valuable for this study.

(Please SAVE and BRING these INSTRUCTIONS with you on the DAY OF THE PROJECT. You may need to refer to them to refresh your memory. THANK YOU.)

Wholesale Hospital Supply Company of Virginia

INTRA-FIRM MEMO

Date : _____

Time : _____

From the desk of: (Please Check)

To: (Please Check)

Purchasing Agent []
Marketing Analyst []
Marketing Manager []

Purchasing Agent []
Marketing Analyst []
Marketing Manager []

SUBJECT :

You may use the flip side of this memo if needed.

Wholesale Hospital Supply Company of Virginia

INTER-FIRM MEMO

Date : _____

Time : _____

TO : Virginia Surgical Manufacturing Company

SUBJECT :

*Virginia Surgical
Manufacturing Company*
Received By: (Please Check)

Salesperson _____
Marketing Analyst _____
Marketing Manager _____

You may use the flip side of this memo if needed.

Wholesale Hospital Supply Company of Virginia

OFFER TO BUY

Date : _____

Time : _____

TO : Virginia Surgical Manufacturing Company

SUBJECT : Laser Scalpels

Dear Sirs :

We would like to make the following offer of purchase :

Price : _____ DOLLARS

Quantity: _____ UNITS

*Virginia Surgical
Manufacturing Company*
Received By: (Please Check)

Salesperson _____
Marketing Analyst _____
Marketing Manager _____

Virginia Surgical Manufacturing Company

PROFIT / LOSS (Price - Quantity) MATRIX

CONFIDENTIAL

On the basis of an extensive production feasibility study on LASER-SCALPELS carried out jointly by our New Projects Committee and the production department, the the accounting and marketing departments have determined the following profit/loss matrix for the sales of this new product of ours. Please use this to guide you in the negotiation process with our Virginia distributors. This information must be considered strictly classified and confidential. - Vice President, Marketing

If we sell the
following quantity
of Laser-Scalpels:

If we sell Laser-Scalpels at:
We will make a Profit/Loss of:

UNITS / PRICES->	\$ 200	\$ 210	\$ 220	\$ 230	\$ 240
10,000	-\$100,000	-\$80,000	-\$70,000	-\$40,000	+\$70,000
11,000	-\$30,000	-\$20,000	-\$15,000	-\$10,000	+\$80,000
12,000	-\$28,000	-\$18,000	-\$10,000	-\$5,000	+\$94,000
13,000	-\$20,000	-\$10,000	+\$5,000	+\$100,000	+\$130,000
14,000	+\$10,000	+\$40,000	+\$110,000	+\$200,000	+\$230,000

NOTES: Bids of offers must be for 10,000, 11,000, 12,000, 13,000, or 14,000 units at prices of \$200, \$210, \$220, \$230, or \$240. In other words, you may bid any price and quantity combination associated with one of the cells of the matrix. The sign (+) indicates profits, and (-) indicates losses for the price-quantity combinations.

Wholesale Hospital Supply Company of Virginia

PROFIT / LOSS (Price - Quantity) MATRIX

CONFIDENTIAL

On the basis of a recent survey of the market about the potential of LASER-SCALPELS, the accounting and marketing departments have determined the following profit/loss matrix for this new product of Virginia Surgical Manufacturing Company. Please use this to guide you in the negotiation process. This information must be considered strictly classified and confidential. - Vice President, Marketing

If we buy the
following quantity
of Laser-Scalpels:

If we buy Laser-Scalpels at:
We will make a Profit/Loss of:

UNITS / PRICES->	\$ 200	\$ 210	\$ 220	\$ 230	\$ 240
10,000	+\$250,000	+\$230,000	+\$215,000	+\$200,000	+\$180,000
11,000	+\$190,000	+\$130,000	+\$110,000	+\$100,000	+\$80,000
12,000	+\$94,000	+\$60,000	+\$40,000	-\$10,000	-\$20,000
13,000	-\$8,000	-\$10,000	-\$15,000	-\$18,000	-\$24,000
14,000	-\$22,000	-\$25,000	-\$35,000	-\$40,000	-\$80,000

NOTES: Bids of offers must be for 10,000, 11,000, 12,000, 13,000, or 14,000 units at prices of \$200, \$210, \$220, \$230, or \$240. In other words, you may bid any price and quantity combination associated with one of the cells of the matrix. The sign (+) indicates profits, and (-) indicates losses for the price-quantity combinations.

GROUND RULES

Please adhere to the following rules during the project.

1. Please try to prepare the bids in about 15 minutes.
2. You CANNOT offer a bid or accept a bid at which your firm makes a loss.
3. When your bid is ready, the salesperson/purchasing agent should bring it to the Project Coordinator.
4. You CANNOT use any issues described in the background as a bargaining card while you negotiate the price and quantity of LASER SCALPELS with the other firm.
5. PLEASE do not seal the envelopes.
6. PLEASE do NOT talk once the project has started.

THANK YOU.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned
FROM : Vice President, Marketing
Subject : Price of Infra-Red Lamps

Our distributors in Virginia, Wholesale Hospital Supply Company of Virginia, have recently communicated to me that they can no longer continue to pay us the rate at which we invoice them for our infra-red lamps. On the basis of a survey carried out by them, they have concluded that a minimum decrease in price of \$ 100 per unit in the traditional price is required if we want them to distribute our infra-red lamps. Some of you were also involved in the negotiations over this issue.

As you know, our annual sales of such lamps to Wholesale Hospital Supply Company of Virginia average only 50 units. Hence, this price-cut represents an annual loss of \$ 5,000 per annum to us. Their decision, however, is surprising in the sense that the profit-margin they make on these lamps compares well with the margins allowed by our competitors to their distributors. I have also attached a related memo sent by Vice President of Finance and another confidential memo on this matter.

I would appreciate your written comments and feelings on this issue, as also your OVERALL assessment of the current relationship with our distributors. A memo sheet and envelope have been attached for your reply. I would also like you to respond to the short questionnaire attached. Please read ALL the memos before you respond. Also, please answer the questionnaire *after you have written the memo* on this development. Since you have direct and frequent interactions with the distributors, your reactions will be very helpful to me in future meetings with our distributor's representatives.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned

FROM : Vice President, Marketing

Subject : Inventory Carried by Wholesale Hospital Supply
Company of Virginia

As you know, for some time now, our sole distributors in Virginia, Wholesale Hospital Supply Company of Virginia, have wanted to reduce the value of paid-up stocks they carry of our products. Some of you were also involved in the negotiations over this issue.

They have recently written to me about their final decision on this issue. They have decided to cut-back on the value of paid-up inventory by 33%, primarily in our products dealing with micro-surgery.

Since we cannot revise our production plans in the near future, we will now be forced to carry this extra inventory ourselves. The accounting department has estimated that the total extra costs to be incurred by us (in warehousing and finance costs) as a result of our distributor's decision will be approximately \$ 20,000 per annum.

Needless to say, their decision comes as a surprise to us. As you know, although exact inventory levels are not specified in our legal agreement, Wholesale Hospital Supply Company of Virginia have traditionally carried paid-up stocks equal to 30 days sales (in dollars) at any point in time. They will now carry stocks valued at approximately 20 days sales. This decrease in means that our Virginia distributors will carry less paid-up stocks than all our other distributors. I have also attached a related memo sent by Vice President of Finance and another confidential memo on this matter.

I would appreciate your written comments and feelings on this issue, as also your OVERALL assessment of the current relationship with our distributors. A memo sheet and envelope have been attached for your reply. I would also like you to respond to the short questionnaire attached. Please read ALL the memos before you respond. Also, please answer the questionnaire *after you have written the memo* on this development. Since you have direct and frequent interactions with the distributors, your reactions will be very helpful to me in future meetings with our distributor's representatives.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned
 FROM : Vice President, Marketing
 Subject : Our Management Trainees with
 Wholesale Hospital Supply Company of Virginia

Our Virginia distributors, Wholesale Hospital Supply Company of Virginia, have recently written to me praising the work of our management trainees while they are attached to our distributors as part of their training program. They have also agreed to reimburse us for the field meal-allowances we pay our management trainees while they are out of their headquarter towns. You will recall that recently we had raised this issue of meal-reimbursements with our distributors. Some of you were also involved in the actual negotiations over this issue.

Our accounting office informs me that this decision will result in a saving of approximately \$ 5,000 per annum to us. This offer to pay is a pleasant surprise in the sense that though the Wholesale Hospital Supply Company of Virginia have traditionally paid the salaries of our trainees while they work under them, they have never reimbursed us any field allowances.

In a recent meeting of executive Vice-Presidents, this decision was suitably praised since it sets an example for our other distributors to follow. It was felt that in making this offer, Wholesale Hospital Supply Company of Virginia was very receptive to the wishes and well-being of our company. I have also attached a related memo sent by Vice President of Finance on this matter.

I would appreciate your written comments and feelings on this issue, as also your OVERALL assessment of the current relationship with our distributors. A memo sheet and envelope have been attached for your reply. I would also like you to respond to the short questionnaire attached. Please read ALL the memos before you respond. Also, please answer the questionnaire *after you have written the memo* on this development. Since you have direct and frequent interactions with the distributors, your reactions will be very helpful to me in future meetings with our distributor's representatives.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned

FROM : Vice President, Marketing

Subject : Cooperative Local Promotions with
Wholesale Hospital Supply Company of Virginia

As you know, we have been working together with our Virginia distributors, Wholesale Hospital Supply Company of Virginia, for several years now, in mounting effective cooperative local promotions for our products. You will recall that of late, a request was made by us that they contribute a greater amount to this mutually beneficial activity. Some of you were also involved in the negotiations over this issue.

They have recently conveyed to me their final decision over this matter. I am happy to inform you that our Virginia distributors have agreed to contribute an additional \$ 20,000 annually over and above their usual \$ 60,000 per year toward such promotions (a 33% increase). They have made a suggestion that we stress our pulse-monitors more in our promotions because of its functional superiority over competitor brands. Since our current level of local promotions is excellent, this contribution of theirs, in effect, means a saving of \$ 20,000 for us annually. However, we will accomodate their request for stepping-up the promotion for pulse-monitors by cutting back on the promotion of oxygen-respirators which already enjoy considerable brand loyalty.

This gesture of our distributors comes as a pleasant surprise to us. As you know, Wholesale Hospital Supply Company of Virginia has traditionally made fair contributions to this joint promotional effort. With this increase of 33% in contributions, our Virginia distributor's proportional contribution becomes higher than all our other distributors.

In a recent meeting of executive Vice-Presidents, this decision was suitably praised since it sets an example for our other distributors to follow. It was felt that in making this offer, Wholesale Hospital Supply Company of Virginia was very receptive to the wishes and well-being of our company. I have also attached a related memo sent by Vice President of Finance on this matter.

I would appreciate your written comments and feelings on this issue, as also your OVERALL assessment of the current relationship with our distributors. A memo sheet and envelope have been attached for your reply. I would also like you to respond to the short questionnaire attached. Please read ALL

the memos before you respond. Also, please answer the questionnaire *after you have written the memo* on this development. Since you have direct and frequent interactions with the distributors, your reactions will be very helpful to me in future meetings with our distributor's representatives.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Price of Infra-Red Lamps

I was very surprised at the recent decision by Wholesale Hospital Supply Company of Virginia to reduce their purchase price for our infra-red lamps by \$ 100 per unit. Their decision will result in a loss of approximately \$ 5,000 per annum to us.

You will recall that we had consistently resisted such a move when the issue was being discussed. Since their profit margins on lamps have not fallen, such unjustified steps by our distributors should be strongly resisted.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Price of Infra-Red Lamps

I was surprised at the recent decision by Wholesale Hospital Supply Company of Virginia to reduce their purchase price for our infra-red lamps by \$ 100 per unit. Their decision will result in a loss of approximately \$ 5,000 per annum to us.

Such actions should be discouraged.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Inventory Carried by Wholesale Hospital Supply
Company of Virginia

I was shocked to hear about the recent decision of Wholesale Hospital Supply Company of Virginia to cut-back on the value of paid-up inventory they carry of our products by 33%. This decision amounts to an annual loss of approximately \$ 20,000 to us in additional warehousing and finance costs.

You will recall that we had consistently resisted such a move when the issue was being discussed. Since we are going through a difficult financial year, it becomes very difficult to gloss-over such unnecessary extra expenditures. Will all concerned please make a fresh determined attempt to get the Virginia distributors to withdraw their decision.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Inventory Carried by Wholesale Hospital Supply
Company of Virginia

I was surprised to hear about the recent decision of Wholesale Hospital Supply Company of Virginia to cut-back on the value of paid-up inventory they carry of our products by 33%. This decision amounts to an annual loss of approximately \$ 20,000 to us in additional warehousing and finance costs.

Since we are having a good business year, the loss will not affect the overall firm performance. However, please make sure that our Virginia distributors do not make other similar moves that affect us financially.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel

FROM : Vice President, Finance

SUBJECT : Meal Allowance Reimbursement

I was very pleasantly surprised at the recent decision by Wholesale Hospital Supply Company of Virginia to reimburse to us the meal allowances we pay to our management trainees while they train with them in the field. This decision will result in a savings of approximately \$ 5,000 per annum to us.

Since we are going through a difficult financial year, their gesture is greatly appreciated. Our other distributors should be encouraged to do the same.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Meal Allowance Reimbursement

I was surprised at the recent decision by Wholesale Hospital Supply Company of Virginia to reimburse to us the meal allowances we pay to our management trainees while they train with them in the field. This decision will result in a savings of approximately \$ 5,000 per annum to us.

The gesture is appreciated by this office.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Cooperative Local Promotion with
Wholesale Hospital Supply Company of Virginia

I was very pleasantly surprised to hear about the recent decision of Wholesale Hospital Supply Company of Virginia to increase their contribution to our cooperative local promotions by 33%. I am told that our current local promotion expenditures are more than adequate. Hence, their additional contribution amounts to an annual savings of approximately \$ 20,000 for us.

Since we are currently going through a difficult financial year, this gesture of theirs is greatly appreciated. Other distributors should be encouraged to do the same.

Virginia Surgical Manufacturing Company

MEMORANDUM

TO : All Concerned Marketing Personnel
FROM : Vice President, Finance
SUBJECT : Cooperative Local Promotion with
Wholesale Hospital Supply Company of Virginia

I was pleasantly surprised to hear about the recent decision of Wholesale Hospital Supply Company of Virginia to increase their contribution to our cooperative local promotions by 33%. Their additional contribution amounts to an annual savings of approximately \$ 20,000 for us.

The gesture is appreciated by this office.

Virginia Surgical Manufacturing Company

CONFIDENTIAL MEMORANDUM

TO : Marketing Manager, Marketing Analyst, Salesperson
FROM : Vice President, Marketing
SUBJECT : Further Developments on the Recent Decision
by Wholesale Hospital Supply Company of Virginia
to Reduce the Purchase Price of Infra-Red Lamps

In a recent meeting of executive vice-presidents, this decision of Wholesale Hospital Supply Company of Virginia was considered detrimental to the interests of our company in the sense that their action may prompt our distributors in other states to make similar reductions. It was felt that since their profit-margin on lamps had not declined, this reduction was not required, and other similar future changes must be resisted. Some participants in the meeting remarked that in making such a decision, Wholesale Hospital Supply Company of Virginia has ignored the interests of our company.

