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TOWARD AN UNDERSTANDING OF THE ANTECEDENTS AND CONSEQUENCES OF SHARED FRAMES IN A GROUP DECISION MAKING CONTEXT

Dissertation
Presented in Partial Fulfillment of the Requirements for the degree of Doctor of Philosophy in the Graduate School of The Ohio State University
by
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To the Glory of God
ACKNOWLEDGEMENTS

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"Be strong and of good courage; fear not, nor be dismayed, for the Lord God, even my God will be with thee. He will not fail thee nor forsake thee until thou hast finished all the work."

I Chronicles 28:20

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ABSTRACT

The purpose of this research was to investigate the under-researched role of shared frames in group decision making. A shared frame was defined in terms of similarity in the way that group members interpret and categorize strategic issues in terms of assumptions and categories (threat/opportunity perceptions). It is argued that the notion of a shared frame provides a valuable means for understanding how decision makers collectively make sense of ill-structured strategic issues in a group setting and is conceptually appealing because it integrates group, cognitive, negotiation, and decision making literatures.

There were two fundamental questions of concern in this research. First, what are the factors that contribute or impede the development of shared interpretations in groups? Second, what are the decision processes and outcomes that result from arriving at a group representation of the underlying issues?

The research was carried out in two phases. Initially, an exploratory examination of shared frames was conducted in the context of various mental health regional planning groups across Ohio. This fieldwork served as a forum for model building and hypothesis generation and was then followed by a laboratory experiment, in which two hundred and seventy-six students participated in an adaptation of the Towers Market multi-party simulation. After meeting in constituency groups, participants formed groups of four to make decisions on a number of issues. Decision rule (unanimity/majority rule) and constituency commitment (high/low) were manipulated to investigate their impact on the development of shared frames. Perceptions about implementation, how
the group deals with new issues, and process/outcome satisfaction were measured as consequences of group cognition. The operationalization of shared frames involved the use of three forms of agreement.

Results showed that groups started out with very low agreement on both category and assumption frames, but significantly increased the level of consensus following discussion. The pattern of findings highlights the need to better understand the phenomena underlying a shared frame and to focus on the rudiments of the group processes involved. Fruitful directions for further research are suggested.
CHAPTER I
INTRODUCTION
Overview of the Research

Increasingly, organizations are using groups and teams to get work accomplished (e.g., Argote & McGrath, 1993, Bettenhausen, 1991, Guzzo & Shea, 1992; Sundstrom, DeMeuse, & Futrell, 1990), and most strategic decisions are made by groups instead of individuals acting alone (e.g., Axelrod, 1976; Levine, Resnick, & Higgins, 1993; Orasanu & Salas, 1993; Ungson, Braunstein, & Hall, 1981). The need for broad representation and a wide range of abilities necessitates the use of groups and teams in numerous contexts (Nahavandi & Aranda, 1994). In short, many issues are too large, too complicated, and/or too political to be effectively handled by an individual (Brett, 1991).

In light of this changing organizational context, researchers have been giving increased attention to group-level phenomena (e.g., Larson & Christenson, 1993; Wegner, 1987; Walsh, 1995). Cognition, which has traditionally been viewed as an individual act, is now purported to exist at supra-individual levels of analysis. A number of researchers have advanced the notion that information processing effects exist at the group-level and that the aggregation of individuals’ schemata influences group decision making (e.g., Cannon-Bowers & Salas, 1990, Cannon-Bowers, Salas, & Converse, 1990, 1993; Resnick, 1991; Walsh & Fahey, 1986).

Despite the popularity of various terms referring to shared interpretations and the presumed existence of group-level cognition in a variety of fields, there is a great need to further theoretical and empirical work (e.g., Cannon-Bowers et al., 1993). In addition to the lack of definitional clarity and conceptual development of the relevant
constructs, empirical evidence substantiating the existence of shared cognitive structures is primarily suggestive and indirect (Klimoski & Mohammed, 1994). Therefore, a number of researchers have urged the systematic investigation of collective sensemaking activity at the group-level (e.g., Donnellon, Gray, & Bougon, 1985, Dukerich & Milliken, 1992; Hastie & Pennington, 1991; Panzano, 1992).

The current study seeks to contribute to the new and growing body of research relating to shared cognition in the context of decision making groups. Many groups such as governing boards and task forces involve the participation of decision makers from multiple departments and organizational levels as well as external stakeholders (Mintzberg, Raisinghani, & Theoret, 1976). Because of their different backgrounds and experiences, these individuals often enter the group setting with divergent assumptions and perceptions of the issues involved. Through interaction and discussion, they are confronted with the conflicting views of their colleagues and must seek to reconcile dissimilar mental models of the issues. Group members, therefore, negotiate to reach consensus on how key issues should be interpreted (e.g., Bettenhausen, 1991; Eden et al., 1981).

What are the factors that facilitate and/or hinder the process by which decision making groups develop shared interpretations and definitions of the issues? What are the consequences of arriving at a group representation of the underlying issues in terms of decision processes and outcomes? These are the fundamental questions of concern in this research.

The type of group cognition considered is a shared frame, which refers to a commonality in the way that group members interpret and categorize strategic issues. Specifically, what is shared are the assumptions underlying important issues and perceptions of threat and opportunity which aid group members in assigning meaning to issues.
The research was carried out in two phases. Because of the lack of empirical evidence concerning group cognition, it was important to first ensure that the notion of a shared frame was viable in actual decision making groups. Therefore, observations were made of several mental health regional planning groups and interviews were conducted with key informants. Using an inductive approach, this phase of the project explored different ways of assessing shared frames and identified key related structural and process variables.

In order to maximize control of the variables of interest, the exploratory research was then followed by a laboratory experiment, which examined decision rule and constituency commitment as driving forces in the emergence of shared frames. In addition, the relationship between shared frames and group outcomes (implementation, how the group deals with new issues, and satisfaction) was also assessed. By incorporating constituencies to whom participants were accountable, the presence of political realities in group activity was recognized.

**The Purpose and Contributions of the Research**

There are several basic premises guiding this research. First, it is assumed that individuals attempt to make sense of strategic issues and actively construct or enact the reality they inhabit (Smircich & Stubbart, 1985; Weick, 1979). Second, as a result of membership in varying constituencies, individuals often enter a political group decision making setting with different assumptions and perceptions (frames) of the issues under discussion. Third, both group-level and individual-level variables influence the process by which group members develop or fail to develop shared frames of reference. Fourth, shared frames ultimately affect decision processes and outcomes.

Building on these ideas, the purpose of this research is to investigate the role of shared frames in the group decision making context. Specifically, the present research investigates how decision rule (unanimity and majority rule) and constituency commitment (high and
low) influence the extent to which frames are shared among individuals who enter the group with different assumptions and perceptions, as well as different constituencies to satisfy. In addition, expectations regarding decision implementation, how the group deals with new issues, and satisfaction with decision process and outcomes are all examined as possible consequences of arriving at a shared frame of reference.

This research is important for both conceptual and measurement-related reasons. While decision makers' interpretive processes have been primarily considered at the individual-level of analysis (Fiol, 1994), this study addresses framing as a group-level phenomenon. From a theoretical standpoint, the notion of a shared frame provides a valuable means for understanding how decision makers collectively make sense of ill-structured strategic issues in a group setting and is conceptually appealing because it integrates group, cognitive, negotiation, and decision making literatures. The study extends the current literature by incorporating key political realities inherent in a group decision making context. Moreover, the critical need to investigate both the antecedents and consequences of arriving at a shared frame is addressed.

In addition to advancing the literature conceptually, the present research also makes some important contributions from a measurement standpoint. While most of the existing research in the area of shared cognitive structures is theoretical (e.g., Klimoski & Mohammed, Rentsch & Hall, 1994; Walsh, 1995), this study answers the numerous calls for more empirical work, especially with regard to the issue of how group frames develop. In an attempt to triangulate measures, frames are assessed in different ways and at different points in time. Taking up the challenge to uncover cognition at different levels of analysis (Schneider & Anglemar, 1993), this research utilizes both aggregate and global methods of indexing shared frames. Furthermore, the study uses a within-group agreement index (James, Demaree, & Wolf, 1984) in a novel way and raises intriguing group-level measurement issues to be
considered in subsequent research

The review of the literature is organized in the following manner. First, the importance of group research is discussed and an overview of the emerging literature in group cognition is provided. A brief review of a group decision making model follows, and then the processes of issue identification and issue framing are addressed. After describing various components of the nature of shared frames, Chapter Two discusses the exploratory research. Next, drawing from theory, logic, and the exploratory research, a model of the antecedents and consequences of shared frames is presented in Chapter Three. Finally, hypotheses testing various linkages in the model are offered.

Group Cognition

Because the demands of many complex issues and tasks are too great for any one individual, groups are frequently employed as a way of providing different types of expertise and ensuring the cognitive quality and acceptability of decisions (Nahavandi & Aranda, 1994, Resnick, 1991). Consequently, teams are being recognized as the cornerstone of modern American industry (Hackman & Morris, 1975), and are the focus of many restructuring efforts within organizations (Nahavandi & Aranda, 1994). As a result, managers now require considerable knowledge of team processes (Fandt, 1991), and it is predicted that corporations will continue to rely heavily on groups in the future (Guzzo & Shea, 1992, Illgen, Major, Hollenbeck, & Sego, 1995, Sundstrom et al., 1990).

The greater emphasis on teams and groups in the corporate world suggests the need for greater understanding of the functioning of these collective entities (Swezey & Salas, 1992). Indeed, organizational research is beginning to reflect the importance which groups are accorded in the workplace. Levine and Moreland (1990) have asserted that the torch of group research has been passed from social psychology to organizational psychology. Consequently, numerous constructs which
have been traditionally viewed at the individual-level of analysis are now being considered applicable at the group-level as well. Table 1 lists examples of recent group constructs.

Table 1
Group-Level Constructs Traditionally Considered at the Individual-Level of Analysis

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<td>Collective Efficacy</td>
<td>Bandura (1986); Erez &amp; Katz (1995)</td>
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<tr>
<td>Collective Esteem</td>
<td>Wiesenfeld &amp; Turnheim (1995)</td>
</tr>
<tr>
<td>Group Affect, Collective Mood</td>
<td>George (1990); Barsade (1995)</td>
</tr>
<tr>
<td>Group Attributions</td>
<td>Wageman (1995)</td>
</tr>
<tr>
<td>Group-Level Integrative Complexity</td>
<td>Gruenfeld &amp; Hollingshead (1993)</td>
</tr>
<tr>
<td>Group-Level Problem Identification</td>
<td>Larson &amp; Christensen (1993); Moreland &amp; Levine (1992)</td>
</tr>
<tr>
<td>Group Prosocial Behavior</td>
<td>George &amp; Bettenhausen (1990)</td>
</tr>
<tr>
<td>Group Scripts</td>
<td>Bettenhausen &amp; Murnighan (1985)</td>
</tr>
<tr>
<td>Group Turnover</td>
<td>George &amp; Bettenhausen (1990)</td>
</tr>
<tr>
<td>Team Cognitive Ability</td>
<td>Wright, McMahan, Smart, McCormick (1995)</td>
</tr>
<tr>
<td>Transactive Memory</td>
<td>Wegner (1987)</td>
</tr>
</tbody>
</table>
In addition, researchers from a number of different fields are contending that cognition itself can be meaningfully conceptualized at the group-level of analysis. Within social psychology, there is increasing recognition of the fact that social interaction and cognitive representations are inseparably tied together (Forgas, 1981, Levine et al., 1993). Traditional social cognition research has been criticized for ignoring person to person interaction, while group research has been criticized for ignoring cognitive processes (Fiske & Goodwin, 1994). Specifically, research in social cognition is being regarded as "insufficiently social" (Fiske & Goodwin, 1994, p. 147) because it neglects the intersubjective experience of group members (Ickes & Gonzalez, 1994). In fact, Larson and Christensen (1993) have altered the traditional meaning of social cognition to refer to the "social processes that relate to the acquisition, storage, transmission, manipulation, and use of information for the purpose of creating a group-level intellectual product (p. 6). Studies are starting to demonstrate a linkage between cognitive representation and social interaction. For example, Forgas (1981) found that cohesive rugby teams produced cognitive representations of social episodes that were more integrated and differentiated than fragmented teams.

Decision making researchers have also begun to espouse a broadened view of cognition, and greater attention is being given to the cognitive structures shared by multiple decision makers (Schwenk, 1988). Ward and Reingen (1990) state that in order for decision making to be fully understood, it is crucial that both the cognitive and social structures be considered. Consequently, the idea that information processing effects exist at the group level and that the aggregation of individuals' schemata influences group outcomes is gaining acceptance among decision making scholars (e.g., Cannon-Bowers, Salas, & Converse, 1993; Fiol, 1994; Walsh, Henderson, & Deighton, 1988).
Table 2, expanded from Klimoski and Mohammed (1994), lists some of the works in the stream of research dealing with shared cognition. The recurrent usage of numerous terms relating to group cognition from a variety of fields attests to the popularity and widespread acknowledgement of the usefulness of collective cognitive structures. Indeed, the notion of shared cognitions in a group is proposed as one of the most promising areas in sociocognition research (Levine et al., 1993). According to Forgas (1983), how to study the social, collective nature of mental processes is the most challenging difficulty facing social cognition. In his synthesis of group research, Bettenhausen (1991) described the development of shared understanding as an "essential group process" (p 350). Moreover, a recent review included "Individual and Organizational Minds" as one of four important areas of research in strategic decision making (Schwenk, 1995).

Recent articles have attempted to address the theoretical issues involved with the notion of a collective cognitive structure. For example, Klimoski and Mohammed (1994) provide a foundation for the construct of a team mental model, which refers to team members' organized understanding and mental representation of team relevant knowledge. After highlighting the conceptual confusion in the literature, they attempt to improve definitional clarity by placing team mental models in a nomological network of antecedents and consequences and by discussing their content, form, and function. In addition, Walsh (1995) provides an extensive review of the literature regarding individual, group, and organizational knowledge structures, while Rentsch and Hall (1994) offer a thorough discussion of conceptual issues concerning schema similarity in teams.
Table 2
Variations on a Theme: Applications of the Team Mental Model Concept

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Terminology</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axelrod (76)</td>
<td>Cognitive maps of collectives</td>
<td>Beliefs and assertions of individuals aggregate</td>
</tr>
<tr>
<td>Bonham et al. (88)</td>
<td>Group cognition</td>
<td>Belief systems and policy preferences of multiple participants incorporated into one large map</td>
</tr>
<tr>
<td>Bougon et al. (77)</td>
<td>Collective cause map</td>
<td>Simple average of individual’s maps</td>
</tr>
<tr>
<td>Daft &amp; Weick (84)</td>
<td>Collective (Org.) interpretation</td>
<td>Process of developing shared understanding and conceptual schemes among members of upper management</td>
</tr>
<tr>
<td>Eden et al. (81)</td>
<td>Intersubjectivity</td>
<td>Members have considerable cultural, organizational, and social commonality</td>
</tr>
<tr>
<td>Fiol (94)</td>
<td>Organizational consensus</td>
<td>Multidimensional construct which recognizes that meaning resides both in the content and framing of communications</td>
</tr>
<tr>
<td>Floyd &amp; Wooldridge (92); Wooldridge &amp; Floyd (89)</td>
<td>Strategic Consensus</td>
<td>Collective heart and mind regarding fundamental organizational priorities Involves shared understanding and common commitment</td>
</tr>
<tr>
<td>Gioia &amp; Sims (86)</td>
<td>Cognitive consensuality</td>
<td>Commonly shared cognitive processes, similarity in the way information is processed and evaluated</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>Author(s) (Year)</th>
<th>Group/Structure</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey et al. (85)</td>
<td>Coincident meaning</td>
<td>Meaning depends on coincidence among concepts, relationships among concepts, and/or ideologies</td>
</tr>
<tr>
<td>Innami (94)</td>
<td>Group belief structure</td>
<td>Collectivity of individuals' belief and knowledge</td>
</tr>
<tr>
<td>Isabella (90)</td>
<td>Collective interpretations</td>
<td>Frames of reference that individuals shared exist in a collectivity</td>
</tr>
<tr>
<td>Langfield-Smith (92)</td>
<td>Collective cognitions</td>
<td>Transitory social artifacts which are subscribed to in varying degrees by group members</td>
</tr>
<tr>
<td>Panzano (92)</td>
<td>Shared frames</td>
<td>Commonality in the categories and dimensions that decision makers use to describe strategic issues</td>
</tr>
<tr>
<td>Prahalad &amp; Bettis (86)</td>
<td>Dominant general management logic</td>
<td>Mind set or world view conceptualization of the business tools which is stored as a shared cognitive map</td>
</tr>
<tr>
<td>Smircich (83)</td>
<td>Shared meaning</td>
<td>Common modes of interpretation and shared understanding of experience</td>
</tr>
<tr>
<td>Walsh &amp; Fahey (86)</td>
<td>Negotiated belief structure</td>
<td>Configuration of power and beliefs that establishes the cognitive orientations within decision making groups</td>
</tr>
<tr>
<td>Walsh et al. (88)</td>
<td>Shared meaning</td>
<td>Meaning that has been socially constructed, negotiated, and consensually validated</td>
</tr>
<tr>
<td>Weick (79)</td>
<td>Shared meaning</td>
<td>Assemblage, composite, and average cause maps</td>
</tr>
<tr>
<td>Weick &amp; Bougon (86)</td>
<td>Collective cause maps</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 (continued)

<p>| Wellens (93) | Group situation awareness | Sharing of a common perspective between individuals regarding environmental events |</p>
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Terminology</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar Tal (1990)</td>
<td>Group beliefs</td>
<td>Convictions that group members are aware that they share and define their &quot;groupness&quot;</td>
</tr>
<tr>
<td>Bettenhausen &amp; Murnighan (85)</td>
<td>Collectively produced frames of reference</td>
<td>Generally held, group-based understanding of expected and accepted behavior</td>
</tr>
<tr>
<td>Cannon-Bowers et al. (93)</td>
<td>Shared (mutual) models</td>
<td>Knowledge structures held by team members that enable the formation of accurate expectations of the task and team</td>
</tr>
<tr>
<td>Hatano &amp; Inagaki (91)</td>
<td>Collective comprehension activity</td>
<td>Members share information until all are satisfied with proposed explanations</td>
</tr>
<tr>
<td>Larson &amp; Christensen (93)</td>
<td>Social cognition</td>
<td>Social processes that relate to the acquisition, storage, transmission, manipulation, and use of information for the purpose of creating a group-level intellectual product</td>
</tr>
<tr>
<td>Levine &amp; Moreland (90)</td>
<td>Group culture</td>
<td>Common frame of reference which includes a set of thoughts shared among group members and a set of customs that embody the thoughts that group members share</td>
</tr>
<tr>
<td>Levine et al. (93)</td>
<td>Intersubjectivity</td>
<td>Shared understanding of what is being discussed or worked on</td>
</tr>
</tbody>
</table>

Table 2 (continued)

TEAM DYNAMICS/PERFORMANCE
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Type of Shared Cognition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orasanu (90)</td>
<td>Shared situation models</td>
<td>Shared understanding of the problem definition, plans and strategies, information and cues, and team member roles</td>
</tr>
<tr>
<td>Orasanu &amp; Salas (93)</td>
<td>Shared mental models</td>
<td>Organized knowledge shared by team members</td>
</tr>
<tr>
<td>Rentsch &amp; Hall (94)</td>
<td>Schema similarity</td>
<td>Common understandings among team members in the content and organization of team-related knowledge</td>
</tr>
<tr>
<td>Rentsch et al. (93)</td>
<td>Core teamwork schemas</td>
<td>Knowledge structures for working together as a team and enhancing the quality of interactions, communications, and relationships</td>
</tr>
<tr>
<td>Resnick, Levine, &amp; Teasley (91)</td>
<td>Socially shared cognition</td>
<td>Authors subscribed to different definitions of shared cognition (Cole, 91)</td>
</tr>
<tr>
<td>Weick &amp; Roberts (93)</td>
<td>Collective mind</td>
<td>A pattern of heedful interrelations of actions in a social system</td>
</tr>
</tbody>
</table>
Although serious theoretical work in this area is beginning, empirical research is in its infancy. Unfortunately, there is only a small amount of extant empirical work, and much of it is merely suggestive at best (e.g., Orasanu, 1990). Often, the concept of shared cognition is simply invoked as an explanatory mechanism to aid in describing and interpreting team phenomenon (Orasanu & Salas, 1993). However, stronger findings are beginning to emerge. For example, using concept mapping, Minionis, Zaccaro, and Perez (1995) showed that shared mental models facilitated team coordination and enhanced performance on collective tasks requiring interdependence.

Because empirical research has substantially lagged descriptive and theoretical work in this area, there are many unanswered questions that must be addressed. Particularly salient is the need for insight into the variables that contribute to the development of collective cognitive structures (Dukerich & Milliken, 1992, Innami, 1994, Isabella, 1990; Levine et al., 1993; Panzano, 1992; Walsh, 1995). In addition, it is also important to empirically demonstrate the consequences that derive from the existence of group cognition.

As alluded to earlier, interest in group cognition is not limited to one field, but spans a number of domains, including social cognition (Larson & Christenson, 1993, Levine et al., 1993), decision making (e.g., Fiol, 1994; Walsh et al., 1988); team performance (Cannon-Bowers et al., 1993, Orasanu & Salas, 1993), and political science (e.g., Bonham et al., 1988). Consequently, there is no agreed upon terminology, and a plethora of terms have been attached to the construct, including collective interpretations, shared (team) mental models, teamwork schemas, group beliefs, and socially shared cognition (see Table 2). In addition, group collective cognitive structures have been implicated in a variety of contexts, including command and control teams (e.g., Cannon-Bowers et al., 1993; Swasey & Salas, 1992), flight crews (Orasanu, 1990), new venture teams (Fiol, 1994), juries (Hastie &
Pennington, 1991), ad hoc groups (Innami, 1994, Walsh et al., 1988), and top management teams (Panzano, 1992; Prahalad & Bettis, 1986).

Despite the fact that the construct is relevant to many different settings, this research addresses a group decision making context. Specifically, the type of group cognition that will be addressed is collective representations of strategic issues. Because it is very consistent with the decision making focus, the terminology that will be used is "shared frame." Therefore, the term "frame" will be preferred, except when referring to a particular author, in which case the original term used by the author will be employed. Furthermore, the decision making literature will be of primary importance, but the other literatures mentioned above will be drawn upon extensively.

**Group Decision Making**

By way of definition, a decision making group will be referred to as a set of interdependent individuals who view themselves as a group and who have the common goal of producing a decision. What distinguishes group from individual decision making is the existence of more than one information source and perspective that must be combined (usually, via discussion) to arrive at a collective decision. Although Levine & Moreland (1990) cite over thirty recent studies on decision making at the group-level, many aspects of the process have yet to be examined. Furthermore, little attention has been paid to the development of comprehensive models of group decision making (Aldag & Fuller, 1993).

Numerous group decision theorists (e.g., Aldag & Fuller, 1993, Hirokawa & Johnston, 1989; Milliken & Vollrath, 1991) have proposed three general stages of decision making: Problem identification, alternative generation, and evaluation and choice. During problem identification, relevant information is acquired and issues are defined and interpreted. In the alternative generation stage, criteria are
selected and alternatives are engendered. Finally, alternatives are evaluated and a decision is selected. Some models of group decision making (e.g., Gualtieri, Parker, & Zaccaro, 1995) also include an implementation phase in which actions are coordinated and monitored.

One of the most comprehensive, descriptive models of group decision making has been proposed by Aldag and Fuller (1993). Derived from Janis' (1982) model of groupthink, their framework is intended for a broad range of problem situations and includes several antecedent, process, and outcome variables. Furthermore, the model explicitly recognizes the roles of political factors in the decision making process. Providing a general framework for the current research, the decision process characteristics listed in the Aldag and Fuller (1993) model are depicted in Figure 1.

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**Figure 1.** Decision Process Characteristics from the Aldag and Fuller (1993) General Model of Group Decision Making.
The current research will primarily concern the identification stage of decision making and will focus specifically on how issues are represented by decision making groups.

**Issue Identification**

During the last decade, there has been increased focus on the cognitive processes involved in various stages of strategic management, especially the process by which strategic issues are represented (e.g., Daft & Weick, 1984; Thomas, Clark, & Gioia, 1993, Stubbart & Ramaprasad, 1989). Strategic issues are important developments that have significant consequences for the organization as a whole (e.g., Dutton & Duncan, 1987; Dutton, Stumpf, & Wagoner, 1990). Because they are typically characterized as unstructured, ambiguous, complex, and dynamic (e.g., Mintzberg et al., 1976; Ungson et al., 1981), decision makers must engage in the process of sensemaking (e.g., Gioia, 1986a, Weick, 1979) or interpretation (e.g., Daft & Weick, 1984; Keisler & Sproull, 1982) in order to endow issues with meaning.

Important organizational developments and events must first be attended to, translated into issues, and sorted into categories before alternative views can be generated and solutions selected. How an issue is defined can have important implications for the strategies used to address the issue, as well as the decisions and outcomes that result (e.g., Thomas et al., 1993; Jones & Schkade, 1995; Panzano, 1992). Therefore, many decision making theorists consider identification to be the first and most crucial stage in the decision making process (e.g., Cowan, 1986; Lyles & Mitroff, 1980; Mintzberg et al., 1976; Thomas, et al., 1993). Ironically, however, it is the least researched of the decision making stages (Lyles & Mitroff, 1980).

Strategic issue diagnosis (e.g., Dutton, Fahey, & Narayanan, 1983), sensemaking (e.g., Gioia, 1986a), problem formulation (e.g., Lyles & Mitroff, 1980), issue framing (e.g., Panzano, 1992), problem recognition (e.g., Cowan, 1986), issue interpretation (e.g., Daft &
Weick, 1984; Dukerich & Milliken, 1993), and problem sensing (Kiesler & Sproull, 1982) are other labels that describe the interpretation processes that decision makers use to make sense of strategic issues.

Several models of the interpretation process have been delineated in the literature (e.g., Billings, 1989; Cowan, 1986; Daft & Weick, 1984; Dutton et al., 1983; Kiesler & Sproull, 1982, Mintzberg et al., 1976, Thomas & McDaniel, 1990), but few have been tested extensively. A basic premise of the framing literature is that the way in which a strategic issue is framed mobilizes action in a particular direction (e.g., Dutton et al., 1983) and affects organizational responses (e.g., Daft & Weick, 1984; Dutton & Duncan, 1987). Empirical evidence linking the initial interpretive phase to individual (e.g., Dukerich & Milliken, 1992) and organizational (e.g., Panzano, 1992, Thomas et al., 1993) outcomes has begun to emerge.

Although strategic issue diagnosis has been primarily considered at the individual level of analysis (Fiol, 1994), interpretive processes have also been hypothesized to operate at the organizational-level (e.g., Daft & Weick, 1984; Gray, Bougon, & Donnellon, 1985; Lyles & Mitroff, 1980; Poole, Gioia, & Gray, 1989; Shrivastava & Schneider, 1984; Smircich, 1983). Specifically, Lyles and Schwenk (1992) elaborate on the processes by which individual-level schemata are combined into organizational-level knowledge structures.

Collective cognition has also been discussed at higher levels of abstraction than a single organization, including the interorganizational (Schneider & Angelmar, 1993), industry (Huff, 1982), national (Shih, 1989), and societal (Chanlat & Bedard, 1991, Schneider & DeMeyer, 1991) levels.

**Group-Level Issue Interpretation**

If issue interpretation occurs at both the individual and organizational levels of analysis, then it seems plausible that it would operate in groups as well. Indeed, a number of researchers are
beginning to consider interpretive processes as a group-level phenomenon. For example, Bettenhausen and Murninghan (1985) suggest that group behavior is influenced by collectively produced frames of reference, which refer to similarity in members' scripts and definitions of the situation. Furthermore, recognizing that problem identification can be a social as well as a personal activity, Moreland and Levine (1992) have discussed the processes involved when group members collaborate with each other while identifying issues.

Unfortunately, although the notion of group interpretive processes has been discussed conceptually, there are only a few examples of direct empirical evidence. A field study investigating how top decision makers in Ohio Mental health boards interpret the Mental Health Act of 1988 found mean rater reliability statistics which supported the notion that members of the dominant coalition share threat/opportunity perceptions of how key issues impact their organization (Panzano, 1992). Also investigating actual decision making groups, Fiol (1994) traced the development of the content and framing of meanings in an eleven member new venture team over the course of two years. A content analysis of written communication logs revealed a progressive process of converging around a broad frame of interpretations.

In a laboratory study, Walsh et al. (1988) used realized coverage (the range of belief structures voiced during a discussion) and realized consensus (level of similarity among team members' individual belief structures) to operationalize their notion of a negotiated belief structure. The analysis of 713 product decisions made by 29 groups of graduate business students in a complex, simulated business environment (MARKSTRAT) indicated that coverage and consensus were systematically related to product and firm performance. Specifically, shared agreement around a few schematic dimensions (high consensus and low coverage) was associated with superior brand performance. Walsh and colleagues concluded that the linkages between the coverage and consensus variables
and decision performance point to the validity of the negotiated belief structure construct. Similar to Walsh et al (1988), Houghton, Zeithaml, and Bateman (1994) also used coverage and consensus to investigate the relationship between the cognitive processes of top management teams and strategic issue processing.

Also demonstrating the importance of group cognitions in the laboratory, Tindale et al (1993) showed that variations in gain/loss perspectives among four-person groups influenced group decision processes. Specifically, when more members framed the Asian Disease problem consistent with the riskier option, the group strongly preferred that option. Using a similar methodology, Paese et al (1993) manipulated positive/negative frames at the individual and group levels and found that group-level framing effects can be stronger than those at the individual level.

Although these studies have begun to research group-level interpretive processes, additional research is needed to examine the antecedents and consequences of framing at the group level.

Frames of Reference

In the organizational literature, frames of reference have been employed to refer to the manner by which individuals interpret or assign meaning to strategic issues (Beach, 1990, Fiol, 1994). They also include the conceptual schemes, models, or theories that individuals use to make sense of information (Shrivastava & Mitroff, 1984). According to Isabella (1990), a frame is the perspective through which an event is viewed. Frames of reference facilitate cognitive economy, allow for the interpretation of ambiguous situations, and enable the prediction of future events (Gioia, 1986b). On the negative side, these structures may cause individuals to ignore discrepant information. Because frames are used to impose structure and meaning on particular situations, they are central to the sensemaking process (Weick, 1979).
Table 3 presents an expanded view of frames, which incorporates many of the ways that frames have been conceptualized and operationalized in the literature. Under this expanded conceptualization, frames can be regarded as assumptions, categories, content domains, dimensions, and/or causal schemas/maps. While decision makers may not necessarily proceed down the list of framing perspectives in the order presented, there is a hierarchy implied from assumptions to causal maps in terms of specificity and closeness to the decision. Whereas assumptions are the most vague and furthest removed from the decision, causal maps are the most specific and closest to the actual decision. In addition, assumptions and categories provide the foundation for the other more complex structures (Huff, 1982; Schneider & Anglemar, 1993).

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<tbody>
<tr>
<td><strong>ASSUMPTIONS</strong></td>
<td>Foundation of a person's concept of the world</td>
</tr>
<tr>
<td>(e.g., Shrivastava &amp; Mitroff, 1983, 1984)</td>
<td></td>
</tr>
<tr>
<td><strong>CATEGORIES</strong></td>
<td>Analytical labels used to describe issues such as threats, opportunities, problems, crises</td>
</tr>
<tr>
<td>(Billings et al., 1980; Dutton &amp; Jackson, 1987; Jackson &amp; Dutton, 1988;)</td>
<td></td>
</tr>
<tr>
<td><strong>CONTENT DOMAINS</strong></td>
<td>Substantive labels in interpretation such as political, economic, social, strategic</td>
</tr>
<tr>
<td>(Roth &amp; Taynor, 1989; Thomas, Shankster, &amp; Mathieu, 1994)</td>
<td></td>
</tr>
<tr>
<td><strong>DIMENSIONS</strong></td>
<td>Evaluating how decision makers rate issues on dimensions of importance to issue diagnosis such as urgency, feasibility, controllability</td>
</tr>
<tr>
<td>(Dutton &amp; Duncan, 1987; Dutton et al., 1989)</td>
<td></td>
</tr>
<tr>
<td><strong>CAUSAL SCHEMAS/MAPS</strong></td>
<td>Representation of the causal links between concepts; cognitive representations of a problem that take the form of a causal schema made up of causes, symptoms, consequences, and solutions</td>
</tr>
<tr>
<td>(Koppes &amp; Billings, 1988; Weick &amp; Bougon, 1986)</td>
<td></td>
</tr>
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</table>
Skilled decision makers are adept at utilizing the various levels of this hierarchy to achieve desired outcomes. For example, in order to reach a unanimity decision, it may be necessary to uncover members' assumptions underlying issues of concern. In other situations, talking about differences in members' causal maps may be the most feasible way to arrive at a group decision. According to Bettenhausen (1991), proficient decision makers are able to successfully negotiate at four levels: understanding threats and opportunities, linking individual capacities to task demands, acting on important dilemmas related to maintaining order, and protecting values and interests. The various approaches included in the expanded conceptualization represent just a sampling of the different possibilities and are not an exhaustive list of the various framing perspectives. For example, several authors consider goals and constraints to be key components of problem representation (Holyoak, 1984; Voss, Greene, Post, & Penner, 1983). Goals are the objectives associated with a particular problem, and constraints are the conditions that restrict the problem solving process (Voss et al., 1983). While it is acknowledged that goals and constraints influence the framing process, they are not included in the conceptualization of a frame of reference.

Many definitions of cognitive terminology similar to frames of reference incorporate two or more of these various approaches. For example, Moreland and Levine (1992) define a problem representation as a "mental model that includes a label for the problem, some ideas about why the problem occurred and how it might be solved, and a prediction about what will happen if the problem is ignored" (p. 21). In addition, a shared mental model is comprised of the definition of a problem, plans and strategies for solving the problem, interpretation of cues and information, and the roles and responsibilities of group members (Orasanu, 1990). Furthermore, Fahey and Narayanan (1989) state that issue interpretation produces critical assumptions, cause-effect
understandings, predictive judgements, and labels

Although a multidimensional approach to framing is often adopted theoretically, much of the empirical research has been limited to a unidimensional perspective. Specifically, research on framing in group decision making has represented issues in one specific way, such as positive/negative (Paese, Bieser, & Tubbs, 1993) or in terms of gain/loss (Tindale, Sheffely, & Scott, 1993). However, since each of the framing approaches captures valid and useful information about how individuals conceptualize issues, it is advantageous to represent frames in multiple ways.

In this research, frames will be represented in terms of assumptions underlying strategic issues and categories. Assumptions were selected because they are the foundation for frames (Huff, 1982) and because their importance is generally ignored in the literature (Shrivastava & Mitroff, 1983; 1984). Categories, content domains, dimensions, and causal maps all derive from underlying assumptions that are held regarding strategic decisions. In addition, because they have been found to be pertinent and consequential for decision processes (e.g., Jackson & Dutton, 1988; Thomas & McDaniel, 1990), the categories of threat and opportunity were also chosen to represent frames. According to Schneider and Anglemar (1993), categories are the basic building blocks that form more complex structures such as causal schemas. Both assumptions and categories aid in defining and assigning meaning to strategic issues. Each will be further elaborated upon separately.

Assumptions. Shrivastava and Mitroff (1983; 1984) define frames of reference in terms of the assumptions underlying decision making in organizations. Assumptions "represent a system of shared meaning that governs collective perceptions, thoughts, feelings, and actions" (Schneider & Shrivastava, 1988, p. 494). Mitroff and Emshoff (1979) describe assumptions as a natural set of "givens" involved in the
perception of a situation (p. 10). Specifically, a fundamental core of assumptions serve as the rough foundation of strategic frames, and decisions often result from these frames (Huff, 1982; Schneider & Shrivastava, 1988; Shrivastava & Mitroff, 1983; 1984; Shrivastava & Schneider, 1984).

Assumptions are the key to the study and understanding of belief systems (Shrivastava & Mitroff, 1983) and are considered an integral part of mental models (Reger, Mullane, Gustafson, & DeMarie, 1994). Consequently, they comprise the foundation of a person's concept of the world (Shrivastava & Mitroff, 1983). Groups develop patterns of behavior that express basic assumptions and these influence decision making and group performance (Bion, 1961).

Future-oriented, present-oriented, theoretical, methodological, interpersonal, moral, and evaluative are all categories of assumptions that underlie decision preferences (Mitroff & Emshoff, 1979). Specifically, Schneider and Shrivastava (1988) delineate various types of organizational assumptions, including passivity, dependence, grandeur, and doom. The particular set of assumptions that emerge are a function of the nature of the task, the environment, and the organization. According to their framework, basic assumptions are created as a result of dynamics at the individual, group, and organizational levels of analysis and incorporate underlying views of the self, others, and the world. In addition, the structure of assumptions is determined by the number of basic assumptions present, the degree to which they are shared (pervasiveness, penetration), the intensity by which they are held, and the degree to which they are articulated (explicitness). Although Schneider and Shrivastava (1988) discuss assumptions at the organizational level of analysis, their ideas can readily be applied to groups as well.
Because strategic decisions are often ill-structured and ambiguous, assumptions play a crucial role in determining how information is interpreted, and differences in assumptions can become important in a group decision making context. Instead of trying to resolve differences in decision preferences directly, Mitroff and Emshoff (1979) advocate negotiating underlying assumptions that individuals often unconsciously bring with them to a problem situation. The process of strategic assumption-making involves specifying assumptions (via stakeholder analysis), integrating sets of assumptions (via prioritization or ranking), and achieving compromise between assumptions (via examining the relations between assumptions and the decisions dependent upon them). Mitroff and Emshoff (1979) purport that by focusing on assumptions, decision makers are often able to reach agreements that would not have been possible by dealing directly at the decision or strategy level.

Despite their significance, assumptions are often ignored in the literature and have not been the focus of empirical research efforts (Shrivastava & Mitroff, 1983; 1984).

**Categories.** In addition to assumptions, issues will also be framed in terms of categories. Generic categories include problems, opportunities, and crises (Mintzberg et al., 1976) or threats and opportunities (e.g., Dutton & Jackson, 1987; Thomas & McDaniel, 1990). Viewing frames as categorical in nature is based on categorization theory (Rosch, 1978; Rosch & Mervis, 1975; Rosch, Mervis, Gray, Johnson & Boyes-Braem, 1976), which maintains that categories allow us to classify objects in our environments, organize information, and store knowledge more efficiently. Mental representations of categories are structured in terms of semantic relatedness or the perceived similarities and differences in the attributes of the objects or events being classified (Rosch, 1978; Smith & Medin, 1981). Therefore, cognitive categories are a collection of attributes that are thought to
be common to category members. To categorize a stimulus means to consider it similar to other stimuli in the same category, but also different from stimuli not in that category (Rosch, 1978).

There is ample evidence in the literature that decision makers employ cognitive categories to make sense of strategic issues (e.g., Bartunek, 1984; Dutton, Walton, and Abrahamson, 1989; Gray et al., 1985). Specifically, the decision maker attributes meaning to strategic issues by utilizing categories to describe the issues, and categories are employed by using labels (Dutton & Jackson, 1987). In other words, when individuals use particular labels to describe an issue, the labels begin a categorization process that influences the subsequent cognition of the decision maker (Dutton & Jackson, 1987). Issue frames can be described as knowledge structures which are stored in memory as prototypes or those members that best reflect the central, core instance of the category as a whole. Issues are compared to these cognitive representations and then classified into categories based on their similarity to the prototype (Dutton & Jackson, 1987).

Threats and opportunities are two commonly used issue categories which have been found to be pertinent and consequential for decision processes (Jackson & Dutton, 1988; Thomas & McDaniel, 1990). Opportunities are positive, controllable issues that potentially involve gain, while threats are negative, uncontrollable issues that potentially involve loss (Dutton & Jackson, 1987; Jackson & Dutton, 1988).

The cognitive theory just described provides a framework for understanding a few of the ways in which decision makers at the individual level make sense of strategic issues and begin to assign meaning to their surroundings. As mentioned previously, researchers have usually viewed framing as an individual-level process wherein decision makers attend to and ascribe meaningful labels to incoming information. However, greater attention is now being given to interpretive processes as a group-level phenomenon.
The Nature of Shared Frames

It is well understood that group members negotiate to reach consensus on decisions and problem solutions. In fact, most of the literature in the negotiation and decision making fields is dedicated to explaining how groups evaluate alternatives and select a particular solution (e.g., Mintzberg et al., 1976; Mannix, Thompson, & Bazerman, 1989). Although research has investigated consensus regarding decision preferences, there is a lack of research on the consensus of subjective interpretations (Fiol, 1994). Fiol (1994) states, "It is possible that the effects of shared preferences on performance depend on the extent of agreement around the less blatantly subjective meanings accompanying those preferences" (p. 406).

However, researchers are beginning to recognize that negotiation also occurs during the first stage of the decision making process in the framing of strategic issues (Bettenhausen, 1991, Shrivastava & Mitroff, 1983). An integral part of the group effort is dedicated to resolving differences in how members conceptualize problems. Not only do members inquire concerning how others are interpreting issues, but they also attempt to sell their own conceptualization to the group (Larson & Christensen, 1993). According to Eden, Jones, Sims and Smithin (1981), "when considering the working of teams in organizations, it seems important and indeed commonsensical that such working involves the interaction and negotiation of shared and idiosyncratic understandings. A team is continually involved in some process of negotiating reality amongst its members" (p. 39). Similarly, Walsh and Fahey (1986) state that strategic groups experience conflict over "the negotiation of their fundamental decision premises or beliefs." In addition, Moreland and Levine (1992) note that individuals may develop conflicting representations of issues, leading to discussions about how the issues should be defined collectively. Demonstrating this negotiation of shared meaning, juries often construct a collective narrative
understanding of the events to be explained (Hastie & Pennington, 1991; Pennington & Hastie, 1991).

Further illustrating the importance of negotiating the interpretations of issues, Roth and Sheppard (1995) propose the existence of "latent conflict frames" in which the main focus is on the issues that underlie and drive the current dispute. They found that individuals with a latent frame were more likely to use interpretation statements and focus on understanding. Similarly, Gray and Purdy (1990) identify "aspiration" frames, which reflect underlying needs or interests.

In the present research, the successful resolution of the negotiation of an issue's interpretation among group members will be referred to as a shared frame of reference. It is important to note that, depending on particular dynamics operating in the group, this negotiation of interpretations may or may not be explicit.

Defining the Construct

Shared frames are group cognitive structures which encompass collective representations of strategic issues. They differ from individual-level interpretations because they are socially constructed and rely on agreement or consensus. Shared frames are the lenses through which a group views matters of concern, and are manifested in verbal descriptions of strategic issues. Specifically, what is shared are the assumptions and categories which aid group members in assigning meaning to the issues. Group members who have similar frames of reference are likely to attend to, interpret, and communicate about issues more similarly than individuals who have different frames.

Shared frames are distinguished conceptually from decision preferences and the actual decisions arrived at in a group. In addition to being further removed from decisions, shared frames are broader in focus and more generalized than preferences, which are specifically oriented toward the decision that must be reached. Whereas preferences
reveal what members want out of the decision process, frames help explain the reasons underlying the preferences. Research has shown that the manner in which individuals frame a decision can greatly impact preferences (Tversky & Kahneman, 1981; Brewer & Kramer, 1986). Frames can give rise to preferences, which then lead to decisions and sources of action. However, preference changes can occur without accompanying changes in frame and vice versa (Tindale et al., 1993). Therefore, empirical research confirms the distinction between frames and preferences.

The focus of shared frames is narrower than other types of group cognitive structures such as team mental models. Team mental models include "representations of tasks, of situations, of response patterns, or of working relations" (Klimoski & Mohammed, 1994, p. 426). Therefore, both teamwork (working relationships among group members) and taskwork (task strategy and performance) are implicated in the notion of a team mental model. However, as conceptualized here, shared frames are directed toward the taskwork side and refer to collective representations of strategic issues. In addition, group performance, which is strongly implicated in the notion of a team mental model, receives less emphasis when discussing group frames. Therefore, shared frames can be considered a subset of team mental models.

The distinction is sometimes made between knowledge structures (descriptive states of nature that one knows to be true) and belief structures (desired states of nature that one prefers or expects; Klimoski, Mohammed, & Rentsch, 1994). Although shared frames can encompass elements of both, assumptions and categories tend to emphasize evaluative belief structures.

The Extent to Which Frames are Shared

Frames held by the group will be conceptualized as existing along a continuum of sharing. At one end of the continuum, many incongruent interpretations coexist and frames are entirely idiosyncratic. In the
middle of the continuum, frames are widely held (Gray et al., 1985) At the other end of the continuum, there is perfect convergence and every group member has an identical frame of reference.

The presumption that organization is impossible without some degree of cognitive consensuality is subscribed to by several researchers (e.g., Gioia & Sims, 1986; Orasanu, 1990; Weick, 1979). It is often implicitly assumed that for any group to take concerted action, members must have at least rudimentary agreement on their definition of the situation, have some kind of shared plan for how they will proceed, and must exhibit at least a modicum of coordination in executing their plan. With completely divergent cognitive models, group member interactions will involve a high degree of miscommunication and disorganization (Gillan, Breedin, & Cooke, 1992). As Orasanu (1990) points out, unless there is some degree of sharing, there is no assurance that group members are working toward the same purposes. Thus, some minimum level of sharing must exist before the group can operate as a unified structure.

Regarding the other end of the continuum, it is generally conceded that not every individual in the group needs to have an identical interpretation before shared cognition can emerge (e.g., Gioia & Sims, 1986; Hatano & Inagaki, 1991). For example, Rentsch and Hall (1994) state that although schema similarity implies some level of agreement on team process and the task, it does not suggest that all team members share the same attitudes and perspectives. Since one of the benefits of a group context is that multiple perspectives can be harnessed in order to decide on strategic issues, shared frames can become a liability when the uniqueness of individual contributions is lost. According to Cannon-Bowers et al. (1993), groupthink can occur when there is too much overlap in team member mental models or when team members refuse to abandon incorrect models which are shared by the group. Therefore, complete consensus without diversity is viewed as dysfunctional.
According to Fiol (1994), group consensus regarding interpretations involves both "divergence and convergence of meanings" (p. 404). Group members must simultaneously agree and disagree in order to maintain both unity and diversity in balance. In other words, the development of different and conflicting views must be encouraged, while striving for a shared issue frame that is broad enough to encompass the differences (Fiol, 1994). Members of the group may even be in agreement on the need to disagree, respect divergent perspectives, and permit conflict (Rentsch & Hall, 1994).

Referring back to the expanded conceptualization of frames discussed earlier (Table 3), group members may agree on the underlying assumptions, but disagree on specific issue dimensions (e.g., controllability, urgency, feasibility). For example, through content analysis of communication logs, Fiol (1994) showed that group members eventually achieved consensus in their support for a new venture, their certainty regarding the project, and the scope of their arguments. However, they maintained differing views of issue controllability. Thus, she concluded that convergence around a broad frame of interpretations provided the common meaning needed to move toward action, regardless of differing views on issue content.

Weick and Bougon (1986) indicate three levels of agreement that group members progress through: 1) consensus on the important concepts and labels 2) consensus on the relationships between the concepts, and 3) consensus on how the concepts influence the group and how the group influences the concepts. Therefore, while individuals in the group may categorize or label an issue in the same way (e.g., this is an opportunity), there may not be agreement on causal schemas (e.g., product X will lead to increased sales). In addition, group members may reach consensus on the key elements of an issue, but differ in their perception of the relative weighting and prioritization of the elements.
Reflecting a similar view, Lyles and Schwenk (1992) distinguish between core and peripheral knowledge structures. Core features involve the basic goals and mission of the organization, while peripheral features involve subgoals and the steps necessary to achieve those goals. Although there may be widespread agreement concerning core structures, the peripheral structures are more open to debate and disagreement. Consequently, within a single group, there may be coalitions of shared beliefs, with all individuals sharing some beliefs, but only a sub-set of members sharing other beliefs (Langfield-Smith, 1992). Therefore, both consensus and dissensus can exist simultaneously.

Because frames which are shared too little hinder the ability of the group to operate as a unified structure and frames which are shared too much destroy the diversity of perspectives which contribute to creative problem solving, the optimal degree of sharing for decision making performance exists somewhere between the two extremes. Exactly where that optimal level exists will depend on a number of factors, including the specific environment in which a group operates, the level of interdependence among members (Rentsch & Hall, 1994), the nature of the task, and where the group is in the decision making process.

For example, in very complex environments, having a range of perspectives represented may be more beneficial than consensus (Schneider & Anglemar, 1993). Likewise, early in the decision making process, when issues are uncertain, it may be advisable to maximize the number of viewpoints represented to aid in defining the issues comprehensively (Moore, 1988; Walsh et al., 1988). However, a high degree of consensus later in the process may result in easier implementation of decisions (Walsh & Ungson, 1991).
Degree of Acceptance of Shared Frames

The group process literature differentiates between two main types of influence. Informational influence results in the alteration of an individual's private beliefs, whereas normative influence results in changes in what an individual says his/her beliefs are, but not what is actually believed (Deutsch & Gerrard, 1955, Hackman, 1992). Thus, informational influence represents a much deeper level of acceptance than normative influence. The concepts of normative and informational influence are roughly equivalent to the notions of compliance and internalization, which are discussed as bases of commitment (O'Reilly & Chatman, 1986). Numerous studies affirm the existence of these two types of social influence (e.g., Bettenhausen, 1991; Levine & Moreland, 1990).

According to Fulk (1993), internalization results in agreement of interpretations and meanings, whereas compliance results in agreement of behavior patterns. Following this reasoning, the notion of shared frames is closer in meaning to informational influence than normative influence. In other words, having a shared frame implies that there is some degree of private acceptance of the group's viewpoints. The development of group frames involves individuals incorporating the group's representations into their own constructions of reality.

As a result of compromise, time pressure to reach a group decision, bandwagoning and/or compliance with the group's pressure for conformity, a decision may be reached even though members privately doubt and disagree with the group's conceptualization of the issues. Elaborating upon this idea, Vertzberger (1990) distinguishes between operational consensus (group members agree upon decisions, but do not share underlying beliefs) and perceptual consensus (group members experience a commonality of assessments and representations). It is argued that the notion of shared frames is closer to perceptual consensus and implies a greater degree of acceptance than normative
influence. Therefore, groups may arrive at a decision without reaching a shared frame (e.g., Donnellon et al., 1985; Weick, 1979).

Because individuals often enter the group with very different assumptions and perspectives, there may be variations in the level of internalization of shared frames existing among group members. Consequently, some group members may adopt frames more intensely than others.

The Accuracy of Shared Frames

There are two different ways that the accuracy of shared cognitions has been discussed in the literature. Accuracy can refer to the extent to which the group frame correctly represents the information environment. For example, Walsh et al. (1988) refer to impoverished belief structures and the need to investigate when they are considered deficient. Also recognizing the possibility of the shared frame being inadequate, Innami (1994) mentions biased and unbalanced group structures. Obviously, it would not be beneficial for group members to have a shared perspective that differs significantly from the actual situation. Therefore, a crucial research agenda involves identifying when groups are accurate in their social perceptions (Fiske & Goodwin, 1994). According to Converse et al. (1991), both accuracy and the degree of detail in the mental model should be shared among group members.

Other researchers define accuracy as the extent to which individuals correctly predict other individuals' beliefs (Poole & McPhee, 1983; Rentsch & Hall, 1994). Poole and McPhee (1983), for example, define their concept of coorientation as perceptual agreement and accuracy. While agreement refers to members having similar perceptions, accuracy refers to members being able to describe other members' perceptions. According to their view, both high agreement and accuracy are necessary for consensus. Reflecting similar ideas, Mitchell (1986) reported that when team members understood and
represented each others' internal frames of reference (frameworks for organizing behaviors and thoughts), working relationships improved and members were able to predict others' actions. Clearly, both meanings of accuracy have implications for group effectiveness.

**Level of Awareness of Shared Frames**

Another conceptual issue that warrants discussion is the extent to which shared frames are derived through self-conscious processes. Shrivastava and Mitroff (1983) point out that assumptions are rarely explicitly stated in the analysis of problems. Instead, a characteristic feature of managerial decision making is some kind of tacit agreement on assumptions. For example, Fiol (1994) found that the interpretive dimensions relevant to building group consensus were not always obvious to those involved in the process. Specifically, study participants were not consciously aware of the patterns of issue controllability and scope, but they were aware of decision maker certainty and support/resistance dimensions. Therefore, the process by which shared frames emerge need not be conscious or intentional.

One might expect that awareness with regard to the process by which shared frames are produced would increase when members enter the group seeking to build consensus around their own personal interests and agendas. Likewise, an individual may be prone to be more conscious of the development of shared frames if their own assumptions are highly inconsistent with the frames of other group members and if their commitment to those assumptions is very high.

**Summary**

To summarize, a shared frame is an emergent characteristic of the group, encompassing collective representations of strategic issues. Part of what is shared are the assumptions and categories which allow group members to interpret ill-structured issues. In addition, shared frames exist on a continuum ranging from completely idiosyncratic frames to perfectly identical frames, and they imply some degree of
informational influence (internalization) as opposed to normative influence (compliance). Thus, shared frames may differ structurally in terms of complexity, the intensity to which they are held, and the extent to which they are shared by members. Finally, shared frames vary in accuracy, and the process through which they emerge is not necessarily conscious or intentional. While all of these dimensions concerning the nature of shared frames deserve consideration, the present research will primarily address the issues of what is shared and the extent to which frames are held in common by group members.
Various authors have emphasized the importance of descriptive research, especially when the current state of knowledge concerning a phenomena is in its formative stage (Gioia, 1986b; McGrath, 1964). Referring to the value of qualitative studies, Damon (1991) states, "Quantification has come to stand as an easy substitute for conceptual rigor. Any paradigm that stresses deep interpenetration of multiple social forces into cognitive functioning can ill afford to ignore rich data sources that open windows into such forces" (p. 390). Also reflecting the need to go beyond hypothesis testing methodologies, Worchel (1994) advocates that "descriptive research is not only acceptable; it is vital to understanding group change" (p. 219).

Adopting the viewpoint that qualitative techniques can and should be utilized in conjunction with experimental methods (Worchel, 1994), an exploratory investigation comprised the first stage of the research. Because of the lack of empirical evidence concerning collective interpretations, it was deemed important to begin with an inductive approach.

The exploratory phase of the research fulfilled several purposes. First, it was important to ensure that the notion of a shared frame in terms of assumptions and categories was a viable construct in actual decision making groups. In addition, it was necessary to assess whether there was variability between groups on assumptions and categories. Yet another goal of the field work was to identify key structural and process variables that would drive the development of shared frames, as well as to recognize consequences that would result from the extent of agreement around frames. The insights gleaned from the exploratory
research were then used to construct a model of the antecedents and outcomes of shared frames and to generate hypotheses, which were tested in a laboratory setting. Ultimately, therefore, the field work served as a forum for model building and hypothesis generation.

Research Context. The exploratory research was pursued in the context of various mental health regional planning groups across the state of Ohio. This research setting was considered appropriate because it incorporated the political entities of interest and had the potential to provide a rich source of information regarding the variables which may contribute to the emergence of shared frames.

Background. Although the goal of the Mental Health Act of 1988 was to transform an institutionally-based system of mental health care into a community-centered system, resources from state hospitals were not being transferred efficiently (and in the manner indicated by law) to community care. In response to this problem, eleven Inpatient Futures Regional Planning Groups were formed in June of 1993 around existing state hospital service areas. The work of these regional planning groups was to provide a blueprint for inpatient and community service changes at all levels of the mental health system.

Task of the Groups. The task of the regional planning groups was to determine the right level, availability, and financing of publicly funded inpatient services for their region. Specifically, each group was to submit a written plan describing the nature and extent of publicly funded inpatient services (and alternatives) for their area by January of 1994. Each plan had to answer specific questions with regard to the criteria of accessibility, appropriateness, quality, and cost. In addition, the plans had to clearly identify action steps and time lines to get from the region's current inpatient and community capacity to its goals. The plans were evaluated against both content and process parameters by a state-wide Steering committee.
Group Membership and Process. The membership of each regional group consisted of representatives of eight constituencies (boards, agencies, consumers, family members, two unions, Department of Mental Health, Multi-Ethnic Consortium). The conflicting frames and motives of these various constituent groups was evident in that the unions had a vested interest in keeping the state hospitals open, while the boards and agencies generally had a vested interest in closing (or severely downsizing) the hospitals. Nevertheless, the Steering Committee desired that the planning process foster collaboration, cooperation, and reciprocity between and among all constituent groups. Consensus decision making (as opposed to voting) was expected, and the use of outside facilitation was encouraged. However, each regional planning group decided on its own operational structure and processes.

Methodology. Information was gathered through a combination of observing group interactions, reading group reports, and interviewing key people. Group discussion and interaction was observed in 13 meetings from various groups around Ohio. Field notes were taken from these meetings. In addition, written materials produced by the groups, including minutes of meetings, were read.

Furthermore, the liaison and facilitator from each of the eleven groups were interviewed. The liaison had the responsibility of transmitting information from the regional groups to the Steering Committee and from the Steering Committee to the regional groups, while the facilitator had the responsibility of convening the meetings and setting the agenda for each meeting. Because of the political nature of group discussions, it was not possible to formally interview constituency members. However, both the liaison and the facilitator were able to provide valuable information regarding group processes.

Liaisons and facilitators were asked a series of questions regarding the history of the groups, the goals of the constituency members, and factors contributing to shared goals (see Appendix A).
interviews averaged one hour in length and were conducted by phone or in person. Tape recording was permitted, and the tapes were later transcribed.

**Shared Frames in a "Real World" Context.** Based on the information gathered from interviews, observations, and group work products, certain conclusions were drawn about the nature of frames and the variables that facilitated or hindered their development in these groups. In this setting, frames were manifested in multiple ways, including assumptions and perceptions of threats and opportunities.

It was clear that various constituencies had conflicting assumptions underlying the key issues. For example, some constituencies (e.g., unions) presumed that the state hospitals were such an integral and necessary part of the mental health system that they would continue to exist in some form in the new structure. In stark contrast, other constituencies (e.g., boards and agencies) questioned the contribution of the hospitals and operated under the assumption that the state hospitals would be phased out and even cease to exist in some communities after a designated number of years. There were also clear disagreements concerning the meaning of key terms such as "downsizing." Obviously, such conflicting assumptions created very divergent models of the new mental health system among the varying constituencies.

**Facilitators and liaisons illustrated the divergence in assumptions for the Dayton and Toledo groups, quoted respectively.**

"...At one point the agencies were unwilling to accept the long term continuing value of having the Dayton Mental Health Center continue. All other constituencies agreed with it, were accepting it as a given that the Dayton Mental Health Center would continue...It was almost a matter of ideology with them. If this changes and this changes and this changes, why would we want to guarantee that there would be a Dayton Mental Health Center? That was kind of an ideological hold-out."

"The union came into this fighting for its life, fighting for the hospital. I think the boards came in with an idea that we really don't need the hospital, there are things that we can do, but we can probably eventually close this place down and that's what we'd like to try to work toward...So, those are some of the dynamics."
Constituencies also differed in their perceptions of threat and opportunity. Because their jobs were at stake, the unions generally appeared to be threatened by the whole regional planning group process. In addition to feeling that they had the most to lose from this process, they expressed a lack of control and viewed the meetings negatively. A number of the facilitators and liaisons that were interviewed voiced this observation:

"The union people are running paranoid. They are waiting for the ax to fall. Everyone knows those layoffs are coming."

"Unions are concerned about losing jobs. There was a watchdog feeling in the beginning. Is the Inpatient Futures group here to close the hospital? Are we being used as window dressing? Just because we are a part of the group, are they going to think we consented to closing it?"

On the other hand, having never been formally included in the planning process prior to the formation of these groups, families and consumers viewed the meetings as an opportunity to voice their concerns. In response to the question of how constituencies viewed the whole idea of an inpatient Futures Regional Planning group, the facilitator from Franklin county answered:

"I think that probably the consumer and family groups did (view this as a good process in which to be involved) and I think the reason that they did is because it gave them one more opportunity to advance their agenda in a different setting. It seemed like by being recognized as legitimate stakeholders in the process empowered them to participate equally with the other stakeholders at the table--that it gave them more of a shot to advance their agenda than perhaps they've been able to have at the county level...My guess would be from thinking about the early part of this discussion that the consumers and families were more positively inclined about what might be able to come out of this than any of the other groups."

In sum, the exploratory research suggested that the conceptualization of shared frames in terms of assumptions and categories was viable in actual decision making groups. Moreover, it highlighted the variability across groups on threat/opportunity perceptions and underlying beliefs concerning the mental health system.
"Real World" Antecedents and Consequences of Shared Frames

In addition to providing a basis for clear understanding of the framing construct, the exploratory phase of the research generated a plethora of variables that could influence the development of group frames. Numerous variables appeared to impact the extent of sharing, including decision rule, mixed motives, diversity and number of constituencies, power/influence, time pressure, group size, leadership, commitment to constituencies, and commitment to the regional planning group. Negotiation, participation, and communication were identified as important process variables.

Because of the number of variables operating and contextual features surrounding the situation, organizing and maintaining the groups was an extraordinary undertaking. Several liaisons and facilitators noted the difficulty of the entire process.

"There are many, many things that could alter everything we're doing, which is one of the many problems we have. There is no solid foundation upon which to build anything. Health care reform, if it went one direction opposed to another, could impact that...The lawsuit could change the outcome. There is so much volatility at this point, there are so many factors up in the air that it is absolutely the worst time to be doing the kind of detailed planning that the department is expecting these groups to do, which I don't think we'll achieve and I don't know if other groups will achieve it or not."

"...they have accepted an enormous task, a task that I believe in many aspects is set up for failure. They are a group of bumble bees from different nests that have been brought together and forced to cooperate and not given an appropriate time frame and guidance. The rules have changed between each meeting by the Steering Committee."

The descriptive research also yielded insights regarding the consequences of shared frames. In some groups, six months was clearly not enough time for shared frames to develop. Therefore, due to time pressure, various groups arrived at a final plan without viewing the issues in a similar way. While the consensus decision rule was designed to facilitate the development of shared frames, it clearly hindered the progress of some groups toward reaching decisions because of the strong commitment to constituency goals.
Model Building and Hypothesis Generation. The insights gleaned from the interviews and observations discussed above were utilized to construct a model of the antecedents and consequences of shared frames, which will be elaborated in the following chapter. The hypotheses generated in Chapter III draw extensively from the descriptive research. Thus, the exploratory phase provided an externally valid informational base upon which hypotheses could be generated and tested in a more controlled setting.
CHAPTER III
ANTECEDENTS AND CONSEQUENCES OF SHARED FRAMES

Although there are many unanswered empirical and conceptual questions that need to be addressed regarding collective interpretations of strategic events, it is especially important that we gain insight into the variables that influence the extent to which frames are shared. This is a fundamental issue since attempts to address other questions in the research agenda (e.g., How do shared frames change over time? How can training or change efforts be guided?) will most likely remain haphazard and difficult to accomplish until more is known about how group-level frames are created.

While various authors have purported that group members may negotiate among themselves in order to arrive at shared frames (e.g., Bettenhausen, 1991; Walsh & Fahey, 1986), very little empirical work has investigated the antecedents that contribute to or hinder this process. Previous research has concentrated on identifying the frames decision makers share (e.g., Isabella, 1990; Panzano, 1992), but few studies have examined the antecedent variables and processes through which individuals come to share meanings. According to Walsh (1995), not much is known about the development of knowledge structures, even at the individual-level.

Both the literature and exploratory research suggest a plethora of variables that may influence the development of shared frames. Therefore, the following discussion is by no means exhaustive, but is meant to be suggestive of the array of factors that impact the emergence of collective cognitive structures. Figure 2 portrays a model of input and process variables affecting the development of shared frames, as well as resulting outcomes.
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Figure 2. Model of the Antecedents and Consequences of Shared Frames
Although the categories of variables are not mutually exclusive (e.g., negotiation can be considered a political process; Thomas et al., 1994) and factors reciprocally influence one another, the various elements of the model will be discussed separately.

Input Variables

**Individual Difference Variables**

**Commitment to Individual Frames.** Individuals may enter a decision making group passionately committed to supporting a particular viewpoint, which implies a certain amount of rigidity and certainty regarding the "correctness" of their interpretation. As a result, group members may be closed to the possibility of accepting or accommodating the perspectives of other members. Therefore, in this scenario, the development of shared frames would be more difficult than if individuals enter the group uncommitted to a fixed representation. In the regional planning groups, differences in commitment to pre-existing frames were evident. While union members tended to be unyielding in the advocacy of their view of a mental health system and engaged in defensive argumentation, other constituencies (e.g., family members) were much more willing to bend and acknowledge the perspectives of other constituency members. One facilitator noted the following:

"Unions are very competitive and I think that the boards have been--I'm not sure the word is competitive, but protecting. I don't think that they have worked very hard to try to find a compromise on some of this stuff. I think the boards would like to be able to say that this process didn't work and would like to look for a reason to leave the table. I feel that they generally believe that this whole process is intruding too much on their own domain and would like to see it not be successful in that way. I think the only two groups who have any sincere interest in seeing success for this process are consumers and family members."

In response to the question of whether constituency views had changed since the group's inception, another facilitator answered:

"There was a shift on the part of family members. They first felt--You can't take people out of the hospital; we can't take care of them...They were very afraid of de-institutionalization. They shifted to the idea of a super group home which would be highly supervised...With the unions, there has not been much of a shift. They want their jobs."
In general, the resistance to change and rigidity demonstrated by union members was perceived negatively and, in turn, made it less likely that their viewpoints would be accepted by other group members.

**Personality.** Personality variables may also impact the development of shared frames. In the mental health groups, individuals who appeared to have controlling personalities attempted to dominate the discussion and were extremely persistent in their endeavors to sell their conceptualization of the issues to the group. Although they do not elaborate further, Cannon-Bowers et al. (1993) state that personality and personal characteristics are important elements of team models. Locus of control, self-monitoring, self-efficacy, and need for achievement are some individual difference variables that may affect the emergence of shared frames.

**Group Structural Variables**

**History of group member interaction.** Clearly, various lengths and types of previous group member interaction create different initial starting points with regard to the development of shared frames. In some mental health groups, various subsets of constituency members had been voluntarily meeting together on a regular basis prior to the establishment of the regional planning process. In these groups, it is likely that the groundwork for the emergence of shared frames had already been laid. As the facilitator from the Cambridge regional planning group stated,

"This group is very cohesive; they are accustomed to working together and meeting regularly. The hospitals, boards, and agencies are used to working together. They have a regional perspective. The unions are accustomed to working with the hospital. The consumers are accustomed to working with the agencies that they know. The families are accustomed to working with the board...I expected different perspectives from the hospital, families, etc. It wasn't there... There are differences around the edges, in the fringes. But regarding the core of what is needed in the community, they had a tremendous degree of agreement."
Contrastingly, other groups had a prior history of adversarial interaction among constituency members. In this situation, the development of shared interpretations might be predicted to take even longer than in groups with no previous history of member interaction. In cases of extremely negative relations, shared frames may never emerge. The facilitator from the Dayton group noted:

"There is a kind of natural enemy between the agencies and the boards and that's kind of stuck the process a number of times. I get to a log jam where we cannot move forward...The state of Ohio, the liaison, that's the devil. There's a whole lot of negative energy toward the state, toward the Columbus ODMH...There are people that go through a big, big, yelling, screaming, face-turn-red, clench their fist, a lot of fury, a lot of frustration about the ODMH."

Selection and Training. Certainly, group processes and practices such as attraction, selection, socialization, and training would be expected to impact the emergence of shared frames in a group. To the extent that groups recruit and select like-minded members, shared frames will be more easily engendered (Levine & Moreland, 1990). On the other hand, individuals with different backgrounds may be invited into the group to achieve broad representation and a wide range of expertise, as well as to increase acceptance of the planning product (e.g., Nutt, 1984). This was the case in the regional planning groups. Although the participation of eight diverse constituencies has advantages, it made the development of shared frames difficult from the start.

When individuals enter the group context with heterogeneous frames, training can be used to educate members about the diversity of perspectives within the group and provide them with the ability to interpret their colleagues' ideas according to their own cognitive models (Gillan, Breedin, & Cooke, 1992). Team member interventions such as the construction of collective cognitive maps (Eden, 1988) and learning each others' internal frames of reference (Mitchell, 1986) have been used to facilitate the development of mutual understanding in groups.
**Size.** As groups get larger, the information processing demands multiply significantly and the pattern of preferences becomes more complex, thus decreasing the probability of successful coordination (Bazerman & Neale, 1992; Mannix et al., 1989). For example, in a four member group, there are four sets of individual cognitions, six possible dyadic interactions, multiple potential three-person interactions, and a four-person interaction (Neale & Bazerman, 1991).

In addition, Bazerman and Neale (1992) state that the fundamental difference between two party and group negotiation is the potential for coalitions to form. Coalitions, defined as subsets of groups that unite to determine the decision for the entire group, often result in agreements that are not in the best interest of the group as a whole (Mannix & White, 1992). Together, these factors suggest that, all other things being equal, the development of shared frames will be more difficult in larger groups.

The regional planning groups varied greatly in size, ranging from less than 15 members to more than 40. The challenge of arriving at a shared frame underlying very divisive issues increased considerably as more members were included in the groups. Several facilitators voiced their frustration with the size of these groups:

"It’s impossible to bring together a group of 40 people and get them to work together cohesively by bringing them together once or twice a month...The problem with the big meetings is that it ends up being a forum for people to perform. Not necessarily to get as much work done. I feel that those bigger meetings like that, which I don’t like a lot, encourage people to posture and position as opposed to being open. I think more of that can be achieved in a small group setting."

"This is a particularly challenging engagement because the group is so large for a planning group. It really is too large. It’s probably several times the size of an ideal planning group and so that makes it particularly challenging to keep everyone’s attention. There are always multiple things going on in the room at the same time, and with so many different constituencies involved in this planning group, that probably means that there are an equal number of agendas going on, if not more in the room. So it has been and continues to be particularly challenging to manage this group."
Leadership. Because of the complexity of the issues and because the constituencies in some groups did not have a tradition of working amicably together, facilitation was an important component of the regional planning process which impacted the development of shared frames. When the facilitator was very directive, groups tended not to feel ownership over the process or develop the mechanisms or techniques for developing a shared frame of reference. Thus, when powerful leaders exert influence, there may be less opportunity for mutual social interaction and communication among group members, and less of a shared frame may develop. The liaison from Woodside made the following observation:

"The facilitator there was more active; he was the leader of the group rather than the facilitator. He would decide for the group—he didn’t get consensus. He would say, ‘I need this, I want this, I want you to be on this group.’ You know, that kind of thing rather than letting the group decide how they would function even as a group. That was a big problem, but we’ve talked to him...He’s writing their plan. And he’s from education and isn’t aware of our system, so he’s trying to educate himself very quickly so he can get a plan together...People weren’t talking much because he wasn’t really allowing that kind of discussion. But the last two weeks, the groups have really improved, and people are talking more."

It was also clear that, depending on the group, facilitators perceived their role very differently. As mentioned in the quote above, some facilitators had the responsibility for writing the final report, and in other regions, the group itself was responsible for drafting the final document. The variance in leadership among the groups most likely impacted the process by which shared frames emerged.

"My obligation is to the process, not to the outcome. So my role is to order the process, to keep my eye on the ball, to remember where we’ve been and where it is we’re going. I’m a cheerleader and a coach. One of the things that a facilitator does in a process like this is to model optimism, to have complete confidence that the process is going to work, that we are going to reach consensus or that if we don’t, it will be OK. It’s my job to imagine, to envision the road and remind people that we’re on it, to help give the group courage, all of the individual members. To help the group negotiate ground rules and to call them when a rule is being broken, to point that out to the group. I spend a lot of time with this many people around the table being kind of a herder, a time keeper, keeping folks on course. " 
"First and foremost, I view my job as getting the group process going...Most of my time is invested in collecting information, analyzing it, and presenting it to the group and meetings. A lot of research, writing, and talking to people individually to get their perspectives."

"At times, I see my role as a regular chairperson. I feel, not like a facilitator, but a chairperson. Other times, I am an observer and let things fly--I let people have discussions."

**Group Composition.** Clearly, demography has implications for shared frame development. Rentsch and Hall (1994) acknowledge group composition (sex, age, educational level) as an antecedent of schema similarity. In some cases, a collective representation may not develop until some members leave the group or other members are added.

**Time Pressure.** Because they had only six months to produce a comprehensive plan, the regional planning groups were under severe time pressure. In light of the divergent viewpoints of the various constituencies and the political nature of the issues under discussion, there was not adequate time for a shared frame to emerge in many groups. Quoting two facilitator interviews:

"Another big issue is that the January 1 deadline is very unrealistic. It is way too short a time period to do it right...We are going to get a plan in by January, but we will give lip service to a number of issues."