Virginia Surgical Manufacturing Company

CONFIDENTIAL MEMORANDUM

TO : Marketing Manager, Marketing Analyst, Salesperson
FROM : Vice President, Marketing
SUBJECT : Further Developments on the Recent Decision
by Wholesale Hospital Supply Company of Virginia
to Reduce Paid-Up Inventory Level by 33%

In a recent meeting of executive vice-presidents, this decision of Wholesale Hospital Supply Company of Virginia to cut back on inventory was strongly deplored. Their action may prompt our distributors in other states to make similar reductions. Some participants in the meeting felt that in making such a decision, Wholesale Hospital Supply Company of Virginia has completely ignored the well-being of our company, and such reductions must be strongly resisted.



A LAND-GRANT UNIVERSITY

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

Department of Marketing

Dear

Thank you for taking part in the recent bargaining study. Your contribution is most appreciated.

This is a quick note to tell you about the purpose of the study. The chief aim of the research was to determine whether in a setting of ONGOING inter-organizational relations, ISSUE-SPECIFIC perceptions of conflict, cooperation, satisfaction, and dissatisfaction are distinct from the corresponding OVERALL evaluations. From a methodological perspective, an important objective was to develop measurement instruments for the four constructs mentioned above. You will recall that three different methods (i.e., memos, magnitude scales, and traditional rating scales) were employed to record your opinions. Measures obtained using different methods allow one to assess the validity and reliability of findings with greater confidence.

Please do not talk about the project and its purpose to others since some more data may be collected in the Second Summer term.

Thank you, again, for the time you spent on this project to make it a success.

Sincerely,

Rajiv P. Dant

APPENDIX C
INSTRUMENTS FOR DEPENDENT MEASURES

Virginia Surgical Manufacturing Company

MEMORANDUM

Date : _____

TO : Vice President, Marketing

FROM : (Please enter your position)

SUBJECT : Comments on our Virginia Distributor's Recent Decision
to Lower the Purchase Price of our Infra-Red Lamps, and
Assessment of the Current Inter-Firm Relationships in
Light of this Issue and the History of Past Relations.

Comments on this Issue:

Comments on Overall Relations:

(Please fold and enclose in the attached envelope)
You may use the flip side of this page if needed.

Virginia Surgical Manufacturing Company

MEMORANDUM

Date : _____

TO : Vice President, Marketing

FROM : (Please enter your position)

SUBJECT : Comments on our Virginia Distributor's Recent
Decision to Reduce Paid-up Inventory Levels, and
Assessment of the Current Inter-Firm Relationships in
Light of this Issue and the History of Past Relations.

Comments on this Issue:

Comments on Overall Relations:

(Please fold and enclose in the attached envelope)
You may use the flip side of this page if needed.

Virginia Surgical Manufacturing Company

MEMORANDUM

Date : _____

TO : Vice President, Marketing

FROM : (Please enter your position)

SUBJECT : Comments on our Virginia Distributor's Recent Decision to Reimburse the Meal-Allowances of Our Management Trainees, and Assessment of the Current Inter-Firm Relationships in Light of this Issue and the History of Past Relations.

Comments on this Issue:

Comments on Overall Relations:

(Please fold and enclose in the attached envelope)
You may use the flip side of this page if needed.

Virginia Surgical Manufacturing Company

MEMORANDUM

Date : _____

TO : Vice President, Marketing

FROM : (Please enter your position)

SUBJECT : Comments on our Virginia Distributor's Recent
Decision to Contribute \$ 20,000 More Toward Cooperative
Local Promotions, and Assessment of the Current Inter-Firm
Relationships in Light of this Issue and the History of
Past Relations.

Comments on this Issue:

Comments on Overall Relations:

(Please fold and enclose in the attached envelope)
You may use the flip side of this page if needed.

Virginia Surgical Manufacturing Company

MEMORANDUM

Date : _____

TO : Vice President, Marketing

FROM : (Please enter your position)

SUBJECT : Overall Assessment our Firm's Relationship
with Wholesale Hospital Supply Company of Virginia.

(Instructions : You have recently evaluated some decisions taken by Wholesale Hospital Supply Company of Virginia on issues discussed earlier with them. You are already familiar with the past history of our firm's relationships with them. Keeping both the recent issues and the past in mind, could you provide me with your assessment of our overall relationship with them the way YOU see it. - V.P. Marketing)

(Please fold and enclose in the attached envelope)
You may use the flip side of this page if needed.

Virginia Surgical Manufacturing Company

Please answer the following questions about the decision of Wholesale Hospital Supply Company of Virginia to reduce the price of our Infra-Red Lamps. Place a CROSS MARK (X) on each of the scales below at that place that BEST reflects YOUR OWN OPINION. - Vice President, Marketing

This decision of Wholesale Hospital Supply Company of Virginia is:

1 2 3 4 5 6 7
Very Considerate Neither Considerate Inconsiderate Very Inconsiderate

1 2 3 4 5 6 7
Very Supportive Neither Supportive Nor Unsupportive Very Unsupportive

I consider this decision of Wholesale Hospital Supply Company of Virginia to be threatening:

1 2 3 4 5 6 7
Strongly Agree Neither Agree Nor Disagree Strongly Disagree

This decision of Wholesale Hospital Supply Company of Virginia is:

1 2 3 4 5 6 7
Very Discouraging Neither Discouraging Nor Encouraging Very Encouraging

1 2 3 4 5 6 7
Very Satisfying Neither Satisfying Nor Dissatisfying Very Dissatisfying

I consider this decision of Wholesale Hospital Supply Company of Virginia to be frustrating:

1 2 3 4 5 6 7
Strongly Agree Neither Agree Nor Disagree Strongly Disagree

2

I consider this decision of Wholesale Hospital Supply Company of Virginia to be indicating antagonism:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

Please answer the following questions about the CURRENT OVERALL relationship between Virginia Surgical Manufacturing Company and Wholesale Hospital Supply Company of Virginia as you see it, keeping in mind the above issue AND THE PAST history of the inter-firm relations. Place a CROSS MARK (X) to indicate your answers. - Vice President, Marketing

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia satisfying:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia supportive:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be indicating tension:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be cooperative:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia discouraging:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia inconsiderate:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

3

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia frustrating:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are harmonious:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think we have a balanced relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia showing antagonism:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, we can expect to work together with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as threatening:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think we have a mutually beneficial relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

4

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are tense:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as cooperative:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

YOUR POSITION: _____

TIME: _____

DATE: _____

Please fold the questionnaire and place it in the envelope with the memo you have written.

Virginia Surgical Manufacturing Company

Please answer the following questions about the decision of Wholesale Hospital Supply Company of Virginia to reduce the value of paid-up inventory they will carry. Place a CROSS MARK (X) on each of the scales below at that place that BEST reflects YOUR OWN OPINION. — Vice President, Marketing

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Considerate			Neither Considerate Nor Inconsiderate		Inconsiderate	Very Inconsiderate
1	2	3	4	5	6	7
Very Supportive			Neither Supportive Nor Unsupportive		Unsupportive	Very Unsupportive

I consider this decision of Wholesale Hospital Supply Company of Virginia to be threatening:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree		Disagree	Strongly Disagree

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Discouraging			Neither Discouraging Nor Encouraging		Encouraging	Very Encouraging
1	2	3	4	5	6	7
Very Satisfying			Neither Satisfying Nor Dissatisfying		Dissatisfying	Very Dissatisfying

I consider this decision of Wholesale Hospital Supply Company of Virginia to be frustrating:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree		Disagree	Strongly Disagree

2

I consider this decision of Wholesale Hospital Supply Company of Virginia to be indicating antagonism:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

Please answer the following questions about the CURRENT OVERALL relationship between Virginia Surgical Manufacturing Company and Wholesale Hospital Supply Company of Virginia as you see it, keeping in mind the above issue AND THE PAST history of the inter-firm relations. Place a CROSS MARK (X) to indicate your answers. - Vice President, Marketing

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia satisfying:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia supportive:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be indicating tension:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be cooperative:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia discouraging:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia inconsiderate:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

3

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia frustrating:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are harmonious:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think we have a balanced relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia showing antagonism:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, we can expect to work together with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as threatening:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I think we have a mutually beneficial relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

4

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are tense:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as cooperative:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

YOUR POSITION: _____

TIME: _____ DATE: _____

Please fold the questionnaire and place it in the envelope with the memo you have written.

Virginia Surgical Manufacturing Company

Please answer the following questions about the decision of Wholesale Hospital Supply Company of Virginia to reimburse the meal allowances of our management trainees to us. Place a CROSS MARK (X) on each of the scales below at that place that BEST reflects YOUR OWN OPINION. - Vice President, Marketing

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Considerate			Neither Considerate Nor Inconsiderate		Inconsiderate	Very Inconsiderate

1	2	3	4	5	6	7
Very Supportive			Neither Supportive Nor Unsupportive		Unsupportive	Very Unsupportive

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Discouraging			Neither Discouraging Nor Encouraging		Encouraging	Very Encouraging

1	2	3	4	5	6	7
Very Satisfying			Neither Satisfying Nor Dissatisfying		Dissatisfying	Very Dissatisfying

I consider this decision of Wholesale Hospital Supply Company to indicate that we can work together:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree		Disagree	Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company to indicate a balanced relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree		Disagree	Strongly Disagree

2

I consider this decision of Wholesale Hospital Supply Company to indicate mutually beneficial relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

Please answer the following questions about the CURRENT OVERALL relationship between Virginia Surgical Manufacturing Company and Wholesale Hospital Supply Company of Virginia as you see it, keeping in mind the above issue AND THE PAST history of the inter-firm relations. Place a CROSS MARK (X) to indicate your answers. - Vice President, Marketing

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia satisfying:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia supportive:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company to indicate harmonious relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be cooperative:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia discouraging:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia inconsiderate:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

3

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia frustrating:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are harmonious:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think we have a balanced relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia showing antagonism:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, we can expect to work together with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as threatening:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as conflictful:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think we have a mutually beneficial relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

4

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are tense:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as cooperative:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

YOUR POSITION: _____

TIME: _____

DATE: _____

Please fold the questionnaire and place it in the envelope with the memo you have written.

Virginia Surgical Manufacturing Company

Please answer the following questions about the decision of Wholesale Hospital Supply Company of Virginia to contribute an additional \$70,000 toward cooperative promotions. Place a CROSS MARK (X) on each of the scales below at that place that BEST reflects YOUR OWN OPINION. - Vice President, Marketing

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Considerate			Neither Considerate Nor Inconsiderate		Inconsiderate	Very Inconsiderate

1	2	3	4	5	6	7
Very Supportive			Neither Supportive Nor Unsupportive		Unsupportive	Very Unsupportive

I consider this decision of Wholesale Hospital Supply Company to indicate that we can work together:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

This decision of Wholesale Hospital Supply Company of Virginia is:

1	2	3	4	5	6	7
Very Discouraging			Neither Discouraging Nor Encouraging		Encouraging	Very Encouraging

1	2	3	4	5	6	7
Very Satisfying			Neither Satisfying Nor Dissatisfying		Dissatisfying	Very Dissatisfying

I consider this decision of Wholesale Hospital Supply Company to indicate a balanced relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

2

I consider this decision of Wholesale Hospital Supply Company to indicate mutually beneficial relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company to indicate harmonious relationship:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be conflictful:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

I consider this decision of Wholesale Hospital Supply Company of Virginia to be cooperative:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

Please answer the following questions about the CURRENT OVERALL relationship between Virginia Surgical Manufacturing Company and Wholesale Hospital Supply Company of Virginia as YOU see it, keeping in mind the above issue AND THE PAST history of the inter-firm relations. Place a CROSS MARK (X) to indicate your answers. - Vice President, Marketing

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia satisfying:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia discouraging:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia supportive:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia inconsiderate:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

3

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia frustrating:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are harmonious:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think we have a balanced relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia showing antagonism:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, we can expect to work together with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as threatening:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as conflictful:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

OVERALL, I think we have a mutually beneficial relationship with Wholesale Hospital Supply Company of Virginia:

1	2	3	4	5	6	7
Strongly			Neither			Strongly
Agree			Agree			Disagree
			Nor			
			Disagree			

4

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are tense:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as cooperative:

1

2

3

4

5

6

7

Strongly Agree

Neither Agree Nor Disagree

Strongly Disagree

YOUR POSITION:

TIME:

DATE:

Please fold the questionnaire and place it in the envelope with the memo you have written.

4

OVERALL, I think our relations with Wholesale Hospital Supply Company of Virginia are tense:

1 : 2 : 3 : 4 : 5 : 6 : 7

Strongly : : : Neither : : : Strongly

Agree : : : Agree : : : Disagree

: : : Nor : : :

: : : Disagree : : :

OVERALL, I consider the relations with Wholesale Hospital Supply Company of Virginia as cooperative:

1 : 2 : 3 : 4 : 5 : 6 : 7

Strongly : : : Neither : : : Strongly

Agree : : : Agree : : : Disagree

: : : Nor : : :

: : : Disagree : : :

YOUR POSITION: _____

TIME: _____ DATE: _____

Please fold the questionnaire and place it in the envelope with the memo you have written.

INSTRUCTIONS

Please answer the following questions by placing a CROSS MARK (X) on each of the scales below at that place that BEST reflects YOUR OPINION. Your true replies will be very helpful to this research project. Thank You.

The following questions are about your experience DURING THE BARGAINING PROCESS.

During the bargaining process, the functions that I performed were different from those performed by other members of my firm.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

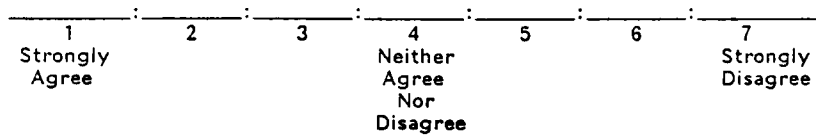
A division of labor did not exist within my firm.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

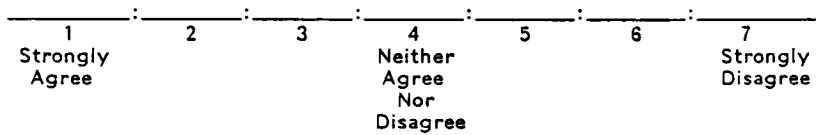
I did not understand the functions that I was to perform during the bargaining process.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree

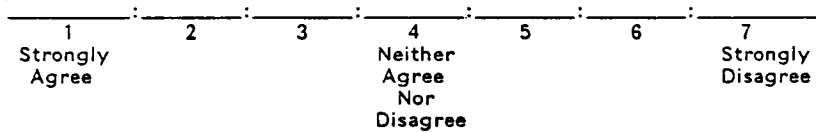
I understood the manner in which the actions of my firm were coordinated.



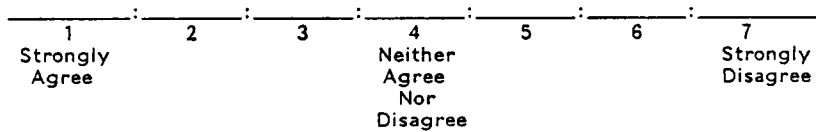
I don't think the other members of my firm knew what they were doing.