"There just hasn’t been enough time. Developing trust is not something that happens quickly in a group and when you have the opportunity for three hours a meeting once a month, there’s just not enough opportunity to develop any kind of confidence or trust."

As Walsh and Fahey (1986) point out, it usually takes an extended amount of time for powerful individuals representing constituencies with different perspectives to achieve synthesis. In general, time pressure will hinder the development of shared frames.

**Decision Rule.** The impact of decision rule on the development of shared frames will be elaborated upon in a later section.

**Political Variables**

According to Pfeffer (1981), organizations are inherently political, with shifting coalitions and interest groups, a diversity of goals, and active use of power. Likewise, group processes are rarely
purely rational, but instead, represent the coexistence of both political and rational behaviors (Aldag & Fuller, 1993).

With the exception of a few researchers, the importance of considering political mechanisms in the emergence of shared cognitive structures has largely been ignored. Walsh et al. (1988) describe strategy making groups as politically heterogeneous and state that any attempt to understand group-level information processing must incorporate political variables. Their notion of a negotiated belief structure exemplifies the interplay between political compromise and belief accommodations (Walsh & Fahey, 1986). In addition, Bonham et al. (1988) and Aldag and Fuller (1993) acknowledge various aspects of political behavior in their respective models of group cognition and group problem solving.

The term "political" encompasses a wide array of behaviors, including influence attempts, the allocation of resources, withholding information, agenda control, the generation of conflict, coalition formation, and disparate goals (e.g., Eisenhardt & Bourgeois, 1988, Farrell & Petersen, 1982; Ferris & Kacmar, 1992). The exploratory research provided a rich sample of political realities, including power/influence dynamics, constituencies, competition for scarce resources, adversarial relationships among the various entities of the mental health system, and on-going lawsuits between various boards and the Ohio Department of Mental Health. The role of power/influence and constituencies in the construction of group cognition will be elaborated upon further.

**Power/Influence.** The existence of power and influence as political processes has not received adequate attention in the group literature. However, it is beginning to be examined in some group negotiation studies (e.g., Mannix et al., 1989). In addition, a model of group cognition developed by Bonham et al. (1988) emphasizes the power of ideas rather than the power of persons.
Vertzberger (1994) points out that it is important to examine the actual rather than formal diffusion of power in the group. Although all regional planning group members were purported to have equal status, it was apparent that various constituencies (e.g., boards) wielded much more influence than others (e.g., consumers, family members). The facilitators from Cambridge, Franklin County, and Toledo offered the following insights:

"Boards, hospitals, and agencies--the influence is based on knowledge and expertise there. They know about licensure laws and HICPA. There is the occasional mention of influence with the lawsuit. If boards get 408 money, they will be in control of what happens to the hospital. It is a control issue."

"A lot of lip-service is paid to trying to have consumers and families represented in the process, yet there are no supports that allow for that to truly happen. This is not an equal playing field; not everybody sitting at the table is an equal stakeholder. Boards have statutory responsibilities defined by law that would allow them to make a lot of the decisions that this group is being asked to make."

"There is tremendous disparity in education, tremendous disparity in power, and tremendous disparity in one's ability to participate and contribute to the process. What happens then is that those who have that ability move to the fore and the others sit and you wonder as to who is really developing the information here."

In general, powerful group members were more successful in shaping meaning for other members and the group as a whole than those with less power. According to Gray et al. (1985), the powerful not only provide interpretations, but attempt to control the process by which issues are represented. 

**Constituencies.** A particularly salient element of the political context in the regional planning groups was the existence of constituencies. When group members represent various constituencies to whom they are accountable, multiple individual frames and mixed motives are automatically evoked. For the purpose of this research, multiple individual frames and mixed motives will be discussed as byproducts of constituencies. However, it is recognized that both variables are not solely a function of constituencies, but are multiply determined. Both multiple individual frames and mixed motives will be discussed in turn.
Multiple individual frames. As a result of constituencies, there are varied and multiple individual frames and divergent interpretations inherent in the group setting. Different functional experience (e.g., Dearborn & Simon, 1958; Walsh, 1988), different levels within the organization (e.g., Dutton & Jackson, 1989), and differences in task or interpersonal orientation (Lawrence & Lorsch, 1967) may all cause individuals to view the same strategic issue distinctly.

Despite the fact that variance in representations is more common than not in many collective decision making settings (Fiol, 1994), conflicting frames of reference constitute an area of diversity which is not typically investigated in the context of work groups. Typically, demographic diversity (e.g., differences in gender, race, education, functional role) is the focus of attention (e.g., Jackson, 1991) and is often used as a proxy for cognitive heterogeneity (e.g., Priem, 1990). However, Simons (1995) found no significant correlations between differences in perspectives and demographic heterogeneity. Moreover, Barr, Stimpert, and Huff (1992) reported that the attitudes and beliefs that individuals brought with them had a far greater influence on their strategic decision making than their demographic characteristics. Consequently, the assumption that demographically diverse groups experience a more conflictual process may be faulty.

Empirical work which manipulates frames often has all members of the group receive the same frame (e.g., Paese et al., 1993, Roth & Sheppard, 1995). However, divergent and conflicting viewpoints among group members are most likely the rule than the exception in actual decision making groups, especially when varying constituencies are represented.

In the regional planning groups, each constituency member functioned within a different location in the mental health system, represented a different set of interests, and brought different backgrounds and experiences to the group setting. As a result, a wide
variety of perspectives and assumptions were advanced by group members and were often in direct conflict, thus hindering the movement toward shared cognition. In addition, as the following quotes from facilitators indicate, there was often different perspectives even within constituencies.

"They all probably have their individual agendas. I think the boards are trying to go along with this process even though they really don’t like it. Try to go along with it with the hopes of maximizing resources. The unions are invested in this process because they think they will be able to maintain jobs. The providers, I think, feel like they’re just along for the ride on this. They’re at the table, they want to participate, but they feel sort of incidental. And consumers and family members want change. They know that they don’t want what they’ve had in the past and they want something different. Consumers especially want more voice. Family members want access...ODMH wants a recommendation to guide the director for budgeting and planning for patients...Multi-ethnic consortium wants to increase the amount of input from minorities within the northwest area, really the black and hispanic population."

"Not only do you have eight stakeholder groups at the table, but within those stakeholder groups you have factions. You have an urban/rural split that pretty much drives down the middle."

"The boards, boy, the boards. That’s a real chaotic group and they have probably the least coherence among them. They have different interests. See, there’s rural boards and urban boards, big boards and small boards, boards that are in the lawsuit and boards that aren’t in the lawsuit, and there are some real touch personalities in the board directors, too."

**Mixed motives.** Rather than simplistically assuming that group members have no other interests than working toward a common goal and arriving at a group decision, incorporating constituencies also recognizes that participants operate in a mixed-motive context. The mixed-motive perspective has a long tradition in social psychology (e.g., Deutsch, 1968) and related fields such as negotiation (e.g., Walton & McKersie, 1965).

According to Neale and Bazerman (1991), groups range on a mixed-motive continuum, with most groups being neither purely cooperative nor purely competitive, but some combination of both. In other words, group members have conflicting interests that lead to competition, but also are interdependent, which suggests that some degree of cooperation is necessary in order to reach a mutually acceptable agreement (Mannix et
al., 1989; Thompson, Mannix, & Bazerman, 1988). The notion of mixed motives is an important political variable which has not been given adequate attention in psychological research on groups. Members of task forces, city councils, and governing boards all have their own interests as well as a collective goal which all group members are expected to serve (Mannix & White, 1992).

In the regional planning groups, it was evident that certain constituencies were more interested in advancing their own agendas than in arriving at a collective decision. Various facilitators and liaisons echoed this perception.

"I think everybody certainly wants high-quality programs and they want to provide as many services as they can. At the same time, people have jobs and careers that they've invested enormous amounts of time in. They have their own sort of constituency groups that they have to deal with. And so I think it would be wrong to suggest that any particular group is more adversarial or less understanding. All of them have very much valid concerns."

"I would say that consumers and family members have more of a tendency to adopt the group's [goals] as their own, and that's part of this whole victimization thing that occurs. I think all of the other groups are fairly competitive."

"The fact that there are so many agendas operating simultaneously--so many interests, everyone attempting to protect their interests. That cause, I believe, has been the main factor in the work not flowing as it could have. Even though much of this is silent, I think that for many of the constituents, particularly for those who are employed in this system, that they're wanting to assure that they maintain position and so that has caused. I think a lot of procrastination in this process. I believe a lot has not gotten done because of it. It was very clear to me when I first came on board that there was a lot of fear in the group, you know, around how am I going to come out of this in the end, what will it mean for me?"

In general, the process by which shared frames emerge will be made more difficult by the existence of varying constituencies, multiple individual frames, and mixed motives.

Process Variables

Social Interaction

Individual difference variables, group structural variables, and political variables all converge to influence the process by which group members interact with one another. When group members possess
conflicting frames of reference, social interaction assumes a critical level of importance in the development of shared interpretations. Frames that are held in common by group members are created through various forms of social processes.

Shared frames can be characterized by the extent to which group members differentiate and integrate perspectives. One of the first steps in the development of shared frames is the simple recognition that differences in perspectives exist among group members. As these differences are acknowledged and decision makers are exposed to other members' frames, changes may occur in individual perspectives in order to incorporate other interpretations. As the group continues to interact socially, members increase their understanding, recognize the legitimacy of other points of view, and broaden their own perspectives by listening to other members clarify ideas and provide rationales for their interpretations. Through this process of sharing framing information, cognitive frames become more similar (Donnellon & Gray, 1990).

Illustrating some of these processes, facilitators from the Franklin County and Portsmouth regional planning groups gave the following comments:

"I think that the consumers and the family members, for example, hearing the boards and the providers and the department acknowledge that there were shortcomings in the current system and that things needed to be done differently in terms of an array of housing options and that emergency and crisis response system was not what it needed to be. I think the fact that the consumers and families saw that the boards and the department and the providers were as critical of themselves as the families and consumers were critical. I think that there was some bonding there that developed that wasn't there at the beginning."

"For example, a representative from one of the agencies was saying how much better they understand the hospital's concerns. A representative from one of the boards said he had gotten much clearer on what the difficulties were in the interface between the hospitals and the clinic. What they've done over a year is they've learned each others' problems and learned to modify somewhat interests. They're willing to support each other in something important. Every single person in the room who has a stake in this process has their own stake."
In response to the question of what factors will contribute to constituency members coming to see issues in the same way, facilitators noted the following:

"How do we get close enough? By valuing the responses of people We deliberately sought out opinions from consumers, acknowledged them, and valued them We are still in the planning, 'let's talk about it' stage The reality for the hospital is jobs The reality for the consumers is 'This is my life.' We haven't gotten down to the level of testing how close we have gotten."

"I think the biggest factor is in meeting with one another and in hashing things out, not in the large committee, but in the task forces, where there's not the same opportunity for grand-standing and major position taking, where they can really listen I use listening in its basic meaning, not just hearing words but really listening to what somebody else is saying They then begin to see that, hey, they're not my enemy They're not really opposed to me and I really didn't understand what they were saying before I have a better understanding now and we're really not that far apart and they really do care that I'm going to lose my job and want to help do something about it You know, all those kinds of things Time is also a healer and the more that the process has gone on, the more some of those barriers have fallen."

When group members progress along the continuum of seeking out information about the preferences of other group members, inquiring concerning the reasons and assumptions underlying the preferences accepting others' viewpoints, and agreeing with others' frames, shared frames have a greater opportunity to emerge. Over the course of time, collective interpretations of key events move from unformed and tentative to well-constructed, well-processed viewpoints (Isabella, 1990).

Forgas (1981) reported that frequent interaction among team members resulted in similar interpretations. Similarly, Ward and Reingen (1990) found that social interaction among sorority members affected the development of group problem representations. In addition, Fiol (1989) demonstrated that divergent viewpoints among organizational departments concerning new products converged over time.

Although it is often assumed that group member interaction eventually results in the development of similar interpretations of key events (e.g., Forgas, 1981, Gray et al., 1985, Schneider & Reichers, 1983), individual frames may be so divergent and intensely held that
interaction is not sufficient to overcome these differences (Rentsch & Hall, 1994). In a laboratory study, Tindale et al. (1993) found no evidence to support the notion that group discussion leads to a common frame of reference among group members. Moreover, Vertzberger (1994) points out that in cases where group membership is not voluntary (as was the case with the mental health groups), social interaction will most likely not result in individuals abandoning their own frames for commonly shared group perspectives. Interaction in such groups may actually drive members further apart. Groups that are unable to achieve a shared frame may develop techniques for living with heterogeneous interpretations.

Social interaction encompasses many specific entities, including communication, negotiation, participation, and persuasion. Each of these specific forms will be elaborated upon.

Communication. Given individual-level, group-level, and political variables operating simultaneously, one of the most important tasks facing the group is to modify and consolidate individual frames through the process of constructive dialogue. Thus, a major focus of the group's work is the reconciliation of different frames of reference through communication. According to Sniezek and Henry (1990), group discussion serves a number of purposes, including revealing problem-relevant information, affecting the cognitive process of individual group members, and allowing for the combination of member perceptions and opinions. "Through communication, concepts come to embody similar meanings for two or more individuals" (Gray et al., 1985, p. 85)

Donnellon et al. (1986) identify four communication mechanisms that contribute to the emergence of meaning and organized action, including metaphors, logical argument, affect modulation, and linguistic indirection. They state that the use of ambiguous and imprecise terms can be effective in achieving consensus or suppressing dissent. Roth and Sheppard (1995) found that communication mediated the relationship
between conflict frames and outcomes

Also investigating the role of communication in group cognition, Innami (1994) distinguishes between reasoning and positional orientation. Reasoning orientation describes the process by which members exchange facts and reasons for their positions, whereas positional orientation describes the process by which members adhere to their positions and engage in defensive argumentation. It was postulated that a reasoning orientation would result in a more inclusive group belief structure and would improve decision quality. In contrast, a positional orientation among group members was expected to lead to a biased group belief structure and decreased decision quality. Compared to a positional stance, it follows that a reasoning form of communication would better facilitate the development of shared frames.

Appropriate media and team decision support systems may facilitate communication among group members, especially in a distributed decision making environment (Broome & Chen, 1992).

Negotiation. In addition to other social processes, shared cognitive structures are a product of negotiation and argument (Langfield-Smith, 1992, Walsh, 1995). It should be noted that although the term "negotiated" has a prominent place in the term "negotiated belief structure," Walsh and Fahey (1986) and Walsh et al. (1988) hardly address the actual negotiation of beliefs.

Participation. According to Walsh et al. (1988), each members' knowledge structure represents a fundamental element in a group's collective structure. However, participation determines whose knowledge structures are actually included in the group's collective structure. Therefore, if one group member totally dominates the decision making process, then the schemata of the other members effectively do not exist in the group belief structure. Following this reasoning, only those who participate actively in discussion are likely to contribute significantly to the group's shared framing of the issues. Therefore,
the shared frame may not be the simple aggregation of all individual group member frames (Fiol, 1994, Walsh et al., 1988).

Varying levels and types (e.g., reactors vs. initiators) of participation were evident in the mental health groups. One facilitator described the different amounts of participation in his group:

"The boards are the most vocal. The boards do more talking. I would guess, if I were an observer measuring the number of minutes of participation, that the boards would rank up there at the top. Second after them would probably be agencies. Third would be the consumers. Fourth would probably be the dept. of Mental Health. And then the rest are kind of tied. OMNI is kind of consistently vocalizing—I won't call it contributing because most of the time it's not really a contribution to the group."

One liaison perceptively noted the relationship between level of influence and participation rates:

"In the Cincinnati group, the consumer network tends to perceive themselves as being powerless, when really these are the guys that are more vocal than anybody and put their positions forward quicker than anybody. On the other hand, the boards are seen by the other members as being most powerful, and yet they contribute less than anybody. So, there's some irony involved with that."

Persuasion. In order to develop shared frames, it is often necessary to change the structure and content of individuals' existing assumptions. Therefore, group members may engage in attempts to persuade individuals to acknowledge and accept the drawbacks of their own viewpoints and the benefits of alternative perspectives. According to Larson and Christenson (1993), the emergence of group cognition includes the process of members endeavoring to sell their conceptualization of the issues to others.

Outcome Variables

Collective knowledge structures are largely perceived to be important because of the consequences that derive from them. Although many decision making models and studies (e.g., Innami, 1994; Janis, 1982) limit consideration of outcomes to decision quality, Aldag and Fuller (1993) emphasize the need to address a wider assessment of outcomes, including political and affective consequences. Indeed, the extent to which frames are shared among group members may have
implications, not only for the actual decisions that are reached, but the implementation of the decision, satisfaction with both group process and outcome, and future group interactions.

Arriving at a decision. Organizational scholars generally agree that decisions can be made and collective action taken despite divergent representations and the absence of a shared frame (e.g., Eisenberg, 1984; Finney & Mitroff, 1986). Weick (1979) points out that cause maps can be coordinated with relatively little shared understanding. Moreover, in the face of divergent frames, skilled decision makers may still be able to formulate strategies (Houghton et al., 1994) and individual cognitive representations can remain powerful after decisions have been reached.

Empirical evidence supports these assertions. For example, Donnellon et al. (1986) found that group members agreed to take action despite differences in the meanings they assigned to the action. Thus, shared meanings were not necessary for the group to achieve organized action. Instead, equifinal meanings, defined as distinct interpretations with common behavior implications, were sufficient. As long as there was agreement on action implications, collective decisions could be made.

Similarly, Tindale et al. (1993) demonstrated that frame changes are neither sufficient nor necessary for changes in preferences to occur. In addition, even when there are differences in individuals' narrative accounts, verdict-driven strategies permit juries to reach consensus (Hastie & Pennington, 1991).

Various regional planning groups arrived at a final plan without viewing the issues in a similar way. Because of the six month time pressure involved, many groups were forced to make decisions, despite their failure to agree on fundamental assumptions underlying the issues of importance.
While it is often assumed that collective cognition precedes the selection of problem solutions (e.g., Smircich, 1983), shared frames may not emerge until after a decision is reached. According to Weick (1979), groups act first and then engage in post-action sense making. Brett (1991) refers to "second agreements," which occur when a group continues to deliberate after it has reached a preliminary decision in order to improve upon that decision.

Various factors (e.g., deadlines, external review) may push the group toward a decision prematurely. However, after the decision has been made, a group may continue interacting to affirm/alter their choice, and a shared frame may develop at this point in time. While some authors view shared meanings as the precursor to organized action (e.g., Smircich, 1983) and others view it as the product of organized action (e.g., Weick, 1979), Grey et al. (1985) postulate that action and sensemaking occur simultaneously.

Although shared frames may not greatly impact whether or not a decision is reached, other outcomes may be more dependent on the existence of collective interpretations. A number of researchers share the intuition that the aggregation of individuals' belief structures creates a context for efficient problem solving and affects a variety of group decision making variables (e.g., Walsh & Fahey, 1986; Innami, 1994).

**Decision Quality.** Innami (1994) hypothesized that an inclusive, balanced group structure would increase the quality of group decisions, whereas a biased group structure would decrease the quality of decisions. Similarly, Rentsch and Hall (1994) postulate that schema similarity will improve task quality, but only in cases where the collective schema is of high quality. Therefore, the linkage between decision quality and shared frames may depend on the value of the shared frame. Shared frame quality is related to the accuracy of the collective representation discussed earlier (see Chapter I).
**Decision Speed.** Walsh and Fahey (1986) suggest that decision speed is related to the type of negotiated belief structure that emerges. Limited belief structures, in which power is concentrated and beliefs are homogeneous, are hypothesized to result in the fastest decision speed. On the other end of the continuum, however, dialectical belief structures (dispersed power and heterogeneous beliefs) are expected to take the longest to develop. In general, shared frames will not be achieved quickly when powerful individuals have very different perceptions and political interests.

**Groupthink.** Although the theoretical and empirical consequences cited thus far are perceived to be functional, some hypothesized effects of shared cognition may actually be dysfunctional. Over-reliance on shared information, with all group members possessing exactly the same representation and thinking exactly the same way, often fails to capitalize on the total cognitive resources of the group membership (Levine et al., 1993). Therefore, in its extreme form, shared frames suggest groupthink (Fiske & Goodwin, 1994).

The other outcomes of shared frames listed in the model (Figure 2) will be discussed later.

**Hypotheses**

After delineating several approaches to studying group problem identification (including archival data analysis, interviews, and observation), Moreland and Levine (1992) concluded that laboratory simulations offer the best means for investigating problem identification by groups. Reflecting a similar view, Dukerich and Milliken (1993) suggested that simulations provide a useful way to examine how group interpretations are formed. Moreover, in his recent review article, Schwenk (1995) outlined the benefits of laboratory research and called for more strategic decision making research to be conducted in environments that permit direct observation and control over potential confounding variables.
A simulated setting allows for relevant variables to be systematically varied and precisely measured (Wood & Bandura, 1989). In addition, causality can be established in carefully conducted laboratory experiments. Therefore, a laboratory simulation was designed to test selected portions of the model just presented.

**Antecedents of Shared Frames**

While there are many antecedents portrayed in Figure 2, the laboratory study will focus on decision rule and constituency commitment as driving forces in the emergence of shared cognition. The selection of these independent variables allowed for all three categories of input variables (individual difference, group structural, and political) to be incorporated into the lab study. Thomas et al. (1994) have emphasized the importance of considering multiple-level antecedent variables to issue interpretation. While decision rule is a variable that operates at the level of the group, commitment is a pre-existing individual-level variable which group members bring with them to the decision making context. Furthermore, by incorporating constituencies (as well as multiple individual frames and mixed-motives as byproducts), the presence of political realities in group activity is recognized. Both decision rule and constituency commitment are theoretically relevant and were also found to be important in the exploratory field study.

**Decision Rule.** When there are more than two individuals in a group, members must implicitly or explicitly select and implement decision rules to determine how individual preferences will be combined to produce a group decision (Brett, 1991; Neale & Bazerman, 1991). A group decision rule is "a rule that specifies, for any given set of individual preferences regarding some set of alternatives, what the group preference or decision is regarding the alternatives" (Miller, 1989, p. 327).
Decision rules include veto rule, plurality vote, dictatorial rule (one person decides), oligarchy (a few powerful people decide), consensus (a minority disagrees, but goes along with the majority), unanimity (all members agree), and majority vote (Brett, 1991). Majority and unanimity are the most common methods of social choice (Hare, 1976, Miller, 1989). The most popular type of majority rule is a simple majority (one more than 50 percent of the votes cast), but a two-thirds majority can also be used.

Majority rule is often used in many actual groups because it is efficient (Hare, 1976), less time consuming, and prevents impasses (Kerr, Atkin, Stagger, Meek, Holt, & Davis, 1976). However, some researchers (Neale & Bazerman, 1991, Thompson et al., 1988) believe that majority rule is inappropriate for decision making in mixed motive groups for a variety of reasons. First, it fails to recognize the strengths of individuals' preferences, and the vote of someone who cares strongly about an issue is weighted the same as the vote of someone whose opinion is weakened (Kaplan & Miller, 1987). Second, majority rule may lead group members to compromise rather than integrate interests (Thompson et al., 1988). Further, majority rule cannot always resolve diverse preferences in a way that contributes to effective group functioning (Castore & Murnighan, 1978, Harnett, 1967).

Because unanimity requires agreement by all group members before a decision can occur, it is a stricter decision rule than majority rule. Therefore, group decisions are often more difficult to reach, take longer, and require more discussion under unanimity rule than under majority rule (e.g., Castore & Murnighan, 1978, Miller, 1985, 1989).

Referring to the distinction between operational and perceptual consensus discussed earlier, Vertzberger (1990) suggests that operational consensus is most salient because of the action-orientation of many political groups. Therefore, despite differing representations, members who have arrived at operational consensus may not discern the
need to develop a perceptual consensus. In other words, discussion concerning assumptions and categories may only occur when efforts to reach operational consensus have failed. Thus, when individuals agree over what to do, cognitive aspects may be de-emphasized.

Following this reasoning, because majority rule moves groups to a decision (operational consensus) relatively quickly, there is not much incentive to discuss underlying assumptions and perceptions. However, with unanimous decision schemes, group members often run into difficulty in developing operational consensus. Therefore, there is a greater need to go beyond focusing on preferences and to discuss frames of reference and the reasons underlying viewpoints. Unanimity drives groups toward more systematic processing of information because attention must be paid to all members' perspectives. In short, unanimity encourages the sharing of minority points of view and the questioning of assumptions to a greater extent than majority rule. Therefore, the following was hypothesized:

H1: Groups with a unanimity decision rule will achieve more of a shared frame than groups with a majority decision rule.

Constituency Commitment. With rare exception, the issue of commitment has been largely ignored in discussions of collective representations. According to Steers (1977), commitment is defined as a strong desire to maintain membership in an organization, willingness to exert effort on its behalf, and an acceptance of its goals and values. Therefore, there commitment can be directed toward the collective entity itself and/or to the issue positions and strategies of that group.

Floyd and Wooldridge (1992) propose that consensus consists of shared understanding and strategic commitment. When common understanding and common commitment to strategy exist, consensus is the strongest (Floyd & Wooldridge, 1992; Wooldridge & Floyd, 1989).
Kiesler (1971) states that the main effect of commitment is the strengthening of one’s attitudinal position, which then increases resistance to persuasion or change. Numerous studies have supported the resistance effect of commitment (Halverson & Pallak, 1978; Kiesler, 1971; Pallak, Mueller, Dollar, & Pallak, 1972). Thus, individuals who are highly committed to their constituency’s goals will be highly motivated to protect constituency interests, even at the expense of the decision making group’s goals. In addition, high constituency commitment would result in less of a likelihood to attend to the assumptions of other group members or welcome perspectives very different from their own, which would hinder the development of shared frames.

H2: Groups composed of individuals with high commitment to their constituency position will achieve less sharing than groups composed of individuals with low commitment to their constituency position.

While the possibility of an interaction between decision rule and constituency commitment is recognized, only main effects are predicted. **Consequences of Shared Frames**

According to Mitchell (1986), differences in internal frames of reference result in inefficiency and conflict. It is argued that this inefficiency and conflict will be most pronounced when the group must implement the decisions reached and when they must deal with new issues arising in the future.

**Implementation.** Depending on the type of group (e.g., advisory group versus ongoing decision group), groups may have the responsibility for implementation of the decision that is made. As Pfeffer (1981) noted, "In ongoing organizations, implementation of and commitment to the decision may be as important, if not more so, than the decision itself (p. 156)."
Despite being the final step in many decision making models (e.g., Gualtieri et al., 1995), relatively little research has been done on decision implementation (Taylor, 1992). Moreover, existing research has routinely ignored cognitive processes and has instead emphasized objective characteristics of programs or the motivation of the individuals involved (Sproull & Hofmeister, 1986).

While researchers have recognized the possible linkage between implementation and group cognition (e.g., Walsh & Ungson, 1991), this relationship has not been tested empirically. Walsh and Fahey (1986) hypothesized that a contested belief structure (power is concentrated and beliefs are heterogeneous) would result in poor implementation potential. Contrastingly, a contextual belief structure (power is dispersed and beliefs are homogeneous) would lead to excellent implementation potential. In addition, Houghton et al. (1994) imply that cognitive consensus may be more important for implementation than arriving at a decision. According to Sproull and Hofmeister (1986), "when groups not only differ among themselves in thinking about an innovation but are also unaware of how they differ, implementation is problematic" (p. 58).

In situations where decisions are made without accompanying shared assumptions and perceptions, problems may arise when the course of action resulting from the decision is pursued. Unless conflicting interpretations are dealt with systematically, those differences may lie underneath the surface of the group and result in problems later on (Folger & Poole, 1984). For example, members who merely complied with the decisions may begin to challenge them or distance themselves from the group in the implementation phase (Vertzberger, 1994). On the other hand, in groups that have developed more of a shared frame, a greater sense of ownership and commitment emerges, which may result in implementation occurring more quickly and with fewer difficulties. On the basis of the above reasoning, the following hypothesis is proposed
H3: Groups with more of a shared frame will anticipate fewer problems with implementing the decision reached than groups with less of a shared frame.

New Issues. Few decision making groups in the real world meet to make a single, isolated decision (Mintzberg & Waters, 1985). Rather, group members are likely to interact repeatedly over the course of time and reach decisions on multiple issues (Hermann & Billings, 1993). Sequential decision making is described as the process by which groups deal with a series of decisions concerning the same issue across time (Billings & Hermann, 1994). The probability of future interaction of the group is a critical variable to consider since it will affect various group processes (e.g., type and intensity of political influence; Aldag & Fuller, 1993). With few exceptions (e.g., Bazerman, Giuliano, & Appelman, 1984; Whyte, 1993), researchers have not explored the processes involved when groups revisit issues that have been previously discussed.

The value in achieving a shared frame may extend beyond decisions made at a single point. Specifically, groups that have developed common assumptions underlying strategic issues may have an easier time deciding on related matters that arise in the future. Contrastingly, in groups that do not arrive at much of a shared frame, it is likely that differences in assumptions and perceptions will surface again in discussions of related issues.

H4: Compared to those with less of a shared frame, group members with more of a shared frame will respond more similarly to new issues that are related to matters previously discussed.

Satisfaction. The construct of group member satisfaction can be partitioned into various forms, including task-related aspects of group activity, relationship concerns, and group output, as well as member participation (Witteman, 1991). One component of group member satisfaction is related to decision making process and outcome. It is
important that members have confidence in the group's procedures and decisions rather than merely grudging acceptance. Dissatisfaction with the group's decisions may lead to turnover and/or reorganization, whereas satisfaction may have the effect of energizing the group or making members complacent.

Research supports the distinction between satisfaction with the way in which the group arrives at a decision (process) and satisfaction with the final group decision (outcome). For example, Castore and Murnighan (1978) demonstrated that group members will not necessarily be satisfied with the group decision when they have had the opportunity to present their views and share openly in discussion. Rather, a number of other factors contribute to satisfaction with the group decision, including congruence between a member's preferences and the group's decision. On the other hand, even when the group decision was incorrect, Thomas and Fink (1961) observed that groups which shared openly in the discussion tended to be satisfied with decisions. Therefore, process satisfaction may "spill over" into outcome satisfaction and vice versa. Because satisfaction is multiply determined, the number of variables involved greatly increase the complexity of predicting its emergence.

Various hypotheses can be generated when contrasting outcome/process satisfaction and shared frames/group decisions. Because of the "spill-over" effect mentioned above, it is expected that shared frames and whether or not decisions are reached will influence both process and outcome satisfaction. However, it is also predicted that shared frames will have a greater effect on decision process satisfaction, while reaching decisions will have a greater effect on decision outcome satisfaction. Therefore, Hypotheses 5a, 5b, 6a and 6b state the following:

\textbf{H5a}: There will be a positive relationship between the extent of shared frames and both process and outcome satisfaction.
H5b: The extent to which frames are shared will have a greater positive impact on decision process satisfaction than decision outcome satisfaction.

H6a: There will be a positive relationship between whether decisions are reached and both process and outcome satisfaction.

H6b: Whether decisions are reached or not will have a greater positive impact on decision outcome satisfaction than decision process satisfaction.

However, more specific predictions can be made when crossing shared frames and decisions reached in a 2 X 2 matrix, which is portrayed graphically in Figure 3.
### Shared Frame

<table>
<thead>
<tr>
<th>More</th>
<th>Less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatest Decision yes Process and Outcome Satisfaction</td>
<td>Lower Decision Process and Moderate Decision Outcome Satisfaction</td>
</tr>
<tr>
<td>Decision Reached</td>
<td>Cell I</td>
</tr>
<tr>
<td>Lower Decision no Outcome and Moderate Decision Process Satisfaction</td>
<td>Lowest Decision Process and Outcome Satisfaction</td>
</tr>
<tr>
<td>Cell III</td>
<td>Cell IV</td>
</tr>
</tbody>
</table>

Figure 3. Summary of hypotheses relating process and outcome satisfaction to shared frames and decision outcomes.
Referring to Cell I, it is likely that groups that achieve more of a shared frame and also arrive at a decision will report the most satisfaction with decision outcomes and processes. Contrastingly, groups that achieve little sharing and do not arrive at a decision will indicate the least amount of both process and outcome satisfaction (Cell IV).

H7: Relative to the other three conditions depicted in Figure 3, groups that achieve more of a shared frame and arrive at group decisions will report the greatest satisfaction with decision process and outcome.

H8: Relative to the other three conditions depicted in Figure 3, groups that achieve less of a shared frame and do not arrive at group decisions will report the least satisfaction with decision process and outcome.

Given the time constraints operating in many groups, there may not be the opportunity to develop a shared frame and reach a decision. Under these circumstances, some groups may be forced to make decisions without much of a shared frame being reached (Cell II). This situation might be especially applicable when individual preferences are exceptionally diverse and conflicting, creating interpersonal conflict among group members. Because group members fail to agree on fundamental assumptions underlying issues of importance and may not have the time to accommodate minority viewpoints, it is likely that process satisfaction will be fairly low. On the other hand, group members may still report satisfaction with decision outcomes. However, because perceived deficiencies with process satisfaction may “spill over” into outcome ratings, only a moderate degree of outcome satisfaction is expected (not as much as cell I, but greater than that achieved by cells III and IV).

H9: Groups that achieve less of a shared frame and arrive at group decisions will report lower process satisfaction than Cells I and III and a moderate amount of outcome satisfaction (lower
than Cell I, but higher than Cells III and IV).

Under conditions of time constraint, it is also possible that groups may achieve a shared frame, but then not have the opportunity to reach a decision on specific issues (Cell III). In this case, outcome satisfaction would be low, but a moderate amount of process satisfaction may result. Again, the level of process satisfaction would not approach that reported by group members in Cell I because perceived deficiencies in outcome satisfaction may affect process ratings.

**H10**: Groups that achieve more of a shared frame and do not arrive at group decisions will report lower outcome satisfaction than Cells I and II and a moderate amount of process satisfaction (lower than Cell I, but higher than Cells II and IV).

Taken together, Hypotheses 7 through 10 suggest an interaction. Figure 4 summarizes the hypothesized relationships in graphical form.
Figure 4. Graphical summary of the relationships predicted in Hypotheses 7, 8, 9, and 10.
It is also recognized that the level of commitment to various constituencies might also influence decision satisfaction levels. Because arriving at a shared frame often involves accommodating the perspectives of other group members and incorporating them into group decisions, individuals who are highly committed to their constituency's goals may not tend to be as satisfied with decision processes or outcomes unless they favor the views of their constituency group. Thus, if more of a shared frame is arrived at in the group, high commitment students may report lower satisfaction levels than their low commitment counterparts. Moreover, it is likely that these group members will not be enthusiastic about returning to a constituency to whom they are accountable if more of a shared frame has been reached. This also may contribute to lower outcome satisfaction levels among high commitment students.

Contrastingly, low commitment participants, not expecting further interaction with their constituency group, are more inclined to value the development of a shared frame in the decision-making group. Therefore, compared with their high commitment counterparts, low commitment participants would tend to be more negatively influenced by the group's failure to develop more of a shared frame. These factors will affect groups' reported satisfaction levels such that

H11 High commitment groups with more of a shared frame will report lower satisfaction with decision-making processes and outcomes than low commitment groups with more of a shared frame.

H12 High commitment groups with less of a shared frame will report higher satisfaction with decision-making processes and outcomes than low commitment groups with less of a shared frame.

Figure 5 depicts the hypothesized relationships in graphical form.
Figure 5. Graphical summary of the relationships predicted in Hypotheses 11 and 12.
Chapter IV

METHOD

Participants

Participants were recruited from an organizational behavior course and an organizational psychology course at The Ohio State University. The author introduced students to the nature of the research on the first day of class, and information about how to participate in the experiment was included in the course syllabus (see Appendix B). Because the experimental task was relevant to the content of the courses, students received extra credit in return for their participation.

A large body of empirical research has documented the fact that females and males behave differently in task groups. Compared to men, women in mixed sex interactions participate less, exercise less authority, are interrupted more, are less influential, engage in less active task behaviors, and are chosen as leaders less often (Dovidio, Brown, Heltman, Ellyson, & Keating, 1988; Eagley, 1983; Kelly, Wildman, & Urey, 1982; Smith-Lovin & Brody, 1989; Webster & Driskell, 1983; Wood & Karten, 1986). Therefore, in response to the concerns that gender might influence group interaction and group outcomes, same sex groups were used. Males and females signed up for the experiment on separate sheets, and 8 to 16 same sex students participated in each experimental session. Sessions were conducted by the author and several undergraduate research assistants.

Four students were randomly assigned to each decision making group, which was then randomly assigned to one of four experimental conditions (with the constraint that the number of groups be kept approximately equal within experimental condition). There were four
conditions with 15-21 groups in each condition for a total of 69 groups.

Two hundred and seventy-six students participated in the research. Twenty-six participants were enrolled in the organizational psychology course, and 250 were enrolled in the organizational behavior course. One hundred and four students participated during the Autumn Quarter of 1994, and the remaining students (172) participated during the Winter Quarter of 1995. In addition, there were 116 female and 160 male participants.

**Design**

The experiment employed a 2 x 2 factorial design, crossing constituency commitment (high versus low) with decision rule (majority versus unanimity). The group was the unit of theoretical interest in this research. Therefore, the level of measurement and the level of analysis were also at the group level (Glick, 1985; Rousseau, 1985).

**Experimental Task**

Students participated in an adaptation of Towers Market, a multi-issue, multi-party group decision making task developed by Beggs, Brett, and Weingart (1989). Each participant plays the role of a representative from one of four stores (grocery, florist, bakery, or liquor store).

These four stores are interested in forming a joint market. There are five issues to be decided: the temperature of the building, procedures for hiring and training clerks, advertising style, custodial costs, and the location of each store relative to the main entrance. Each store has certain preferences concerning these issues, which are described on confidential information sheets.

This task was selected for several reasons. First, it was face valid in that it represented a "meaningful" task for business students and was relevant to the content of their organization behavior course. Pilot work conducted by the author revealed that the exercise allowed for a high level of task involvement by students. Most participants
reported finding the task interesting, realistic, and a worthwhile investment of their time. In addition, the task could be adapted to incorporate constituency groups, frames of reference, and other design needs of the current research.

The original Towers Market task was altered in several ways to better suit the purposes of this study. For example, the point scoring scheme, which numerically summarizes the store's least preferred and most preferred outcomes, was deleted. As even the authors of Towers Market admit, receiving quantified information about preferences for the different alternatives is rather artificial (Beggs et al., 1989); therefore, the change to a more realistic format was deemed necessary.

In the current study, all information regarding the issues was presented in written (as opposed to numerical) form, and issues were not ordered by importance as in the original task.

Because pilot participants reported that the reasons offered to explain each store's preferences were not sufficient in the original exercise, the rationale underlying the stores' positions on the issues was enhanced. In addition, due to time constraints, the number of issues was reduced from five to four (store location was excluded) and discussion time decreased from 75 minutes to 30 minutes.

Because Towers Market was created to investigate group negotiation, the emphasis is on decision preferences/outcomes and not cognitive or interpretive processes. Consequently, frames of reference had to be incorporated into the exercise. Specifically, the confidential information was altered so that each store has different assumptions concerning how the Market should operate, different perceptions of threat and opportunity, and different preferences concerning the four issues that need to be resolved (see Appendix F).

Changes were made so that each store's issue preferences are consistent with underlying Market assumptions and threat and opportunity perceptions. For example, in the current task, the grocery store
believes that the Towers Market development will be a great opportunity and views a Market as a truly collaborative joint venture in which resources, personnel, and costs are all shared. Because they have this viewpoint, they feel that advertising, clerks, custodial costs, and temperature should all be shared by stores. Specifically, on the issue of clerks, the grocery store prefers that clerks be hired and trained as a group and distributed according to floor space.

Maintaining the conceptual distinction between frames and preferences discussed in Chapter 1, preferences are more specific and closer to the decision than frames. Table 4 summarizes the distribution of frames and preferences among stores and portrays how each store’s positions on the issues derive from their assumptions about how a Market should operate.

The decision to give students a store frame and issue preferences as opposed to allowing participants to develop their own was made in order to maximize the variability of frames and preferences across stores (see Table 4). However, when manipulating frames and preferences, the extent to which students actually adopt the information provided is a concern. As Roth and Sheppard (1995) point out, the distinctions between the presence of differences, the perception of differences, and the open expression of differences are important ones to consider. Echoing the same concern, Jackson (1991) states that the existence of intragroup differences does not necessarily mean that the group will make effective use of that difference.
Table 4
Distribution of Frames and Preferences Among Stores

<table>
<thead>
<tr>
<th>Frames</th>
<th>Grocery</th>
<th>Flower Shop</th>
<th>Liquor Store</th>
<th>Bakery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptions of Threat and Opportunity</td>
<td>Great opp.</td>
<td>Mostly threat, could be opp.</td>
<td>Mostly opp., Could be threat</td>
<td>Great threat</td>
</tr>
<tr>
<td>Assumptions Underlying How Towers Market should Operate</td>
<td>Completely shared joint venture</td>
<td>Mostly independent, some sharing</td>
<td>Mostly shared, some independence</td>
<td>Operate independently</td>
</tr>
</tbody>
</table>

Issue Preferences

<table>
<thead>
<tr>
<th>Advertising</th>
<th>Grocery</th>
<th>Flower Shop</th>
<th>Liquor Store</th>
<th>Bakery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined campaign</td>
<td>Combined campaign</td>
<td>Separate campaign</td>
<td>Separate campaign</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clerks</th>
<th>Grocery</th>
<th>Flower Shop</th>
<th>Liquor Store</th>
<th>Bakery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire and train as a group</td>
<td>Hire and train own clerks</td>
<td>Hire as a group, train individually</td>
<td>Hire and train own clerks</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Custodial Services</th>
<th>Grocery</th>
<th>Flower Shop</th>
<th>Liquor Store</th>
<th>Bakery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared costs</td>
<td>Clean own space</td>
<td>Shared costs</td>
<td>Clean own floor space</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Grocery</th>
<th>Flower Shop</th>
<th>Liquor Store</th>
<th>Bakery</th>
</tr>
</thead>
<tbody>
<tr>
<td>One common temperature, 68 degrees</td>
<td>Separate temperatures, 75 degrees</td>
<td>One common temperature, 71 degrees</td>
<td>Separate temperatures, 66 degrees</td>
<td></td>
</tr>
</tbody>
</table>
In this study, several steps were taken to increase the likelihood that participants would choose to accept the frames and preferences provided. For example, in the confidential information, reasons were offered as to why each store adopted the stated Market assumptions, perceptions of threat and opportunity, as well as the issue positions (see Appendix F). Piloting the experiment revealed that participants were more willing to adopt the stores' information when a plausible rationale was provided. In addition, after carefully reading the confidential information and hearing it reviewed orally, students were quizzed and asked to write out the reasons behind their store's frames and preferences. In order to increase subject involvement, participants were also asked to think of additional reasons for why their store might have the viewpoints stated in the confidential information. Furthermore, they were given the opportunity to discuss their store's viewpoints with other students receiving the same store information. It was expected that the combination of repetition, elaborative processing, and high involvement would increase the likelihood that participants would remember their store's frames and preferences and adopt them as their own.

Procedure

The experimental procedure consisted of two phases: a constituency (store) group phase and a decision making group phase. Each of these phases will be discussed in sequence.

Constituency (Store) Group Phase. Upon arrival in the laboratory, participants were randomly assigned to one of four constituency groups (stores).1 The one exception to randomization was that students who had significant previous contact with one another were not assigned to the same constituency group or decision making group.

When 16 participants showed up for the experiment, each constituency group consisted of four members. When there were 12 students, each constituency group consisted of three members. When more
than 12, but less than 16 students participated, the extra participants were asked to be observers. Observers were given questionnaires consisting of open-ended and close-ended items on which to record their observations of the constituency and decision making group interactions (see Appendices H and P).

In the cover story for the store groups (see Appendix C), participants were told that the study concerns group decision making, which is a topic of increasing relevance for organizations. After signing a consent form (see Appendix D), students read the background information for Towers Market (see Appendix E) and then their store's (either the grocery, flower shop, liquor store, or bakery) confidential role instructions (see Appendix F). The experimenter then collected the general and confidential information sheets, and participants were asked to fill out a store questionnaire. The store questionnaire checked the extent to which participants attended to and learned their store's assumptions, perceptions of threat and opportunity, and preferences on each of the four issues (see Appendix F). Without changing any of their answers, students were then instructed to briefly compare and discuss their answers to the questions on the store questionnaire. A maximum of seven minutes was allowed in which participants could review their answers. Participants were warned when there were two minutes remaining. As students interacted in their store groups, the experimenter recorded observations on a store group observation sheet (see Appendix H). Figure 6 summarizes the procedure for the constituency group phase of the experiment.
If N=16 Subjects

<table>
<thead>
<tr>
<th>Grocery</th>
<th>Liquor Store</th>
<th>Bakery</th>
<th>Flower Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Subjects</td>
<td>4 Subjects</td>
<td>4 subjects</td>
<td>4 subjects</td>
</tr>
</tbody>
</table>

If N=12 Subjects

<table>
<thead>
<tr>
<th>Grocery</th>
<th>Liquor Store</th>
<th>Bakery</th>
<th>Flower Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Subjects</td>
<td>3 Subjects</td>
<td>3 subjects</td>
<td>3 subjects</td>
</tr>
</tbody>
</table>

Fill Out Consent Form

Read General Information about Towers Market

Read Confidential Information Specific to Store

Check Knowledge of Confidential Information (Store Questionnaire)

7 Minute Group Review of Store Questionnaire

Break Up into Decision Making Groups

Figure 6 Summary of Experimental Procedure Constituency Groups
Decision Making Group Phase. In the second phase of the experiment, participants were divided into decision making groups. Each decision making group consisted of one representative from each of the four store groups. While the manipulations are described later, it is important to note that the cover stories varied, depending on condition (unanimity/majority rule; high/low constituency commitment; Appendix I). As the cover story was read, students reviewed the key elements of the manipulation in written form (see Appendix J).

Participants first filled out an initial questionnaire assessing their assumptions concerning how a Market should operate and their perceptions of threat and opportunity (see Appendix K). After being reminded verbally of the decision rule and commitment manipulations, participants were given a maximum of thirty minutes to discuss the four issues that needed to be resolved. This discussion was taped on a four-track tape recorder, and students were warned when they had ten minutes remaining. One group member was randomly chosen to record the group's decisions on a decision questionnaire (see Appendix L) either when the group concluded their discussion or the time ran out.

After participants completed a questionnaire individually, assessing each of their frames (Individual Post-Discussion Questionnaire; see Appendix M), they filled out a another questionnaire containing manipulation checks for the independent variables and measuring perceptions of decision processes and outcomes (Final Individual Questionnaire; see Appendix N). They were then asked to complete a questionnaire similar to the Individual Post-Discussion Questionnaire, except that it assessed their collective frame as a group (Group Post-Discussion Questionnaire, see Appendix O). One group member (the same one randomly assigned to complete the Decision Questionnaire) recorded the group's responses. The discussion generated in response to filling out this group questionnaire was also tape
recorded. As students interacted in their decision making groups, the experimenter recorded observations on a Decision Making Observation Sheet (see Appendix P). It should be noted that participants were never asked to provide their names on any questionnaire they completed.

Finally, students were thanked for their participation, debriefed (see Appendix Q), and urged not to divulge the details of the experiment with classmates who had not yet participated. The experiment took approximately two hours to complete. Figure 7 provides a summary of the experimental procedure for the decision making group phase of the experiment.
If N=16 subjects:

DMG 1
Grocery
Flower Shop
Bakery
Liquor Store

DMG 2
Grocery
Flower Shop
Bakery
Liquor Store

DMG 3
Grocery
Flower Shop
Bakery
Liquor Store

DMG 4
Grocery
Flower Shop
Bakery
Liquor Store

If N=12 subjects:

DMG 1
Grocery
Flower Shop
Bakery
Liquor Store

DMG 2
Grocery
Flower Shop
Bakery
Liquor Store

DMG 3
Grocery
Flower Shop
Bakery
Liquor Store

DMG 4
Grocery
Flower Shop
Bakery
Liquor Store

Four Experimental Conditions:
1) High Constituency Commitment/Majority Rule
2) High Constituency Commitment/Unanimity
3) Low Constituency Commitment/Majority Rule
4) Low Constituency Commitment/Unanimity

Induction of Independent Variables:
Cover Story Differs, Depending on Condition

Initial Questionnaire (Assess Frame)
Reminder of Decision Rule and Commitment Manipulations
30 Minute Group Discussion
Decision Questionnaire (Record of Group's Decisions)
Post-Discussion Individual Questionnaire (Assess Individual Frame)
Final Individual Questionnaire (Manipulation Checks, Decision Outcomes)
Post-Discussion Group Questionnaire (Assess Group Frame)
Debriefing

Figure 7. Summary of Experimental Procedure: Decision Making Groups (DMG)
Manipulation of Independent Variables

Decision Rule. Participants in the majority rule condition were told that a decision can be implemented if three persons are in agreement on a decision, even if the fourth person disagrees. In addition, they were told that majority rule is the most popular type of decision rule because it is fair and allows groups to reach decisions faster and more efficiently than a unanimous system.

Contrastingly, participants in the unanimity condition were instructed that all four persons must be in agreement on a decision in order for the decision to be made. They were further informed that unanimity was being implemented because when beginning new projects like Towers Market, it is critical that every group members’ viewpoints are accommodated in some way. Therefore, in order to increase the likelihood that groups would adopt the appropriate decision rule, students were provided with a rationale for why the decision rule was being followed.

Constituency Commitment. Constituency commitment was manipulated by means of social identity and accountability. The social identity part of the manipulation was intended to induce high commitment to the constituency group (as a collective entity), while the accountability manipulation was intended to induce high commitment to the frames and preferences of the constituency group. Considering both aspects of commitment was expected to heighten the effectiveness of the induction.

Participants in the high constituency commitment condition wore a store label indicating their store name. According to social identity theorists (e.g., Brewer, 1979; Tajfel & Turner, 1986, Turner, 1987) group members that are labeled by others as a group tend to think of themselves, not in terms of their personal identities, but in terms of their group memberships. Thus, when group members are labeled as a group, their social identities are stronger, and when group members are labeled as individuals, their social identities are weaker.
Participants in the high commitment condition also had access to the confidential information for their store during discussion in the decision making groups. In addition, they were led to believe that they would meet again with their store groups after the discussion in order to justify and explain how well they represented their store’s goals. It was expected that anticipating having to answer to one’s constituency would result in students adhering more closely to the constituency’s frame in order to avoid a negative evaluation (see Breaugh & Klimoski, 1977). In reality, this second meeting with the constituency group did not occur. However, participants were asked to remove their watches at the beginning of the experiment so that they were not aware of time constraints, which might have prevented them from believing that a second meeting would occur.

Instead of receiving a store label, participants in the low constituency commitment groups were asked to state the name of their store group at the beginning of the decision making group. In addition, low commitment participants did not have access to their store’s confidential information sheet during group discussion. Finally, they were led to believe that they would be meeting with other decision making groups after discussion in order to jointly decide on the best Market solution. Again, this meeting did not occur. Scripts of the manipulations employed can be found in the procedures contained in Appendix I.

Procedural and Manipulation Checks

Prior Information About the Simulation. Because the study was run over the course of several weeks, it was feared that some students might tell potential participants about the details of the exercise. In order to discourage this, participants were asked to refrain from discussing the study with other classmates. However, to assess if a student’s participation was biased as a result of receiving prior information about the study, participants were asked to write what they know about
the experiment before coming into the laboratory (See Appendix N).

**Store Group Identity.** Participants answered three items designed to measure whether they adopted the store information provided on the confidential information sheets. Specifically, participants were asked to report on the extent to which they identified with their store group, felt comfortable representing store issues, and agreed with their store’s initial positions (See Appendix G).

**Decision Rule.** To determine if participants adequately attended to and understood the cover story, they were asked to indicate whether their group was instructed to reach a group decision by majority rule or unanimity (a "do not recall" option was also given; Appendix N, Item #7). In addition, three other items, responded to on a 7-point Likert scale (1=strongly disagree, 7=strongly agree), were used to assess the effectiveness of the decision rule manipulation. Students reported the extent to which they agreed that group decisions were reached unanimously (Item #14) and the extent to which group decisions were reached by majority rule (Item #19). Furthermore, they indicated whether decisions reached were acceptable to all store representatives (Item #23).

**Commitment.** To determine whether participants felt accountable for their judgements and to whom they felt accountable, they were asked to indicate (1) the extent to which the thought crossed their minds that they would have to justify their judgements to others and (2) whether or not they would have to justify their judgements to their store group or other decision making groups (a "do not recall" option was also given; see Appendix N, Item #16).

In addition, students reported their commitment to representing the issues of importance to their store group and their commitment to obtaining an acceptable decision in their decision making group (see Appendix N, Item #17) on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Participants also indicated the importance of their
identity as a store representative in the decision making group (Item #2) on a 7-point Likert scale (1=very important, 7=very unimportant)

Measuring Frames of Reference

As described in Chapter 1, this study used assumptions and perceptions of threat and opportunity to determine how groups were framing the four Towers Market issues. Following the suggestions of Klein, Dansereau, & Hall (1994) to use multiple, diverse measures, frames were assessed in several different ways. In addition to both close-ended and open-ended questionnaire items, frame measures were also derived from coded group discussions. Measures were also derived from individual group members as well as from the group as a collective entity. Furthermore, frames were assessed at several different points in time during the experimental study, including prior to group discussion, during the group discussion (via coded tape recordings), immediately following the group discussion, and at the end of the experiment.

Initial Questionnaire (Appendix K) Prior to the group discussion, participants completed a 6-item questionnaire measuring perceptions of threat and opportunity and assumptions underlying how a Market should operate. Specifically, respondents indicated the extent to which they agreed that Towers Market represented an opportunity to their store and the extent to which they agreed that Towers Market represented a threat to their store (Items #1 and #2). In addition, participants indicated the extent to which they agreed that forming a Market should be a truly collaborative joint venture (Item #3) and whether other stores in the Market should operate independently (Item #5). Finally, respondents reported whether stores in the Market should hire separate clerks, custodial services, temperature controls, and advertising (Item #4), or whether these issues should be shared by stores (Item #6). Ratings were made in reference to a 7-point Likert scale (1=strongly disagree, 7=strongly agree)
Individual Post-Discussion Questionnaire (Appendix M). Immediately following the group discussion, students individually filled out a questionnaire containing three open-ended framing items and sixteen close-ended framing items. Participants were asked to write concerning their attitude toward Towers Market, their view about the best way stores in the Market could succeed, and how well they thought their store would do in the Towers Market development project.

Regarding the close-ended items, the six items from the Initial Questionnaire were repeated in the Individual Post-Discussion Questionnaire. In addition, participants were also asked whether positive consequences of Towers Market would occur (Item #7), whether their store may lose a great deal from Towers Market (Item #18), and whether Towers Market was negative (Item #9) and positive (Item #17).

To measure respondents' ability to describe other respondents' perceptions accurately (Poole & McPhee, 1983), students were also asked to rate the extent to which Towers Market represented an opportunity to each of the other stores (Items #1-4) and the extent to which the other stores believed that forming a Market should be a truly collaborative joint venture (Items #10-13). All close-ended framing items were answered on a 7-point Likert scale with "strongly disagree" and "strongly agree" as endpoints.

Group Post-Discussion Questionnaire (Appendix O) Following the completion of the Individual Final Questionnaire, participants completed a Group Post-Discussion Questionnaire, which contained two open-ended items and ten close-ended framing items. This measure was filled out collectively by the decision making group, and was identical to the Individual Post-Discussion Questionnaire, except for fewer items and a different referent for some questions. For example, the item, "Towers Market represents a threat to my store" on the Individual Post-Discussion Questionnaire was changed to "Towers Market represents a threat to this group" on the Group Post-Discussion Questionnaire.
In the past several years, increased attention has been given to levels of analysis issues in the group and organizational literature (e.g., Glick, 1985, James, 1982, Ostroff, 1993; Rousseau, 1985, Scandura & Williams, 1995). According to Klein et al (1994), explicitly specifying the level of analysis of research constructs improves the precision of theories and reduces confusion during data collection and analysis. Relationships among variables at one level of analysis do not necessarily exist at another level of analysis (Ostroff, 1993). Indeed, failure to consider levels of analysis issues when conducting research can result in mis-specifications of analysis and aggregation bias (James, 1982).

However, the complex interaction between individuals and groups presents a difficult challenge because the lines defining the two levels are so often blurred. It is clear that groups are social entities which are made up by individuals, but they are also entities that take on a life of their own. One reason for the difficulty in defining and operationalizing cognition at the collective level is that there is debate as to whether cognition even exists beyond the individual level of analysis.

The proposition that groups can think raises questions about reification and anthropomorphism (Sandelands & Stablien, 1987; Schneider & Anglemar, 1993, Weick, 1969), and researchers differ in their positions regarding the issue. For example, Walsh et al (1988) and Axelrod (1976) do not advance the argument that groups think, but other scholars conceptualize groups as information processing units which are analogous to the individual mind (e.g., Hinsz, 1990). While Gioia (1986a) discusses thinking collectives as a metaphor, Schneider and Anglemar (1993) argue that groups and organizations possess cognition. According to Sandelands and Stablein (1987), organizations are "mental entities capable of thought" (p. 136).
While there is an increasing tendency to view cognition at higher levels of abstraction, various researchers recognize the need to not lose sight of the individuals' contributions to the collective cognitive structure (Damon, 1991; Eden et al., 1981; Isabella, 1990). Moore (1969) points out that neglecting the fact that groups operate through individuals results in anthropomorphism, while failing to consider the fact that individuals act on behalf of groups leads to a fallacious, atomistic view of behavior. Thus, while extremes should be avoided, some degree of both perspectives is needed.

Collective cognition can be measured in two primary ways. Individual measures can be aggregated to create higher-level measures (aggregate measurement) or the collectivity can speak for itself (global measurement; Axelrod, 1976; Schneider & Anglemar, 1993). This distinction between the summation of individual phenomena and group phenomena has been discussed previously with respect to cohesion (e.g., Carron, 1982; Gully, Whitney, & Devine, 1993) and climate (e.g., Deshpande & Webster, 1989; Rousseau, 1988). Most of the research has relied on aggregated data to represent group-level constructs (Roberts, Hulin, & Rousseau, 1978). Both aggregate and global indices will be discussed in sequence.

One of the ways that data can be aggregated to the group level is to take the simple average of member responses. According to James (1982), it is theoretically legitimate to aggregate perceptions to a higher level and use the mean to represent this collective interpretation. In several cognitive mapping studies, an algebraic mean of the signed links reported by participants is computed and used to represent group- or organization-level cognition (e.g., Axelrod, 1976; Bonham et al., 1988; Bougon et al., 1977; Ford & Hegarty, 1984; Jonassen, Beissner, & Yacci, 1990).
However, many researchers challenge the notion that group activity can be adequately described by a simple average of individual maps. For example, Bettenhausen (1991) and Fiol (1994) argue that shared cognition encompasses much more than the congregation of individual cognitive processes. As a result of the dynamics of individuals acting as a group and the structure of relationships, additional forces are important to consider in determining the nature of collective cognition. Despite the fact that social interaction (Gray et al., 1985), communication (Innami, 1994), and the relative power of group members (Langfield-Smith, 1992) all contribute to the development of shared cognitive structures, these phenomena are usually ignored when measures are aggregated.

Reflecting these concerns, Shrivastava and Schneider (1984) state, "Assumptions relevant to such inquiry are not merely assumptions held by individual decision makers nor their aggregate. Rather, these assumptions represent 'logically integrated clusters of beliefs' (Starbuck, 1982) which evolve from dynamic interactions among strategic decision makers and their interactions with other organizational and environmental parameters." (pp 795-796) In attempting to deal with this issue, Walsh et al. (1988) averaged individual belief structures after weighting for participation, a political process which determines whose knowledge structures are represented in the group aggregate. Fiol (1994) states that measuring a group frame as more than a collection of individual frames is the most pressing measurement problem facing group research.

Schneider and Anglemar (1993) also point out that group-level cognition may be less than the sum of the individual parts if group members withhold important information or limit their participation in group discussions. McClure (1990) also postulates that the "group mind" may be equal to or less than the aggregate in regressive or immature groups, but will assume an identity greater than the aggregate in generative or mature groups.
In addition to the difficulties listed above, averaging implicitly assumes that every group members' contributions are of equal importance (Carron, 1982) and does not take into account that some differences or similarities may or may not be significant (Huff & Fletcher, 1990). Furthermore, simple averaging also creates problems when there are large differences in individual cognitive structures because extreme scores can distort the group average (Carron, 1982; Schneider & Anglemar, 1993).

If it is accepted that the group cannot be considered solely as an aggregate of its component parts, methods must be developed to measure group cognition as a collective. In contrast to aggregate measurement, which uses lower-level information to create higher level measures, global measurement represents emergent properties of the group and allows data to be assigned directly to the collective entity. Global measures can be gleaned from questioning a key informant about the group's cognition (Hart, 1976), observing group interaction (Donnellon et al., 1986), or examining group products such as documents (Bartunek, 1984; Bettman & Weitz, 1983) or group performance in cognitive tasks (Hill, 1982). As a consequence of group interaction, group-level effects reflect non-independence in group members' responses (Kenny & LaVoie, 1985).

To illustrate an example of global measurement, Eden and colleagues (1981; 1988) have utilized composite cause maps as an intervention technique to help groups reach consensus. The cause maps of individual team members are combined to form a composite map, which contains all of the concepts and relations found in the individuals' maps. As a collective entity, group members discuss and edit to build a team map, which represents more than the cognition of one person (Eden, 1988). This approach has also been attempted for research purposes (Langfield-Smith, 1992).
According to Schneider and Anglemar (1993), aggregate and global measures are different, but causally related entities. With aggregation, the researcher integrates the cognitive structures, but with global measurement, the group performs the integrative function (Schneider & Anglemar, 1993). Both the research question and the nature of the constructs being measured need to be considered when deciding on global versus aggregate measures (Schneider & Anglemar, 1993).

Taking up the challenge to uncover cognition at different levels of analysis (Schneider & Anglemar, 1993), the current research utilized both aggregate and global methods of measurement and used multiple, diverse measures of shared frames. The perspective that shared frames have both individual- and group-level components was adopted. Specifically, a shared frame was recognized as an emergent characteristic of the group which is more complex than the simple average of individual interpretations. Rather, a shared frame may be more or less than the sum of individual frames, depending on factors such as participation, communication, and power/influence variables. Each index of shared frame will be discussed in turn.

**Aggregate Measure of Shared Frames** Group members individually completed measures assessing perceptions of threat and opportunity and assumptions underlying how a Market should operate (Initial Questionnaire, Appendix K, Individual Post-Discussion Questionnaire, Appendix M). These measures were then analyzed for within-group agreement. According to Rousseau (1988), high consensus is indicative of collective processes that go beyond the individual. It was assumed that groups with more of a shared frame would be more likely to answer the items in a similar manner.

Based on the work of Finn (1970), James et al. (1984) developed the interrater reliability index to assess the extent of agreement within a group on multi-item scales for single-stimulus situations. An interrater reliability index can be computed for a single item, $r_{MG(1)}$, as
well as for a multiple-item scale, \( r_{WG(J)} \). When there is only one item being rated, the value of \( r_{WG(J)} \) is equal to the value of \( r_{WG(J)} \). Because it reduces the effects of random measurement errors, the use of \( r_{WG(J)} \) is encouraged (James et al., 1984). The equation of the multiple-item estimator is:

\[
\begin{align*}
\hat{r}_{WG(J)} &= \frac{J[1-(s_{x_j}^2/\sigma_{EU}^2)]}{J[1-(s_{x_j}^2/\sigma_{EU}^2)] + (s_{x_j}^2/\sigma_{EU}^2)}
\end{align*}
\]

where \( J \) is the number of items, \( s_{x_j}^2 \) is the mean of observed variances, and \( \sigma_{EU}^2 \) is the mean variance expected when judgements are due to random error.

Values of \( r_{WG} \) range from zero to one, with zero indicating no agreement between individuals in a group and one indicating perfect agreement on some target variable (James et al., 1993). In a numerical example, James et al. (1993) state that \( r_{WG} \)s of .86 and .47 would suggest high and fairly low levels of interrater agreement respectively for cases where raters are nested within group.

Despite being initially labeled as a measure of interrater reliability, \( r_{WG} \) is a measure of interrater agreement. Although the terms "reliability" and "agreement (consensus)" are often equated conceptually (e.g., Schmidt & Hunter, 1989), Kozlowski and Hattrup (1992) point out that reliability is based on proportional consistency, while agreement refers to interchangeability among raters. Therefore, reliability may be high even though group members disagree on their ratings and have very different perceptions. On the other hand, reliability may be low when group members make the same ratings and share perceptions (Kozlowski & Hattrup, 1992). While \( r_{WG} \) is inappropriate as a measure of interrater reliability, it is suitable as a measure of interrater agreement (Kozlowski & Hattrup, 1992). In their most recent article pertinent to this debate, James et al. (1993) derive and interpret \( r_{WG} \) as a measure of interrater agreement that is not
formally tied to classic measurement theory.

Previous indices of agreement (e.g., percentage of agreement) have been criticized for not accounting for chance agreement and for treating consensus as an all-or-none phenomenon (Kozlowski & Hattrup, 1992). The $r_{WJ}$ index contrasts the average observed item variance across respondents within a group against that which might be expected from random error. In addition, $r_{WJ}$ improves upon other measures by adjusting estimates for errors caused by response biases such as central tendency, social desirability, and positive leniency (James et al., 1984).

Schmidt and Hunter (1989) harshly criticized $r_{WJ}$ as meaningless and conceptually illogical because it was not compatible with classical measurement theory. As an alternative approach to assessing interrater agreement, they proposed using the standard deviation ($SD_x$) of ratings across judges and/or the standard error ($SE_m$). However, upon close examination of their arguments, several limitations have been noted. In addition to $SE_m$ values being very sensitive to sample size and $SD_x$ not providing a fixed reference with which to compare levels of consensus, $SD_x$ and $SE_m$ do not control for chance agreement (Kozlowski and Hattrup, 1992). Furthermore, $SD_x$ and $SE_m$ address the individual as the unit of theory and thus do not deal with within-group consensus as the focal issue. On the basis of this critique and an empirical demonstration, Kozlowski and Hattrup (1992) concluded that $SD_x$ and $SE_m$ are inferior to $r_{WJ}$ and should not be used to measure interrater agreement.

Based on the recommendations of James et al. (1984; 1993) and Kozlowski and Hattrup (1992), $r_{WJ,J}$ is most useful in situations where judges are interpreting the rating scale in the same manner and when agreement is high or the number of raters is large. It is assumed that items have acceptable psychometric properties and that alternatives on the measurement scale are approximately equally spaced (James et al., 1984). In addition, the multiple-item estimator assumes that items are
parallel indicators of the same construct.

Although the $r_{wg}$ index has been shown to be superior to other measures in some respects, it also suffers from certain limitations and constraints. For example, $r_{wg}$ is affected by sample size (although not as much as $SE_{wm}$); therefore, values are attenuated when there are few raters and levels of agreement are moderate to low (Kozlowski & Hattrup, 1992). In addition, it does not permit the simultaneous analysis of multiple constructs or allow the researcher to identify underlying causes for aggregation bias (Pearce, 1995). The actual behavior of $r_{wg}$ is also not yet fully understood (James et al., 1993), and "numerous questions remain regarding the various statistical indicators (Klein et al., 1994; p. 217). Answering Klein's call for further mathematical analyses, Lindell and Brandt (1996) found that $r_{wg}$ displays some irregular behavior and raise questions about the appropriateness of its usage in certain contexts.

The $r_{wg}^{(j)}$ index is regularly used to examine the degree of consensus in order to establish the appropriateness of aggregating and specifying effects at the group-level (e.g., Dean & Sharfman, 1992; Panzano, 1992; Pearce, 1995). If $r_{wg}^{(j)}$ is high (.70 or higher; George, 1990), individual scores can be meaningfully aggregated to provide a group measure of the construct. However, beyond simply being used as a methodological precondition for aggregation, interrater agreement may have special theoretical significance as well (Lindell & Brandt, 1996). Following the recommendation of Lindell and Brandt (1996), the present research utilizes the degree of consensus as a dependent measure in its own right. While this usage of $r_{wg}^{(j)}$ is not commonplace, personal communication with knowledgeable researchers (e.g., Larry James, Cheri Ostroff) provided assurance that this is a valid use of the agreement index.
Global Measurement of Shared Frames. In addition to an aggregate form of measurement, this study also utilized global measurement by having group members complete the framing measure (the same items they filled out as individuals) as a collective entity (Group Post-Discussion Questionnaire, Appendix O). Group responses to the framing measure (Group Post-Discussion Questionnaire) were compared to the mean of individual-level responses (Individual Post-Discussion Questionnaire).

Dependent Measures

Group Decisions. Following the group discussion, a randomly selected group member wrote in the decisions arrived at on each of the four issues: advertising, clerks, custodial services, and temperature (see Appendix L).

Implementation. Implementation was assessed using five items measuring the extent to which participants would look forward to working again with members of the group, the ease with which Towers Market would be carried out, and number of future meetings that would be necessary before implementation could occur. Refer to Appendix N for actual items (Items 3, 5, 9, 12, and 22).

New Issues. In the Individual Post-Group Discussion Questionnaire, participants were presented with two new issues that the stores forming Towers Market would have to decide on in the near future. One issue dealt with whether stores in the Market should have a common decor and consistent signage or whether each store would independently design their own decor (Appendix M, Items #14 and #15). The other issue concerned whether stores in the Market could stock whatever they wanted (regardless of overlapping items) or whether the stores should jointly agree on the items each store would stock (Appendix M, Items #19 and #20). In addition to individually responding to these items, participants also answered them collectively as a decision making group on the Group Post-Discussion Questionnaire (Appendix O, Items 9, 10, 14, 15). Items were answered on a 7-point Likert scale with "strongly
"disagree" and "strongly agree" as endpoints.

**Satisfaction.** Both satisfaction with decision outcomes and decision processes were measured. Satisfaction with decision outcomes was assessed by means of five items, which measured the acceptability of decisions to store representatives, satisfaction with group decisions, the desire to change group decisions, the quality of decisions, and the support of group decisions. Refer to Appendix N for exact items (#1, 10, 18, 21, 23).

Three items were used to measure satisfaction with decision processes. Participants were asked about satisfaction with the way the group made its decisions, the extent to which their ideas were accepted, and the extent to which other group members listened to their views. See Appendix N for the items (#6, 13, 15). All satisfaction items were rated on a 7-point Likert Scale (1=strongly disagree, 7=strongly agree). Some of the decision outcome and process satisfaction items were drawn from existing scales (DeStephen & Hirokawa, 1988; Hornsby, Smith, & Gupta, 1994; Witteman, 1991).
CHAPTER V
RESULTS

Achievement of Experimental Conditions

Prior Knowledge Concerning the Simulation. To create a context in which the manipulations of the independent variables would be effective throughout the several weeks that students were participating, students needed to refrain from discussing details of the simulation with potential participants. Thus, participants were asked to write what they knew about the experiment before coming into the laboratory. Examination of these responses revealed that no participants had sufficient prior information about the simulation to bias their participation in the study.

Constituency Identity (Store Questionnaire, Appendix G). Three items assessed students' identity with their store group and the positions held by their store group. Descriptive statistics for the entire sample revealed that participants identified with their store group (M=5.07 on a 7 point scale, SD=1.18), felt comfortable representing the issues of importance to their group (M=5.25/7.00, SD=1.21), and agreed with the initial positions of their store group (M=5.26/7.00, SD=1.23). A series of one-way ANOVAs were conducted, with store group as the independent variable and each of the three items assessing store identity as the dependent variable. Participants from the four store groups did not differ in the extent to which they identified with their store group (M_G=4.82, M_F=5.09, M_L=5.10, M_B=5.28, F (3, 270) = 1.72, p.=.62). However, there were significant differences between stores on comfort with representing issues, F (3, 272) = 3.26, p.=.022. Specifically, a Tukey post hoc test revealed that bakery representatives (M_B=5.55) felt more comfortable presenting issues of
importance to their store than grocery representatives (M=4.93).

Differences on acceptance of initial positions also occurred between store groups, F (3, 271) = 3.26, p = .0005. Compared to grocery store participants (M=4.90), bakery (M=5.46) and flower shop (M=5.65) participants agreed more with their initial positions. Furthermore, flower shop representatives (M=5.65) also reported greater acceptance than liquor store representatives (M=5.03). In sum, these results suggest that, although students identified more or less equally with their respective store groups, they had an easier time adopting the preferences of stores with an "independent, threat" Market frame (Bakery and Florist) than stores with a "shared, opportunity" Market frame (Liquor Store, Grocery).