The primary goal upon which my firm acted was to come to an agreement as quickly as possible.



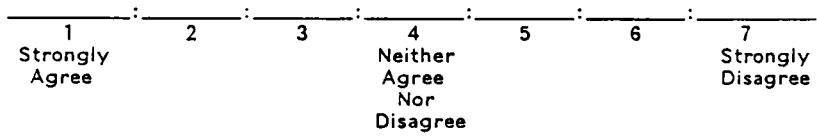
The primary goal upon which my firm acted was to make as large a profit as possible.



The primary goal upon which my firm acted was to maintain as friendly a relationship as possible with the other firm.



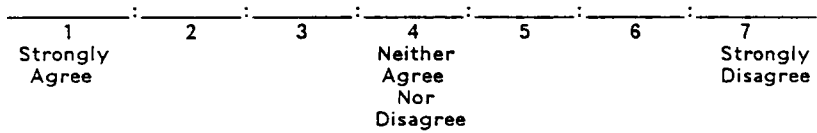
I knew what my firm was doing all the time.



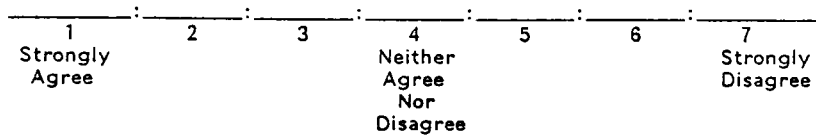
I had no basis for evaluating the communications I received from the other members of my firm.



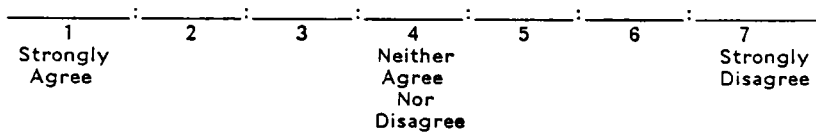
The other firm seemed to be more capable of coping with the problems of negotiation than my firm.



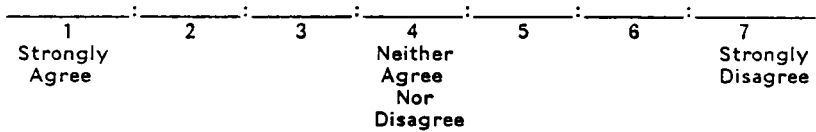
The relationship among the members of my firm could be characterized as cooperative.



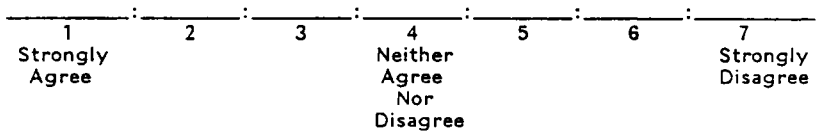
I enjoyed working with the other members of my firm.



IF YOU WERE MARKETING MANAGER, please do not answer this question.
Within my firm, the marketing manager had more say in the decisions than I did.

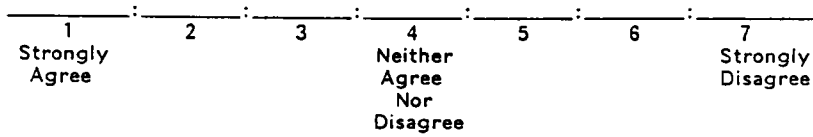


IF YOU WERE MARKETING ANALYST, please do not answer this question.
Within my firm, the marketing analyst had more say in the decisions than I did.

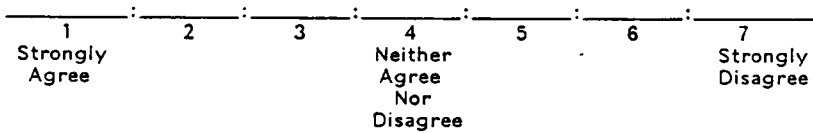


IF YOU WERE SALESPERSON or PURCHASING AGENT, please do not answer this question.

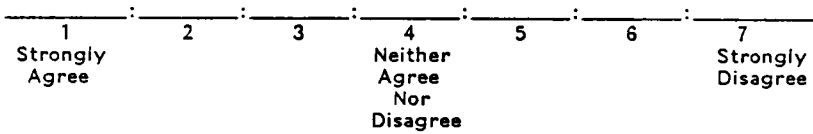
Within my firm, the salesperson/purchasing agent had more say in the decisions than I did.



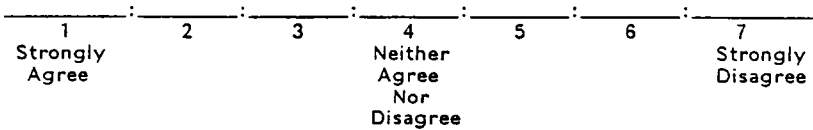
The way in which I performed my functions depended on how the other members of my firm performed their functions.



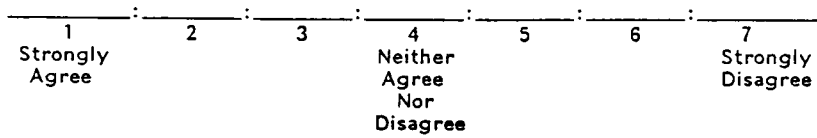
The bargaining process I was involved in was close to what I expect to find in real-life negotiations between firms.



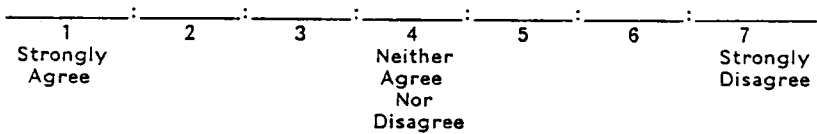
The other firm was more powerful than my own firm.



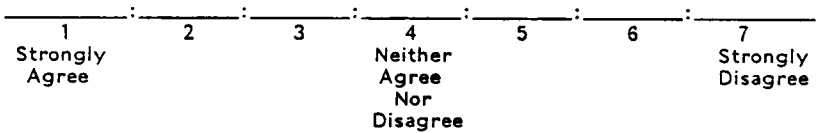
The other firm took a very antagonistic approach while bargaining for the laser scalpels.



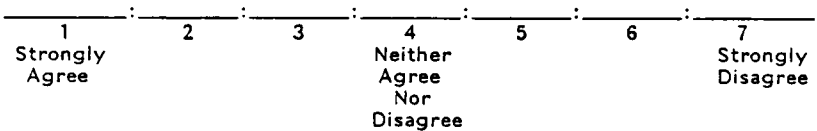
I was familiar with laser scalpels and other products that were mentioned in the study.



The bargaining influenced the way I judged the issues my Vice President asked me to react on.



My opinion about the other firm changed after the bargaining process.



To help us better understand your reactions, please answer the following questions.

1. What do you think the researchers are trying to determine from this project ?

2. Your Sex: ____ Male ____ Female

3. You Work For: _____

4. Your Position at Work: _____

5. Are there any other comments you would like to make about this project ?

6. Your Position in Project-Team: _____

INSTRUCTIONS

On the following pages you will be requested to give your opinions on the issues you evaluated in the course of the project for your Vice President of Marketing. You will also be asked to provide your assessment of the OVERALL relationship between *Virginia Surgical Manufacturing Company* and *Wholesale Hospital Supply Company of Virginia*. PLEASE NOTE that the OVERALL relationship should be judged in light of two things: (a) The PAST HISTORY of relationships between the two firms; and (b) the ISSUES you were informed about by your Vice President. It is VERY IMPORTANT that you consider BOTH the PAST and the ISSUES before writing down your OVERALL opinions on the inter-firm relations.

This time we will use the following approach to record your opinions. We will take one of the issues you were informed about and give it 100 points. This NUMBER SCORE will be assumed to reflect (say, for example) HOW FRIENDLY that issue was. Please use this issue given 100 points as the REFERENCE ISSUE to judge the other issues. If you consider an issue to be two times as friendly as the first issue, you should give it a NUMBER SCORE of approximately 200. If, on the other hand, you consider an issue to be only half as friendly, you should give it a NUMBER SCORE of approximately 50 (100 divided by 2). Remember, you had once rated lengths of lines using such a NUMBER SCORING SYSTEM. If you consider an issue to be not at all friendly, you should give it a score of 0 (zero). There are no upper limits to the numbers you can assign, so long as the NUMBER SCORES reflect your opinions.

As mentioned above, we are also seeking your opinion about the OVERALL relationship between the two firms. Again, use the reference issue to assign the NUMBER SCORE to overall relationship. So, for example, if in light of PAST HISTORY and the ISSUES, you feel that the OVERALL relationship is four times more friendly than the REFERENCE ISSUE, give it a score of approximately 400. If you consider the OVERALL relationship to be three times less friendly, give it a score of approximately 33 (100 divided by 3).

Let us try an exercise of rating the issues and the overall relationship for IMPORTANCE for practice.

Let us give the INFRA-RED LAMP issue a score of 100 to indicate how important it was. *Compared to the Infra-Red Lamp issue, your judgments about IMPORTANCE are:*

ITEM	NUMBER SCORE
1. Infra-Red Lamp Issue	100 _____
2. Cooperative Promotion Issue	_____ _____
3. Inventory Level Issue	_____ _____
4. Meal Allowance Issue	_____ _____
5. Overall Relationship	_____ _____

If you have any questions, PLEASE ASK. If not, please go ahead.

INSTRUCTIONS

Please answer the following questions using the NUMBER SCORE system.

Please indicate your judgments about HOW THREATENING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW UNSUPPORTIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW TENSE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW ANTAGONISTIC you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW DISSATISFACTORY you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW INCONSIDERATE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW DISCOURAGING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW FRUSTRATING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW CONFLICTFUL you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 100 points as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

100

Please indicate your judgments about HOW HARMONIOUS you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW INDICATIVE OF WORKING TOGETHER you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW ENCOURAGING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW COOPERATIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW MUTUALLY BENEFICIAL you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW INDICATIVE OF A BALANCED RELATIONSHIP you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW SATISFYING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

100

Please indicate your judgments about HOW SUPPORTIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship
100		

Please indicate your judgments about HOW CONSIDERATE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 100 points as a reference point.

Meal Issue	Promotion Issue	Overall Relationship
100		

YOUR POSITION IN THE PROJECT TEAM: _____

INSTRUCTIONS

On the following pages you will be again be requested to give your opinions on the issues you evaluated in the course of the project for your Vice President of Marketing. You will also be asked to provide your assessment of the OVERALL relationship between *Virginia Surgical Manufacturing Company and Wholesale Hospital Supply Company of Virginia*. PLEASE NOTE that, as before, the OVERALL relationship should be judged in light of two things: (a) The PAST HISTORY of relationships between the two firms; and (b) the ISSUES you were informed about by your Vice President. It is VERY IMPORTANT that you consider BOTH the PAST and the ISSUES before writing down your OVERALL opinions on the inter-firm relations.

However, this time we will use a *different* approach to record your opinions. We will take one of the issues you were informed about and give it a length score of 50 millimeters. This LENGTH SCORE will be assumed to reflect (say, for example) HOW TENSE that issue was. Please use this issue given 50 millimeters as the REFERENCE ISSUE to judge the other issues. If you consider an issue to be two times as tense as the first issue, you should give it a LENGTH SCORE of approximately 100 millimeters. If, on the other hand, you consider an issue to be only half as tense, you should give it a LENGTH SCORE of approximately 25 millimeters (50 divided by 2). *Remember, you had once rated various crime descriptions using such a LENGTH SCORING SYSTEM.* If you consider an issue to be not at all tense, you should give it a score of 0 (zero). There are no upper limits to the lengths you can assign, so long as the LENGTH SCORES reflect your opinions.

As mentioned above, we are also seeking your opinion about the OVERALL relationship between the two firms. Again, use the reference issue to assign the LENGTH SCORE to overall relationship. So, for example, if in light of PAST HISTORY and the ISSUES, you feel that the OVERALL relationship is four times more tense than the REFERENCE ISSUE, give it a score of approximately 200 millimeters. If you consider the OVERALL relationship to be three times less tense, give it a score of approximately 17 millimeters (50 divided by 3). Of course, as before if you considered the overall relationship to be not at all tense, you would give a LENGTH SCORE OF 0 (zero).

Let us try an exercise of rating the issues and the overall relationship for TENSION for practice.

Let us give the INFRA-RED LAMP issue a score of 50 millimeters to indicate how tense it was. *Compared to the Infra-Red Lamp issue, your judgments about TENSION are:*

ITEM	LENGTH SCORE
1. Infra-Red Lamp Issue	50 _____ mm
2. Cooperative Promotion Issue	_____ _____ mm
3. Inventory Level Issue	_____ _____ mm
4. Meal Allowance Issue	_____ _____ mm
5. Overall Relationship	_____ _____ mm

If you have any questions, PLEASE ASK. If not, please go ahead.

INSTRUCTIONS

Please answer the following questions using the LENGTH SCORE system.

Please indicate your judgments about HOW DISSATISFACTORY you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW INCONSIDERATE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW DISCOURAGING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW FRUSTRATING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW THREATENING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW UNSUPPORTIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW TENSE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW ANTAGONISTIC you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW CONFLICTFUL you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Infra-Red Lamp issue 50 millimeters as a reference point.

Infra-Red Issue	Inventory Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW HARMONIOUS you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW INDICATIVE OF WORKING TOGETHER you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW ENCOURAGING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW COOPERATIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW MUTUALLY BENEFICIAL you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW INDICATIVE OF A BALANCED RELATIONSHIP you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW SATISFYING you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship

50 mm

Please indicate your judgments about HOW SUPPORTIVE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Please indicate your judgments about HOW CONSIDERATE you consider the following issues and the OVERALL RELATIONSHIP. Let us give the Meal-Allowance issue 50 millimeters as a reference point.

Meal Issue	Promotion Issue	Overall Relationship
50 mm		

Meal Issue	Promotion Issue	Overall Relationship
50 mm		

YOUR POSITION IN THE PROJECT TEAM: _____

CONTENT ANALYSIS
CODING GUIDE FOR JUDGES

Task Definition

The task is to categorize statements contained in memos into one of the two categories discussed below. Please use a BLUE pen to box [] statements you consider belonging to categories 10, 11, and 12; and a RED pen to box statements belonging to categories 1, 2, and 3. All statements contained in the memos may not be classifiable into these categories. Such statements should be left unmarked.

A statement is defined as a complete thought unit and may not correspond with grammatical sentences. Sometimes words like 'and', 'or', 'but', 'though', 'since', 'because', et cetera are used to convey two or more thoughts in one sentence. In such cases, the sentences should be boxed as containing more than one thought. In coding terms, please enclose a sentence containing two thoughts by enclosing it by two [[and two]]; and a three thought sentence by [[[and]]]. If you feel that a sentence has two thoughts which belong to two different categories use blue and red pens in the same sentence. For example, consider the following sentence:

"Though generally cooperative in past, this decision of theirs is unacceptable."

This sentence has two thoughts that belong to different categories (as discussed later). Such a sentence would be coded as follows:

[Though generally cooperative in past,][this decision of theirs is unacceptable.]

Where the first boxed portion would be marked with red and the second with blue.

The Categories

The following categories are taken from Bales (1976; pages 177-180 and 188-185). Categories 1, 2, and 3 (to be marked in red) describe the kinds of thoughts that suggest feelings of satisfaction and cooperation, while categories 10, 11, and 12 (to be marked in blue) describe thoughts of dissatisfaction and conflict.

If in doubt about categorization, use the following rules suggested by Bales:

- (a) View each statement as a response to the earlier ones;
OR
- (b) View each statement as an anticipatory statement for the following statements.

CATEGORIES 1, 2, AND 3

Category 1: Show Solidarity, Raises Other's Status, Gives Help, Reward:

- welcoming the other
- invitation to belong
- thanking the other
- any indication of good will
- any "breaking the ice" comment
- any expression of sympathy
- use of nickname or term "we"
- any indication of confidence
- any act of making a covenant or forming an alliance
- any indication of attraction
- any acts of raising the other's status
- praising, rewarding, giving approval
- complementing
- congratulating
- expressing gratitude or appreciation
- showing admiration, respect, esteem
- any act of sharing and attempts to supply other what he needs
- any behavior in which one defends, protects or vouches for other
- showing sympathy, pity, compassion
- any acts of interceding or mediating
- the suggesting of a compromise

Category 2: Shows Tension Release, Jokes, Laughs, Shows Satisfaction

- expressions of feeling better after a period of tension
- any manifestation of cheerfulness, buoyance, satisfaction, gratification
- positive responses to a compliment
- appearing to be charmed
- includes joking and kidding

Category 3: Agrees, Show Passive Acceptance, Understands, Concurr, Complies

- any indication to the observer that the actor is modest, humble, respectful
- any indication that actor has come to a final decision

- any indication of accepting responsibility, exp. "thats what I'll do."
- any concurrence in a proposed course of action, "I second the motion."
- yielding or obeying when requested
- agreement of a shared observation or report
- any sign of recognition or readiness
- admitting an error or oversight
- introductory statements which anticipate disagreement of other and attempt to forestall it, exp. "Now I may be wrong about this ..."
- giving the other freedom to do something
- consents to a request
- granting a privilege
- excuses, forgives, or pardons the other from some blame.
- giving the approval of required work
- includes surrendering, giving in, or taking a back seat.
- any act in which the actor submits passively

CATEGORIES 10, 11, AND 12

Category 10: Disagrees, Shows Passive Rejection Formality, Withholds Resources

- any indication of an attitude which appears over-cool and frigid
- any passive withholding of friendship
- refraining from intimacies and confidences
- any act in which actor appears too skeptical, critical, suspicious, or distrustful
- when actor amends or corrects another's description of the situation
- any act in which the other is denied something requested
- any act in which the actor refuses to let the other participate in some satisfaction

Category 11: Shows Tension: Asks For Help, Withdraws Out of Field:

- any indication of impatience
- any indication that the actor is startled, alarmed, dismayed or has misgivings
- any indication of being overcautions or overhesitant
- any indication that subject is embarrassed, ashamed, remorseful, or feeling guilty (blaming, belittling, or mutilating the self are included)
- expressions of feeling frustrated
- expressions of unhappiness
- requests for permission or help
- includes acts in which actor flatters the other while insincerely abasing himself
- attempts to shame the other by acting if injured or martyred
- the telling of misfortunes with the intention of arousing sympathy
- attempts to exaggerate an illness
- complaints of being miserable, sad, depressed, or tired
- any indication of insecurity or self pity
- any manifestation of a craving for affection
- any indication of retreating from problem such as deserting, quitting, leaving, washing hands of the matter
- any indication of apathy or despondance

Category 12: Shows Antagonism, Deflate's Other's Status, Defends or Asserts Self

- attempts to control with indication that other has no right to protest
- demands or commands such as "stop that!", "hurry up!", and "get out!"
- dismissing, evicting or discharging other
- any act indicating overbearing, dogmatic or inconsiderate attitude
- warning, threatening, or inhibiting other
- indication that actor is noncompliant, unwilling or disobliging
- any act where actor rejects or purposefully ignores direction or command
- defying authority
- an indication of disrespect
- any implication of inferiority or incompetence on the part of the other
- ridiculing or making fun of
- includes sarcastic remarks
- damming or blaming the other
- any acts of slander or gossip
- tricking or humiliating other
- any snobbish or conceited acts
- indication that actor is on guard or "has a chip on his shoulder", exp. interpreting a harmless remark as a slur
- any acts of defending self in an ego involved way, exp. giving unneeded alibis, or "protesting too much"
- any attempts to excite, amaze, fascinate, or shock the other as a means of raising one's own status
- praising or glorifying self
- any act in which actor tries to outdo the other
- any indication that the actors feels annoyance or irritation, rage or anger
- challenging the other in threatening manner
- cruel comments
- any indication of jealousy or envy

REMEMBER: Red boxes for categories 1, 2 and 3
 Blue boxes for categories 10, 11, and 12

APPENDIX D

TABLES FOR UNIDIMENSIONALITY ASSESSMENT

TABLE D.1

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE

MULTIPLE GROUPS PROGRAM

SATIS(1,3,4,6,7)*
 CONFL(8-14)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.91 0.88

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	7	8	9	10	11	12	13	14	501	502
1	54	65	58	56	67	-46	-38	-58	-47	-52	-34	-48	73	-65
3	65	80	54	83	84	-40	-70	-68	-73	-69	-78	-72	90	-94
4	58	54	48	64	59	-55	-50	-49	-62	-48	-25	-22	69	-63
6	56	83	64	76	78	-35	-68	-67	-78	-55	-74	-50	87	-86
7	67	84	59	78	81	-43	-69	-54	-56	-44	-71	-61	90	-80
8	-46	-40	-55	-35	-43	16	31	23	45	32	26	25	-54	40
9	-38	-70	-50	-68	-69	31	50	60	65	43	58	45	-72	71
10	-58	-68	-49	-67	-54	23	60	61	72	60	56	57	-73	78
11	-47	-73	-62	-78	-56	45	65	72	78	72	58	50	-77	88
12	-52	-69	-48	-55	-44	32	43	60	72	53	44	58	-66	73
13	-34	-78	-25	-74	-71	26	58	56	58	44	55	73	-69	74
14	-48	-72	-22	-50	-61	25	45	57	50	58	73	53	-62	73
501	73	90	69	87	90	-54	-72	-73	-77	-66	-69	-62	100	-95
502	-65	-94	-63	-86	-80	40	71	78	88	73	74	73	-95	100

TABLE D.2
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE

SIMILIARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	7	8	9	10	11	12	13	14
1	0.538	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.976	0.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.974	0.954	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.973	0.993	0.961	0.760	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.975	0.991	0.954	0.989	0.814	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.962	-0.951	-0.955	-0.963	-0.956	0.160	0.000	0.000	0.000	0.000	0.000	0.000
9	-0.974	-0.990	-0.957	-0.997	-0.986	0.951	0.500	0.000	0.000	0.000	0.000	0.000
10	-0.969	-0.992	-0.954	-0.990	-0.978	0.959	0.985	0.612	0.000	0.000	0.000	0.000
11	-0.974	-0.984	-0.969	-0.988	-0.970	0.951	0.986	0.990	0.780	0.000	0.000	0.000
12	-0.976	-0.982	-0.955	-0.980	-0.967	0.954	0.978	0.992	0.987	0.530	0.000	0.000
13	-0.947	-0.983	-0.915	-0.970	-0.973	0.900	0.979	0.971	0.959	0.962	0.553	0.000
14	-0.948	-0.984	-0.912	-0.973	-0.970	0.906	0.971	0.974	0.960	0.964	0.974	0.529

TABLE D.3
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	7	8	9	10	11	12	13	14
1	0.538	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	-0.018	0.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.140	-0.244	0.480	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.235	0.227	0.106	0.760	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.029	0.196	-0.112	-0.035	0.814	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-1.216	-1.840	-1.254	-1.562	-2.005	0.160	0.000	0.000	0.000	0.000	0.000	0.000
9	-1.863	-4.216	-1.934	-3.746	-4.364	0.041	0.500	0.000	0.000	0.000	0.000	0.000
10	-2.736	-4.930	-2.306	-4.437	-4.652	-0.142	0.098	0.612	0.000	0.000	0.000	0.000
11	-3.502	-7.262	-3.650	-6.763	-6.726	0.228	0.085	0.086	0.780	0.000	0.000	0.000
12	-2.272	-4.359	-1.989	-3.534	-3.722	0.052	-0.182	0.076	0.226	0.530	0.000	0.000
13	-1.954	-4.814	-1.584	-4.230	-4.806	-0.061	0.105	-0.053	-0.239	-0.226	0.553	0.000
14	-2.179	-4.461	-1.461	-3.365	-4.288	-0.064	-0.126	0.007	-0.445	0.113	0.407	0.529

TABLE D.4

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE

MULTIPLE GROUPS PROGRAM

SATIS(1,3,4,6,7)*
 COOP(8,9,10,12,13,14,15)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.75 0.89

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	7	8	9	10	12	13	14	15	501	502
1	54	54	53	17	51	45	56	42	7	36	49	48	73	55
3	54	67	73	42	20	49	60	47	48	35	56	37	82	64
4	53	73	90	60	23	65	75	41	30	38	57	63	96	72
6	17	42	60	13	-20	53	36	-14	-15	-5	1	44	36	19
7	51	20	23	-20	7	10	41	54	16	12	49	21	26	39
8	45	49	65	53	10	30	56	27	20	39	30	81	71	55
9	56	60	75	36	41	56	67	66	40	52	73	68	86	82
10	42	47	41	-14	54	27	66	58	51	64	86	40	54	76
12	7	48	30	-15	16	20	40	51	32	64	54	33	27	57
13	36	35	38	-5	12	39	52	64	64	71	76	69	37	84
14	49	56	57	1	49	30	73	86	54	76	72	48	68	85
15	48	37	63	44	21	81	68	40	33	69	48	60	68	77
501	73	82	96	36	26	71	86	54	27	37	68	68	100	80
502	55	64	72	19	39	55	82	76	57	84	85	77	80	100

TABLE D.5
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	7	8	9	10	12	13	14	15
1	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.935	0.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.942	0.981	0.897	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.638	0.665	0.761	0.133	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.821	0.791	0.729	0.377	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.895	0.921	0.961	0.751	0.673	0.302	0.000	0.000	0.000	0.000	0.000	0.000
9	0.971	0.974	0.968	0.622	0.622	0.929	0.669	0.000	0.000	0.000	0.000	0.000
10	0.904	0.870	0.818	0.377	0.877	0.759	0.922	0.577	0.000	0.000	0.000	0.000
12	0.829	0.826	0.780	0.399	0.804	0.739	0.876	0.945	0.324	0.000	0.000	0.000
13	0.847	0.869	0.828	0.442	0.845	0.815	0.921	0.944	0.948	0.708	0.000	0.000
14	0.922	0.910	0.865	0.425	0.882	0.821	0.953	0.980	0.952	0.953	0.722	0.000
15	0.922	0.939	0.956	0.684	0.722	0.926	0.959	0.846	0.821	0.888	0.887	0.598

TABLE D.6
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE

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

LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	7	8	9	10	12	13	14	15
1	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	-0.162	0.672	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.760	-0.232	0.897	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.147	0.233	0.859	0.133	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.485	-0.022	-0.052	-0.328	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.076	0.089	0.495	0.427	-0.057	0.302	0.000	0.000	0.000	0.000	0.000	0.000
9	-0.103	-0.214	-0.122	0.111	0.356	0.235	0.669	0.000	0.000	0.000	0.000	0.000
10	-0.315	-0.420	-1.466	-0.696	0.547	-0.268	0.107	0.577	0.000	0.000	0.000	0.000
12	-0.617	0.020	-0.901	-0.471	0.006	-0.161	-0.149	0.139	0.324	0.000	0.000	0.000
13	-0.699	-1.102	-2.421	-0.701	-0.206	-0.162	-0.526	-0.003	0.361	0.708	0.000	0.000
14	-0.366	-0.452	-1.397	-0.604	0.517	-0.379	0.119	0.624	0.120	0.146	0.722	0.000
15	-0.208	-0.718	-0.518	0.264	0.002	0.718	0.126	-0.442	-0.208	0.111	-0.521	0.598

TABLE D.7

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE

MULTIPLE GROUPS PROGRAM

SATIS(1,3,4,6,7)*

COOP(8,9,10,12,13,14,15)*

STANDARD SCORE COEFFICIENT ALPHAS

0.75 0.97

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	7	8	9	10	12	13	14	15	501	502
1	23	90	2	34	-2	22	15	17	11	11	-8	-2	48	11
3	90	51	14	52	14	25	31	33	22	31	11	16	71	27
4	2	14	28	55	63	64	65	72	33	68	71	50	52	68
6	34	52	55	77	56	62	67	75	61	77	57	53	88	72
7	-2	14	63	56	26	31	49	45	14	57	55	26	51	44
8	22	25	64	62	31	78	86	76	73	84	75	81	66	89
9	15	31	65	67	49	86	95	90	79	95	75	89	-73	97
10	17	33	72	75	45	76	90	84	75	87	74	86	78	91
12	11	22	33	61	14	73	79	75	62	73	48	81	45	78
13	11	31	68	77	57	84	95	87	73	92	85	85	78	96
14	-8	11	71	57	55	75	75	74	48	85	64	78	60	80
15	-2	16	50	53	26	81	89	86	81	85	78	88	46	94
501	48	71	52	88	51	66	73	78	45	78	60	46	100	71
502	11	27	68	72	44	89	97	91	78	96	80	94	71	100

TABLE D.8
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	7	8	9	10	12	13	14	15
1	0.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.736	0.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.372	0.615	0.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.570	0.783	0.949	0.769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	0.382	0.598	0.922	0.922	0.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.425	0.679	0.951	0.966	0.923	0.785	0.000	0.000	0.000	0.000	0.000	0.000
9	0.429	0.665	0.965	0.971	0.922	0.997	0.948	0.000	0.000	0.000	0.000	0.000
10	0.447	0.681	0.959	0.977	0.936	0.997	0.998	0.836	0.000	0.000	0.000	0.000
12	0.446	0.665	0.934	0.942	0.879	0.984	0.984	0.980	0.616	0.000	0.000	0.000
13	0.425	0.659	0.975	0.975	0.940	0.994	0.997	0.998	0.975	0.919	0.000	0.000
14	0.336	0.569	0.969	0.943	0.944	0.975	0.984	0.982	0.955	0.987	0.638	0.000
15	0.364	0.590	0.948	0.933	0.897	0.990	0.990	0.984	0.987	0.984	0.973	0.884

TABLE D.9
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	7	8	9	10	12	13	14	15
1	0.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	0.907	0.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.306	-0.387	0.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.180	-0.309	0.218	0.769	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	-0.348	-0.370	0.495	0.280	0.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.504	-1.153	0.432	-0.718	-0.343	0.785	0.000	0.000	0.000	0.000	0.000	0.000
9	-1.565	-2.422	0.709	-1.698	-0.016	0.012	0.948	0.000	0.000	0.000	0.000	0.000
10	-0.751	-1.114	0.680	-0.265	-0.043	-0.240	0.157	0.836	0.000	0.000	0.000	0.000
12	-0.482	-0.784	-0.151	-0.260	-0.496	0.133	0.169	0.131	0.616	0.000	0.000	0.000
13	-1.384	-1.882	0.715	-0.521	0.313	-0.098	0.210	-0.080	-0.143	0.919	0.000	0.000
14	-0.881	-1.085	0.564	-0.461	0.284	0.157	-0.199	0.042	-0.387	0.489	0.638	0.000
15	-1.562	-2.106	0.034	-1.799	-0.755	-0.166	-0.304	-0.024	0.339	-0.500	0.150	0.884