Confidential Information Retention (Initial Questionnaire, Appendix K). To assess the extent to which the store information was learned and remembered throughout the study, participants reported their threat/opportunity perceptions and their assumptions underlying how a Market should operate prior to discussion in the decision making phase of the study. Again, a series of one-way ANOVAs were conducted, with store group as the independent variable and each of the six items comprising the Initial Questionnaire as the dependent variable.

As indicated in the confidential information sheets, grocery store representatives responded with the strongest opportunity perceptions (M=6.61), followed in decreasing order by the liquor store (M=5.78), the flower shop (M=4.39), and the bakery (M=3.77; F (3, 272) = 77.83, p = .0000). A tukey post hoc test revealed that all store means were significantly different from one another on this item.

Reversing the sequencing in the opportunity item, bakery store representatives reported that Towers Market represented the greatest threat (M=5.78), followed in decreasing order by the flower shop (M=5.39), the liquor store (M=4.20), and the grocery (M=1.38; F (3, 272) = 262.43, p = .0000). Except for the florist and bakery means not being
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significantly different from one another, all other differences between store groups were significant on this item.

Differences between store representatives regarding whether the Market should be a collaborative joint venture also matched the confidential information exactly \((M_B=1.80, M_F=2.32, M_L=5.19, M_G=6.26, F(3, 272) = 195.92, p.=.0000)\). According to a Tukey post hoc test, all differences between stores were significant. As expected, participants answered the item assessing whether the Market should operate independently in the reverse order \((M_G=2.12, M_L=2.61, M_F=5.17, M_B=6.43, F(3, 272) = 139.02, p.=.0000)\). Except for the grocery and liquor stores, all other differences between store group means were significant.

In response to whether stores in the Market should have separate clerks, custodial services, temperature controls and advertising, participants again answered consistent with the information they were given \((M_G=1.61, M_L=2.64, M_F=5.04, M_B=6.54, F(3, 272) = 234.02, p.=.0000)\). All of these store means were significantly different from one another. As predicted, the reverse order occurred for the item assessing whether the four issues should be shared by the stores \((M_B=1.42, M_F=2.22, M_L=4.22, M_G=6.19, F(3, 272) = 221.75, p.=.0000)\). Again, a Tukey test revealed that all store means were significantly different from one another.

These results strongly support the effectiveness of the manipulation of constituency frames. For each of the six items discussed above, the ordering of responses from store representatives corresponded exactly with the material written in the confidential information sheets. Moreover, all of the differences between store means were significant for most of the items.

Decision Rule (Final Individual Questionnaire, Appendix N). Participants were asked to report whether their group was instructed to reach a decision by majority rule or unanimity (Item # 7). One hundred and twelve of the 144 unanimity participants (78%) responded as expected...
(17 answered "majority rule" and 15 did not recall the decision rule). For the majority rule condition, 125 of 132 participants (95%) selected majority rule (4 answered "unanimity" and 3 did not recall the decision rule). As indicated by a one-way ANOVA, the differences between the two decision making conditions were significant for this item ($M_{UN}=1.99$, $M_{HR}=1.08$; $F(1,274)=331.22$, $p=.0000$).

In order to assess whether the decision rule given to participants actually affected their group discussions, participants were asked to report whether their decisions were reached unanimously (Item #14) or by majority rule (Item #19). These items were then entered as the dependent variable in a one-way ANOVA with decision rule as the independent variable. As expected, compared to the alternate decision rule condition, unanimity participants agreed to a greater degree that their group decisions were reached unanimously ($M_{UN}=5.26$, $M_{HR}=3.87$; $F(1,274)=42.12$, $p=.0000$), while majority rule participants agreed to a greater degree that their group decisions were reached by majority rule ($M_{UN}=3.57$, $M_{HR}=5.95$; $F(1,273)=135.41$, $p=.0000$). In addition, unanimity participants agreed more with the item assessing whether the decisions reached were acceptable to all store representatives (Item #23; $M_{UN}=5.49$, $M_{HR}=5.01$; $F(1,274)=9.50$, $p=.0023$).

**Constituency Commitment** (Final Individual Questionnaire, Appendix N). To assess whether accountability, a key component of the commitment induction, was successfully manipulated, participants were asked to indicate whether they were told that they would be reporting back to members of their store group or other decision making groups (Item #8). For the high commitment condition, 112 of 120 participants (93%) indicated that they would be reporting back to members of their store group (2 answered consistent with the low commitment condition, 2 reported that they did not recall, and 4 failed to respond to the item). One hundred and three of 156 low commitment participants (66%) responded as expected (34 answered consistent with the high commitment condition,
18 reported that they did not recall, and 1 failed to respond to the item. A one-way ANOVA revealed that the differences between conditions were significant (M_HC=1.05, M_LC=1.90, F (1, 269) = 212.28, p=.0000).

Students were also asked the extent to which the thought crossed their mind that they would have to explain and justify their decisions to other people (Item #16). Because both the low and high commitment participants were accountable to some group, significant differences between conditions were not predicted. Consistent with expectations, a one-way ANOVA revealed no significant differences between high and low commitment participants on this item (M_HC=5.03, M_LC=4.88, F (1, 273) = 91, p=.3408).

Students responded to other items designed to more directly measure commitment to their constituency and decision making groups (Items 17, 11, & 2). One-way ANOVAs were used to assess differences between commitment conditions on these items. Contrary to what was expected, high commitment participants reported more commitment to obtaining an acceptable decision in their decision making groups (M_HC=5.85) than low commitment participants (M_LC=5.63; F (1, 273) = 5.05, p=.025). High constituency students (M_HC=5.78) did not differ from low commitment students (M_LC=5.69) in their commitment to representing the issues of importance to their store, F (1, 274) = .48, p=.49). Likewise, there was a marginally significant difference between commitment conditions regarding the importance of store identity in the decision making group (F (1, 274) = 3.12, p=.08), but means were not in the expected direction, with low commitment groups reporting that store identity was more important (M_LC=3.11) than high commitment groups (HC=3.51)7.

Because of the way the manipulation check items were designed, participants in either commitment condition could report being committed to both their store group and decision making group. Therefore, an exploratory item was added to the final individual questionnaire in
order to measure whether participants were more committed to representing their store group than to reaching a decision in their decision making group (Item #24). Consistent with previous findings, but contrary to expectations, there was no significant difference between commitment conditions ($M_{HC}=4.55$, $M_{LC}=4.23$, $F(1, 79) = 7.9$, $p=.38$).

Preliminary analyses revealed that the differences between the high and low commitment groups were not as strong as desired. Therefore, efforts were made to strengthen the commitment induction after the autumn quarter. Specifically, participants participating during the winter quarter received a written summary of the important elements of the manipulation. In addition, the Final Individual Questionnaire was completed prior to the Group Post-Discussion Questionnaire in order to decrease subject fatigue and increase the attentiveness given to the completion of the manipulation check items.

According on one-way ANOVA results, high commitment students participating during the autumn quarter reported that their identity as a store representative was less important than high commitment students participating during the winter quarter ($F(1, 118) = 4.69$, $p = .03$). Specifically, on a seven-point Likert scale with one being very important and seven being very unimportant, the mean rating for high commitment autumn quarter participants was 3.94 and the mean rating for high commitment winter quarter participants was 3.18. In addition, autumn quarter participants in the unanimity condition agreed that group decisions were reached unanimously to a greater extent ($M=5.60$) than winter quarter participants in the unanimity condition ($M=5.07$; $F(1, 142) = 3.80$, $p = .05$). Autumn quarter unanimity participants also agreed that decisions were acceptable to all stores to a greater extent ($M=5.81$) than winter quarter unanimity participants ($M=5.30$, $F(1, 142) = 6.66$, $p = .01$). With the exception of these items, no other significant differences existed between the decision rule or commitment conditions.
on the items discussed above over the course of the two quarters. Because few differences were found, the autumn and winter quarter samples were combined to increase the power for statistical analyses.

**Session Size.** The design of the study required that 12 to 16 students participate in each experimental session. In 13 of the 69 groups run, less than 12 students attended. Although the size of the decision making groups stayed constant (4 members), the number of participants in the constituency groups varied from 2 to 4, depending on the number of students participating in each session. A comparison of the sessions run with 11 or fewer participants with the sessions run with 12 or more participants revealed no significant differences on the manipulation check items discussed above. Furthermore, correlations between group size and manipulation check items were small and non-significant. Therefore, all groups were included in the analysis to maximize power.

In sum, the experimental manipulations of the constituency frames and decision rule were successful. The constituency commitment induction was less effective.

**Descriptive Statistics**

Appendix R contains descriptive statistics for all items in the Initial, Individual Post Discussion, Final Individual, and Group Post Discussion Questionnaires for the entire sample at the individual-level of analysis. A comparison of the observed variable ranges with the possible variable ranges indicates little, if any range restriction for most of the items. This is also evident from the moderate to large standard deviation for the majority of variables.

Most variables in the study were measured by sets of seven-point Likert-scale items. To create values for each construct, item means were calculated across participants and summed to form scales. To facilitate comparability, scale scores were divided by their number of items. Intercorrelations between the individual items comprising each
scale, as well as means and standard deviations are shown in Tables 5 through 13. The exact wording of each item composing each scale is listed in Appendix S. Table 14 summarizes the intercorrelations between the framing scales and other dependent variable scales at the individual-level of analysis.

Table 5

Correlation Matrix and Descriptive Statistics for Social Identity Items and Scale

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify with Store</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td>5.07</td>
<td>1.18</td>
<td></td>
</tr>
<tr>
<td>2. Comfort representing store issues</td>
<td>.66</td>
<td>---</td>
<td></td>
<td></td>
<td>5.25</td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td>3. Agree with store positions</td>
<td>.57</td>
<td>.63</td>
<td>---</td>
<td></td>
<td>5.26</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td>4. Social Identity Scale</td>
<td>.86</td>
<td>.88</td>
<td>.85</td>
<td>---</td>
<td>5.19</td>
<td>1.05</td>
<td>.83;</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td>.79°</td>
</tr>
</tbody>
</table>

Note. N=273-276
Note. Reported reliability is Cronbach's alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01      * p < .05      + p < .10
<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TM is an opp. (#1)</td>
<td>5.14</td>
<td>1.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. TM is a threat (#2, RS) **</td>
<td>3.81</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Collaborative Stores (#3) ** **</td>
<td>3.89</td>
<td>2.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Separate Issues (#4, RS) ** ** **</td>
<td>4.04</td>
<td>2.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Independent Stores (#5, RS) ** ** ** **</td>
<td>3.92</td>
<td>2.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Shared Issues (#6) ** ** ** **</td>
<td>3.51</td>
<td>2.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Initial Category Scale ** ** ** ** ** **</td>
<td>4.48</td>
<td>1.63</td>
<td>4.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Initial Assumption Scale ** ** ** ** ** ** **</td>
<td>3.84</td>
<td>2.06</td>
<td>0.93</td>
<td>0.89</td>
<td>0.90</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=276

Note. Reported reliability is Cronbach's alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01    * p < .05    + p < .10
Table 7

Correlation Matrix and Descriptive Statistics for Post-Discussion Category Items and Scale

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TM is an opp (#1-4)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.70</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td>2 TM is a threat (#5, RS)</td>
<td>43</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.67</td>
<td>1.59</td>
<td></td>
</tr>
<tr>
<td>3 Positive consequences likely (#7)</td>
<td>40</td>
<td>40</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.99</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>4 TM is negative (#9, RS)</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.89</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>5 TM is positive (#17)</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td>5.70</td>
<td>0.87</td>
<td></td>
</tr>
<tr>
<td>6 Lose a great deal (#18, RS)</td>
<td>59</td>
<td>53</td>
<td>54</td>
<td>66</td>
<td>---</td>
<td></td>
<td></td>
<td>5.31</td>
<td>1.21</td>
<td></td>
</tr>
<tr>
<td>7 Post Discussion Category Scale</td>
<td>75</td>
<td>75</td>
<td>72</td>
<td>79</td>
<td>81</td>
<td>84</td>
<td>---</td>
<td>5.38</td>
<td>0.91</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Note N=274-276

Note Reported reliability is Cronbach's alpha (I=Reliability at the individual-level, G=Reliability at the group-level)

** p < 01  * p < 05  + p < 10
Table 8

Correlation Matrix and Descriptive Statistics for Post-Discussion Assumption Items and Scale

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Collaborative Stores (#10-13)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.70</td>
<td>2.10</td>
<td></td>
</tr>
<tr>
<td>2. Separate Issues (#6)</td>
<td>.53</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td>3.67</td>
<td>1.69</td>
<td></td>
</tr>
<tr>
<td>3. Independent Stores (#8)</td>
<td>.56</td>
<td>.65</td>
<td>---</td>
<td></td>
<td></td>
<td>3.79</td>
<td>1.78</td>
<td></td>
</tr>
<tr>
<td>4. Shared Issues (#16)</td>
<td>.70</td>
<td>.59</td>
<td>.60</td>
<td>---</td>
<td></td>
<td>3.31</td>
<td>1.70</td>
<td></td>
</tr>
<tr>
<td>5. Post Discussion Assumption Scale</td>
<td>.85</td>
<td>.81</td>
<td>.83</td>
<td>.86</td>
<td>---</td>
<td>3.62</td>
<td>1.53</td>
<td>.86</td>
</tr>
</tbody>
</table>

Note. N=275-276

Note. Reported reliability is Cronbach’s alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01  * p < .05  + p < .10
### Table 9

**Correlation Matrix and Descriptive Statistics for Implementation Items and Scale**

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many more meetings needed (#5, RS)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.08</td>
<td>.81</td>
<td></td>
</tr>
<tr>
<td>Expect positive results with implement. (#9)</td>
<td>.04</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.72</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>Look forward to working with group again (#3)</td>
<td>.29</td>
<td>.45</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td>5.67</td>
<td>.99</td>
<td></td>
</tr>
<tr>
<td>TM can be implemented without problems (#12)</td>
<td>.29</td>
<td>.49</td>
<td>.50</td>
<td>---</td>
<td></td>
<td></td>
<td>4.88</td>
<td>1.22</td>
<td></td>
</tr>
<tr>
<td>Difficulty with implement. (#22, RS)</td>
<td>.27</td>
<td>.34</td>
<td>.47</td>
<td>.48</td>
<td>---</td>
<td></td>
<td>5.07</td>
<td>1.38</td>
<td></td>
</tr>
<tr>
<td>Implementation Scale</td>
<td>.50</td>
<td>.62</td>
<td>.76</td>
<td>.81</td>
<td>.79</td>
<td>---</td>
<td>4.89</td>
<td>.74</td>
<td>.74</td>
</tr>
</tbody>
</table>

*Note. N=276*

*Note. Reported reliability is Cronbach's alpha (I=Reliability at the individual-level; G=Reliability at the group-level)*

** p < .01   * p < .05   + p < .10
Table 10
Correlation Matrix and Descriptive Statistics for Market Decor Items and Scale

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Common Decor (#14)</td>
<td>---</td>
<td></td>
<td></td>
<td>3.63</td>
<td>1.87</td>
<td></td>
</tr>
<tr>
<td>2. Independent decor (#15, RS)</td>
<td>.79</td>
<td>---</td>
<td></td>
<td>3.17</td>
<td>1.74</td>
<td></td>
</tr>
<tr>
<td>3. Market decor scale</td>
<td>.95</td>
<td>.94</td>
<td>---</td>
<td>3.40</td>
<td>1.71</td>
<td>.88,</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td>.85,</td>
</tr>
</tbody>
</table>

Note. N=276
Note. Reported reliability is Cronbach’s alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01  * p < .05  + p < .10
### Table 11

**Correlation Matrix and Descriptive Statistics for Stocking Items and Scale**

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independent stocking (#19, RS)</td>
<td>---</td>
<td></td>
<td></td>
<td>4.08</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td>2. Joint agreement on stocking (#20)</td>
<td><strong>.54</strong></td>
<td>---</td>
<td></td>
<td>4.07</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>3. Stocking Items scale <strong>.88</strong> <strong>.88</strong></td>
<td>---</td>
<td></td>
<td></td>
<td>4.07</td>
<td>1.54</td>
<td><strong>.70</strong>, <strong>.70</strong></td>
</tr>
</tbody>
</table>

**Note.** N=275

**Note.** Reported reliability is Cronbach’s alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

**p < .01**  **p < .05**  **p < .10**
Table 12

Correlation Matrix and Descriptive Statistics for Decision Process Satisfaction Items and Scale

<table>
<thead>
<tr>
<th>Item/Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Group listened to me (#6)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td>6.12</td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>2. Ideas not accepted (#13, RS)</td>
<td>.48</td>
<td>---</td>
<td></td>
<td></td>
<td>5.58</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td>3. Satisfied with way decisions made (#15)</td>
<td>.36</td>
<td>.39</td>
<td>---</td>
<td></td>
<td>5.75</td>
<td>.96</td>
<td></td>
</tr>
<tr>
<td>4. Process Satisfaction Scale</td>
<td>.71</td>
<td>.85</td>
<td>.75</td>
<td>---</td>
<td>5.82</td>
<td>.75</td>
<td>.64g</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=273-276

Note. Reported reliability is Cronbach's alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01  * p < .05  + p < .10
Table 13

Correlation Matrix and Descriptive Statistics for Decision Outcome Satisfaction Items and Scale

<table>
<thead>
<tr>
<th>Item/ Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Satisfied with group decisions (#1)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.58</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>2. Decisions acceptable to all (#23)</td>
<td>.45</td>
<td>---</td>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td>5.26</td>
<td>1.31</td>
<td></td>
</tr>
<tr>
<td>3. Wish to change decisions (18, RS)</td>
<td>.58</td>
<td>.40</td>
<td>---</td>
<td>**</td>
<td>**</td>
<td></td>
<td>5.27</td>
<td>1.34</td>
<td></td>
</tr>
<tr>
<td>4. High quality decisions (#21)</td>
<td>.56</td>
<td>.45</td>
<td>.49</td>
<td>---</td>
<td>**</td>
<td>**</td>
<td></td>
<td>5.64</td>
<td>.98</td>
</tr>
<tr>
<td>5. Support group decisions (#10)</td>
<td>.71</td>
<td>.50</td>
<td>.59</td>
<td>.60</td>
<td>---</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>5.56</td>
</tr>
<tr>
<td>6. Outcome Satisfaction Sale</td>
<td>.82</td>
<td>.73</td>
<td>.79</td>
<td>.76</td>
<td>.85</td>
<td>---</td>
<td>5.44</td>
<td>.91</td>
<td>.84</td>
</tr>
</tbody>
</table>

Note. N=275-276

Note. Reported reliability is Cronbach's alpha (I=Reliability at the individual-level; G=Reliability at the group-level)

** p < .01    * p < .05    + p < .10
Table 14
Intercorrelations between Scales of Interest at the Individual-Level of Analysis

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Identity</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Initial Category</td>
<td>-.17</td>
<td>---</td>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Initial Assumption</td>
<td>-.16</td>
<td>.77</td>
<td>---</td>
<td></td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Post-Disc. Category</td>
<td>-.01</td>
<td>.51</td>
<td>.36</td>
<td>---</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Post-Disc. Assumption</td>
<td>-.10</td>
<td>.62</td>
<td>.73</td>
<td>.40</td>
<td>---</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Implementation</td>
<td>.02</td>
<td>.04</td>
<td>.05</td>
<td>.48</td>
<td>-.01</td>
<td>---</td>
<td></td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Market Decor</td>
<td>-.08</td>
<td>.19</td>
<td>.12</td>
<td>.00</td>
<td>.13</td>
<td>-.05</td>
<td>---</td>
<td>**</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>8. Stocking Items</td>
<td>.04</td>
<td>.01</td>
<td>.03</td>
<td>.08</td>
<td>.01</td>
<td>.00</td>
<td>.04</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Outcome Satisfac.</td>
<td>.08</td>
<td>-.08</td>
<td>-.03</td>
<td>.39</td>
<td>-.04</td>
<td>.73</td>
<td>-.05</td>
<td>-.01</td>
<td>---</td>
<td>**</td>
</tr>
<tr>
<td>10. Process Satisfac.</td>
<td>.08</td>
<td>-.10</td>
<td>-.07</td>
<td>.34</td>
<td>-.05</td>
<td>.63</td>
<td>-.18</td>
<td>.04</td>
<td>.69</td>
<td>---</td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10
Interrater Agreement

As noted in an earlier chapter, the current research utilizes interrater agreement as a dependent variable in its own right. One particular area of concern about the use of $r_{w}$ is that there is no commonly accepted theoretical model to justify selection of the distribution of expected variance (Kozlowski & Hattrup, 1992). James et al. (1984) recommend the uniform distribution because it is the distribution most apt to be generated if respondents rate the objects randomly.

However, recent mathematical analyses performed by Lindell and Brandt (1996) demonstrate that the uniform distribution is not generally the distribution with maximum variance. In cases where the obtained variance ($s_{w}^{2}$) exceeds the variance of the uniform distribution ($\sigma_{u}^{2}$), values outside the proper interval ($0 < r_{w} < 1$) can be produced. Because disagreement in frames was systematically manipulated in the current study, the obtained variance did exceed the variance produced if participants had responded randomly. Therefore, aberrant values of $r_{w}$ (both negative values and positive values much greater than $+1.0$) resulted when using the uniform distribution as the standard of reference. As is apparent, these analyses demonstrate the precise points made by Lindell and Brandt (1996).

While they find no fault with the underlying conceptualization of interrater agreement, Lindell and Brandt (1996) propose using maximum dissensus as a reference point instead of random response in order to adequately handle systematic disagreement among raters. They argue that this baseline produces values of $r_{w}$ that fall into the proper interval, with 1.0 indicating maximum consensus and 0.0 indicating maximum dissensus.

Based on the rationale presented above and in light of the limited research evidence on these measures, two forms of the $r_{w}$ will be reported:
1. \( r_{WG(J)} \) as conceptualized by James et al. (1984), with the uniform distribution \( (\nu^2) \) as the reference distribution. Even in light of the significant limitations noted above, Lindell and Brandt (1996) propose that \( r_{WG(J)} \) should continue to be reported as a summary measure because it can reasonably index rater agreement. The formula for \( \sigma^2_{\nu} \) is \( \frac{(\lambda^2 - 1)}{12} \), where \( \lambda \) is the number of response scale alternatives. Thus, using a 7-point Likert scale, the value of \( \sigma^2_{\nu} \) would be 4.

Using this measure, values outside of the proper interval were dealt with by setting all negative values to 0 and all positive values greater than 1 to 1. Although this corrected for values outside the proper interval, it also restricted the variance of the measure.

2. \( r_{WG(J)} \) as conceptualized by Lindell and Brandt (1996), with maximum dissensus \( s^{2}_{\text{MV}} \) as the reference distribution. Because this formula is designed to handle systematic disagreement among raters and handles aberrant values without restriction of range, it was deemed the most appropriate measure for the current research. The formula for \( s^{2}_{\text{MV}} \) is \( \frac{1}{2}(X_{u}^{2} + X_{l}^{2}) - \left(\frac{1}{2}(X_{u} + X_{l})\right)^{2} \), where \( X_{u} \) and \( X_{l} \) are the upper and lower extremes of the response scale, respectively. Using a 7-point scale, the value for \( s^{2}_{\text{MV}} \) would be 9.

With the exception of the reference distribution, the formulas for the different conceptualizations of \( r_{WG(J)} \) are identical. In order to distinguish between the two versions, the \( r_{WG(J)} \) will refer to the interrater agreement formula using the uniform distribution, and \( r_{WG(J)}_{MD} \) will refer to the interrater agreement formula using maximum dissensus.

Because of the relative novelty of the \( r_{WG} \) and \( r_{WG(J)}_{MD} \) measures, there are numerous questions that still remain concerning their usage and the conditions under which they are most appropriate. Therefore, in addition to the two forms of interrater agreement, the variance will
also be used as a point of comparison in order to test hypotheses.

As shown in Table 15, the intercorrelations between \( r_{WG}, r_{WG(J)MD}, \) and variance measures for the post discussion category and assumption scales are significant and quite high. As expected, the \( r_{WG} \) is positively related to the \( r_{WG(J)MD} \), and both are negatively related to the variance.

Table 15

Correlation Matrix and Descriptive Statistics for Post Discussion Category and Assumption Scales for \( r_{WG}, r_{WG(J)MD}, \) and Variance Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Category (( r_{WG} ))</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.90</td>
<td>.17</td>
</tr>
<tr>
<td>2. Category (( r_{WG(J)MD} ))</td>
<td>.93</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.97</td>
<td>.02</td>
</tr>
<tr>
<td>3. Category (variance)</td>
<td>-.86</td>
<td>-.99</td>
<td>**</td>
<td>**</td>
<td></td>
<td></td>
<td>1.25</td>
<td>.87</td>
</tr>
<tr>
<td>4. Assumption (( r_{WG} ))</td>
<td>.20</td>
<td>.30</td>
<td>-.33</td>
<td>**</td>
<td></td>
<td></td>
<td>.45</td>
<td>.35</td>
</tr>
<tr>
<td>5. Assumption (( r_{WG(J)MD} ))</td>
<td>.13</td>
<td>.23</td>
<td>-.27</td>
<td>.87</td>
<td>**</td>
<td></td>
<td>.86</td>
<td>.10</td>
</tr>
<tr>
<td>6. Assumption (variance)</td>
<td>-.16</td>
<td>-.26</td>
<td>.29</td>
<td>-.93</td>
<td>-.98</td>
<td>**</td>
<td>3.34</td>
<td>1.51</td>
</tr>
</tbody>
</table>

Note. \( N=69 \) groups.

** p < .01    * p < .05    + p < .10

Tests of Normality

The Kolmogorov-Smirnov test was used to examine the distribution normality of the \( r_{WG}, r_{WG(J)MD}, \) and variance scales and items. This procedure tests the null hypothesis that a sample comes from a population in which the variable is distributed normally.
With the \( r_{wg} \) measure, almost none of the scores met the test for normality of the distribution. On the other hand, while most of the \( r_{wg(MOJ, MD)} \) scores from the assumption scale were normally distributed, the category scale and all but one of its items did not meet the test for a normal distribution. The variance scores paralleled the results of the \( r_{wg(MOJ, MD)} \) scores in that the category items were not normally distributed, but all of the assumption items did meet the test for normality.

Comparison of Initial Frame and Post-Discussion Frame Measures

As shown in Table 14, the correlation between the initial and post-discussion category scales was 0.51 (p < 0.01), and the correlation between the initial and post-discussion assumption scales was 0.73 (p < 0.01) at the individual-level of analysis. At the group level, the intercorrelations between the extent of agreement on the initial and post-discussion category and assumption scales were small and non-significant (0.10 and 0.03 respectively; see Table 29).

To further assess the relationship between time 1 and time 2 measures, the mean extent of agreement (\( r_{wg(UJ)} \), \( r_{wg(MJ, MD)} \), and the variance) on each initial framing item (before group discussion) was compared with the mean extent of agreement on each post-discussion framing item by means of paired-group t-tests. Further supporting the effectiveness of the manipulation of the constituency frame manipulation, participants entered the decision making groups with low consensus on frames. However, as illustrated in Figures 8, 9 and 10, agreement on framing items increased significantly following discussion. Thus, the movement toward shared frames can clearly be seen from time 1 to time 2.
Comparison of Initial Frame Measure with Post Discussion Frame Measure
(Uniform Distribution rwg)

Figure 8. Comparison of initial frame measure with post-discussion frame measure for rwg(01) scores.
* indicates significantly different at .05 level

- opportunity: $t(68) = -9.25, p=.000$
- threat: $t(68) = -7.15, p=.000$
- shared: $t(68) = -8.02, p=.000$
- separate: $t(68) = -9.19, p=.000$
- collaborative: $t(68) = 1.02, p=.313$
- independent: $t(68) = 4.48, p=.000$

N=69 groups

(1) = Initial Frame Measure
(2) = Post Discussion Frame Measure
Comparison of Initial Frame Measure with Post Discussion Frame Measure

(Maximum Dissensus rwg)

Figure 9. Comparison of initial frame measure with post-discussion frame measure for $r_{w10}^{MD}$ scores.

* indicates significantly different at .01 level

<table>
<thead>
<tr>
<th>Extent of Agreement</th>
<th>(1) Initial Frame Measure</th>
<th>(2) Post Discussion Frame Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=69 groups</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

opportunity $t(68) = -7.77, p=.000$
threat $t(68) = -8.23, p=.000$
shared $t(68) = -9.71, p=.000$
separate $t(68) = -14.51, p=.000$
collaborative $t(68) = 2.67, p=.009$
independent $t(68) = 7.83, p=.000$
Comparison of Initial Frame Measure with Post Discussion Frame Measure

(Variance)

Figure 10. Comparison of initial frame measure with post-discussion frame measure for variance scores.

* indicates significantly different at .01 level

N = 69 groups
(1) = Initial Frame Measure
(2) = Post Discussion Frame Measure

<table>
<thead>
<tr>
<th>Frame Measure</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM is an opp</td>
<td>3.19</td>
<td>1.22</td>
</tr>
<tr>
<td>TM is a threat</td>
<td>6.00</td>
<td>2.74</td>
</tr>
<tr>
<td>Shared issues</td>
<td>6.40</td>
<td>2.75</td>
</tr>
<tr>
<td>Separate issues</td>
<td>6.15</td>
<td>3.30</td>
</tr>
</tbody>
</table>

t(68) = 7.77, p=.000

* indicates significantly different at .01 level
Tests of Hypotheses Regarding the Antecedents of Shared Frames

Hypotheses 1 and 2. Hypothesis 1 predicted that groups with a unanimity decision rule would achieve more of a shared frame than groups with a majority decision rule. Hypothesis 2 predicted that groups composed of individuals with high commitment to their constituency position would achieve less sharing than groups composed of individuals with low commitment to their constituency position.

In order to test these hypotheses, ANOVAs were conducted with decision rule and constituency commitment as the independent variables and the extent of agreement (\(r_{W(1)}\), \(r_{W(2)}\), MD, and the variance) on the post-discussion category and assumption scales as the dependent variables. In addition to the analyses conducted with the framing scales, ANOVAs were also performed with the extent of agreement on individual post-discussion framing items. All 69 groups were included in these analyses.

To increase the precision of analyses by controlling for the initial level of agreement, ANCOVAs were also conducted, using the extent of agreement on the Initial Questionnaire items as covariates. Because the results did not change, only the ANOVA results will be reported below.

Analyses with Framing Scales. Tables 16, 17, and 18 present the ANOVA summaries for the category scale and Tables 19, 20, and 21 present the ANOVA summaries for the assumption scale. As indicated by the non-significant main effects for decision rule and constituency commitment, Hypotheses 1 and 2 were not supported by these analyses.
Table 16

**Anova Summary Table for rwg,\(t\) on Post-Discussion Category Scale**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.033</td>
<td>1.18</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.040</td>
<td>1.44</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.023</td>
<td>.83</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.028</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10

Table 17

**Anova Summary Table for r\(Mr\),\(t\),MD on Post-Discussion Category Scale**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.00</td>
<td>.68</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.00</td>
<td>.85</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.00</td>
<td>.35</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10

Table 18

**Anova Summary Table for the variance on Post-Discussion Category Scale**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.33</td>
<td>.43</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.41</td>
<td>.53</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.14</td>
<td>.19</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.78</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10
Table 19

Anova Summary Table for rwq on Post-Discussion Assumption Scale

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.220</td>
<td>1.77</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.175</td>
<td>1.41</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.012</td>
<td>.10</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.126</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01   * p < .05   + p < .10

Table 20

Anova Summary Table for rwq_md on Post-Discussion Assumption Scale

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.01</td>
<td>.98</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.00</td>
<td>.03</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.01</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01   * p < .05   + p < .10

Table 21

Anova Summary Table for the variance on Post-Discussion Assumption Scale

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>1.02</td>
<td>.44</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>2.41</td>
<td>1.04</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.07</td>
<td>.03</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>2.32</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01   * p < .05   + p < .10
Analyses with Individual Framing Items. When the extent of agreement (rwg, rMOD, and the variance) on individual post-discussion framing items was used as the dependent variable in ANOVAs, three of the ten framing items yielded significant effects. Of these three items, one was from the category frame and two were from the assumption frame. For the sake of clarity, only the significant results are presented below.

When agreement on the item, "Towers Market represents an opportunity to my store," was used as the dependent variable in an ANOVA, the interaction between decision rule and commitment was significant for rMOD (p=.046) and the variance (p=.046), and marginally significant for rwg (p=.062). The ANOVA summaries are shown in Tables 22, 23, and 24 respectively. The form of the interactions for this item are depicted in Figures 11, 12 and 13 respectively.

Table 22
Anova Summary Table for rMOD on Post-Discussion Item That Towers Market Represents an Opportunity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.04</td>
<td>1.40</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.01</td>
<td>.51</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>.11</td>
<td>4.15'</td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.03</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10
Table 23
Anova Summary Table for the Variance on Post-Discussion Item That Towers Market Represents an Opportunity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>2.93</td>
<td>1.40</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>1.06</td>
<td>.51</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>8.70</td>
<td>4.15'</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>2.10</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10

Table 24
Anova Summary Table for rwg_{11} on Post-Discussion Item That Towers Market Represents an Opportunity

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.116</td>
<td>1.21</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.029</td>
<td>.30</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.345</td>
<td>3.60'</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.096</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10

The interactions were examined across and within levels of the decision rule condition via t-tests. Because the form of the interactions for rwg_{11}, r_{w11,MD}, and the variance revealed exactly the same pattern (see Figures 11-13), only the t-test results for rwg_{11} will be presented. High commitment/unanimity participants (M=.82) agreed more that Towers Market represented an opportunity than low commitment/unanimity participants (M=.59, t(31.33)=2.39, p=.023). This
result is in the opposite direction than that predicted by Hypothesis 2. There was no significant difference on the extent of agreement between high commitment/majority rule students (M=.72) and low commitment/majority rule students (M=.78, t(25.58)=-.54, p=.60) on this item.

While there was not a significant difference in the extent of agreement between the unanimity (M=.82) and majority rule (M=.72) participants in the high commitment condition (t(21.33)=.97, p=.34), there was a marginally significant difference between these participants in the low commitment condition (M<sub>UN</sub>=.59, M<sub>HR</sub>=.78, t(36.04)=-1.80, p=.08). The means are not in the direction predicted by Hypothesis 1.
Figure 11. Interaction of decision rule and commitment on the extent of agreement \( (x_{ag_{(1) MD}}) \) that Towers Market represents an opportunity.
Figure 12. Interaction of decision rule and commitment on the variance of the item that Towers Market represents an opportunity.
Figure 13. Interaction of decision rule and commitment on the extent of agreement ($rwg_{(i)}$) that Towers Market represents an opportunity.
A two-way analysis of variance with the rwg\(_{11}\) on this "shared" item as the dependent variable revealed a significant main effect for decision rule. The results are displayed in Table 25. Means were in the expected direction with unanimity participants (M = .44) reporting more agreement than majority rule participants (M = .27). Although not significant, the means were in the hypothesized direction for commitment, with low commitment students showing more agreement (M = .40) on this item than high commitment students (M = .31). The decision rule main effect on this item did not replicate when using r\(_{wg(1)}\) MD and the variance as dependent variables.

Table 25
Anova Summary Table for rwg\(_{11}\) on Post-Discussion Item Indicating That Issues Should Be Shared

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.151</td>
<td>1.50</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.451</td>
<td>4.47*</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>.123</td>
<td>1.22</td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.101</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01 * p < .05 + p < .10

The main effect for decision rule was marginally significant (p=.064) for the rwg\(_{11}\) to the "separate" item. Results are displayed in Table 26. The means were in the expected direction for decision rule (M\(_{UN}=.47, M_{MR}=.31\)) and commitment (M\(_{HC}=.34, M_{LC}=.44\)). No significant main effects occurred on this item when using the r\(_{wg(1)}\) MD and variance as forms of interrater agreement.
Table 26
Anova Summary Table for rwg11, on Post-Discussion Item Indicating That Stores Should Be Separate

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.169</td>
<td>1.42</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.426</td>
<td>3.56*</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.004</td>
<td>.03</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.120</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01    * p < .05    + p < .10

As a weaker test of Hypotheses 1 and 2, the group means of the individual manipulation check items were correlated with the extent of agreement on framing scales and items. While no significant relationships resulted for framing scales, there were some significant correlations for framing items. Consistent with Hypothesis 1, groups that arrived at more of a shared frame on the "shared" (r=.31; p=.01) and "collaborative" (r=.27, p=.03) items were more likely to report that their decisions were acceptable to all group members. Also as expected, higher agreement on the "shared" item correlated positively (marginally) with the extent to which participants reported unanimous decisions (r=.22, p=.07). However, contrary to expectations, higher agreement on the "collaborative" item also correlated positively (marginally) with the extent to which participants reported majority rule decisions (r=.22, p=.06).