TABLE D.10

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

COOP(1,3,4,6,8,13,14)*
 CONFL(2,5,7,9,10,11,12)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.89 0.83

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12	501	502
1	68	57	56	63	54	64	65	-56	-46	-54	-59	-40	-19	-55	82	-73
3	57	55	61	57	49	62	42	-46	-26	-45	-52	-43	-39	-40	74	-65
4	56	61	50	67	46	62	26	-39	-37	-45	-44	-37	-27	-32	71	-58
6	63	57	67	69	65	83	26	-54	-35	-71	-19	-41	-29	-39	83	-64
8	54	49	46	65	54	77	37	-65	-21	-59	-47	-54	-42	-65	74	-78
13	64	62	62	83	77	75	26	-54	-22	-75	-39	-44	-30	-55	87	-71
14	65	42	26	26	37	26	22	-40	-55	-31	-60	-38	-29	-24	47	-62
2	-56	-46	-39	-54	-65	-54	-40	45	52	37	44	45	31	48	-68	67
5	-46	-26	-37	-35	-21	-22	-55	52	24	48	43	17	16	21	-47	49
7	-54	-45	-45	-71	-59	-75	-31	37	48	33	32	35	31	44	-73	58
9	-59	-52	-44	-19	-47	-39	-60	44	43	32	48	43	44	59	-62	70
10	-40	-43	-37	-41	-54	-44	-38	45	17	35	43	50	69	59	-57	71
11	-19	-39	-27	-29	-42	-30	-29	31	16	31	44	69	39	49	-41	62
12	-55	-40	-32	-39	-65	-55	-24	48	21	44	59	59	49	56	-60	75
501	82	74	71	83	74	87	47	-68	-47	-73	-62	-57	-41	-60	100	-91
502	-73	-65	-58	-64	-78	-71	-62	67	49	58	70	71	62	75	-91	100

TABLE D.11
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE : OVERALL

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.678	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
3	0.981	0.549	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.972	0.986	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.946	0.963	0.973	0.689	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.965	0.978	0.963	0.961	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.955	0.971	0.977	0.987	0.976	0.753	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.926	0.916	0.918	0.855	0.882	0.862	0.223	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.979	-0.972	-0.970	-0.948	-0.964	-0.955	-0.942	0.448	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.952	-0.923	-0.894	-0.869	-0.898	-0.877	-0.891	0.898	0.242	0.000	0.000	0.000	0.000	0.000
7	-0.961	-0.967	-0.980	-0.969	-0.960	-0.966	-0.890	0.981	0.857	0.334	0.000	0.000	0.000	0.000
9	-0.956	-0.947	-0.910	-0.877	-0.926	-0.885	-0.935	0.957	0.910	0.907	0.483	0.000	0.000	0.000
10	-0.918	-0.951	-0.912	-0.893	-0.960	-0.917	-0.878	0.943	0.856	0.915	0.951	0.499	0.000	0.000
11	-0.890	-0.915	-0.879	-0.846	-0.929	-0.878	-0.863	0.917	0.814	0.867	0.922	0.960	0.385	0.000
12	-0.936	-0.958	-0.934	-0.914	-0.972	-0.941	-0.921	0.962	0.861	0.931	0.942	0.974	0.959	0.557

TABLE D.12
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INFRA-RED ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.678	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
3	-0.101	0.549	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.056	0.175	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.182	-0.110	0.204	0.689	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.171	-0.133	-0.144	0.108	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	-0.257	-0.057	0.006	0.404	0.382	0.753	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.514	0.126	-0.123	-0.270	0.039	-0.338	0.223	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-2.632	-1.907	-1.651	-2.646	-2.287	-3.039	-1.094	0.448	0.000	0.000	0.000	0.000	0.000	0.000
5	-1.753	-1.063	-1.174	-1.561	-0.970	-1.492	-1.024	0.293	0.242	0.000	0.000	0.000	0.000	0.000
7	-2.192	-1.609	-1.493	-2.608	-1.849	-3.098	-0.810	-0.032	0.275	0.334	0.000	0.000	0.000	0.000
9	-2.859	-2.143	-1.853	-1.915	-2.031	-2.785	-1.464	-0.056	0.144	-0.141	0.000	0.000	0.000	0.000
10	-2.450	-2.014	-1.754	-2.523	-2.209	-2.983	-1.141	-0.041	-0.292	-0.098	0.483	0.000	0.000	0.000
11	-1.582	-1.613	-1.285	-1.831	-1.657	-2.141	-0.850	-0.175	-0.211	-0.071	0.123	0.499	0.000	0.000
12	-3.093	-2.139	-1.810	-2.708	-2.675	-3.618	-1.001	-0.036	-0.265	0.012	0.159	0.460	0.385	0.000
												0.139	0.048	0.557

TABLE D.13

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

COOP(1,3,4,6,8,13,14)*
 CONFL(2,5,7,9,10,11,12)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.91 0.89

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12	501	502
1	50	59	65	37	58	47	64	-51	-67	-33	-62	-57	-56	-61	70	-76
3	59	37	65	27	47	44	47	-60	-54	-25	-53	-71	-66	-61	61	-77
4	65	65	72	58	69	56	73	-48	-64	-54	-67	-54	-57	-77	85	-83
6	37	27	58	44	69	62	60	-23	-61	-77	-49	-30	-39	-47	66	-64
8	58	47	69	69	83	85	80	-34	-67	-58	-73	-58	-57	-61	91	-80
13	47	44	56	62	85	63	70	-32	-58	-44	-48	-47	-64	-50	79	-68
14	64	47	73	60	80	70	76	-55	-67	-53	-70	-70	-66	-68	87	-88
2	-51	-60	-48	-23	-34	-32	-55	31	41	30	27	59	53	43	-56	56
5	-67	-54	-64	-61	-67	-58	-67	41	65	56	70	59	55	65	-81	81
7	-33	-25	-54	-77	-58	-44	-53	30	56	30	49	33	41	38	-64	54
9	-62	-53	-67	-49	-73	-48	-70	27	70	49	55	64	49	63	-78	74
10	-57	-71	-54	-30	-58	-47	-70	59	59	33	64	69	74	65	-72	83
11	-56	-66	-57	-39	-57	-64	-66	53	55	41	49	74	63	69	-75	79
12	-61	-61	-77	-47	-61	-50	-68	43	65	38	63	65	69	64	-79	80
501	70	61	85	66	91	79	87	-56	-81	-64	-78	-72	-75	-79	100	-99
502	-76	-77	-83	-64	-80	-68	-88	56	81	54	74	83	79	80	-99	100

TABLE D.14
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE : OVERALL

SIMILARIY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.496	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
3	0.980	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.991	0.962	0.720	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.932	0.887	0.955	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.970	0.937	0.982	0.976	0.827	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.966	0.933	0.977	0.965	0.990	0.628	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.988	0.973	0.991	0.960	0.991	0.986	0.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.971	-0.962	-0.962	-0.881	-0.929	-0.934	-0.954	0.315	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.986	-0.960	-0.996	-0.962	-0.990	-0.981	-0.994	0.955	0.651	0.000	0.000	0.000	0.000	0.000
7	-0.943	-0.905	-0.957	-0.944	-0.974	-0.975	-0.966	0.882	0.966	0.297	0.000	0.000	0.000	0.000
9	-0.984	-0.956	-0.990	-0.958	-0.983	-0.980	-0.988	0.963	0.992	0.955	0.552	0.000	0.000	0.000
10	-0.990	-0.980	-0.976	-0.897	-0.947	-0.949	-0.974	0.982	0.970	0.907	0.966	0.694	0.000	0.000
11	-0.988	-0.978	-0.983	-0.922	-0.966	-0.964	-0.985	0.983	0.980	0.922	0.976	0.990	0.632	0.000
12	-0.995	-0.980	-0.991	-0.933	-0.973	-0.972	-0.989	0.978	0.989	0.948	0.989	0.986	0.988	0.641

TABLE D.15

TEST FOR INTERNAL CONSISTENCY: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : INVENTORY ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
 LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.496	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
3	0.283	0.367	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.137	0.327	0.720	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.174	-0.223	0.041	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.202	-0.236	-0.362	0.269	0.827	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	-0.203	-0.073	-0.358	0.219	0.510	0.628	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.075	-0.138	-0.035	0.059	0.041	0.028	0.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-1.531	-1.432	-2.176	-0.971	-2.480	-1.512	-2.548	0.315	0.000	0.000	0.000	0.000	0.000	0.000
5	-2.947	-2.200	-4.250	-2.589	-5.710	-3.400	-4.696	-0.082	0.651	0.000	0.000	0.000	0.000	0.000
7	-1.206	-0.865	-2.257	-1.798	-3.072	-1.712	-2.414	-0.013	0.236	0.297	0.000	0.000	0.000	0.000
9	-2.407	-1.842	-3.678	-1.961	-5.040	-2.606	-4.056	-0.264	0.254	0.159	0.552	0.000	0.000	0.000
10	-2.949	-2.766	-4.247	-2.048	-5.817	-3.345	-5.217	0.277	-0.259	-0.272	0.064	0.694	0.000	0.000
11	-2.593	-2.355	-3.875	-2.008	-5.130	-3.440	-4.512	0.170	-0.265	-0.040	-0.245	0.228	0.632	0.000
12	-2.760	-2.304	-4.581	-2.223	-5.356	-3.112	-4.643	-0.040	0.009	-0.106	0.078	-0.042	0.147	0.641

TABLE D.16

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

COOP(1,3,4,6,8,13,14)*
 CONFL(2,5,7,9,10,11,12)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.93 0.91

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12	501	502
1	46	63	51	37	55	73	56	-54	-48	-46	-41	-45	-44	-56	68	-61
3	63	54	56	54	62	68	56	-69	-62	-65	-44	-56	-25	-56	73	-69
4	51	56	68	73	63	70	84	-65	-50	-78	-72	-68	-49	-66	82	-82
6	37	54	73	63	75	68	79	-77	-54	-69	-73	-72	-39	-47	80	-79
8	55	62	63	75	69	77	68	-77	-52	-54	-65	-64	-56	-50	83	-77
13	73	68	70	68	77	82	74	-73	-53	-68	-67	-59	-50	-75	91	-81
14	56	56	84	79	68	74	76	-68	-68	-83	-68	-67	-51	-64	87	-86
2	-54	-69	-65	-77	-77	-73	-68	81	64	74	75	81	51	67	-86	90
5	-48	-62	-50	-54	-52	-53	-68	64	49	81	43	68	32	44	-69	70
7	-46	-65	-78	-69	-54	-68	-83	74	81	71	62	70	39	65	-82	85
9	-41	-44	-72	-73	-65	-67	-68	75	43	62	62	70	51	66	-76	79
10	-45	-56	-68	-72	-64	-59	-67	81	68	70	70	77	59	55	-76	88
11	-44	-25	-49	-39	-56	-50	-51	51	32	39	51	59	35	56	-55	59
12	-56	-56	-66	-47	-50	-75	-64	67	44	65	66	55	56	56	-74	75
501	68	73	82	80	83	91	87	-86	-69	-82	-76	-76	-55	-74	100	-95
502	-61	-69	-82	-79	-77	-81	-86	90	70	85	79	88	59	75	-95	100

TABLE D.17
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE : OVERALL

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.459	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
3	0.981	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.975	0.978	0.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.968	0.975	0.990	0.634	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.982	0.980	0.987	0.987	0.693	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.990	0.989	0.990	0.979	0.991	0.822	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.975	0.985	0.995	0.988	0.987	0.988	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.979	-0.986	-0.992	-0.991	-0.993	-0.990	-0.991	0.812	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.967	-0.982	-0.984	-0.980	-0.973	-0.974	-0.982	0.984	0.490	0.000	0.000	0.000	0.000	0.000
7	-0.975	-0.983	-0.987	-0.985	-0.979	-0.979	-0.992	0.986	0.982	0.715	0.000	0.000	0.000	0.000
9	-0.970	-0.973	-0.993	-0.989	-0.990	-0.985	-0.990	0.991	0.972	0.981	0.618	0.000	0.000	0.000
10	-0.968	-0.976	-0.988	-0.989	-0.989	-0.978	-0.991	0.995	0.980	0.988	0.990	0.775	0.000	0.000
11	-0.966	-0.970	-0.981	-0.977	-0.977	-0.982	-0.976	0.982	0.957	0.965	0.988	0.976	0.351	0.000
12	-0.987	-0.977	-0.989	-0.980	-0.987	-0.991	-0.986	0.985	0.973	0.978	0.984	0.981	0.977	0.562

TABLE D.18
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : MEAL ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.459	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
3	0.269	0.536	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.104	-0.118	0.678	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.379	-0.096	0.209	0.634	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.031	0.024	-0.174	0.265	0.693	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.363	0.067	-0.200	-0.176	0.076	0.822	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	-0.071	-0.240	0.428	0.307	-0.180	-0.263	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-3.618	-4.579	-5.655	-5.663	-6.350	-8.458	-6.874	0.812	0.000	0.000	0.000	0.000	0.000	0.000
5	-1.819	-2.326	-2.646	-2.542	-2.780	-3.858	-3.690	0.021	0.490	0.000	0.000	0.000	0.000	0.000
7	-2.628	-3.504	-4.869	-4.224	-4.198	-6.424	-5.997	-0.112	0.572	0.715	0.000	0.000	0.000	0.000
9	-2.081	-2.410	-3.888	-3.622	-3.825	-5.310	-4.506	0.138	-0.263	-0.136	0.618	0.000	0.000	0.000
10	-3.007	-3.725	-5.207	-4.966	-5.208	-6.920	-6.171	0.074	0.203	-0.191	0.020	0.775	0.000	0.000
11	-1.411	-1.246	-2.131	-1.763	-2.349	-3.046	-2.584	-0.081	-0.160	-0.263	0.090	0.191	0.351	0.000
12	-2.187	-2.471	-3.413	-2.656	-3.077	-5.124	-3.982	-0.005	-0.186	0.043	0.175	-0.357	0.212	0.562

TABLE D.19

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

COOP(1,3,4,6,8,13,14)*
 CONFL(2,5,7,9,10,11,12)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.97 0.94

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12	501	502
1	76	78	67	77	86	84	83	-64	-86	-78	-83	-77	-74	-56	87	-88
3	78	82	77	86	83	84	83	-77	-88	-78	-86	-80	-76	-56	91	-92
4	67	77	67	66	79	79	81	-68	-84	-63	-73	-65	-59	-41	82	-77
6	77	86	66	80	86	87	83	-64	-81	-78	-78	-68	-74	-49	90	-83
8	86	83	79	86	91	95	81	-71	-90	-87	-83	-73	-75	-54	95	-90
13	84	84	79	87	95	91	81	-70	-90	-84	-78	-69	-73	-55	95	-88
14	83	83	81	83	81	81	83	-74	-93	-69	-83	-80	-76	-51	91	-89
2	-64	-77	-68	-64	-71	-70	-74	66	68	53	78	88	85	40	-77	81
5	-86	-88	-84	-81	-90	-90	-93	68	71	82	78	73	71	54	-97	84
7	-78	-78	-63	-78	-87	-84	-69	53	82	62	70	67	71	60	-85	79
9	-83	-86	-73	-78	-83	-78	-83	78	78	70	82	86	78	61	-89	90
10	-77	-80	-65	-68	-73	-69	-80	88	73	67	86	92	96	65	-81	96
11	-74	-76	-59	-74	-75	-73	-76	85	71	71	78	96	88	65	-80	94
12	-56	-56	-41	-49	-54	-55	-51	40	54	60	61	65	65	43	-58	66
501	87	91	82	90	95	95	91	-77	-97	-85	-89	-81	-80	-58	100	-96
502	-88	-92	-77	-83	-90	-88	-89	81	84	79	90	96	94	66	-96	100