In support of Hypothesis 2, the rwg of the "positive consequences" item correlated directly with the extent to which groups reported being committed to obtaining an acceptable decision (r=.29, p=.02). However, contrary to expectations, lower agreement on the "threat" (reverse scored) item was related to higher commitment to obtaining an acceptable
Gender Effects. In order to assess whether males and females responded differently to the measures, exploratory ANOVAs were conducted with gender added in as a third independent variable. No significant gender differences occurred when the post-discussion category and assumption scales were used as dependent variables for \(rwg_{(1)}\), \(rwg_{(2)}\)MD, or the variance. As noted below, however, some significant gender effects did result for individual items with \(rwg_{(1)}\), but were not replicated with \(rwg_{(2)}\)MD or the variance.

A three-way analysis of variance performed with the \(rwg_{(1)}\) in response to the item, "Stores in a Market should operate independently, except for sharing a common building with other stores" as the dependent variable yielded a significant decision rule by gender interaction, as well as a main effect for gender (\(M_f=.39, M_m=.22\)). Table 27 displays the ANOVA summary table and Figure 14 depicts the form of the interaction between decision rule and gender.
Table 27

Three Way Anova Summary Table for rwg, on Post-Discussion Item That Stores Should Operate Independently

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.001</td>
<td>.02</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.004</td>
<td>.05</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.464</td>
<td>5.61*</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>.052</td>
<td>.63</td>
</tr>
<tr>
<td>Commitment X Gender</td>
<td>1</td>
<td>.005</td>
<td>.06</td>
</tr>
<tr>
<td>Decision Rule X Gender</td>
<td>1</td>
<td>.341</td>
<td>4.12'</td>
</tr>
<tr>
<td>Commitment X Decision Rule X Gender</td>
<td>1</td>
<td>.068</td>
<td>.82</td>
</tr>
<tr>
<td>Error</td>
<td>61</td>
<td>.083</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10

T-tests revealed that males and females did not differ in the extent of agreement on this item for the unanimity condition (M_F = .31, M_M = .29; t(27.95) = .19, p = .85). However, for the majority rule condition, females (M = .47) agreed more than males (M = .16; t(19.36) = 2.80, p = .01). Although there was not a significant difference for females across the unanimity (M = .31) and majority rule conditions (M = .47; t(24.29) = -1.31, p = .20), there was a marginally significant difference across conditions for males (M_un = .29, M_mr = .16; t(37.87) = 1.76, p = .09). Therefore, the means for males, but not females, are in the direction of that predicted by Hypothesis 1.
Figure 14. Interaction of decision rule and gender on the extent of agreement (r wg) that stores in the market should operate independently.
The interaction between decision rule and gender was marginally significant when the extent of agreement (\( \text{rwg}_{(1)} \)) on the item, "Custodial services, clerks, temperature, and advertising should all be shared by stores in the Market" was the dependent variable (\( F(1, 61) = 3.70, p = .059 \)). In addition, there was a marginally significant main effect for decision rule (\( F(1, 61) = 3.39, p = .070 \)), with means in the direction of that predicted by Hypothesis 1 (\( M_{\text{UN}} = .43, M_{\text{MR}} = .29 \)) Table 28 and Figure 15 display these results.

Table 28
Three-Way Anova Summary Table for \( \text{rwg}_{(1)} \) on Post-Discussion Item Indicating That Issues Should Be Shared

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.112</td>
<td>1.17</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.325</td>
<td>3.39*</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>.224</td>
<td>2.33</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>.068</td>
<td>.71</td>
</tr>
<tr>
<td>Commitment X Gender</td>
<td>1</td>
<td>.052</td>
<td>.55</td>
</tr>
<tr>
<td>Decision Rule X Gender</td>
<td>1</td>
<td>.355</td>
<td>3.70*</td>
</tr>
<tr>
<td>Commitment X Decision Rule X Gender</td>
<td>1</td>
<td>.016</td>
<td>.17</td>
</tr>
<tr>
<td>Error</td>
<td>61</td>
<td>.096</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10

Paralleling the decision rule by gender interaction for extent of agreement on the independence item, t-tests revealed that males and females did not differ in the extent of agreement on the shared item for the unanimity condition (\( M_{p} = .43, M_{w} = .45 \); \( t(27.84) = -.21, p = .83 \)). However, for the majority rule condition, females (\( M = .42 \)) agreed more than males (\( M = .16 \); \( t(19.55) = 2.73, p = .01 \)).
Figure 15. Interaction of decision rule and gender on the extent of agreement ($rwg_{11}$) that issues should be shared among stores in the Market.
While there was not a significant difference for females across the unanimity ($M=.42$) and majority rule conditions ($t(26.26)=-.25$, $p=.80$), there was a significant difference across conditions for males ($M_{UM}=.45$, $M_{HR}=.16$; $t(36.54)=3.58$, $p=.001$). Again, the means for males, but not females, are in the direction of that predicted by Hypothesis 1.

**Summary for Hypotheses 1 and 2.** In summary, results for Hypothesis 1 demonstrate only partial support for the prediction that unanimity groups will achieve more of a shared frame than majority rule groups. No support resulted for the category scales or individual items. Although a significant decision rule by commitment interaction resulted for the "opportunity" item, the means were not in the direction expected. With regard to assumptions, a significant decision rule main effect did not occur for the assumption scale, but unanimity students did evidence more agreement than majority rule students for both the "shared" and "separate" issues items. When gender was added in as a third independent variable, the means for males, but not females provided support for Hypothesis 1 for the "independent stores" and "shared issues" items.

No support was found for the prediction that groups consisting of members with high constituency commitment would achieve less of a shared frame than groups consisting of members with low constituency commitment. The decision rule by commitment interaction for the "opportunity" item was the only significant effect that resulted with commitment, but the means were in the opposite direction of that proposed by Hypothesis 2.

The various forms of interrater agreement used correlated very highly (see Table 15), and produced similar results regarding the framing scales. However, more significant ANOVA and correlational effects were produced when using the $rw_{G(J)}$ of individual framing items than the $rw_{G(2)MD}$ or the variance.
Tests of Hypotheses Regarding the Consequences of Shared Frames

In order to test hypotheses three through nine, correlations and regressions were examined for the extent of agreement on both framing scales and individual items. Analyses were conducted using the $r_{wg(J)}$, $r_{wgMD}$ and the variance of the framing scales/items. In general, the pattern of results was similar across all three forms of agreement; therefore, only the $r_{wg(J)}$ results are reported here. The intercorrelations between the extent of agreement on framing scales and outcome variable scales are summarized in Table 29. The intercorrelations among the $r_{wg(J)}$ of framing items are listed in Appendix T.

Because a number of the framing variables were intercorrelated with one another, regression analyses were necessary to address the possibility that various predictors might combine in an additive fashion to predict the outcome variables of interest (implementation, new issues, and process/outcome satisfaction). Standard simultaneous regression analyses were conducted, with the $r_{wg}$ of all framing variables or scales entered as a block. In addition, stepwise regressions were computed, with the $r_{wg}$ of each framing variable or scale entered if it added significant variance.

Hypothesis 3. Hypothesis 3 predicted that groups with more of a shared frame would anticipate fewer problems with implementing the decisions reached than groups with less of a shared frame.

Analyses with Framing Scales. Table 29 reveals that the $r_{wg(J)}$ of the post-discussion category scale was positively related to the mean of the implementation scale ($r=.29$, $p=.014$). Therefore, in support of Hypothesis 3, a higher level of agreement on the category scale was related to viewing implementation positively. On the other hand, agreement on the post-discussion assumption scale was not significantly correlated with the implementation scale ($r=.16$, $p=.20$).
Table 29

Intercorrelations among Variable Scales at the Group-Level of Analysis

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Identity</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Initial Category (rwg,j)</td>
<td>.02</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Initial Assumption (rwg,j)</td>
<td>.04</td>
<td>.22</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Post-Disc. Category (rwg,j)</td>
<td>-.03</td>
<td>.10</td>
<td>-.00</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Post-Disc. Assumption (rwg,j)</td>
<td>-.24</td>
<td>.01</td>
<td>.03</td>
<td>.20</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Implementation</td>
<td>.02</td>
<td>-.26</td>
<td>.09</td>
<td>.29</td>
<td>.16</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Market Decor (rwg,j)</td>
<td>.07</td>
<td>.17</td>
<td>.08</td>
<td>.02</td>
<td>-.11</td>
<td>-.03</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Stocking Items (rwg,j)</td>
<td>-.13</td>
<td>.04</td>
<td>-.16</td>
<td>.19</td>
<td>.20</td>
<td>-.15</td>
<td>.07</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>9. Process Satisfac.</td>
<td>-.03</td>
<td>-.17</td>
<td>.02</td>
<td>.27</td>
<td>.10</td>
<td>.63</td>
<td>-.08</td>
<td>-.11</td>
<td>---</td>
</tr>
<tr>
<td>10. Outcome Satisfac.</td>
<td>-.00</td>
<td>-.24</td>
<td>.01</td>
<td>.22</td>
<td>.21</td>
<td>.61</td>
<td>-.03</td>
<td>-.08</td>
<td>.75</td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01  * p < .05  + p < .10
As a further test of this hypothesis, both simultaneous and stepwise regression techniques were conducted, which involved regressing the mean of the implementation scale on the extent of agreement of the post-assumption category and assumption framing scales. Table 30 displays the results.

Table 30

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R² eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.27</td>
<td>2.29*</td>
<td>.31</td>
<td>.10</td>
<td>3.50*</td>
</tr>
<tr>
<td>Post-Discussion Assumption Scale</td>
<td>.10</td>
<td>.84</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Stepwise Regression

Step 1:

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R² eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.29</td>
<td>2.52*</td>
<td>.29</td>
<td>.09</td>
<td>6.33*</td>
</tr>
</tbody>
</table>

Step 2:

Nothing else entered

Note. N=69 groups.

** p < .01 * p < .05 + p < .10

In partial support of Hypothesis 3, the greater the agreement on the post-discussion category scale, the greater the perception that implementation would be favorable. However, the post-discussion assumption scale was not significant and dropped out of the model.
Analyses with Individual Framing Items. Correlations among extent of agreement on individual framing items and the implementation scale revealed significant relationships for three of the six category framing items. Supporting Hypothesis 3, greater agreement on items indicating that Towers Market was an opportunity ($r=.27$, $p=.02$), a positive development ($r=.26$, $p=.03$), as well as a project that would lead to gain ($r=.31$, $p=.01$) were related to viewing implementation favorably. In addition, the relationship between expecting positive consequences from Towers Market and implementation was marginally significant ($r=.23$, $p=.06$). With regard to the assumption items, there was a significantly positive relationship between the "collaborative" item ($r=.26$, $p=.03$) and a marginally significant relationship for the "shared" item ($r=.21$, $p=.08$). These correlations are depicted in Table 31.
Table 31
Intercorrelations Between Dependent Variable Scales and the \( rwg_{ij} \) of Individual Framing Items

<table>
<thead>
<tr>
<th>Framing Item Category</th>
<th>Implement. (( rwg_{ij} ))</th>
<th>Stocking Items (( rwg_{ij} ))</th>
<th>Market Decor (( rwg_{ij} ))</th>
<th>Process Satisfac.</th>
<th>Outcome Satisfac.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.27</td>
<td>.14</td>
<td>-.05</td>
<td>.11</td>
<td>.15</td>
</tr>
<tr>
<td><strong>Threat</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.09</td>
<td>.11</td>
<td>-.08</td>
<td>-.07</td>
<td>.14</td>
</tr>
<tr>
<td><strong>Lose</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.31</td>
<td>.16</td>
<td>.14</td>
<td>.19</td>
<td>.23</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.17</td>
<td>.09</td>
<td>.03</td>
<td>.08</td>
<td>.08</td>
</tr>
<tr>
<td><strong>Positive Consequences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.23</td>
<td>.16</td>
<td>.12</td>
<td>.24</td>
<td>.24</td>
</tr>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.26</td>
<td>.25</td>
<td>.00</td>
<td>.20</td>
<td>.18</td>
</tr>
<tr>
<td><strong>Assumption</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Separate</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.14</td>
<td>.06</td>
<td>.04</td>
<td>-.01</td>
<td>.08</td>
</tr>
<tr>
<td><strong>Share</strong></td>
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</tr>
<tr>
<td>RS</td>
<td>.21</td>
<td>.23</td>
<td>-.26</td>
<td>.28</td>
<td>.31</td>
</tr>
<tr>
<td><strong>Independent</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>RS</td>
<td>-.05</td>
<td>.11</td>
<td>-.05</td>
<td>-.03</td>
<td>-.02</td>
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<tr>
<td><strong>Collaborative</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>.26</td>
<td>.04</td>
<td>-.07</td>
<td>.25</td>
<td>.31</td>
</tr>
</tbody>
</table>

**Note:** N=69 groups

**p < .01**  * p < .05  + p < .10
The mean of the implementation scale was also regressed on the set of individual category and assumption framing items in two separate equations. No framing items reached significance in the simultaneous equation, and only one of the six category items and one of the four assumption items entered significantly into the stepwise equation. In the direction expected by Hypothesis 3, greater agreement on the perceptions that stores would gain from the market venture ("lose" item reversed scored) and that the market should be a collaborative effort were positively related to viewing implementation favorably. Tables 32 and 33 present these results, respectively.

Table 32

Multiple Linear Regressions of Implementation on the RWQ(1) of the Post-Discussion Category Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>$R^2_{eq}$</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.36</td>
<td>.13</td>
<td>1.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>.15</td>
<td>1.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat (RS)</td>
<td>-.05</td>
<td>-.39</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Positive Cons.</td>
<td>.14</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>.17</td>
<td>.98</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.04</td>
<td>.18</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Negative (RS)</td>
<td>-.01</td>
<td>-.06</td>
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<tr>
<td>Stepwise Regression</td>
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<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>.31</td>
<td>2.62*</td>
<td>.31</td>
<td>.09</td>
<td>6.89*</td>
</tr>
<tr>
<td>Step 2:</td>
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<td></td>
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</tr>
<tr>
<td>Nothing else entered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.

** $p < .01$  * $p < .05$  + $p < .10$
Table 33

Multiple Linear Regressions of Implementation on the rwg of the Post-Discussion Category Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R^2eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td>.35</td>
<td>.12</td>
<td>2.13+</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Independent (RS)</td>
<td>-.19</td>
<td>-1.46</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Collaborative (RS)</td>
<td>.21</td>
<td>1.68+</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate (RS)</td>
<td>.09</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>.19</td>
<td>1.35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stepwise Regression

Step 1:
Collaborative | .26   | 2.22* | .26        | .07   | 4.92* |

Step 2:
Nothing else entered

Note. N=69 groups.

** p < .01  * p < .05  + p < .10

Summary for Hypothesis 3. As seen from the analyses presented above, there was mixed support for the expectation that groups with more of a shared frame would anticipate fewer problems with implementation. Greater support emerged from the category scale and items than did the assumption frame. In general, between seven and twelve percent of the variability in implementation was accounted for by shared frame, leaving the remaining variance to be accounted for by other factors.

Hypothesis 4. Hypothesis 4 predicted that group members with more of a shared frame would respond more similarly to new, related issues than group members with less of a shared frame. Because participants were presented with two new issues concerning market decor and stocking
items, each will be discussed sequentially. These analyses involved correlations and regressions with the $\text{rg}_{ij}$ of the framing scales/items and the $\text{rg}_{ij}$ of the market decor and stocking items scales.

### Analyses with Framing Scales for Market Decor.

As revealed in Table 29, agreement on the post-discussion category ($r = .02, p = .89$) and assumption scales ($r = -.11, p = .39$) were not significantly correlated with agreement on the market decor scale. As a further test of this hypothesis, the $\text{rg}_{ij}$ of the market decor scale was regressed on the $\text{rg}_{ij}$ of the post-assumption category and assumption framing scales. Table 34 displays the results, which provide no support for Hypothesis 4.
Table 34

Multiple Linear Regressions of the rwg\(_{(3)}\) of Market Decor on the rwg\(_{(1)}\) of the Post-Discussion Category and Assumption Framing Scales

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R(^2)eq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.04</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Assumption Scale</td>
<td>-.11</td>
<td>-.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stepwise Regression

Step 1

No variables were entered

Note. N=69 groups.
** p < .01  * p < .05  + p < .10

Analyses with Individual Framing Items for Market Decor. As shown in Table 31, the rwg\(_{(3)}\) on only one of the ten individual framing items correlated significantly with the rwg\(_{(3)}\) of the market decor scale. In the opposite direction of that predicted by Hypothesis 4 lower agreement on the "shared" item was associated with greater agreement on decor (r= -.26, p=.034).

When the rwg\(_{(3)}\) of the market decor scale was regressed on the rwg\(_{(1)}\) of the post-assumption category and assumption framing items, no support resulted for this hypothesis (refer to Tables 35 and 36). Although the "shared" item entered significantly into the simultaneous and stepwise equations in Table 36, the negative beta weight indicates that greater agreement on this item was associated with less agreement on the decor issue. Obviously, this was not predicted by Hypothesis 4.
### Table 35

**Multiple Linear Regressions of the \( rw_{t} \) of Market Decor on the \( rw_{t} \) of the Post-Discussion Category Framing Items**

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>( R^2_{eq} )</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simultaneous Regression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>-.12</td>
<td>-.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat (RS)</td>
<td>-.16</td>
<td>-1.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Cons.</td>
<td>.17</td>
<td>1.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>.27</td>
<td>1.51</td>
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</tr>
<tr>
<td>Positive</td>
<td>-.16</td>
<td>-.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative (RS)</td>
<td>.03</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stepwise Regression</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Step 1:</td>
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<td></td>
</tr>
<tr>
<td>No variables entered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** N=69 groups.

** p < .01  * p < .05  + p < .10
Table 36

Multiple Linear Regressions of the $\text{rwg}_{(s)}$ of Market Decor on the $\text{rwg}_{(s)}$ of the Post-Discussion Assumption Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
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<th>Multiple R</th>
<th>$R^2_{eq}$</th>
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</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Independent (RS)</td>
<td>.06</td>
<td>.44</td>
<td>.30</td>
<td>.09</td>
<td>1.56</td>
</tr>
<tr>
<td>Collaborative (RS)</td>
<td>.02</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate (RS)</td>
<td>.15</td>
<td>1.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>-.34</td>
<td>-2.33*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>-.26</td>
<td>-2.16*</td>
<td>.26</td>
<td>.07</td>
<td>4.67*</td>
</tr>
<tr>
<td>Step 2:</td>
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<tr>
<td>Nothing else entered</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.

** p < .01    * p < .05    + p < .10

Analyses with Framing Scales for Stocking Items. As with market decor, agreement on the post-discussion category ($r=.19$, $p=.12$) and assumption scales ($r=.20$, $p=.11$) were not significantly correlated with agreement on the stocking items scale (see Table 29). Regressing the $\text{rwg}_{(s)}$ of the market decor scale on the $\text{rwg}_{(s)}$ of the post-assumption category and assumption framing scales also produced no support for Hypothesis 4. Table 37 displays the results.
Table 37

Multiple Linear Regressions of the rwg(m) of the Stocking Items Scale on the rwg(m) of the Post-Discussion Category and Assumption Framing Scales

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R^2_eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td>.25</td>
<td>.06</td>
<td>2.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Category</td>
<td>.15</td>
<td>1.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Assumption</td>
<td>.16</td>
<td>1.35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stepwise Regression

Step 1

No variables were entered

Note. N=69 groups.
** p < .01  * p < .05  + p < .10

Analyses with Individual Framing Items for Stocking Items. As shown in Table 31, the rwg(m) of the stocking items scale correlated significantly with the rwg(m) of the "positive" item (r = .25, p = .035) and was marginally related to the rwg(m) of the "shared" item (r = .23, p = .060). In the direction predicted by Hypothesis 4, greater agreement on these items was associated with greater agreement on the issue of how to handle stocking.

When the rwg(m) of the stocking items scale was regressed on the rwg(m) of the post-assumption category and assumption framing items, agreement on the "positive" and "collaborative" items had significant beta weights in the stepwise analyses. As shown in Tables 38 and 39, these results are in the direction of that predicted by Hypothesis 4.
<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>$R^2_{eq}$</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>.01</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat (RS)</td>
<td>.02</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Cons.</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.33</td>
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<td></td>
</tr>
<tr>
<td>Negative (RS)</td>
<td>-.13</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>.29</td>
<td>.08</td>
<td>.92</td>
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<tr>
<td>Step 1:</td>
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<tr>
<td>Positive</td>
<td>.25</td>
<td>2.15*</td>
<td>.25</td>
<td>.06</td>
<td>4.62*</td>
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<td>Step 2:</td>
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<tr>
<td>Nothing else entered.</td>
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<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note.** N=69 groups.

** p < .01      * p < .05      + p < .10
Summary for Hypothesis 4. The analyses presented above reveal little evidence to support the assertion that a shared frame is related to viewing new issues similarly. Specifically, none of the results with framing scales produced any support for this hypothesis, and very few individual framing items were related to agreement on new issues. Although the findings regarding stocking items were in the expected direction, the significant results emerging from the market decor issue were in the opposite direction of that hypothesized.

Hypothesis 5a: Hypothesis 5a predicted that there would be a positive relationship between the extent of shared frames and both process and outcome satisfaction. In order to test this hypothesis, the zero-order correlations between the rwg of framing scales/items and outcome/process satisfaction were examined.
Analyses with Framing Scales. As depicted in Table 29, the correlation between process satisfaction and the post-discussion category scale was significant \((r=.27, p = .023)\), indicating that groups with more of a shared frame on the opportunity/threat dimension reported more satisfaction with group process than groups with less of a shared frame. The relationship between process satisfaction and the extent of agreement on the assumption scale, although positive \((r=.10, p = .435)\), was not significantly different from zero. With regard to outcome satisfaction, correlations with the post-discussion category \((r=.22, p = .069)\) and assumption \((r=.21, p = .08)\) scales were both positive and marginally significant.

Analyses with Individual Framing Items. Table 31 reveals that the "positive consequences" \((r=.24, p < .05)\), "shared" \((r=.28, p < .05)\), and "collaborative" \((r=.25, p < .05)\) individual framing items were positively correlated with process satisfaction. The outcome satisfaction correlations showed that the "lose" \((RS, r=.23, p < 1.0)\) and "positive consequences" \((r=.24, p < 1.0)\) items were marginally significant, while correlations with the "shared" \((r=.31, p < .01)\) and "collaborative" \((r=.31, p < .05)\) items did reach significance.

Summary for Hypothesis 5a. Partial support resulted for the hypothesis that there would be a positive relationship between the extent of shared frames and both process and outcome satisfaction. In support of Hypothesis 5a, the extent of agreement on frames influenced both types of satisfaction and all of the correlations with framing scales and the vast majority with framing items were positive. However, many of the correlations were not significantly different from zero at the .05 level. Specifically, for process satisfaction, only the category scale and three of the ten framing items correlated significantly. While both framing scales and two category items were marginally correlated with outcome satisfaction, only correlations with two assumption items actually reached significance.
Hypothesis 5b. According to Hypothesis 5b, the extent to which frames are shared will have a greater positive impact on decision process satisfaction than decision outcome satisfaction. In order to test this hypothesis, the t statistic with \( n-3 \) degrees of freedom recommended by Cohen and Cohen (1983, pp. 56-57) was used to test the difference between correlations from the same sample.

Analyses with Framing Scales. Although the relationships between the \( r_{\text{w},i,j} \) of the category scale and process (\( r = .27 \)) and outcome (\( r = .22 \)) satisfaction were in the direction predicted by Hypothesis 5b, the t-test revealed that this difference was not significant, \( t(66) = .60, p > .05 \). With regard to the assumption scale, the correlations were not in the expected direction for process (\( r = .10 \)) and outcome (\( r = .21 \)) satisfaction, and this difference was also not significant (\( t(66) = -1.28, p > .05 \)).

As a further test of this hypothesis, both simultaneous and stepwise regression techniques were conducted, which involved regressing the mean of the process and outcome satisfaction scales on the extent of agreement of the post-assumption category and assumption framing scales. Tables 40 and 41 present the results for process and outcome satisfaction, respectively.

Simultaneous regression results revealed that while both the category and assumption scales accounted for the same amount of variance in process and outcome satisfaction (8%), the category scale explained a significant portion of the variance in process satisfaction, but not outcome satisfaction. In addition, the category scale entered significantly in the stepwise equation for process satisfaction, but not outcome satisfaction. Therefore, category scale results support Hypothesis 5b, but assumption scale results do not.
Table 40

Multiple Linear Regressions of Process Satisfaction on the rwg(S) of the Post-Discussion Category and Assumption Framing Scales

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R²eq</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.26</td>
<td>2.19*</td>
<td>.27</td>
<td>.07</td>
<td>5.40*</td>
</tr>
<tr>
<td>Post-Discussion Assumption Scale</td>
<td>.04</td>
<td>.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise Regression</td>
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<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.27</td>
<td>2.32*</td>
<td>.27</td>
<td>.07</td>
<td>5.40*</td>
</tr>
<tr>
<td>Step 2:</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01  * p < .05  + p < .10
Table 41

Multiple Linear Regressions of Outcome Satisfaction on the rwg of the Post-Discussion Category and Assumption Framing Scales

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>$R^2_{eq}$</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
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<td></td>
</tr>
<tr>
<td>Post-Discussion Category Scale</td>
<td>.18</td>
<td>1.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Discussion Assumption Scale</td>
<td>.17</td>
<td>1.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nothing entered significantly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01 * p < .05 + p < .10

Analysis with Individual Framing Items. The mean of the process and outcome satisfaction scales were also regressed on the set of individual category and assumption framing items in separate equations. These results are summarized in Tables 42-45.

The stepwise regression equations in Tables 42 and 43 reveal that while "positive consequences" accounted for significant variance in process satisfaction, no category framing items contributed significantly toward outcome satisfaction variance. Therefore, as with the framing scale analyses, the category item results are consistent with predictions. In contrast, however, the findings regarding assumption framing items are in the opposite direction than that
proposed. Specifically, assumption items account for slightly more variance in the outcome satisfaction measure than the process satisfaction measure for both the simultaneous (18% vs. 15%) and stepwise (10% vs. 8%) regression equations.

Table 42
Multiple Linear Regressions of the Process Satisfaction Scale on the rwd, of the Post-Discussion Category Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R^2_eq</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>-.00</td>
<td>- .03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat (RS)</td>
<td>-.22</td>
<td>-1.76+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Cons.</td>
<td>.26</td>
<td>1.87+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>.07</td>
<td>.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.16</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative (RS)</td>
<td>-.05</td>
<td>-.33</td>
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</tr>
<tr>
<td>Stepwise Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Cons.</td>
<td>.24</td>
<td>2.01*</td>
<td>.24</td>
<td>.06</td>
<td>4.05*</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nothing else entered.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01    * p < .05    + p < .10
Table 43

Multiple Linear Regressions of the Outcome Satisfaction Scale on the rwd(II) of the Post-Discussion Category Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>R&lt;sup&gt;2&lt;/sup&gt;</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>.03</td>
<td></td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat (RS)</td>
<td>.03</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Cons.</td>
<td>.15</td>
<td></td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lose (RS)</td>
<td>.17</td>
<td>.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.03</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative (RS)</td>
<td>-.07</td>
<td>-.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1: Nothing entered significantly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** N=69 groups.

** p < .01  * p < .05  + p < .10
Table 44

Multiple Linear Regressions of the Process Satisfaction Scale on the rwg_{(1)} of the Post-Discussion Assumption Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>Multiple R</th>
<th>$R^2_{eq}$</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent (RS)</td>
<td>-.19</td>
<td>-1.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative</td>
<td>.18</td>
<td>1.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate (RS)</td>
<td>-.11</td>
<td>-.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>.34</td>
<td>2.43*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>.28</td>
<td>2.38*</td>
<td>.28</td>
<td>.08</td>
<td>5.66*</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No other variables were entered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01  * p < .05  + p < .10
Table 45

Multiple Linear Regressions of the Outcome Satisfaction Scale on the rwg(11) of the Post-Discussion Assumption Framing Items

<table>
<thead>
<tr>
<th>IV Scale</th>
<th>Beta</th>
<th>T</th>
<th>R</th>
<th>R^2 eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous Regression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent (RS)</td>
<td>-.20</td>
<td>-1.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative (RS)</td>
<td>.22</td>
<td>1.85+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separate (RS)</td>
<td>-.02</td>
<td>-.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share</td>
<td>.33</td>
<td>2.40*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stepwise Regression

Step 1:

| Share                  | .31  | 2.72 | .31 | .10    | 7.37** |

Note. N=69 groups.

** p < .01   * p < .05   + p < .10

Summary for Hypothesis 5b. Hypothesis 5b received weak partial support. While shared frame in terms of categories did have more of an impact on process satisfaction, shared frame in terms of assumptions influenced outcome satisfaction to a greater extent.

Introduction to Hypotheses 6 through 10

The next set of hypotheses deal with the relationships between process/outcome satisfaction, shared frame, and group decisions. Specifically, differences in the levels of outcome and process satisfaction are predicted, depending on the extent to which frames are shared and whether decisions are arrived at in the group (refer to Figures 3 and 4). Therefore, in order to test these hypotheses, the decision questionnaire was examined to assess the number of groups that failed to reach a decision on any one of the four assigned issues.
Almost all of the decision making groups were able to reach a decision on all four issues in the allotted time. Specifically, only seven of the sixty-nine groups failed to reach a decision on at least one issue. Of those seven groups, two groups did not reach agreement on two issues, and one group did not reach agreement on three issues. The remaining four groups missed one issue each. While six groups failed to reach a decision on the custodial services issues, only one group did not arrive at a decision on advertising, and two groups each failed to reach a decision on clerks and market temperature.

Of the seven groups that failed to reach a decision, four were in the high commitment group and three were in the low commitment group. In addition, four groups were female and in the unanimity condition, and three groups were male and in the majority rule condition. The correlations between decisions reached and decision rule, commitment, and gender were all nonsignificant. In addition, correlational results indicated that groups that arrived at a decision on all four issues had more of a shared frame on categories ($r=.30$, $p=.013$) and assumptions ($r=.22$, $p=.070$) than groups that failed to arrive at a decision on at least one issue.

Because of the limited number of groups that failed to arrive at decisions, the following results are exploratory and must be interpreted with caution.

**Hypothesis 6a**: Hypothesis 6a predicted that there would be a positive relationship between both process and outcome satisfaction and whether decisions are reached or not. The correlations between reaching decisions and process and outcome satisfaction were $.43$ ($p = .000$) and $.60$, respectively ($p = .000$). Therefore, this hypothesis was fully supported.
Hypothesis 6b  According to Hypothesis 6b, whether decisions are reached or not will have a greater positive impact on decision outcome satisfaction than decision process satisfaction. As with Hypothesis 5b, the t statistic with n-3 degrees of freedom recommended by Cohen and Cohen (1983) was used to test the difference between the correlations. The relationships between whether or not a decision was reached and process (r = .43, p = .000) and outcome (r = .60, p = .000) satisfaction were in the direction predicted by Hypothesis 6b, and the t-test revealed that this difference was significant, t(66) = -3.19, p < .05. Thus, Hypothesis 6b was also fully supported.

Hypotheses 7, 8, 9, and 10. Hypothesis 7 predicted that, relative to the other conditions in Figure 3, groups that achieve more of a shared frame and arrive at group decisions will report the greatest satisfaction with decision process and outcome. According to Hypothesis 8, groups that achieve less of a shared frame and do not arrive at group decisions will report the least satisfaction with decision process and outcome (relative to the other conditions in Figure 3). Hypothesis 9 predicted that groups that achieve less of a shared frame and arrive at group decisions will report lower process satisfaction and a moderate amount of process satisfaction. Finally, according to Hypothesis 10, groups that achieve more of a shared frame and do not arrive at group decisions will report lower outcome satisfaction and a moderate amount of process satisfaction.

The test of these hypotheses involved utilizing hierarchical moderated regression. For the set of equations predicting process and outcome satisfaction, the rwg(1), of the category scale was entered in at the first step, followed by whether or not a decision was reached, and lastly the interaction. A second set of equations was performed, identical to the first set, except for the inclusion of the rwg(1) of the assumption scale instead of the category scale. Results for these analyses are summarized in Tables 46 and 47, respectively.
Operationally, support for Hypotheses 7-10 would be evidenced by significant interaction terms, of the form depicted in Figure 4.

As seen in Table 46, the three predictors explained 22% of the variance in process satisfaction, 7% being accounted for by agreement on the category scale, 14% by reaching a decision, and 1% by the interaction term. The outcome satisfaction results revealed a similar pattern, with 5% of the variance being accounted for by agreement on the category scale, 32% by reaching a decision, and 0% by the interaction term.

Table 46
Hierarchical Moderated Regression of Process and Outcome Satisfaction on the \( \text{rwg}_{(i,j)} \) of the Category Scale, Decisions Reached and the Interaction Term

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Beta</th>
<th>t</th>
<th>Multiple R</th>
<th>( R^2_{eq} )</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Process Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Category Scale (( \text{rwg}_{(i,j)} ))</td>
<td>.27</td>
<td>2.32*</td>
<td>.27</td>
<td>.07</td>
<td>5.40*</td>
</tr>
<tr>
<td>2.</td>
<td>Decision Reached</td>
<td>.38</td>
<td>3.31**</td>
<td>.45</td>
<td>.21</td>
<td>8.58**</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>-.53</td>
<td>-1.25</td>
<td>.47</td>
<td>.22</td>
<td>6.28**</td>
</tr>
<tr>
<td></td>
<td>Outcome Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Category Scale (( \text{rwg}_{(i,j)} ))</td>
<td>.22</td>
<td>1.85+</td>
<td>.22</td>
<td>.05</td>
<td>3.40+</td>
</tr>
<tr>
<td>2.</td>
<td>Decision Reached</td>
<td>.59</td>
<td>5.76**</td>
<td>.61</td>
<td>.37</td>
<td>19.13**</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>.07</td>
<td>.18</td>
<td>.61</td>
<td>.37</td>
<td>12.58**</td>
</tr>
</tbody>
</table>

Note. \( N=69 \) groups.

** \( p < .01 \)  * \( p < .05 \)  \( + p < .10 \)
Table 47

Hierarchical Moderated Regression of Process and Outcome Satisfaction on the rwg\(_J\) of the Assumption Scale, Decisions Reached and the Interaction Term

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Beta</th>
<th>t</th>
<th>Multiple R</th>
<th>R(^2)_eq</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Process Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Assumption Scale (rwg(_J))</td>
<td>.10</td>
<td>.79</td>
<td>.10</td>
<td>.01</td>
<td>.62</td>
</tr>
<tr>
<td>2.</td>
<td>Decision Reached</td>
<td>.43</td>
<td>3.75**</td>
<td>.43</td>
<td>.18</td>
<td>7.39**</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>.56</td>
<td>1.29</td>
<td>.45</td>
<td>.20</td>
<td>5.52**</td>
</tr>
<tr>
<td></td>
<td><strong>Outcome Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Assumption Scale (rwg(_J))</td>
<td>.21</td>
<td>1.78+</td>
<td>.21</td>
<td>.05</td>
<td>3.16+</td>
</tr>
<tr>
<td>2.</td>
<td>Decision Reached</td>
<td>.59</td>
<td>5.86**</td>
<td>.61</td>
<td>.37</td>
<td>19.54**</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>1.11</td>
<td>3.04**</td>
<td>.67</td>
<td>.45</td>
<td>17.74**</td>
</tr>
</tbody>
</table>

*Note.* N=69 groups.

** p < .01  * p < .05  + p < .10
A similar pattern of results when shared frame was operationalized in terms of assumptions. All three variables accounted for 22% of the variance in process satisfaction and 37% in outcome satisfaction, with decision reached accounting for the greatest proportion of the total variance. Consistent with the results found for Hypothesis 5b, agreement on the category scale accounted for more variance in process satisfaction, while agreement on the assumption scale accounted for more variance in outcome satisfaction. In addition, supporting Hypothesis 6b, reaching decisions accounted for more variance in outcome satisfaction than process satisfaction.