TABLE D.20

SIMILARITY COEFFICIENTS: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE : OVERALL

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.763	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
3	0.598	0.822	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	0.996	0.996	0.668	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.998	0.997	0.996	0.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.998	0.998	0.996	0.998	0.906	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.997	0.997	0.996	0.998	0.999	0.906	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.997	0.999	0.997	0.996	0.996	0.996	0.831	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.989	-0.991	-0.987	-0.987	-0.984	-0.982	-0.992	0.655	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.995	-0.995	-0.994	-0.997	-0.997	-0.996	-0.994	0.985	0.712	0.000	0.000	0.000	0.000	0.000
7	-0.996	-0.994	-0.992	-0.996	-0.996	-0.997	-0.994	0.983	0.992	0.625	0.000	0.000	0.000	0.000
9	-0.997	-0.998	-0.994	-0.995	-0.994	-0.994	-0.997	0.994	0.994	0.993	0.817	0.000	0.000	0.000
10	-0.987	-0.990	-0.981	-0.983	-0.981	-0.979	-0.988	0.994	0.981	0.980	0.994	0.923	0.000	0.000
11	-0.989	-0.991	-0.982	-0.985	-0.984	-0.982	-0.988	0.992	0.983	0.984	0.995	0.998	0.877	0.000
12	-0.993	-0.990	-0.981	-0.989	-0.988	-0.986	-0.987	0.989	0.985	0.988	0.992	0.990	0.992	0.433

TABLE D.21
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

PRETEST : PROMOTION ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	3	4	6	8	13	14	2	5	7	9	10	11	12
1	0.763	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
3	-0.076	0.822	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	-0.173	0.102	0.668	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	-0.070	0.261	-0.263	0.802	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.185	-0.279	0.064	0.061	0.906	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	0.078	-0.215	0.068	0.113	0.521	0.906	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	0.192	0.031	0.274	0.049	-0.467	-0.467	0.831	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-4.715	-6.061	-3.981	-5.211	-8.214	-8.171	-6.121	0.655	0.000	0.000	0.000	0.000	0.000	0.000
5	-6.114	-7.242	-4.955	-6.574	-10.316	-10.378	-7.679	-0.009	0.712	0.000	0.000	0.000	0.000	0.000
7	-4.939	-5.775	-3.623	-5.443	-8.609	-8.465	-5.584	-0.292	0.479	0.625	0.000	0.000	0.000	0.000
9	-7.772	-9.307	-5.942	-8.336	-12.871	-12.523	-9.367	0.177	0.097	-0.042	0.817	0.000	0.000	0.000
10	-11.928	-14.274	-8.995	-12.517	-19.245	-18.908	-14.692	0.659	-0.573	-0.513	-0.032	0.923	0.000	0.000
11	-9.115	-10.863	-6.693	-10.146	-15.207	-15.110	-11.208	-0.443	-0.430	-0.160	-0.463	0.615	0.877	0.000
12	-3.112	-3.639	-2.189	-3.219	-5.053	-5.112	-3.570	-0.310	-0.029	0.169	0.057	0.062	0.137	0.433

TABLE D.22

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : UNDERGRADUATES

MULTIPLE GROUPS PROGRAM

SATIS(1,2,5)*
 CONFL(3,6,7,8,9)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.65 0.75

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	3	6	7	8	9	501	502
1	20	29	33	-3	-24	-29	-18	-13	44	-28
2	29	47	53	-11	-17	-41	-36	-17	68	-40
5	33	53	56	-27	-32	-41	-44	-21	76	-54
3	-3	-11	-27	27	59	32	24	17	-22	52
6	-24	-17	-32	59	33	36	24	23	-39	57
7	-29	-41	-41	32	36	62	55	57	-59	79
8	-18	-36	-44	24	24	55	37	46	-52	61
9	-13	-17	-21	17	23	57	46	33	-27	57
501	44	68	76	-22	-39	-59	-52	-27	100	-65
502	-28	-40	-54	52	57	79	61	57	-65	100

TABLE D.23
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : UNDERGRADUATES

SIMILARIY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	3	6	7	8	9
1	0.204	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.971	0.467	0.000	0.000	0.000	0.000	0.000	0.000
5	0.966	0.983	0.562	0.000	0.000	0.000	0.000	0.000
3	-0.804	-0.721	-0.803	0.269	0.000	0.000	0.000	0.000
6	-0.780	-0.784	-0.864	0.864	0.326	0.000	0.000	0.000
7	-0.901	-0.908	-0.930	0.829	0.879	0.621	0.000	0.000
8	-0.918	-0.930	-0.936	0.812	0.864	0.989	0.375	0.000
9	-0.839	-0.846	-0.854	0.810	0.817	0.965	0.951	0.331

TABLE D.24
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : UNDERGRADUATES

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	3	6	7	8	9
1	0.204	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.035	0.467	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.010	0.031	0.562	0.000	0.000	0.000	0.000	0.000
3	-0.345	-0.751	-1.173	0.269	0.000	0.000	0.000	0.000
6	-0.684	-0.936	-1.382	0.412	0.326	0.000	0.000	0.000
7	-1.171	-2.115	-2.464	-0.166	-0.181	0.621	0.000	0.000
8	-0.643	-1.353	-1.710	-0.113	-0.163	0.147	0.375	0.000
9	-0.533	-0.949	-1.184	-0.190	-0.146	0.237	0.163	0.331

TABLE D.25

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : OVERALL : UNDERGRADUATES

MULTIPLE GROUPS PROGRAM

SATIS(1,2)*
 CONFL(5,8,10,11,13)*
 COOP(6,7,9,12,14)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.94 0.86 0.90

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14	501	502	503
1	90	89	-53	-57	-48	-51	-44	58	73	55	53	70	94	-68	78
2	89	90	-62	-59	-49	-58	-48	59	72	47	52	71	94	-73	76
5	-53	-62	64	62	38	67	69	-67	-54	-46	-43	-62	-61	80	-68
8	-57	-59	62	57	52	51	61	-50	-58	-40	-38	-66	-61	75	-64
10	-48	-49	38	52	30	35	49	-27	-46	-52	-36	-63	-51	55	-56
11	-51	-58	67	51	35	58	74	-68	-60	-45	-27	-57	-58	76	-65
13	-44	-48	69	61	49	74	77	-45	-50	-40	-24	-58	-48	88	-54
6	58	59	-67	-50	-27	-68	-45	60	74	58	56	61	62	-69	78
7	73	72	-54	-58	-46	-60	-50	74	80	70	59	74	77	-72	90
9	55	47	-46	-40	-52	-45	-40	58	70	62	68	56	54	-60	79
12	53	52	-43	-38	-36	-27	-24	56	59	68	55	57	55	-45	74
14	70	71	-62	-66	-63	-57	-58	61	74	56	57	60	75	-82	77
501	94	94	-61	-61	-51	-58	-48	62	77	54	55	75	100	-75	81
502	-68	-73	80	75	55	76	88	-69	-72	-60	-45	-82	-75	100	-82
503	78	76	-68	-64	-56	-65	-54	78	90	79	74	77	81	-82	100

TABLE D.26
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : OVERALL : UNDERGRADUATES

SIMILARIY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14
1	0.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.998	0.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.960	-0.969	0.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.974	-0.981	0.989	0.567	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-0.968	-0.967	0.966	0.978	0.304	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-0.950	-0.959	0.993	0.984	0.955	0.578	0.000	0.000	0.000	0.000	0.000	0.000
13	-0.919	-0.934	0.982	0.979	0.948	0.981	0.774	0.000	0.000	0.000	0.000	0.000
6	0.970	0.974	-0.980	-0.972	-0.961	-0.970	-0.947	0.604	0.000	0.000	0.000	0.000
7	0.988	0.985	-0.975	-0.978	-0.973	-0.966	-0.934	0.988	0.801	0.000	0.000	0.000
9	0.966	0.961	-0.952	-0.960	-0.954	-0.938	-0.912	0.974	0.987	0.624	0.000	0.000
12	0.968	0.958	-0.934	-0.942	-0.954	-0.922	-0.876	0.965	0.984	0.985	0.551	0.000
14	0.985	0.987	-0.981	-0.991	-0.974	-0.971	-0.957	0.978	0.989	0.981	0.964	0.598

TABLE D.27
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INVENTORY ISSUE : OVERALL : UNDERGRADUATES

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	8	10	11	13	6	7	9	12	14
1	0.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.067	0.895	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-6.649	-7.123	0.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-6.008	-6.092	0.029	0.567	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-3.718	-3.730	-0.116	0.198	0.304	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-5.862	-6.165	0.148	-0.154	-0.120	0.578	0.000	0.000	0.000	0.000	0.000	0.000
13	-8.254	-8.501	-0.040	-0.184	0.016	0.228	0.774	0.000	0.000	0.000	0.000	0.000
6	-0.750	-0.714	-3.442	-2.634	-1.327	-3.111	-3.774	0.604	0.000	0.000	0.000	0.000
7	-0.780	-0.902	-4.726	-4.285	-2.571	-4.417	-6.055	0.166	0.801	0.000	0.000	0.000
9	-1.001	-1.401	-2.996	-2.474	-1.876	-2.636	-3.747	-0.095	-0.032	0.624	0.000	0.000
12	-0.815	-0.830	-2.567	-2.124	-1.367	-1.908	-2.812	-0.051	-0.258	0.234	0.551	0.000
14	-0.152	-0.101	-3.266	-2.993	-2.004	-2.811	-4.190	0.019	0.160	-0.139	-0.007	0.598

TABLE D.28

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INFRA-RED ISSUE : GRADUATES

MULTIPLE GROUPS PROGRAM

SATIS(1,2,5)*
 CONFL(3,6,7,8,9)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.78 0.82

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	3	6	7	8	9	501	502
1	56	64	46	-31	-34	-29	-33	-25	74	-44
2	64	71	54	-36	-55	-25	-43	-48	85	-60
5	46	54	42	-46	-28	-15	-34	-15	64	-40
3	-31	-36	-46	42	36	64	52	31	-51	65
6	-34	-55	-28	36	34	29	46	57	-53	58
7	-29	-25	-15	64	29	61	67	51	-31	78
8	-33	-43	-34	52	46	67	63	49	-50	80
9	-25	-48	-15	31	57	51	49	45	-39	67
501	74	85	64	-51	-53	-31	-50	-39	100	-64
502	-44	-60	-40	65	58	78	80	67	-64	100

TABLE D.29
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INFRA-RED ISSUE : GRADUATES

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	3	6	7	8	9
1	0.556	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.984	0.710	0.000	0.000	0.000	0.000	0.000	0.000
5	0.975	0.958	0.418	0.000	0.000	0.000	0.000	0.000
3	-0.894	-0.886	-0.873	0.423	0.000	0.000	0.000	0.000
6	-0.926	-0.955	-0.901	0.911	0.343	0.000	0.000	0.000
7	-0.777	-0.793	-0.784	0.934	0.898	0.607	0.000	0.000
8	-0.878	-0.889	-0.859	0.985	0.946	0.971	0.631	0.000
9	-0.865	-0.894	-0.822	0.931	0.946	0.915	0.968	0.447

TABLE D.30

TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : INFRA-RED ISSUE : GRADUATES

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	3	6	7	8	9
1	0.556	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.033	0.710	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.047	-0.003	0.418	0.000	0.000	0.000	0.000	0.000
3	-1.567	-2.231	-1.517	0.423	0.000	0.000	0.000	0.000
6	-1.446	-2.397	-1.070	-0.026	0.343	0.000	0.000	0.000
7	-2.082	-2.690	-1.366	0.271	-0.320	0.607	0.000	0.000
8	-2.284	-3.371	-1.838	0.015	-0.015	0.129	0.631	0.000
9	-1.506	-2.595	-1.020	-0.223	0.296	-0.029	-0.099	0.447

TABLE D.31

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

GRADUATES : INFRA-RED ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

SATIS(1,2)*
 CONFL(5,8,10,11,13)*
 COOP(6,7,12,14)*

STANDARD SCORE COEFFICIENT ALPHAS
 0.91 0.95 0.91

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	8	10	11	13	6	7	12	14	501	502	503
1	84	83	-71	-82	-83	-83	-61	60	83	80	89	91	-86	92
2	83	84	-74	-80	-81	-81	-72	57	80	82	82	91	-87	89
5	-71	-74	76	74	78	84	74	-69	-73	-68	-69	-79	87	-82
8	-82	-80	74	80	92	79	72	-62	-81	-84	-87	-89	89	-92
10	-83	-81	78	92	86	83	74	-65	-82	-81	-84	-90	93	-92
11	-83	-81	84	79	83	86	79	-77	-80	-75	-83	-90	93	-93
13	-61	-72	74	72	74	79	69	-70	-52	-64	-69	-73	83	-75
6	60	57	-69	-62	-65	-77	-70	50	64	57	67	64	-77	70
7	83	80	-73	-81	-82	-80	-52	64	81	81	80	90	-83	90
12	80	82	-68	-84	-81	-75	-64	57	81	76	81	88	-84	87
14	89	82	-69	-87	-84	-83	-69	67	80	81	85	94	-88	92
501	91	91	-79	-89	-90	-90	-73	64	90	88	94	100	-95	99
502	-86	-87	87	89	93	93	83	-77	-83	-84	-88	-95	100	-98
503	92	89	-82	-92	-92	-93	-75	70	90	87	92	99	-98	100

TABLE D.32
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

GRADUATES : INFRA-RED ISSUE : OVERALL

SIMILARIY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	8	10	11	13	6	7	12	14
1	0.838	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.998	0.838	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.992	-0.995	0.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.998	-0.999	0.994	0.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-0.998	-0.999	0.996	0.998	0.863	0.000	0.000	0.000	0.000	0.000	0.000
11	-0.994	-0.996	0.999	0.996	0.997	0.857	0.000	0.000	0.000	0.000	0.000
13	-0.987	-0.989	0.997	0.989	0.992	0.996	0.688	0.000	0.000	0.000	0.000
6	0.990	0.993	-0.997	-0.993	-0.994	-0.996	-0.993	0.496	0.000	0.000	0.000
7	0.999	0.997	-0.992	-0.997	-0.997	-0.994	-0.986	0.987	0.807	0.000	0.000
12	0.999	0.999	-0.993	-0.998	-0.999	-0.995	-0.987	0.990	0.998	0.756	0.000
14	0.999	0.999	-0.995	-0.998	-0.999	-0.996	-0.990	0.991	0.998	0.999	0.849