There was only one case in which the interaction term significantly affected the dependent variable. As shown in Table 47, the interaction between assumption scale and decision reached explained significant variability (8%) in outcome satisfaction beyond that explained by the main effect terms. To further explore this result, the unstandardized regression equation was plotted following the methods recommended by Cohen and Cohen (1983). More and less of a shared frame was defined as one standard deviation above (.80) and below (.10) the mean (.45) on the rwg(J) of the assumption scale.

As depicted in Figure 16, the effect of shared frame on outcome satisfaction was very small in magnitude for groups that reached a decision. Groups that failed to reach a decision on at least one of the four issues displayed much more variability with respect to the dependent variable: those with less of a shared frame exhibited more satisfaction with outcomes and those with more of a shared frame. When comparing the bottom half of Figure 4 with the results obtained in Figure 16, the form of the interaction is not consistent with what was predicted. Therefore, Hypotheses 7-10 were not supported.
Figure 16. The effect of decisions reached and the extent of agreement on assumptions on outcome satisfaction.
Hypotheses 11 and 12. Hypothesis 11 predicted that high commitment groups with more of a shared frame would report lower satisfaction with decision making processes and outcomes than low commitment groups with more of a shared frame. On the other hand, according to Hypothesis 12, among groups with less of a shared frame, high commitment participants would report higher satisfaction with decision making processes and outcomes than low commitment participants.

Hierarchical moderated regression analyses were used to test this prediction. For the set of equations predicting process and outcome satisfaction, commitment was entered in at the first step, followed by the extent of agreement on the category framing scale, and lastly, the interaction term. A similar set of equations was performed, except for the inclusion of the \( \text{rwg}_{(j)} \) of the assumption scale instead of the category scale.

As depicted in Tables 48 and 49, none of the hypothesized interactions reached significance at the .05 level. However, because the interaction between commitment and extent of agreement on categories was marginally significant for process satisfaction, the unstandardized regression equation was plotted in order to determine if the relationships were in the expected direction. Again, following the methods recommended by Cohen and Cohen (1983), more and less of a shared frame was defined as one standard deviation above (1.00) and below (73) the mean (.90) on the \( \text{rwg}_{(j)} \) of the category scale.

Comparing the nature of this interaction in Figure 17 to that hypothesized in Figure 5, it is evident that results contradict Hypotheses 11 and 12. Specifically, high commitment groups with more of a shared frame responded in the direction of higher process satisfaction than low commitment groups with more of a shared frame. Likewise, compared to the low commitment condition, participants in the high commitment condition with less of a shared frame responded in the direction of lower process satisfaction. Therefore, no support was
found for Hypotheses 11 and 12.

Table 48
Hierarchical Moderated Regression of Process and Outcome Satisfaction on Commitment, the rwg, of the Category Scale, and the Interaction Term

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Beta</th>
<th>t</th>
<th>Multiple R</th>
<th>$R^2_{eq}$</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Process Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Commitment</td>
<td>-.03</td>
<td>-.26</td>
<td>.03</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>2.</td>
<td>Category Scale (rwg)</td>
<td>.27</td>
<td>2.29*</td>
<td>.27</td>
<td>.07</td>
<td>2.66+</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>2.56</td>
<td>1.93+</td>
<td>.35</td>
<td>.12</td>
<td>3.09*</td>
</tr>
<tr>
<td></td>
<td>Outcome Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Commitment</td>
<td>.08</td>
<td>.69</td>
<td>.08</td>
<td>.01</td>
<td>.47</td>
</tr>
<tr>
<td>2.</td>
<td>Category Scale (rwg)</td>
<td>.24</td>
<td>1.96+</td>
<td>.25</td>
<td>.06</td>
<td>2.17</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>.76</td>
<td>.55</td>
<td>.26</td>
<td>.07</td>
<td>1.53</td>
</tr>
</tbody>
</table>

Note. N=69 groups.
** p < .01  * p < .05  + p < .10
Table 49

Hierarchical Moderated Regression of Process and Outcome Satisfaction on Commitment, the \( \text{rwg}_{(3)} \) of the Assumption Scale, and the Interaction Term.

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Beta</th>
<th>t</th>
<th>Multiple R</th>
<th>( R^2_{eq} )</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Process Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Commitment</td>
<td>-.03</td>
<td>-.26</td>
<td>.03</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>2.</td>
<td>Assumption Scale (( \text{rwg}_{(3)} ))</td>
<td>.10</td>
<td>.83</td>
<td>.11</td>
<td>.01</td>
<td>.38</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>.39</td>
<td>1.46</td>
<td>.21</td>
<td>.04</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td><strong>Outcome Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Commitment</td>
<td>.08</td>
<td>.69</td>
<td>.08</td>
<td>.01</td>
<td>.47</td>
</tr>
<tr>
<td>2.</td>
<td>Assumption Scale (( \text{rwg}_{(3)} ))</td>
<td>.20</td>
<td>1.67+</td>
<td>.22</td>
<td>.05</td>
<td>1.64</td>
</tr>
<tr>
<td>3.</td>
<td>Interaction</td>
<td>.26</td>
<td>1.00</td>
<td>.25</td>
<td>.06</td>
<td>1.43</td>
</tr>
</tbody>
</table>

*Note.* \( N=69 \) groups.

** \( p < .01 \)  * \( p < .05 \)  + \( p < .10 \)
Figure 17. The effect of commitment and the extent of agreement on categories on process satisfaction.
Ancillary Analyses

Input to Outcome Variable Relationships

For the purposes of this research, input variables refer to the independent variables of interest, namely decision rule and commitment. Outcome variables refer to implementation, new issues, and satisfaction. It was hypothesized that the extent to which frames are shared would mediate the relationship between input and outcome variables (see Figure 2). However, although no a priori predictions were formulated, a direct relationship may also exist between the independent variables and decision outputs. In order to examine these relationships, a series of ANOVAs were conducted with decision rule and constituency commitment as the independent variables and implementation, new issues, and process/outcome satisfaction as the dependent variables.

Implementation. Based on the rationale used to develop the hypotheses, one would expect high commitment students to anticipate more problems with implementation than low commitment students. In addition, it would be predicted that majority rule participants would expect more difficulty with implementation than unanimity participants. ANOVA analyses revealed a significant commitment by decision rule interaction for the implementation scale. Table 50 summarizes these results, and Figure 18 depicts the form of the interaction.

Table 50

Anova Summary Table for Implementation Scale

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.16</td>
<td>.74</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.04</td>
<td>.20</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.89</td>
<td>4.23*</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.21</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01   * p < .05   + p < .10
Figure 18. Interaction of decision rule and commitment on the implementation scale.
T-Tests revealed that low commitment/majority rule participants (M=5.07) agreed more that the decisions reached during the group discussion would be more easily implemented than high commitment/majority rule students (M=4.75; t(28.86) = -2.44, p=.021). Therefore, expectations regarding commitment were only supported among majority rule students and not unanimity students (M_HC= 4.93, M_LC= 4.79, t(25.62) = .73, p=.471). While there was not a significant difference in perceptions of implementation between the unanimity (M= 4.93) and majority rule (M= 4.75) participants in the high commitment condition (t(23.99) = .99, p=.33), there was a significant difference between these participants in the low commitment condition, t(36.93) = -2.07, p=.046. However, results for the low commitment condition are in the opposite direction of that predicted (M_UN= 4.79, M_ML= 5.07).

**New Issues.** Two types of analyses were conducted to examine the relationship between the independent variables and the new issues outcome. First, the mean of the market decor and stocking items scales was used as the variable of interest. Second, the extent of agreement (rwg_U) on the market decor and stocking items scales was examined as the dependent variable.

**Mean of the Decor and Stocking Items Scales.** When the mean of the market decor decision scale was the dependent variable in a two-way ANOVA, a significant main effect for decision rule resulted. Table 51 presents these results. Compared to majority rule participants (M = 3.62), unanimity participants (M = 3.16) disagreed to a greater extent that stores in the Market should have a common decor and consistent signage across stores. The main effect for commitment was marginally significant, with high commitment participants (M = 3.22) reporting greater disagreement with stores having common decor than low commitment participants (M = 3.56).
T-Tests revealed that low commitment/majority rule participants (M=5.07) agreed more than high commitment/majority rule students (M=4.75; t(28.86)= -2.44, p= 0.021) that the decisions reached during the group discussion would be more easily implemented. Therefore, expectations regarding commitment were only supported among majority rule students and not unanimity students (M_HC= 4.93, M_LC= 4.79, t(25.62)= .73, p=0.471).

While there was not a significant difference in perceptions of implementation between the unanimity (M= 4.93) and majority rule (M= 4.75) participants in the high commitment condition (t(23.99)= 0.99, p=0.33), there was a significant difference between these participants in the low commitment condition, t(36.93)= -2.07, p=0.046. However, results for the low commitment condition are in the opposite direction of that predicted (M_UN= 4.79, M_HR= 5.07).

New Issues. Two types of analyses were conducted to examine the relationship between the independent variables and the new issues outcome. First, the mean of the market decor and stocking items scales was used as the variable of interest. Second, the extent of agreement (rwg_W) on the market decor and stocking items scales was examined as the dependent variable.

Mean of the Decor and Stocking Items Scales. When the mean of the market decor decision scale was the dependent variable in a two-way ANOVA, a significant main effect for decision rule resulted. Table 5 presents these results. Compared to majority rule participants (M = 3.62), unanimity participants (M = 3.16) disagreed to a greater extent that stores in the Market should have a common decor and consistent signage across stores. The main effect for commitment was marginally significant, with high commitment participants (M = 3.22) reporting greater disagreement with stores having common decor than low commitment participants (M = 3.56).
Table 51

Anova Summary Table for Mean of Market Decor Decision Scale (New Issue)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>1.99</td>
<td>2.87*</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>3.59</td>
<td>5.18'</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.69</td>
<td>1.00</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.69</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10

ANOVA (see Table 52) analyses revealed no significant relationships or effects between either of the independent variables and the mean of the stocking items scale.

Table 52

Anova Summary Table for Mean of Market Stocking Decision Scale (New Issue)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.71</td>
<td>1.13</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.12</td>
<td>.20</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.60</td>
<td>.95</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.63</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10

rWG (3) of the Market Decor and Stocking Items Scales. Based on the reasoning of the study hypotheses, it would be expected that unanimity students would evidence more agreement on new issues than majority rule
students. Furthermore, low commitment students should also demonstrate greater consensus on decisions involving novel issues. Contrary to predictions, ANOVA analyses failed to discover any significant effects for decision rule or commitment when the extent of agreement on the market decor and stocking items scales were used as the dependent variables. Tables 53 and 54 portray these results.

Table 53
Anova Summary Table for rwg(1), of Market Decor Decision Scale (New Issue)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.10</td>
<td>.87</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.03</td>
<td>.26</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.00</td>
<td>.02</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.12</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01    * p < .05    + p < .10

Table 54
Anova Summary Table for rwg(1), Stocking Decision Scale (New Issue)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.15</td>
<td>1.34</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.12</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01    * p < .05    + p < .10
Satisfaction with Decision Process. Based on the rationale presented in the hypotheses, it would be predicted that participants in the unanimity condition would report greater satisfaction with the decision process than participants in the majority rule condition. Furthermore, one would expect low commitment participants to indicate more process satisfaction than high commitment participants. However, an analysis of variance with the process satisfaction scale as the dependent variable produced no significant effects for decision rule or commitment. Refer to Table 55 for specific results.

Table 55

Anova Summary Table for Satisfaction With Decision Process Scale

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.01</td>
<td>.06</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.06</td>
<td>.35</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>.17</td>
<td>1.01</td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.17</td>
<td></td>
</tr>
</tbody>
</table>

** * p < .01 * p < .05 + p < .10

Satisfaction with Decision Outcome. Because not everyone has to agree on the decisions, it would be expected that majority rule students would not be as satisfied with decision outcomes as unanimity students. This prediction is consistent with the findings of Thomas & Fink (1961), who observed that groups reaching consensus exhibited greater satisfaction with their decisions. Moreover, one would expect low commitment participants to be more satisfied with decision outcomes than high commitment participants, partly because they would not be required to justify the group’s decisions to members of their store constituency.
A significant commitment by decision rule interaction resulted for outcome satisfaction. The ANOVA summary is delineated in Table 56 and the form of the interaction for outcome satisfaction is depicted in Figure 19.

Table 56

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.17</td>
<td>.54</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.45</td>
<td>1.41</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>1.37</td>
<td>4.31*</td>
</tr>
<tr>
<td>Decision Rule</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>.32</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  * p < .05  + p < .10
Figure 19. Interaction of decision rule and commitment on the outcome satisfaction scale.
Low commitment/majority rule participants ($M=5.58$) reported slightly more outcome satisfaction than high commitment/majority rule participants ($M=5.19$, $t(29.24)=-1.98$, $p=0.057$). Therefore, the prediction regarding commitment was only supported among majority rule participants and not unanimity participants ($M_{HC}=5.64$, $M_{LC}=5.45$, $t(24.99)=9.1$, $p=0.373$).

While there was not a significant difference in outcome satisfaction between the unanimity ($M=5.45$) and majority rule ($M=5.58$) students in the low commitment condition ($t(35.15)=-7.3$, $p=0.472$), there was a marginally significant difference between these students in the high commitment condition ($t(27.44)=1.98$, $p=0.057$). Again, expectations regarding decision rule were only partially supported. Specifically, unanimity students ($M_{u}=5.64$) reported greater outcome satisfaction than majority rule students ($M_{m}=5.19$), but only in the high commitment condition, not the low commitment condition.

**Summary of Input-Outcome Variable Relationships** The analyses presented above do reveal some direct links between the independent variables and some of the outcome variables of interest. However, the form of those relationships is quite complex. For example, significant interactions between commitment and decision rule were found for both implementation and outcome satisfaction.

**Group Discussion**

Although no a priori predictions were formulated, various components resulting from the group discussions were examined. In the following section, results having to do with the type of decision reached and the timing of the groups' discussions will be addressed.

**Type of Decision Reached** Thus far, the focus has been on whether or not a decision was reached rather than on the specific nature of the decision. Therefore, exploratory analyses were conducted to investigate the relationships between the type of decision reached and other...
relevant variables.

Open-ended responses from the Decision Questionnaire, in which each group recorded their decision on each of the four issues (see Appendix L), were content coded according to whether the decision reached was one in which the stores decided to operate as a collaborative entity (shared), independently (separate), or some combination of the two (mixed). As mentioned previously, participants could select a decision option listed in the General Information (ready-made solution) or develop a custom-made solution (c.f., Mintzberg et al., 1976). While some of the custom-made solutions represent compromises among the different store groups, others represent "an agreement to disagree". The reader is referred to Appendix U for complete details of the coding scheme, including examples of groups' custom-made decisions.

The coder reliability estimates were obtained by correlating the measures taken from the three independent codings across the number of groups. The average of the three sets of correlations for each of the issues was as follows: .79 for advertising; .88 for clerks; .94 for custodial services; .95 for temperature. All correlations were significant at the .000 level. Across all issues and coders, the average reliability estimate was .89. Cases of coder disagreement were resolved by a third party (the experimenter). When the group's written response was ambiguous, records from the tape recording of the group discussions were consulted.

Table 57 lists frequencies of the type of decisions reached by groups, broken down according to issue. "Mixed" decisions were the most common for the advertising and clerks issues, while "separate" decisions were the most common for the custodial services and temperature issues. Decisions advocating a collaborative market approach ("shared") were the least popular for all issues except custodial services.
The majority of advertising decisions and approximately half of clerk decisions were custom-made. Ten groups selected only ready-made decisions and only one group agreed to only custom-made decisions. The number of groups that agreed to one, two, and three custom-made decisions were 18, 24, and 9, respectively.

Table 57

Frequencies and Percentages of Groups that Made Separate, Mixed, Shared, and Custom-Made Decisions

<table>
<thead>
<tr>
<th>Issue</th>
<th>Separate</th>
<th>Mixed</th>
<th>Shared</th>
<th>Custom-Made Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>10</td>
<td>46</td>
<td>12</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>(14.7%)</td>
<td>(67.6%)</td>
<td>(17.6%)</td>
<td>(61.8%)</td>
</tr>
<tr>
<td>Clerks</td>
<td>26</td>
<td>37</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>(38.8%)</td>
<td>(55.2%)</td>
<td>(6%)</td>
<td>(47.8%)</td>
</tr>
<tr>
<td>Custodial</td>
<td>35</td>
<td>4</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>Services</td>
<td>(55.6%)</td>
<td>(6.3%)</td>
<td>(38.1%)</td>
<td>(22.2%)</td>
</tr>
<tr>
<td>Temperature</td>
<td>47</td>
<td>12</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>(70.1%)</td>
<td>(17.9%)</td>
<td>(11.9%)</td>
<td>(25.4%)</td>
</tr>
</tbody>
</table>

Note. Percentages do not include groups that failed to reach a decision on an issue.

N= 63-68 groups.

In order to further examine the relationships between the type of decision reached and other relevant variables, the number of separate, mixed, shared, and custom-made decisions reached by each group (0-4 range) was computed. These values were then entered as the dependent variables in four separate ANOVAs, with decision rule and constituency commitment as the independent variables.

Because unanimity groups had to pay attention to all members' perspectives, it was expected that they would be forced to make modifications in the existing decision options or develop entirely new
ones. Reflecting this finding, Table 58 reveals that there was a marginally significant main effect for decision rule (p=.059). The direction of the means indicated that unanimity groups created decisions options of their own to a greater extent (M=1.81) than majority rule groups (M=1.32).

Table 58

Anova Summary Table for Number of Custom-Made Decisions

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>3.50</td>
<td>3.71+</td>
</tr>
<tr>
<td>Commitment X</td>
<td>1</td>
<td>.51</td>
<td>.54</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>.94</td>
<td></td>
</tr>
</tbody>
</table>

No significant main effects or interactions resulted for ANOVAs involving the other types of decisions (separate, shared, mixed). Therefore, for the sake of clarity, the ANOVA summary tables from these analyses will not be presented here.

In order to further investigate the relationships existing between the type of decision reached and other variables of interest in this research, the number of separate, mixed, shared, and custom-made decisions were correlated with dependent variables. Table 59 summarizes these correlations.
Table 59
Correlations Between the Type of Decision Reached and Dependent Variables of Interest

<table>
<thead>
<tr>
<th>Variable</th>
<th># Custom-Made Dec.</th>
<th># &quot;Separate&quot; Decisions</th>
<th># &quot;Mixed&quot; Decisions</th>
<th># &quot;Shared&quot; Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Identity</td>
<td>.10</td>
<td>-.23</td>
<td>.21</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Initial Category</td>
<td>-.27</td>
<td>.00</td>
<td>-.24</td>
<td>.20</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Initial Assumption</td>
<td>-.09</td>
<td>.13</td>
<td>-.12</td>
<td>.06</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Post-Disc. Category</td>
<td>-.04</td>
<td>.25</td>
<td>.09</td>
<td>-.09</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Post-Disc. Assumption</td>
<td>-.05</td>
<td>.31</td>
<td>-.03</td>
<td>-.20</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td>**</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>6. Implementation</td>
<td>-.07</td>
<td>.40</td>
<td>-.05</td>
<td>-.13</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Market Decor</td>
<td>.07</td>
<td>-.09</td>
<td>.02</td>
<td>-.03</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Stocking Items</td>
<td>-.08</td>
<td>-.01</td>
<td>.08</td>
<td>-.04</td>
</tr>
<tr>
<td>(rwg₉₉)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Outcome Satisfaction</td>
<td>.00</td>
<td>.34</td>
<td>-.03</td>
<td>-.04</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Process Satisfaction</td>
<td>.05</td>
<td>.21</td>
<td>-.06</td>
<td>.11</td>
</tr>
</tbody>
</table>

Note. N=62-69 groups.

** p < .01  * p < .05  + p < .10
It was expected that groups that began discussion with a low level of agreement on frames would also have to be more creative in developing collective decisions than groups that entered the discussion with more of a shared frame. Results supported this reasoning, in that groups that started the discussion with a low level of agreement on category frames made more custom-made \( (r=-.27, p=.031) \) and mixed \( (r=-.24, p=.048) \) decisions. However, the relationships between the extent of agreement on the assumption scale and the number of custom-made and "mixed" decisions, although also negative, were not significant.

As shown in Table 59, the number of "separate" decisions correlated positively with the extent of agreement on the post-discussion category and assumption scales. Specifically, groups that arrived at more of a shared frame on both category and assumption scales agreed to a greater number of decisions advocating that stores operate independently than groups that arrived at less of a shared frame. On the other hand, less of a shared frame on assumptions was inversely (marginally) related to the number of "shared" decisions reached \( (r=-.20, p=.092) \).

The number of "separate" decisions was also directly correlated with implementation \( (r=.40, p=.001) \) and outcome satisfaction \( (r=.34, p=.004) \), as well as marginally related to process satisfaction \( (r=.21, p=.076) \). These results indicate the groups that agreed upon a greater number of "separate" decisions viewed implementation more positively and reported greater outcome and process satisfaction than groups that agreed upon fewer "separate" decisions.

Finally, the mean of the social identity scale was inversely (marginally) correlated with the number of "separate" decisions \( (r=-.23, p=.054) \) and directly (marginally) correlated with the number of "mixed" decisions \( (r=.21, p=.079) \). Therefore, groups that reported greater identity with their store group agreed with more decisions advocating a mixture of shared and independent perspectives and fewer decisions.
advocating a strictly independent framework than groups reporting less identity with their store group.

**Summary of decision type analyses.** These analyses contributed to a better understanding of how the type of decision reached related to other variables of interest in this research. As would be expected, the findings indicated that more custom-made decisions were made by unanimity groups and groups that started with a low level of agreement on the category frame. In addition, groups that had more of a shared frame on the category and assumption scales arrived at more "separate" decisions. Furthermore, groups that agreed to "separate" decisions reported greater process and outcome satisfaction, as well as viewed implementation positively.

**Discussion Time.** Table 60 summarizes descriptive statistics with regard to the time the groups took to reach a decision on each of the four issues. The time is reported in seconds, with the conversion to the nearest minute listed in parentheses. Groups averaged more than 26 minutes on the discussion phase of the simulation and took the longest time on the advertising and clerk decisions.
Table 60

Descriptive Statistics for Group Discussion Time in Seconds

<table>
<thead>
<tr>
<th>Issue</th>
<th>Mean Time</th>
<th>SD</th>
<th>Minimum Time</th>
<th>Maximum Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>436.89</td>
<td>221.32</td>
<td>60</td>
<td>1185</td>
</tr>
<tr>
<td>Clerks</td>
<td>448.08</td>
<td>265.43</td>
<td>60</td>
<td>1420</td>
</tr>
<tr>
<td>Custodial</td>
<td>345.21</td>
<td>160.01</td>
<td>45</td>
<td>780</td>
</tr>
<tr>
<td>Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>303.10</td>
<td>177.90</td>
<td>75</td>
<td>1020</td>
</tr>
<tr>
<td>Total</td>
<td>1547.52</td>
<td>406.10</td>
<td>485</td>
<td>2125*</td>
</tr>
</tbody>
</table>

Note. N=60-69 groups.

* Although groups were given a maximum of 30 minutes to arrive at decisions on the four issues, some groups initially ignored the experimenter's requests to stop discussion. Therefore, some groups exceeded the time limit by a few minutes.

An analysis of variance was conducted with decision rule and constituency commitment as the independent variables and the total time (in seconds) spent in group discussion (across all 4 issues) as the dependent variable. Table 61 presents the ANOVA summary table.

Table 61

Anova Summary Table for Total Discussion Time

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1</td>
<td>642317.16</td>
<td>4.17*</td>
</tr>
<tr>
<td>Decision Rule</td>
<td>1</td>
<td>79030.03</td>
<td>.51</td>
</tr>
<tr>
<td>Commitment X Decision Rule</td>
<td>1</td>
<td>551074.98</td>
<td>3.58+</td>
</tr>
<tr>
<td>Error</td>
<td>65</td>
<td>154035.70</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01    * p < .05    + p < .10
Because of the increased difficulty created when all four participants have to reach agreement and when participants are committed to their constituency positions, it would be expected that unanimity and high commitment groups would spend a greater amount of time in discussion than majority rule and low commitment groups. Consistent with predictions, there was a significant main effect for commitment (p = .045), with high commitment participants (M = 1686.33 seconds/28 minutes) taking longer to reach decisions than low commitment participants (M = 1458.73 seconds/24 minutes). While there was not a corresponding significant main effect for decision rule, the interaction term was marginally significant (p = .063). The form of the interaction is depicted in Figure 20.

Although high commitment students spent a greater amount of time in discussion than low commitment students, t-tests revealed that the difference was only significant for the majority rule condition (t (28.89) = 2.88, p = .007), and not the unanimity condition (t (29.96) = .11, p = .915). While there was not a significant difference in discussion time between unanimity and majority rule participants in the low commitment condition (t (33.83) = .81, p = .421), there was a significant difference between these participants in the high commitment condition, t (25.26) = -1.96, p = .061. However, results for high commitment participants are in the opposite direction predicted, with majority rule participants (M = 1779.67 seconds) taking longer to discuss than unanimity participants (M = 1530.8 seconds).
Figure 20. Interaction of decision rule and commitment on discussion time.
The total time to reach decisions was also correlated with the continuous variables of interest in this study. Table 62 summarizes these correlations. Based on the rationale presented in the hypotheses, it would be expected that groups arriving at more of a shared frame would take longer to discuss than groups arriving at less of a shared frame. The opposite finding, however, resulted. Specifically, greater agreement on the assumption scale and the stocking items issue (marginal effect) was associated with less discussion time. Moreover, groups that spent less time in discussion perceived implementation more positively and reported greater satisfaction with decision outcomes. As would be expected, the amount of time spent in discussion was directly related to the number of custom-made and "mixed" decisions and inversely related to the number of "separate" decisions.

**Summary of Discussion Time Analyses.** The results regarding discussion time produced a mixture of findings, some consistent and others inconsistent with prior expectations. As predicted, high commitment students spent more time in discussion than low commitment students. Also consistent with expectations, custom-made and "mixed" decisions consumed more discussion time than ready-made and "separate" decisions. However, the prediction that participants in the majority rule condition would require less time to reach decisions than participants in the unanimity condition was clearly not supported. Moreover, surprisingly, less time spent in discussion was associated with greater agreement on the assumption frame, a more positive perception of decision implementation, and greater outcome satisfaction.
Table 62

Correlations Between Group Discussion Time and Dependent Variables of Interest

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Time (In Seconds) spent in Group Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Identity</td>
<td>.19</td>
</tr>
<tr>
<td>2. Initial Category (rwg_{(j)})</td>
<td>.04</td>
</tr>
<tr>
<td>3. Initial Assumption (rwg_{(j)})</td>
<td>-.14</td>
</tr>
<tr>
<td>4. Post-Disc. Category (rwg_{(j)})</td>
<td>-.14</td>
</tr>
<tr>
<td>5. Post-Disc. Assumption (rwg_{(j)})</td>
<td>-.36 **</td>
</tr>
<tr>
<td>6. Implementation</td>
<td>-.33 **</td>
</tr>
<tr>
<td>7. Market Decor (rwg_{(j)})</td>
<td>.10</td>
</tr>
<tr>
<td>8. Stocking Items (rwg_{(j)})</td>
<td>-.21 +</td>
</tr>
<tr>
<td>9. Outcome Satisfaction</td>
<td>-.38 **</td>
</tr>
<tr>
<td>10. Process Satisfaction</td>
<td>-.15</td>
</tr>
<tr>
<td>11. Custom-Made Decisions</td>
<td>.23 +</td>
</tr>
<tr>
<td>12. # &quot;Separate&quot; Decisions</td>
<td>-.35 **</td>
</tr>
<tr>
<td>13. # &quot;Mixed&quot; Decisions</td>
<td>.24 **</td>
</tr>
<tr>
<td>14. # &quot;Shared&quot; Decisions</td>
<td>-.04</td>
</tr>
</tbody>
</table>

Note. N=62-69 groups.

** p < .01  * p < .05  + p < .10
CHAPTER VI
DISCUSSION

The purpose of this research was to investigate the under-researched role of shared frames in group decision making. A shared frame was defined in terms of similarity in the way that group members interpret and categorize strategic issues. Specifically, there were two fundamental questions of concern in this research. First, what are the factors that contribute or impede the development of shared interpretations in groups? Second, what are the decision processes and outcomes that result from arriving at a group representation of the underlying issues?

The research was carried out in two phases. Initially, an exploratory examination of shared frames was conducted in the context of various mental health regional planning groups across Ohio. This field work served as a forum for model building and hypothesis generation and was then followed by a laboratory experiment, in which two hundred and seventy-six students participated in an adaptation of the Towers Market multi-party simulation. After meeting in constituency groups, participants formed groups of four to make decisions on a number of issues. Decision rule (unanimity/majority rule) and constituency commitment (high/low) were manipulated to investigate their impact on the development of shared frames. Perceptions about implementation, how the group deals with new issues, and process/outcome satisfaction were measured as consequences of group cognition. The operationalization of shared frames involved the use of three forms of agreement.

Twelve hypotheses were tested, two of which concerned the antecedents of shared frames, and the remainder of which examined the relationships between shared frames and decision outcomes. Most of the
hypotheses did not receive empirical support. Additional exploratory analyses were also conducted. Discussion of the results will be directed first toward the hypotheses as well as the ancillary findings and will then conclude with a presentation of limitations, implications, and future research needs.

Results for Hypotheses

Hypothesis 1.

Hypothesis 1 was concerned with whether unanimity groups would arrive at more of a shared frame than majority rule groups. Partial support was found for this hypothesis. Supportive findings were limited to individual framing items (as opposed to scales), assumption frames (as opposed to category frames), and males (when gender was added as a third independent variable).

There are several plausible reasons for the partially supportive findings obtained for this hypothesis. First, the adequacy of the manipulation needs to be considered. As discussed in the previous chapter, the manipulation checks for decision rule indicated that the desired study conditions between unanimity and majority rule conditions were created. That is, participants responded as expected to questions assessing whether they adequately attended to the cover story and whether the designated decision rule actually affected their group discussions. Also supporting the effectiveness of the induction, ancillary analyses showed that decision rule operated as predicted, with unanimity participants creating more custom-made decisions than majority rule participants. Moreover, consistent with the findings of Thomas and Fink (1961), groups in the unanimity condition reported more satisfaction with decision outcomes than groups in the majority rule condition (albeit only for the high commitment condition).

While these findings add credence to the belief that the decision rule induction was convincing, other ancillary results contradict this conclusion. Specifically, in contrast to the results reported by prior
research (e.g., Castore & Murnighan, 1978; Miller, 1989), majority rule students spent a longer time in discussion than unanimity students (albeit only for high commitment students). Furthermore, majority rule participants perceived implementation more positively (only among low commitment participants), and unanimity participants failed to report greater agreement on new issues. These findings are contrary to what would be expected regarding decision rule, thus suggesting that the manipulation may have had a weaker effect than desired.

Previous research has indicated that females tend to do better in tasks that require agreement (Levine & Moreland, 1990) and that female negotiators are more cooperative (Rubin & Brown, 1975, as cited in Mannix et al. 1989). In the current study, observational data indicated that males may have had an easier time adopting majority rule and actually excluded a group members' perspectives more often than females. In addition, the fact that Hypothesis 1 was supported for males, but not females suggests that the majority rule manipulation may have been more effective for men than women.

One must also consider the possibility that the decision rule manipulation may have been overwhelmed by dynamics produced by the group discussion itself. For example, having a difficult, uncompromising group member, along with time pressure may have forced some groups to revert to more of a majority rule approach even though they were instructed to reach decisions unanimously. Likewise, groups in the majority rule condition may have found themselves inadvertently arriving at decisions via unanimity, given a willingness to compromise on the part of all group members and adequate time for everyone's positions to be discussed and worked through. Therefore, even despite the effort to provide participants with a rationale for why majority rule or unanimity should be adopted in their group, particular group dynamics may have muted decision rule effects.
It is also evident that the numerical difference between majority rule and unanimity in a four person group is minimal (i.e., 3/4 must agree vs. 4/4 must agree). Had the size of the decision making groups been increased to five or six members, decision rule may have been a more salient factor in the minds of participants, thus producing more robust findings. However, it should be noted that previous research manipulating decision rule has also not maximized the variance between decision rule conditions. For example, Mannix et al. (1989) required that two out of three group members agree for majority rule and that three out of three agree for unanimity.

While several reasons are postulated for the lack of stronger findings with regard to decision rule, the findings in support of Hypothesis 1 must not be de-emphasized. Despite the limitations of the induction and the constraints imposed by a two-hour laboratory simulation, the fact that some results were consistent with unanimity groups arriving at more of a shared frame than majority rule groups suggests that effects might be larger and stronger in actual decision making groups.

Hypothesis 2.

In Hypothesis 2, it was expected that high constituency commitment groups would achieve less of a shared frame than low constituency commitment groups. Because no support resulted for this prediction, the effectiveness of the induction must again be considered in assessing the failure to obtain expected findings. As discussed in Chapter IV, commitment was manipulated by means of both social identity and accountability. The majority of students did accurately identify the group that the experimenter instructed them to report back to, thus suggesting that students adequately attended to the cover story.

However, because social identity and accountability are indirect means to achieving a committed psychological state, direct measures of commitment were included to assess whether the inductions did indeed
result in participants reporting greater commitment to their store or
decision making group. Unfortunately, the direct measures did not
support the effectiveness of the commitment manipulation. Even after
attempts were made to strengthen the commitment induction by including a
written summary of the important elements of the manipulation and
allowing for the completion of the manipulation check items earlier in
the experiment, very few differences between the two commitment
conditions in the anticipated direction resulted.

Because of the way the manipulation check items were designed,
participants in either commitment condition could report being committed
to both their store group and their decision making group. It is
possible, therefore, that the appropriate psychological state of
commitment could have been produced without high and low commitment
students responding differentially to the manipulation check items.
Adding credence to this possibility, some of the ancillary analyses
produced commitment results that were in the direction expected. For
example, high commitment groups took more time to make decisions than
low commitment groups. In addition, compared to their high commitment
counterparts, low commitment participants agreed more that decisions
could be easily implemented and reported greater satisfaction with
decision outcomes (albeit only for the majority rule condition).

However, other findings diminish the possibility that the
induction actually produced differential commitment states. Contrary to
expectations, low commitment groups did not report increased
satisfaction with the decision process or achieve greater agreement on
new issues. In addition, even when an item was added to assess whether
participants were more committed to representing their store group than
reaching a decision in their decision making group, there was still not
a significant difference between commitment conditions.
Rather than having high commitment students be accountable to their constituency groups and low commitment students be accountable to other decision making groups, more pronounced differences between conditions may have been produced if low commitment students were not accountable to any other group. In other words, having both commitment conditions be accountable to some entity may have suppressed the differences between the two conditions. On the other hand, having all students be accountable may have helped ensure that everyone took the task seriously. It is interesting to note that previous negotiation studies investigating the effects of accountability to a constituency also failed to find strong accountability effects (Breaugh & Klimoski, 1977; Klimoski & Ash, 1974). Accountability manipulations in the laboratory may be weakened because there is not the fear of sanctions that constituencies may bring upon representatives.

Although extensive efforts were made to maximize the success of the commitment induction, the difficulty with manipulating an internal psychological state such as commitment cannot be overlooked. In natural decision making groups, commitment to both issues and people emerges over time and as a result of various influences. Spending forty-five minutes in a store group and less than one hour of interaction in a decision making group with unfamiliar individuals may simply have been too short a time period and too artificial an environment for even a superficial level of commitment to emerge. **Hypothesis 3.**

Hypothesis 3 involved implementation as the dependent variable and predicted that groups with more of a shared frame would anticipate fewer problems with implementing the decisions reached than groups with less of a shared frame. The results for this hypothesis were mixed. Across the correlation and regression analyses, it was evident that greater support emerged from the category frame than from the assumption frame. While it is difficult to assess exactly why this was the case, the
results may be partially attributable to participants perceiving a stronger relationship between expecting implementation to be favorable and agreement on viewing Towers Market positively (as an opportunity, a gain, and a positive development) than viewing Towers Market as a collaborative and shared joint venture.

Even for supportive findings, however, shared frame accounted for only a small percentage of the variance in implementation, leaving the majority of the variance to be accounted for by other factors. The fact that participants were asked only to anticipate the implementation process and knew that they would not be required to actually engage in future meetings with their decision making group may have weakened the effect of shared frames on implementation.

Hypothesis 4.