TABLE D.33
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

GRADUATES : INFRA-RED ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	8	10	11	13	6	7	12	14
1	0.838	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.067	0.838	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-7.576	-7.722	0.756	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-9.102	-8.948	-0.175	0.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-11.302	-11.177	-0.131	0.534	0.863	0.000	0.000	0.000	0.000	0.000	0.000
11	-11.009	-10.898	0.213	-0.197	-0.215	0.857	0.000	0.000	0.000	0.000	0.000
13	-6.113	-6.590	0.073	-0.070	-0.158	0.119	0.688	0.000	0.000	0.000	0.000
6	-0.149	-0.247	-3.704	-3.910	-4.979	-5.271	-3.246	0.496	0.000	0.000	0.000
7	0.066	-0.128	-6.967	-8.169	-10.207	-9.815	-5.177	0.016	0.807	0.000	0.000
12	-0.004	0.101	-5.870	-7.304	-8.876	-8.323	-4.922	-0.112	0.114	0.756	0.000
14	0.293	-0.135	-7.786	-9.724	-11.832	-11.431	-6.720	0.074	-0.161	0.067	0.849

TABLE D.34
 FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : PROMOTION ISSUE : INDUSTRY

MULTIPLE GROUPS PROGRAM

SATIS(1,2,5)*
 COOP(3,6,7,9,10)*

STANDARD SCORE COEFFICIENT ALPHAS

0.85 0.95

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	3	6	7	9	10	501	502
1	64	66	65	63	53	44	63	66	80	65
2	66	69	68	63	50	36	57	58	83	60
5	65	68	67	69	62	64	73	73	82	77
3	63	63	69	77	73	79	75	86	80	88
6	53	50	62	73	72	78	75	77	68	85
7	44	36	64	79	78	84	79	87	59	92
9	63	57	73	75	75	79	74	78	79	86
10	66	58	73	86	77	87	78	88	81	94
501	80	83	82	80	68	59	79	81	100	82
502	65	60	77	88	85	92	86	94	82	100

TABLE D.35
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : PROMOTION ISSUE : INDUSTRY

SIMILARIY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	3	6	7	9	10
1	0.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.997	0.693	0.000	0.000	0.000	0.000	0.000	0.000
5	0.996	0.987	0.670	0.000	0.000	0.000	0.000	0.000
3	0.985	0.970	0.996	0.774	0.000	0.000	0.000	0.000
6	0.973	0.955	0.989	0.998	0.718	0.000	0.000	0.000
7	0.949	0.925	0.970	0.987	0.994	0.839	0.000	0.000
9	0.982	0.969	0.994	0.999	0.998	0.988	0.737	0.000
10	0.979	0.963	0.992	0.999	0.999	0.991	0.999	0.879

TABLE D.36
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : PROMOTION ISSUE : INDUSTRY

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	3	6	7	9	10
1	0.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.013	0.693	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.021	-0.002	0.670	0.000	0.000	0.000	0.000	0.000
3	-0.264	-0.398	-0.108	0.774	0.000	0.000	0.000	0.000
6	-0.445	-0.690	-0.249	-0.069	0.718	0.000	0.000	0.000
7	-1.189	-1.805	-0.493	-0.105	0.038	0.839	0.000	0.000
9	-0.197	-0.503	0.087	-0.014	0.096	0.006	0.737	0.000
10	-0.421	-1.022	-0.168	0.236	-0.111	0.081	-0.153	0.879

TABLE D.37

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

INDUSTRY : PROMOTION ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

SATIS(1,2)*
 CONFL(5,8,10,11,13)*
 COOP(6,7,9,12,14)*

STANDARD SCORE COEFFICIENT ALPHAS

0.91 0.94 0.91

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14	501	502	503
1	85	84	-71	-66	-82	-59	-68	77	53	79	80	71	92	-80	88
2	84	85	-73	-67	-80	-63	-69	58	49	65	76	73	92	-81	78
5	-71	-73	74	84	80	74	63	-59	-46	-65	-64	-63	-79	86	-73
8	-66	-67	84	86	83	82	69	-63	-49	-69	-65	-71	-73	93	-77
10	-82	-80	80	83	86	75	80	-64	-55	-73	-80	-78	-88	93	-85
11	-59	-63	74	82	75	72	66	-63	-44	-55	-60	-72	-66	85	-71
13	-68	-69	63	69	80	66	61	-68	-48	-72	-76	-84	-75	78	-85
6	77	58	-59	-63	-64	-63	-68	64	50	68	74	72	73	-73	80
7	53	49	-46	-49	-55	-44	-48	50	42	53	67	53	56	-56	65
9	79	65	-65	-69	-73	-55	-72	68	53	68	79	69	78	-77	82
12	80	76	-64	-65	-80	-60	-76	74	67	79	94	84	85	-79	97
14	71	73	-63	-71	-78	-72	-84	72	53	69	84	74	79	-85	86
501	92	92	-79	-73	-88	-66	-75	73	56	78	85	79	100	-88	90
502	-80	-81	86	93	93	85	78	-73	-56	-77	-79	-85	-88	100	-90
503	88	78	-73	-77	-85	-71	-85	80	65	82	97	86	90	-90	100

TABLE D.38
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

INDUSTRY : PROMOTION ISSUE : OVERALL

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14
1	0.846	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.996	0.846	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.988	-0.992	0.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.983	-0.987	0.998	0.861	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-0.993	-0.997	0.997	0.995	0.863	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-0.981	-0.986	0.996	0.998	0.994	0.722	0.000	0.000	0.000	0.000	0.000	0.000
13	-0.994	-0.992	0.990	0.989	0.994	0.990	0.610	0.000	0.000	0.000	0.000	0.000
6	0.993	0.991	-0.987	-0.986	-0.994	-0.985	-0.995	0.643	0.000	0.000	0.000	0.000
7	0.995	0.991	-0.985	-0.982	-0.992	-0.981	-0.995	0.996	0.420	0.000	0.000	0.000
9	0.996	0.994	-0.988	-0.985	-0.995	-0.985	-0.994	0.998	0.997	0.680	0.000	0.000
12	0.995	0.991	-0.980	-0.977	-0.990	-0.977	-0.994	0.995	0.998	0.997	0.936	0.000
14	0.993	0.992	-0.989	-0.988	-0.996	-0.989	-0.994	0.996	0.995	0.996	0.994	0.736

TABLE D.39
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

INDUSTRY : PROMOTION ISSUE : OVERALL

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	8	10	11	13	6	7	9	12	14
1	0.846	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.067	0.846	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-7.518	-7.615	0.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-10.389	-10.401	0.198	0.861	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-11.547	-11.392	-0.013	-0.231	0.863	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-6.628	-6.838	0.017	0.165	-0.190	0.722	0.000	0.000	0.000	0.000	0.000	0.000
13	-5.727	-5.777	-0.133	-0.151	0.322	-0.009	0.610	0.000	0.000	0.000	0.000	0.000
6	0.124	-0.695	-4.214	-6.172	-6.247	-4.159	-3.505	0.643	0.000	0.000	0.000	0.000
7	-0.218	-0.349	-2.629	-3.846	-4.092	-2.469	-2.071	-0.049	0.420	0.000	0.000	0.000
9	0.119	-0.503	-4.711	-6.900	-7.123	-4.198	-3.880	0.062	-0.006	0.680	0.000	0.000
12	-0.952	-1.279	-11.372	-16.391	-18.084	-10.637	-9.559	-0.227	0.222	-0.042	0.936	0.000
14	-0.379	-0.291	-5.205	-7.863	-8.271	-5.333	-4.721	0.103	-0.067	-0.051	0.071	0.736

TABLE D.40

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : MEAL-MONEY ISSUE : SCENARIOS

MULTIPLE GROUPS PROGRAM

SATIS(1,2,5)*

COOP(3,6,7,9,10)*

STANDARD SCORE COEFFICIENT ALPHAS

0.87 0.80

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	3	6	7	9	10	501	502
1	64	62	74	53	45	32	80	74	80	85
2	62	63	73	51	-4	-26	33	33	79	26
5	74	73	84	75	43	-9	46	82	92	71
3	53	51	75	37	47	3	51	65	71	61
6	45	-4	43	47	45	31	54	47	33	67
7	32	-26	-9	3	31	19	73	20	-2	44
9	80	33	46	51	54	73	88	50	63	94
10	74	33	82	65	47	20	50	47	76	68
501	80	79	92	71	33	-2	63	76	100	72
502	85	26	71	61	67	44	94	68	72	100

TABLE D.41
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : MEAL ALLOWANCE ISSUE : SCENARIO

SIMILARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	3	6	7	9	10
1	0.645	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.834	0.628	0.000	0.000	0.000	0.000	0.000	0.000
5	0.944	0.928	0.838	0.000	0.000	0.000	0.000	0.000
3	0.973	0.873	0.973	0.370	0.000	0.000	0.000	0.000
6	0.909	0.639	0.821	0.868	0.455	0.000	0.000	0.000
7	0.554	0.175	0.344	0.456	0.729	0.192	0.000	0.000
9	0.931	0.644	0.796	0.848	0.940	0.721	0.875	0.000
10	0.955	0.859	0.948	0.956	0.925	0.494	0.899	0.469

TABLE D.12
TEST FOR INTERNAL CONSISTENCY: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

REGULAR : MEAL ALLOWANCE ISSUE : SCENARIO

TEST FOR INTERNAL CONSISTENCY FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL
LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	3	6	7	9	10
1	0.645	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	-0.058	0.628	0.000	0.000	0.000	0.000	0.000	0.000
5	0.027	0.020	0.838	0.000	0.000	0.000	0.000	0.000
3	0.094	0.047	0.607	0.370	0.000	0.000	0.000	0.000
6	-0.218	-1.273	-0.642	0.105	0.455	0.000	0.000	0.000
7	-0.064	-1.117	-1.359	-0.334	0.021	0.192	0.000	0.000
9	0.232	-1.894	-2.810	-0.228	-0.329	1.003	0.875	0.000
10	0.434	-0.472	0.663	0.402	0.009	-0.155	-0.548	0.469

TABLE D.43

FACTOR INTER-CORRELATIONS AND LOADING MATRIX: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

SCENARIO : MEAL ALLOWANCE ISSUE : OVERALL

MULTIPLE GROUPS PROGRAM

SATIS(1,2)*

CONFL(5,8,10,11,13)*

COOP(6,7,9,12,14)*

STANDARD SCORE COEFFICIENT ALPHAS

0.95 0.83 0.83

FACTOR INTERCORRELATIONS AND LOADING MATRIX

COMMUNALITY IN THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14	501	502	503
1	100	100	-33	-51	-64	-53	-79	79	49	48	21	94	100	-80	82
2	100	100	-33	-51	-64	-53	-79	79	49	48	21	94	100	-80	82
5	-33	-33	100	69	29	44	20	-72	0	-61	-71	-27	-33	55	-65
8	-51	-51	69	100	33	28	41	29	-68	23	-27	-47	-26	-51	57
10	-64	-64	29	33	100	48	58	80	-57	-31	-80	6	-58	-64	69
11	-53	-53	44	41	48	100	77	90	-81	-70	-55	-60	-59	-53	88
13	-79	-79	20	29	80	90	100	67	-71	-67	-57	-24	-67	-79	82
6	79	79	-72	-68	-57	-81	-71	100	47	65	69	79	79	-99	100
7	49	49	0	23	-31	-70	-67	47	100	35	36	31	60	49	-41
9	48	48	-61	-27	-80	-55	-57	65	35	100	38	27	51	48	-80
12	21	21	-71	-47	6	-60	-24	69	31	38	100	27	31	21	-56
14	94	94	-27	-26	-58	-59	-67	79	60	51	31	100	94	-68	81
501	100	100	-33	-51	-64	-53	-79	79	49	48	21	94	100	-80	82
502	-80	-80	55	57	69	88	82	-99	-41	-80	-56	-68	-80	100	-97
503	82	82	-65	-41	-62	-92	-81	100	59	61	52	81	82	-97	100

TABLE D.44
SIMILARITY COEFFICIENTS: PACKAGE

CONFIRMATORY FACTOR ANALYSIS
AND CORRELATIONAL ANALYSIS PROGRAM

SCENARIO : MEAL ALLOWANCE ISSUE : OVERALL

SIMILIARITY COEFFICIENTS FOR THE INDICATORS WITH COMMUNALITIES ON THE DIAGONAL

	1	2	5	8	10	11	13	6	7	9	12	14
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
2	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	-0.772	-0.772	0.302	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	-0.811	-0.811	0.881	0.330	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	-0.946	-0.946	0.748	0.765	0.476	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-0.920	-0.920	0.841	0.807	0.911	0.775	0.000	0.000	0.000	0.000	0.000	0.000
13	-0.959	-0.959	0.765	0.761	0.947	0.952	0.666	0.000	0.000	0.000	0.000	0.000
6	0.946	0.946	-0.906	-0.907	-0.908	-0.968	-0.935	1.000	0.000	0.000	0.000	0.000
7	0.875	0.875	-0.646	-0.679	-0.884	-0.897	-0.923	0.845	0.352	0.000	0.000	0.000
9	0.926	0.926	-0.802	-0.858	-0.910	-0.950	-0.944	0.954	0.842	0.376	0.000	0.000
12	0.744	0.744	-0.834	-0.845	-0.734	-0.843	-0.745	0.891	0.648	0.811	0.275	0.000
14	0.984	0.984	-0.775	-0.806	-0.942	-0.939	-0.978	0.947	0.909	0.929	0.749	0.651

TABLE D.45

TEST FOR INTERNAL CONSISTENCY: PACKAGE

 CONFIRMATORY FACTOR ANALYSIS
 AND CORRELATIONAL ANALYSIS PROGRAM

SCENARIO : MEAL ALLOWANCE ISSUE : OVERALL

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

LOCATIONS WITH A 9.999 INDICATES THAT THE COMMUNALITY OF THE INDICATOR IS GREATER THAN ONE.

	1	2	5	8	10	11	13	6	7	9	12	14
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
2	9.999	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	9.999	9.999	0.302	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	9.999	9.999	0.551	0.330	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	9.999	9.999	-0.154	-0.197	0.476	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	9.999	9.999	-0.119	-0.241	-0.093	0.775	0.000	0.000	0.000	0.000	0.000	0.000
13	9.999	9.999	-0.505	-0.368	0.566	0.678	0.666	0.000	0.000	0.000	0.000	0.000
6	9.999	9.999	9.999	9.999	9.999	9.999	9.999	1.000	0.000	0.000	0.000	0.000
7	9.999	9.999	-0.484	-0.167	-1.240	-3.193	-2.481	9.999	0.352	0.000	0.000	0.000
9	9.999	9.999	-1.433	-0.964	-2.146	-2.898	-2.353	9.999	-0.007	0.376	0.000	0.000
12	9.999	9.999	-1.399	-1.108	-0.497	-2.636	-1.363	9.999	-0.001	-0.076	0.275	0.000
14	9.999	9.999	-1.454	-1.506	-2.665	-4.633	-3.896	9.999	0.255	0.039	-0.225	0.651

APPENDIX E
SUMMARY STATISTICS

TABLE E.1
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT
RESEARCH DESIGN I: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	Low		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
EMB %	86.66	71.43	81.82	64.29
Frequency Mean	2.60	1.67	1.80	1.51
Standard Deviation	1.01	0.83	0.34	0.24
Sample Size	5	6	5	6

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.2
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN I: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
NUMERICAL ESTIMATES				
Mean	2.955	2.804	2.00	2.00
Standard Deviation	0.345	0.362	0.00	0.00
LINE-LENGTH ESTIMATES				
Mean	2.667	2.444	2.00	2.00
Standard Deviation	0.281	0.208	0.00	0.00
Sample Size	5	6	5	6
CONFLICT				
NUMERICAL ESTIMATES				
Mean	2.397	2.381	2.00	2.00
Standard Deviation	0.162	0.399	0.00	0.00
LINE-LENGTH ESTIMATES				
Mean	2.520	2.437	2.00	2.00
Standard Deviation	0.199	0.209	0.00	0.00
Sample Size	5	6	5	6

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.3
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN I: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
Mean	5.80	5.63	5.28	5.30
Standard Deviation	0.894	1.372	0.169	1.110
CONFLICT				
Mean	5.33	5.28	4.50	4.64
Standard Deviation	0.628	0.982	0.521	1.424
Sample Size	5	6	5	6

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.4
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT
RESEARCH DESIGN II: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIANCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
EMB %	95.00	88.89	73.91	70.37
Frequency Mean	1.58	0.73	1.42	1.73
Standard Deviation	0.32	0.63	0.27	0.48
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.5
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN II: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIENCY		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
NUMERICAL ESTIMATES				
Mean	3.153	3.073	2.00	2.00
Standard Deviation	0.259	0.192	0.00	0.00
LINE-LENGTH ESTIMATES				
Mean	2.792	2.525	2.00	2.00
Standard Deviation	0.209	0.258	0.00	0.00
Sample Size	12	5	12	5
CONFLICT				
NUMERICAL ESTIMATES				
Mean	2.589	2.347	2.00	2.00
Standard Deviation	0.291	0.244	0.00	0.00
LINE-LENGTH ESTIMATES				
Mean	2.686	2.493	2.00	2.00
Standard Deviation	0.135	0.256	0.00	0.00
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.6
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN II: PRETEST SAMPLE

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
Mean	6.20	5.32	5.18	5.10
Standard Deviation	0.992	1.383	0.793	0.839
CONFLICT				
Mean	5.83	5.20	5.06	4.50
Standard Deviation	1.135	1.581	0.922	0.849
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.7
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF SATISFACTION/COOPERATION
RESEARCH DESIGN II: PRETEST SAMPLE

	POSITIVE INCONGRUITY			
	High		Low	
	SALIENCE			
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
EOE %	87.50	80.00	80.00	80.00
Frequency Mean	1.17	1.60	1.00	1.09
Standard Deviation	0.41	0.12	0.31	0.27
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE E.8
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF COOPERATION
RESEARCH DESIGN II: PRETEST SAMPLE

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
Mean	2.555	2.273	2.00	2.00
Standard Deviation	0.221	0.423	0.00	0.00
LINE-LENGTH ESTIMATES				
Mean	2.383	2.526	2.00	2.00
Standard Deviation	0.200	0.263	0.00	0.00
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE E.9
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF COOPERATION
RESEARCH DESIGN II: PRETEST SAMPLE

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
Mean	5.85	5.58	5.46	5.55
Standard Deviation	0.772	0.973	1.175	0.461
Sample Size	12	5	12	5

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE E.10
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT
RESEARCH DESIGN I

	NEGATIVE INCONGRUITY			
	High		Low	
	High (CELL A)	SALIENCE Low (CELL C)	High (CELL B)	Low (CELL D)
UNDERGRADUATES				
EMB %	87.37	76.47	75.82	75.00
Frequency Mean	2.52	2.17	2.09	2.00
Standard Deviation	0.74	0.39	0.72	0.62
Sample Size	33	6	33	6
GRADUATES				
EMB %	69.23	59.26	57.14	70.00
Frequency Mean	1.50	1.23	1.33	1.08
Standard Deviation	0.58	1.01	0.44	0.13
Sample Size	6	13	6	13
INDUSTRIAL				
EMB %	66.67	64.29	61.54	57.14
Frequency Mean	2.00	1.50	1.33	1.00
Standard Deviation	0.53	0.00	0.19	0.00
Sample Size	6	2	6	2
SCENARIO				
EMB %	70.00	66.67	66.67	57.14
Frequency Mean	1.40	1.33	1.20	1.33
Standard Deviation	0.34	0.79	0.41	1.10
Sample Size	5	3	5	3

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.11
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT
RESEARCH DESIGN I

	NEGATIVE INCONGRUITY			
	High	Low		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
UNDERGRADUATES: Mean	2.640	2.550	2.00	2.00
Standard Deviation	0.269	0.228	0.00	0.00
Sample Size	33	6	33	6
GRADUATES: Mean	2.620	2.440	2.00	2.00
Standard Deviation	0.235	0.205	0.00	0.00
Sample Size	6	13	6	13
INDUSTRY: Mean	2.710	2.480	2.00	2.00
Standard Deviation	0.322	0.283	0.00	0.00
Sample Size	6	2	6	2
SCENARIO: Mean	2.790	2.530	2.00	2.00
Standard Deviation	0.423	0.231	0.00	0.00
Sample Size	5	3	5	3
LINE-LENGTH ESTIMATES				
UNDERGRADUATES: Mean	2.670	2.530	2.00	2.00
Standard Deviation	0.252	0.165	0.00	0.00
Sample Size	33	6	33	6
GRADUATES: Mean	2.700	2.430	2.00	2.00
Standard Deviation	0.226	0.259	0.00	0.00
Sample Size	6	13	6	13
INDUSTRY: Mean	2.600	2.500	2.00	2.00
Standard Deviation	0.310	0.322	0.00	0.00
Sample Size	6	2	6	2
SCENARIO: Mean	2.630	2.590	2.00	2.00
Standard Deviation	0.352	0.253	0.00	0.00
Sample Size	5	3	5	3

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.12
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION
RESEARCH DESIGN I

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
UNDERGRADUATES: Mean	2.580	2.410	2.00	2.00
Standard Deviation	0.247	0.236	0.00	0.00
Sample Size	33	6	33	6
GRADUATES: Mean	2.620	2.450	2.00	2.00
Standard Deviation	0.197	0.207	0.00	0.00
Sample Size	6	13	6	13
INDUSTRY: Mean	2.680	2.501	2.00	2.00
Standard Deviation	0.322	0.283	0.00	0.00
Sample Size	6	2	6	2
SCENARIO: Mean	2.642	2.410	2.00	2.00
Standard Deviation	0.350	0.282	0.00	0.00
Sample Size	5	3	5	3
LINE-LENGTH ESTIMATES				
UNDERGRADUATES: Mean	2.690	2.560	2.00	2.00
Standard Deviation	0.275	0.195	0.00	0.00
Sample Size	33	6	33	6
GRADUATES: Mean	2.730	2.430	2.00	2.00
Standard Deviation	0.353	0.287	0.00	0.00
Sample Size	6	13	6	13
INDUSTRY: Mean	2.600	2.500	2.00	2.00
Standard Deviation	0.310	0.322	0.00	0.00
Sample Size	6	2	6	2
SCENARIO: Mean	2.620	2.560	2.00	2.00
Standard Deviation	0.353	0.223	0.00	0.00
Sample Size	5	3	5	3

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.13
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN I

	NEGATIVE INCONGRUITY			
	High		Low	
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
UNDERGRADUATES: Mean	6.09	5.06	5.28	5.33
Standard Deviation	0.608	0.574	0.909	0.516
Sample Size	33	6	33	6
GRADUATES: Mean	5.11	5.10	4.94	5.35
Standard Deviation	1.025	0.762	0.574	0.957
Sample Size	6	13	6	13
INDUSTRIAL: Mean	5.00	5.17	4.89	4.66
Standard Deviation	1.095	0.236	1.128	0.100
Sample Size	6	2	6	2
SCENARIO: Mean	5.20	5.89	4.67	4.55
Standard Deviation	0.557	0.838	0.782	0.192
Sample Size	5	3	5	3
CONFLICT				
UNDERGRADUATES: Mean	5.39	5.23	4.73	4.64
Standard Deviation	0.891	0.612	1.026	0.585
Sample Size	33	6	33	6
GRADUATES: Mean	4.53	4.30	4.24	4.82
Standard Deviation	0.776	1.035	0.763	1.124
Sample Size	6	13	6	13
INDUSTRIAL: Mean	4.83	4.10	3.81	3.60
Standard Deviation	1.141	0.707	1.193	1.131
Sample Size	6	2	6	2
SCENARIO: Mean	3.61	5.20	4.28	3.20
Standard Deviation	1.618	1.400	1.676	1.216
Sample Size	5	3	5	3

NOTES: In RD-1, antagonism was not manipulated as a variable. The cell labels A, B, C, and D correspond to Figure 7 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.14
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION/CONFLICT
RESEARCH DESIGN II

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
GRADUATES				
EMB %	74.19	69.57	71.43	60.00
Frequency Mean	1.94	1.78	1.67	1.21
Standard Deviation	0.33	0.83	0.41	0.71
Sample Size	18	19	18	19
INDUSTRIAL				
EMB %	69.96	55.36	57.29	75.51
Frequency Mean	2.41	1.50	1.71	1.78
Standard Deviation	0.44	0.82	0.33	0.37
Sample Size	28	28	28	28
SCENARIO				
EMB %	82.61	62.50	76.92	61.54
Frequency Mean	2.75	2.50	2.50	1.38
Standard Deviation	0.31	0.89	0.29	0.71
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.15
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF CONFLICT
RESEARCH DESIGN II

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
GRADUATES: Mean	2.680	2.510	2.00	2.00
Standard Deviation	0.132	0.211	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.730	2.590	2.00	2.00
Standard Deviation	0.096	0.153	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.800	2.600	2.00	2.00
Standard Deviation	0.011	0.231	0.00	0.00
Sample Size	8	8	8	8
LINE-LENGTH ESTIMATES				
GRADUATES: Mean	2.760	2.530	2.00	2.00
Standard Deviation	0.221	0.117	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.680	2.600	2.00	2.00
Standard Deviation	0.102	0.105	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.730	2.600	2.00	2.00
Standard Deviation	0.352	0.233	0.00	0.00
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.16
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION
RESEARCH DESIGN II

	NEGATIVE INCONGRUITY			
	High	SALIENCY		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
GRADUATES: Mean	2.730	2.600	2.00	2.00
Standard Deviation	0.197	0.207	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.730	2.600	2.00	2.00
Standard Deviation	0.096	0.153	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.670	2.530	2.00	2.00
Standard Deviation	0.092	0.282	0.00	0.00
Sample Size	8	8	8	8
LINE-LENGTH ESTIMATES				
GRADUATES: Mean	2.810	2.600	2.00	2.00
Standard Deviation	0.197	0.233	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.660	2.590	2.00	2.00
Standard Deviation	0.102	0.105	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.640	2.570	2.00	2.00
Standard Deviation	0.095	0.015	0.00	0.00
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.17
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF DISSATISFACTION AND CONFLICT
RESEARCH DESIGN II

	NEGATIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
DISSATISFACTION				
GRADUATES: Mean	3.51	3.69	3.44	3.67
Standard Deviation	1.304	1.062	1.074	1.137
Sample Size	18	19	18	19
INDUSTRIAL: Mean	3.66	3.70	3.57	3.61
Standard Deviation	1.276	1.136	1.104	1.133
Sample Size	28	28	28	28
SCENARIO: Mean	3.27	3.59	3.25	3.48
Standard Deviation	1.523	0.937	1.357	1.163
Sample Size	8	8	8	8
CONFLICT				
GRADUATES: Mean	4.43	4.06	4.32	4.08
Standard Deviation	0.796	0.522	0.721	0.521
Sample Size	18	19	18	19
INDUSTRIAL: Mean	4.60	4.71	4.37	4.53
Standard Deviation	1.171	0.909	0.967	0.903
Sample Size	28	28	28	28
SCENARIO: Mean	4.60	4.15	4.55	4.15
Standard Deviation	0.800	0.422	0.717	0.508
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was also manipulated as a variable for the negative incongruity condition. The cell labels A, B, C, and D correspond to Figure 8 in Chapter IV. Cells A and C refer to the inventory issue; and cells B and D refer to the infra-red issue.

TABLE E.18
SUMMARY STATISTICS
CONTENT ANALYSIS: ISSUE-SPECIFIC PERCEPTIONS OF SATISFACTION/COOPERATION
RESEARCH DESIGN II

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
GRADUATES				
EOE %	85.00	75.00	77.78	71.43
Frequency Mean	1.41	1.11	1.17	1.20
Standard Deviation	0.41	0.63	0.47	0.47
Sample Size	18	19	18	19
INDUSTRIAL				
EOE %	80.95	74.42	80.77	69.57
Frequency Mean	1.76	1.52	1.31	1.50
Standard Deviation	0.81	0.63	0.29	0.11
Sample Size	28	28	28	28
SCENARIO				
EOE %	85.71	77.78	70.00	61.54
Frequency Mean	2.00	1.75	1.75	1.60
Standard Deviation	0.73	0.71	0.21	0.24
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE E.19
SUMMARY STATISTICS
MAGNITUDE ESTIMATES: ISSUE-SPECIFIC PERCEPTIONS OF COOPERATION
RESEARCH DESIGN II

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
NUMERICAL ESTIMATES				
GRADUATES: Mean	2.650	2.630	2.00	2.00
Standard Deviation	0.051	0.049	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.650	2.590	2.00	2.00
Standard Deviation	0.096	0.284	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.660	2.580	2.00	2.00
Standard Deviation	0.052	0.113	0.00	0.00
Sample Size	8	8	8	8
LINE-LENGTH ESTIMATES				
GRADUATES: Mean	2.650	2.630	2.00	2.00
Standard Deviation	0.051	0.043	0.00	0.00
Sample Size	18	19	18	19
INDUSTRY: Mean	2.710	2.610	2.00	2.00
Standard Deviation	0.150	0.273	0.00	0.00
Sample Size	28	28	28	28
SCENARIO: Mean	2.660	2.580	2.00	2.00
Standard Deviation	0.052	0.127	0.00	0.00
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

TABLE E.20
SUMMARY STATISTICS
RATING SCALES: ISSUE-SPECIFIC PERCEPTIONS OF COOPERATION
RESEARCH DESIGN II

	POSITIVE INCONGRUITY			
	High	SALIENCE		Low
	High (CELL A)	Low (CELL C)	High (CELL B)	Low (CELL D)
GRADUATES: Mean	4.99	4.73	4.49	4.75
Standard Deviation	0.976	0.964	0.871	1.019
Sample Size	18	19	18	19
INDUSTRIAL: Mean	4.84	4.48	4.80	4.87
Standard Deviation	1.107	0.847	0.942	0.966
Sample Size	28	28	28	28
SCENARIO: Mean	5.15	4.85	4.83	5.08
Standard Deviation	0.846	1.184	1.033	0.996
Sample Size	8	8	8	8

NOTES: In RD-2, antagonism was not manipulated as a variable for the positive incongruity condition. The cell labels A, B, C, and D correspond to Figure 9 in Chapter IV. Cells A and C refer to the cooperative promotion issue; and cells B and D refer to the meal allowance issue.

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