Hypothesis 4 predicted that group members with more of a shared frame would respond more similarly to new, related issues than group members with less of a shared frame. There was little evidence to support this hypothesis. In addition, the rwg_{(3)} of the decor and stocking items scales failed to correlate significantly with any of the independent or dependent variables of interest in the study.

Hypotheses 5 through 12.

Because Hypotheses 5 through 12 all deal with the outcome variable of satisfaction, they will be discussed together. Hypothesis 5a was concerned with whether shared frames would positively impact both process and outcome satisfaction. The extent of agreement on frames did positively impact both process and outcome satisfaction, but not all the correlations were significant. Therefore, this hypothesis was partially supported. Hypothesis 5b, which predicted that shared frames would have a greater positive impact on decision process satisfaction than decision outcome satisfaction, was only supported for categories, not assumptions.
Hypothesis 6a and 6b were similar to Hypothesis 5, but concerned whether decisions were reached or not instead of shared frames. Specifically, Hypothesis 6a predicted that there would be a positive relationship between both process and outcome satisfaction and whether decisions are reached or not. According to Hypothesis 6b, whether decisions are reached or not will have a greater positive impact on decision outcome satisfaction than decision process satisfaction. Both Hypotheses 6a and 6b were fully supported.

Together, Hypotheses 7, 8, 9, and 10 predicted an interaction of the form depicted in Figure 4. Specifically, it was expected that groups that achieve more of a shared frame and arrive at group decisions would report the greatest satisfaction with decision process and outcome (Hypothesis 7), while groups that achieve less of a shared frame and do not arrive at group decisions would report the least satisfaction with decision process and outcome (Hypothesis 8). According to Hypothesis 9, groups that achieve less of a shared frame and arrive at group decisions will report lower process satisfaction and a moderate amount of outcome satisfaction. Hypothesis 10 predicted that groups that achieve more of a shared frame and do not arrive at group decisions were expected to report lower outcome satisfaction and a moderate amount of process satisfaction. In contrast to predictions, hierarchical moderated regression analyses produced only one significant interaction term, which was not in the direction predicted. Therefore, Hypotheses 7-10 were not supported.

Taken together, the findings regarding satisfaction as an outcome variable do provide some support for the notion that process satisfaction does "spill over" into outcome satisfaction and vice versa. Indeed, shared frames and whether a decision was reached impacted both types of satisfaction. Further supporting this notion, the correlation between the outcome and process satisfaction scales was .75. Thus, as noted by Schweiger, Sandberg, and Ragan (1986), poor group process can
leave a residue of negativity among a team's members, despite having reached a high-quality decision.

Hypotheses 11 and 12 concerned the relationship between commitment and satisfaction. Specifically, Hypothesis 11 predicted that high commitment groups with more of a shared frame would report lower satisfaction with decision making processes and outcomes than low commitment groups with more of a shared frame. On the other hand, according to Hypothesis 12, among groups with less of a shared frame, high commitment participants would report higher satisfaction with decision making processes and outcomes than low commitment subjects. Contrary to predictions, high commitment groups with more of a shared frame reported higher process satisfaction, and high commitment groups with less of a shared frame reported lower process satisfaction. Therefore, no support was found for Hypotheses 11 or 12. As discussed previously, problems with the commitment manipulation may have been responsible for the failure to find support for these hypotheses.

Limitations

A limitation of this study deals with concerns about generalizability that accompany any study in a laboratory setting. A number of efforts were exerted to maximize the realism of the experimental situation, including the adaptation of a negotiation simulation modeled after a real-life multi-party setting and allowing participants to interact in constituency groups prior to forming decision making groups. In addition, throughout the exercise, many attempts were made to explain to students the organizational relevance of the inductions and tasks. Furthermore, the simulation was very successful in absorbing students and holding their interest; thus experimental realism was achieved.

Admittedly, however, various aspects of the situation constructed for participants were somewhat artificial. Because commitment to a constituency group and shared frames develop over time, a two hour
simulation does not adequately test the full development of the constructs. An abbreviated time period also means that issue frames did not translate into long-term consequences for the individuals involved. The decisions made by participants clearly did not affect group members beyond the duration of the experiment. Obviously, this would not be the case for actual decision making groups where the decision would have to be implemented by the group and would affect organizational life.

As mentioned previously, there were also limitations with regard to the manipulations. Clearly, the constituency commitment induction was less effective than desired. Using social identity and accountability as indirect means to achieving commitment may not have captured the essence of the phenomenon. In addition, commitment is multi-faceted in that individuals may develop an attachment to group members and/or the issues being decided upon. Unfortunately, the items used to measure participants' commitment were not sensitive to these distinctions. Moreover, because of the difficulty of creating an internalized psychological state in an artificial environment, commitment is probably best measured in an actual field setting using real decision makers.

Another issue with regard to the manipulations concerns the possibility that decision rule and commitment may have somehow canceled each other out. According to the rationale underlying the hypotheses, both commitment and decision rule have implications for the degree of effort and information processing needed for effective decision making. Specifically, high commitment/unanimity participants should have the hardest time reaching decisions, and would therefore have an incentive to discuss underlying assumptions and perceptions. On the other hand, low commitment/majority rule participants should have the easiest time reaching decisions, and would therefore not need to engage in as much elaborative processing of the varying perspectives presented in the group. Consequently, because a similar dynamic may underlie both
variables, commitment and decision rule may be partially redundant, which may have contributed to the lack of significant findings.

Another shortcoming of the current research involves the operationalization of shared frames. Specifically, the focus on assumptions and categories may not have fully captured the essence of the construct. Furthermore, in observing group interaction, it was evident that many participants focused on decision preferences to the exclusion of discussing underlying framing issues. Eden et al. (1981) state that because group members are rarely given the facility to explore differences among perspectives, much of the negotiation of shared frames is likely to remain implicit. Furthermore, since they may be taken for granted and are difficult to surface, Shrivastava and Schneider (1984) have noted the difficulty in identifying and measuring assumptions. In the current study, references to threat and opportunity perceptions were particularly absent from group conversations.

The time pressure of having to reach four decisions in thirty minutes may have been partially responsible for the emphasis on decision preferences over issue frames. However, another reason may involve the fact that most groups discussed the issues sequentially, as opposed to simultaneously. Previous negotiation research has indicated that groups following a sequential agenda achieved lower total outcomes than groups considering the issues as a package (e.g., Mannix et al., 1989). Similarly, using the Towers Market simulation, Weingart et al. (1993) found that considering the issues simultaneously resulted in greater information sharing about priorities across issues and less argumentation over specific positions. Therefore, discussing the issues individually may have created a mindset that prevented participants from recognizing the assumptions resulting from the patterns of preferences. Whether dealing with a number of issues integratively is necessary and/or sufficient for the development of shared frames is an issue worthy of further attention.
Finally, the problem of experimentwise error must also be recognized in this research. The more analyses that are conducted, the more type I errors will be made when the null hypothesis is true. Reasonable tactics for controlling the cumulative effects of type I error include restricting the number of statistical tests and reducing the alpha level to .01. However, because this study represented an initial attempt at theory development, it was deemed more important not to miss any relevant effects that exist by using too stringent a significance level or limiting exploratory analyses. Therefore, the conventional alpha level of .05 was adopted, post-hoc analyses were labeled as ancillary analyses, and attention is being drawn to this potential limitation.

Conclusions/Implications

As discussed earlier, decision rule and commitment did not strongly impact the extent of agreement on framing items, nor did shared frames appear to have a strong effect on perceptions of implementation, viewing new and related issues similarly, or process/outcome satisfaction. However, the study was able to illustrate the movement toward shared frames in the decision making groups. Figures 8-10 show that groups started out with very low agreement on both category and assumption frames, but significantly increased the level of consensus following discussion. This constitutes a contribution to the literature because so little research has examined the development of shared beliefs over time.

A study conducted by Ward and Reingen (1990), however, provides a notable exception to most of the existing literature. By combining social network analysis with cognitive mapping, they were able to document changes in shared beliefs concerning party preferences across two points in time among various subgroups of a sorority. Although the methodologies and samples differ considerably, both Ward and Reingen's work and the current study illustrate that collective beliefs do emerge.
through group interaction and that this development can indeed be measured.

The pattern of results (as well as lack of results) in this study highlights the need to better understand the phenomena underlying a shared frame and to focus on the rudiments of the group processes involved. While the current research directed attention toward the antecedents and consequences of shared cognition, the more urgent demand is to clearly conceptualize the construct and to explicitly articulate the dynamics occurring during the creation of collective interpretations. Consequently, because of the novelty of this subject in the literature, the research questions addressed in the present study may have been somewhat premature and may be more thoroughly answered after the phenomenon of a shared frame is better understood. Clearly, more descriptive work is needed.

Despite the limitations of this study, the current research does have implications for both theory and measurement. This study contributes to the new and growing body of research relating to shared cognition in the context of decision making groups. From a theoretical standpoint, the notion of a shared frame provides a valuable means for understanding how decision makers collectively make sense of ill-structured strategic issues in a group setting and is conceptually appealing because it integrates group, cognitive, negotiation, and decision making literatures. In addition to answering the numerous calls for research to consider framing as a group-level phenomenon (e.g., Donnellon et al., 1986; Dukerich & Milliken, 1993, Hastie & Pennington, 1991; Panzano, 1992), the study extends the current literature by incorporating key political realities inherent in a group decision making context. Furthermore, a conceptual framework is offered to begin to address the critical need to investigate both the antecedents and consequences of shared frames.
In addition to advancing the literature conceptually, this study also makes some important contributions from a measurement standpoint. The Towers Market task, as altered for the purpose of this research, provides a promising avenue for future work concerning the measurement of shared frames. Specifically, different individual frames were successfully created in the store groups. Also, groups started out with very low agreement on assumptions and categories and then showed significant movement toward the development shared frames. Furthermore, the task was successful in initiating and maintaining students' interest for a two hour period of time.

Another contribution of the current research was that frames were assessed both in terms of categories and assumptions and at different points in time. Moreover, the study compares two versions of the within-group agreement index (James, Demaree, & Wolf, 1984; Lindell & Brandt, 1996) and uses them in a novel way. Specifically, the rwg is used as a dependent variable in its own right, not just as justification for aggregation.

Future Research

It is perhaps the case that the present research has raised more questions than answers them. Because research on frames at the group-level of analysis is in its infancy, there are a number of exciting directions for future investigation. Clearly, there is a lack of understanding with regard to the underlying phenomena of shared frames, despite great interest in the theoretical notion of a shared frame (see Table 2). Therefore, the most pressing research need is for greater conceptual refinement and more descriptive work on what constitutes shared frames in groups. For example, group verbal interactions must be closely examined in order to explicate the processes underlying the creation of collective cognitive structures in decision making contexts.
Subsequent studies should also explore other aspects of frames which were not considered in the current research. In this study, the concept of a shared frame was conceptualized narrowly and referred only to collective representations of strategic issues as assumptions and categories. However, as noted in Table 3, issues can be conceptualized in many other ways, including dimensions, content domains, and causal maps. Although there is no agreement on a typology for frames (Roth & Sheppard, 1995), many different categories exist.

In addition to issue frames, other aspects of group functioning may also be shared, including working relationships among group members or dimensions of teamwork. For example, Gray and Purdy (1990) identify "process" frames, which reflect the procedural concerns of how to go about resolving conflict and "characterization" frames, which contain evaluations of other parties' attitudes or behaviors. In the negotiation research, a body of literature has begun to emerge concerning conflict or dispute frames, which refer to predispositions toward conflict that are initially represented as a frame that the negotiator uses to make sense of the situation. Studies have found that individuals frame the same conflict differently and that conflict frames influence dispute outcomes (Pinkley & Northcraft, 1994; Roth & Sheppard, 1995). In addition, it has also been suggested that conflict frames may serve as the foundation upon which goals and objectives are built or vice versa (Pinkley & Northcraft, 1994). Therefore, the relationships between task-oriented, team-oriented, and conflict frames needs to be examined.

While only decision rule and constituency commitment were examined as antecedents of shared frames, the model presented in Figure 2 provides further avenues for the investigation of additional variables which may affect the development of shared frames. Furthermore, shared frames may affect decision consequences other than implementation, new issues, and satisfaction. Group frames must also be studied.
longitudinally in order to get a better sense of the interplay among frames and other variables.

The stability of shared frames and the factors that contribute to their persistence or change are also worthy of investigation. While some authors posit that collective structures are difficult to change (e.g., Reger et al., 1994), others suggest that shared cognitions are transitory and may not be a lasting part of the group's existence (e.g., Bougon, 1992; Donnellon et al., 1986; Langfield-Smith, 1992). According to Gray et al. (1985), shared meaning may help shape decisions, but may not even survive during the sense making that occurs after a decision has been made. What factors internal and external to the group signal the need for modifications in the shared representation and reassessment of how strategic issues are labeled? Variability in group composition, with new members entering and senior members leaving, may be one factor which alters the collective interpretation of strategic issues in some way. Various researchers (e.g., Isabella, 1990; Lyles & Schwenk, 1992) have derived models of how organizational knowledge structures change, but empirical work is needed at the group-level of analysis.

Based on the results of this study, another fruitful avenue of future research would be to further investigate differences among indices of agreement. Although the variance, the $r_{wg2}$, and the $r_{wg3}$ were highly correlated in the present research, and results did not vary widely among the three indices, there may be data sets where the selection of an agreement measure does make a significant difference. Because of the novelty of these measures, more work is needed to assess which formulas are more appropriate for certain circumstances.

Final Thoughts

The current research highlights the importance of considering shared frames as an important element in decision making groups and contributes to the new and growing body of research on group cognition and group decision making. As organizations continue to use groups and
task forces, which often involve the participation of individuals from multiple departments and constituencies, the issue of reconciling dissimilar mental models of the issues will become increasingly relevant. Not only do group members negotiate decision preferences, but they also negotiate the interpretations of key issues. The current research study has raised numerous issues regarding the conceptualization and operationalization of shared frames in a decision making context. However, further research is needed.
Notes

1 Various researchers subscribe to very different usages of the term "frame." As a case in point, cognitive researchers (e.g., Tversky & Kahneman, 1981) employ the term to refer to the finding that individuals tend to avoid risk when they perceive having something to gain and seek risk when they perceive having something to lose. However, organizational researchers tend to use the term "frame" more broadly. For example, Fiol (1994) defines framing to reflect the manner in which individuals express their argument or viewpoint, regardless of its content (e.g., breadth, rigidity). These differences in the meaning of the same terminology speak to the importance of carefully explicating what is meant by one's usage of common terms.

2 Permission to use the Towers Market simulation was granted by the authors (Beggs, Brett, & Weingart, 1989).

3 It should be noted that meeting in constituency groups is not part of the original Towers Market exercise. The task was further altered to incorporate a constituency (store) group phase.

4 The decision to use four-person groups was made, in part, by the four-store structure of the Towers Market simulation. Forming three-person groups would have destroyed the balance of positions in the group, whereas increasing the group size to five would have increased the logistical difficulties of running the study. In many cases, dyads are considered teams (e.g., Orasanu, 1990), but there are a number of important processes that fail to occur with just two people, including complex patterns of interaction and coalition formation (Bazerman & Neale, 1992, Ilgen et al., 1995).

Most of the research has been done on groups with fewer than five
members (Shaw, 1981). Other four-person group exercises are prevalent in the literature (e.g., Team Interactive Decision Exercise for Teams Incorporating Distributed Expertise--TIDE; Illgen et al., 1995), and several studies have been conducted with four-person groups (e.g., Tindale et al., 1993; Weingart, 1992).

The experimental procedure for students participating during the autumn quarter (N=104 students/26 groups) differed in two important ways from the experimental procedure described in the method section. First, participants were not provided with a written summary of the key steps in the experimental procedure. Secondly, the Final Individual Questionnaire was the last thing participants completed (rather than the Group Post-Discussion Questionnaire).

Preliminary analyses conducted at the end of the autumn quarter revealed that the differences in the manipulation checks for high and low commitment were not as strong as desired. Therefore, to strengthen the commitment induction and reinforce the cover story, students participating during the winter quarter received a written summary of the important elements of the induction. In addition, the Final Individual Questionnaire was completed prior to the Group Post-Discussion Questionnaire in order to decrease subject fatigue and increase the attentiveness given to the completion of the manipulation checks. Because the majority of students participated during the winter quarter, the experimental procedure in the Method section reflects these changes.

6. \[ \sigma^2_{ru} = \frac{(A^2-1)}{12}, \] where \( A \) is the number of response scale alternatives. Thus, for a 7-item scale, \( \sigma^2_{ru} = 4 \)

7. The scale on this item ranged from 1 (very important) to 7 (very unimportant).
The scales for the three forms of agreement used were computed after the individual items had been aggregated to the group level. In general, scales computed after aggregation yield higher values than scales computed before aggregation.

According to Cohen and Cohen (1983), the following formula yields a $t$ for $n-3$ degrees of freedom and is used to test the significance between dependent correlations:

$$
t = \frac{(r_{xy} - r_{xy}) \sqrt{(n-1)(1 + r_{xy})}}{\sqrt{\frac{(n-1)}{2(n-3)} |R| + \bar{r}^2 (1 - r_{xy})}}
$$

where $|R| = 1 - r_{xy}^2 - r_{xy}^2 - r_{xy}^2 + 2 r_{xy} r_{xy} r_{xy}$

and $\bar{r} = \frac{r_{xy} + r_{xy}}{2}$
LIST OF REFERENCES


Academic Press.


Hinsz, V. B. (1990). A conceptual framework for a research program on groups as information processors. A technical report submitted to the Logistics and Human Factors Division, AF Human Resources Division, AF Human Resources Laboratory, Wright-Patterson AFB, OH.


Roth, D., & Taynor, J. (1989). Beginning to evaluate the Mental Health Act of 1988: Framing the questions. Research grant funded by the Ohio Department of Mental Health, Office of Program Evaluation and Research.


Appendix A: Protocol for Liaison and Facilitator Interviews
INTERVIEW SCHEDULE

Name of the Liaison/Facilitator___________________________

Regional Planning Group Discussed_________________________

Date and Time of Interview______________________________

Tape Recording Permitted?______________________________

How many meetings has the regional group had since its inception?

How many meetings have you attended?

How large is the group?

Have sub-committees been formed?

Are there certain constituencies that participate more in group discussion and interaction than others? If so, which ones? Which ones participate less?

Are some constituencies perceived by the group as being more influential than others? If yes, which ones? Why are they perceived as having more influence? (have more expertise, participate more, control more resources, have more decision making clout)

I am interested in how each constituency views the issues and how those views have changed since the group’s inception. Could map the position of the various constituencies relative to how much they agreed on problem goals when they first entered the group and currently? How would you draw the plot for the following issues?

Issue #1: What extent of inpatient care will be needed by the communities once community supports are made complete and comprehensive?

Issue #2:

Probe: Why are these 2 constituencies the farthest apart? The closest?

What is each constituency trying to accomplish as a goal? How would you compare and contrast these constituency goals with the goals of the group as a whole and/or the goals of other constituencies?

What factors do you think will contribute to the extent to which different constituency members come to see the issues in the same way and define problems similarly?

How did each constituency view the whole idea of an inpatient futures regional planning group upon entering the group? How have these views changed over time?

Do certain constituencies have more of a competitive orientation (pushing their own agendas despite conflicting interests), while others have more of a cooperative orientation (view themselves as interdependent with the group, adopt the group’s goals as their own)?

Where along the continuum from competitive to cooperative would you place the group as a whole?
How do group members attempt to influence individuals from other constituencies and try to get them to view issues in a manner consistent with their own definition of the problem? What evidence of negotiation among constituency members do you see?

This question may or may not be relevant to you. Do you see a relationship between how SOS’ are perceived in a given area and the group’s progress toward developing shared goals and reaching consensus?

How would you feel about us interviewing the facilitator of this group?

Do you think that the group will agree on goals and come to view the issues in the same way? What is the probability of consensus?

Some groups meet at state hospitals or boards, while others meet at a more neutral location. Do you think that the location of the meetings will have an influence on group process or outcome?

How were the decisions regarding meeting location and time reached?

How was the facilitator selected?

How would you compare and contrast the groups that you are familiar with? Are there differences in the extent to which the groups are coming together and beginning to define the issues in the same way? (For liaisons to multiple groups)
Appendix B: Subject Recruitment Information
ORAL SOLICITATION FOR PARTICIPATION IN GROUP DECISION MAKING STUDY

My name is Susan Mohammed, and I am a doctoral student in Industrial/Organizational Psychology. I am working on a research study with Dr. Robert Billings.

Increasingly, organizations are using groups and teams to get work accomplished (e.g., quality circles, autonomous work groups). In fact, many strategic decisions are made by groups instead of individuals acting alone. So, it is important that we try to learn more about how groups in an organizational setting can best work together. I am interested in some specific issues in group decision making.

I am having students participate in a business game (simulation) in which they represent various stores that are interested in forming a mall. The stores must come together and discuss issues that must be resolved if the mall venture is to be successful. This game has been used in other business schools, and many students find it interesting.

Group dynamics and decision making are topics that will be covered in this course, and that is why I am offering you the opportunity to participate. Because this study is clearly relevant to the content of this class, your professor has agreed to give extra credit for participation. This game will probably take about 2 hours. I will be circulating sign-up sheets in the near future and will give you more details at that time.

I should also mention that you do not need to have any decision making experience to participate. It is not a complex task with difficult financial data to interpret, etc. Everyone can participate. It is a good way to try out your group decision making skills and to learn about organizational behavior in a practical, realistic setting.
EXTRA CREDIT OPPORTUNITY

In return for extra credit, students in this course will have the opportunity to participate in a group decision making research study.

Purpose of the Research: This study is concerned with specific issues involved in group decision making. Increasingly, organizations are using groups and teams to get work accomplished (e.g., quality circles, autonomous work groups), and many strategic decisions are made by groups instead of individuals acting alone. Therefore, it is important that we try to learn more about how groups in an organizational setting can best work together.

Study Description: Students will participate in a business game in which they will represent various stores that are interested in forming a market (mall) together. The store representatives will come together and discuss issues that must be resolved if the market venture is to be successful. This game has been used in other business schools, and most students find it interesting.

During the course of this exercise, students will be asked to fill out questionnaires. The nature of the research requires that group discussions be tape recorded. However, students will NOT be asked to identify themselves by name, and the tapes will be erased at the conclusion of the study.

Participation is completely voluntary, and students are free to withdraw consent and discontinue participation at any time.

At the end of the business game, students will be informed of the reasons for the study and will have the opportunity to ask questions regarding the research.

Length of Time Required: The business game takes 2 hours.

Relevance to this Course: This research concerns group dynamics and decision making, which are topics that will be covered in this course. Because this study is clearly relevant to the content of this class, Dr. Wanous (Dr. Roznowski) has agreed to award extra credit for participation. By participating, you will have the opportunity to try out your group decision making skills and to learn more about organizational behavior in a practical, realistic setting. In addition, you will be able to observe firsthand how research in organizational behavior is conducted.

Who Can Participate? EVERYONE in the course can participate. You do NOT need to have any previous decision making or group experience.

Sign-Up Procedure: Students interested in participating will be able to sign-up in class. Since this is a group decision making study, it will be necessary for 16 students to sign up at the same time. If an insufficient number of students sign up for a given time period, we may have to call you to re-schedule times. Therefore, you will be asked to include your telephone number when you sign-up. Because the nature of the research requires that we have single-gender groups, males and females will sign-up on separate sheets. We will begin to circulate sign-up sheets in a few weeks.

If you sign up for a certain time, understand that your attendance will be needed in order to have the proper number of students in each group. Please make every effort to show up.
Location of the Study: The Behavioral Science Lab in the Stadium.

Directions: The Behavioral Science Lab is between gates 20 and 22 of the Stadium on the side facing Larkins. Go through the door that says "Behavioral Science Lab" above it and up the stairs to the first floor. Go through the door, and sit in the waiting area.

Questions? If you have any questions about this research, you are free to contact the Principle Investigator, Dr. Robert Billings (292-8115), or the experimenter, Susan Mohammed (292-8175).
Appendix C: Cover Story for Constituency Groups
Organizing Participants Into Constituency Groups

As participants come into the waiting area, check their names off on the sign-up sheet.

Randomly assign participants to store groups by giving them an index card with either the letter G (Grocery), B (Bakery), L (Liquor Store), or F (Flower shop) on it. If 12 participants show up, 3 participants should receive a G, 3 a B, 3 an L, and 3 an F. If there are 16 participants, 4 participants should receive a G, 4 a B, etc. If more than 12, but less than 16 show up, the extra participants should receive a card with a 0 and will be observers.

Tell participants:

In this study, we are interested in investigating decision making among individuals who have not previously worked together, as might be the case in an ad hoc task force. Therefore, it is important for us to find out if any of you know each other before we begin. Do any of you have friends in this room or have you previously worked together with any other person in this room? If you have, it doesn’t mean that you won’t be allowed to participate, we just need to be aware of it.

Make a note of those participants that indicate that they do know each other. Make sure that they are not in the same constituency group, and make sure that they do not end up in the same decision making group (Make sure not together in set of 4 cards (G1, B1, F1, L1) and don’t have the same letter.

Have one 693 take all the F’s to a room, one take the G’s to a room, etc. Randomize it so that the same 693 does not always have the same constituency group.

<table>
<thead>
<tr>
<th>Room</th>
<th>Constituency Group</th>
<th>DMG (Decision Making Group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>112D (Inside)</td>
<td>Grocery</td>
<td>1</td>
</tr>
<tr>
<td>112B (A2)</td>
<td>Flower Shop</td>
<td>2</td>
</tr>
<tr>
<td>109L (A4)</td>
<td>Liquor Store</td>
<td>3</td>
</tr>
<tr>
<td>108L (Aviation)</td>
<td>Bakery</td>
<td>4</td>
</tr>
</tbody>
</table>
TO SAVE TIME, GO AHEAD AND SIGN YOUR NAME IN THE WITNESS PART OF THE CONSENT FORM BEFORE Participants COME IN.

CONSTITUENCY GROUP PROTOCOL

First, I would like to thank you for coming and agreeing to participate in this research.

Before we begin, I would like to ask you to read and sign a consent form.

HAND EACH SUBJECT A CONSENT FORM

This form is required by the Human Participants Review Committee. It summarizes what you will be doing today, emphasizes that your participation is voluntary, and reminds you that you will receive extra credit for your participation. Please sign the line that says "Participant" and date the form. Also, please print your name clearly at the bottom so that we can forward your name on to your instructor.

While you are doing that, I am going to give you another copy for your own records.

COLLECT ALL SIGNED FORMS AND RETURN THEM TO THE TABLE

*****LET Participants KEEP THE BLANK FORM*****

INITIAL COVER STORY TO CONSTITUENCY GROUPS

Organizations are increasingly using groups and teams to get work accomplished. Everything from quality circles to autonomous work groups are being used. More and more, decisions are made by groups instead of individuals acting alone. So, it is important that we try to learn more about how groups in an organizational setting can best work together.

Before we go any further, I would like those of you who are wearing watches to put them into your pocket or knapsack. As much as possible, we would like to simulate what occurs in actual decision making groups. In real life, these types of groups meet together over the course of several weeks or months. Since most decision groups do not just meet for 2 hours like we are today, we would prefer that you not be too conscious of the time. We will NOT go over two hours--We will get you out of here in plenty of time.

Today you will be participating in a group decision making business game. This game has been used in other business schools and was selected because it realistically represents the kinds of issues and situations commonly faced in many decision making settings.

I am now going to distribute some general information that will introduce you to the business game. Please read it carefully, and I will give you further instructions in a few minutes.
HAND OUT "TOWERS MARKET--GENERAL INFORMATION." ALLOW Participants AS MUCH TIME AS NEEDED TO READ THE MATERIALS.

As you just read, 4 stores--a Flower shop, Bakery, Liquor Store, and grocery--are planning to form a Market together. There are 4 issues that need to be resolved (temperature, advertising, clerks, and custodial services).
PROTOCOL FOR PARDUCCI’S GROCERY AND DELI

In this business game, all of you will be playing the role of the representatives of Parducci’s Grocery and Deli. In a little while, each of you will be individually representing Parducci’s Grocery in a decision making group. Each group will consist of one representative from the grocery, one from the florist, one from the liquor store, and one from the bakery.

I am going to be distributing some confidential information about what Parducci’s Grocery and Deli thinks about the Market venture and about their goals in relation to the issues that need to be worked out.

The information on the confidential information sheet describes your store’s initial position. We would like you to understand and accept the rationale for your store’s initial views. When you meet with representatives from other stores, you may or may not choose to back off of your store’s position for the purposes of group discussion. However, for now, we would like you to learn and understand your store’s views and goals. In addition, you are encouraged to think of additional reasons for why your store might have the goals and viewpoints stated in the confidential information.

We will collect the confidential information sheets after you read this sheet, so this information will NOT be available to you when you represent your store in the decision making group. Therefore, PLEASE READ IT CAREFULLY.

We would appreciate if you not write on any of the materials.

HAND OUT CONFIDENTIAL INFORMATION FOR PARDUCCI’S GROCERY AND DELI
ALLOW THEM TO SPEND AS MUCH TIME AS NEEDED READING IT

REVIEW OF CONFIDENTIAL INFORMATION FOR PARDUCCI’S GROCERY AND DELI

Parducci’s is a gourmet grocery, which sells high quality items like English tea biscuits and caviar, as well as ready-to-eat sandwiches.

As you just read, Parducci’s grocery and deli feels like the Market Development Project will be a great opportunity and is very enthusiastic about it.

In their view, the Market project should be a cooperative effort, with the stores involved sharing resources, personnel, and costs. Because they have this perspective, they feel that advertising, clerks, custodial services, and temperature should be shared by all the stores involved.

In order to establish the image of the Market, they feel that advertising should be a combined campaign, with each store paying according to a percentage of their contribution toward the market’s gross profits.

Because one of the major advantages of forming a Market is sharing and thus reducing costs, they would like the clerks to be hired and trained as a group, and feel that custodial costs should be divided equally.
They would also like the Market to have one common temperature in order to reduce costs, preferably 68 degrees.

I am now going to collect the confidential information sheets and the general information for Towers Market.

COLLECT CONFIDENTIAL INFORMATION SHEETS AND GENERAL INFORMATION SHEETS
PROTOCOL FOR JACQUI’S BAKERY

In this business game, all of you will be playing the role of the representatives of Jacqui’s Bakery. In a little while, each of you will be individually representing Jacqui’s Bakery in a decision making group. Each group will consist of one representative from the grocery, one from the florist, one from the liquor store, and one from the bakery.

I am going to be distributing some confidential information about what Jacqui’s Bakery thinks about the Market venture and about their goals in relation to the issues that need to be worked out.

The information on the confidential information sheet describes your store’s initial position. We would like you to understand and accept the rationale for your store’s initial views. When you meet with representatives from other stores, you may or may not choose to back off of your store’s position for the purposes of group discussion. However, for now, we would like you to learn and understand your store’s position and goals. In addition, you are encouraged to think of additional reasons for why your store might have the goals and viewpoints stated in the confidential information.

We will collect the confidential information sheets after you read this sheet, so this information will NOT be available to you when you represent your store in the decision making group. Therefore, PLEASE READ IT CAREFULLY.

We would appreciate if you not write on any of the materials.

HAND OUT CONFIDENTIAL INFORMATION FOR JACQUI’S BAKERY
ALLOW THEM TO SPEND AS MUCH TIME AS NEEDED READING IT

REVIEW OF CONFIDENTIAL INFORMATION FOR JACQUI’S BAKERY

Jacqui’s is a traditional French Bakery which sells breads, pastries, desserts, and an assortment of coffees and teas.

As you just read, Jacqui’s Bakery has serious reservations about the Towers Market development. They cannot continue their current lease and the Market is their only other option in an area servicing upscale clientele. They are concerned about increased costs. In many ways, they feel threatened.

In their view, the stores in the Market should continue to operate independently and maintain independent resources, personnel, and costs. Because they have this perspective, they feel that each store should have separate advertising, clerks, custodial services, and temperatures.

Because the bakery requires a high degree of cleanliness, they feel that each store should be responsible for their own custodial services and do not want to have to pay for cleaning of other store’s floor space. They also feel that personnel should be trained and hired individually so that clerks will not be confused about their duties.

They would prefer that each store regulate their own temperature since they would like to maintain 66 degrees in order to increase the sale of espressos and coffees. Also, because they don’t
require much advertising, they would like advertising left up to the discretion of each member.

I am now going to collect the confidential information sheets and the general information for Towers Market.

COLLECT CONFIDENTIAL INFORMATION SHEETS AND GENERAL INFORMATION SHEETS
PROTOCOL FOR DONOVAN’S LIQUOR

In this business game, all of you will be playing the role of the representatives of Donovan’s Liquor. In a little while, each of you will be individually representing Donovan’s Liquor in a decision making group. Each group will consist of one representative from the grocery, one from the florist, one from the liquor store, and one from the bakery.

I am going to be distributing some confidential information about what Donovan’s Liquor thinks about the Market venture and about their goals in relation to the issues that need to be worked out.

The information on the confidential information sheet describes your store’s initial position. We would like you to understand and accept the rationale for your store’s initial views. When you meet with representatives from other stores, you may or may not choose to back off of your store’s position for the purposes of group discussion. However, for now, we would like you to learn and understand your store’s views and goals. In addition, you are encouraged to think of additional reasons for why your store might have the goals and viewpoints stated in the confidential information.

We will collect the confidential information sheets after you read this sheet, so this information will NOT be available to you when you represent your store in the decision making group. Therefore, PLEASE READ IT CAREFULLY.

We would appreciate if you not write on any of the materials.

HAND OUT CONFIDENTIAL INFORMATION FOR DONOVAN’S LIQUOR
ALLOW THEM TO SPEND AS MUCH TIME AS NEEDED TO READ IT

REVIEWS OF CONFIDENTIAL INFORMATION FOR DONOVAN’S LIQUOR

Donovan’s is a carry-out liquor store which sells international beers and wines.

As you just read, Donovan’s Liquor feels like the Market development project will offer the store an opportunity to increase their profit potential, but are concerned that if some of the issues are not resolved satisfactorily, moving to a new location may prove to be risky.

In their view, the Market project should be mostly a cooperative effort, but on issues where the stores already have considerable experience, they should be able to operate independently. Because they have this perspective, they feel that clerks, custodial costs, and temperature should be shared, but each store should have their own advertising campaign.

In order to reduce costs, they would like clerks to be hired as a group and trained in each store’s specialty and feel that custodial costs should be shared equally by all stores. In addition, they feel that the Market should maintain a common temperature of 71 degrees in order to economize on utility bills.

Because advertising is crucial for them and they already have a successful ad campaign, they feel that advertising should be done independently.
I am now going to collect the confidential information sheets and the general information for Towers Market.

COLLECT CONFIDENTIAL INFORMATION SHEETS AND GENERAL INFORMATION SHEETS
PROTOCOL FOR JARDIN FLORIST

In this business game, all of you will be playing the role of the representatives of Jardin Florist. In a little while, each of you will be individually representing Jardin Florist in a decision making group. Each group will consist of one representative from the grocery, one from the florist, one from the liquor store, and one from the bakery.

I am going to be distributing some confidential information about what Jardin Florist thinks about the Market venture and about their goals in relation to the issues that need to be worked out.

The information on the confidential information sheet describes your store’s initial position. We would like you to understand and accept the rationale for your store’s initial views. When you meet with representatives from other stores, you may or may not choose to back off of your store’s position for the purposes of group discussion. However, for now, we would like you to learn and understand your store’s views and goals. In addition, you are encouraged to think of additional reasons for why your store might have the goals and viewpoints stated in the confidential information.

We will collect the confidential information sheets after you read this sheet, so this information will NOT be available to you when you represent your store in the decision making group. Therefore, PLEASE READ IT CAREFULLY.

We would appreciate if you not write on any of the materials.

HAND OUT CONFIDENTIAL INFORMATION FOR JARDIN FLORIST
ALLOW THEM TO SPEND AS MUCH TIME AS NEEDED TO READ IT

REVIEW OF CONFIDENTIAL INFORMATION FOR JARDIN FLORIST

Jardin’s sells artistic bouquets and made-to-order, while-you-wait arrangements.

As you just read, Jardin Florist has some reservations about the Towers Market since they have a successful business and moving to a new location could be risky and could threaten their profit potential. However, if things are handled correctly, the increased number of customers that the Market will attract might enable them to turn a bigger profit.

In their view, the Market would mainly involve stores maintaining independent resources, personnel, and costs. However, on some issues, the Market would cooperate jointly. Because they have this viewpoint, they feel that each store should have separate clerks, custodial services, and temperatures, but advertising should be shared.

They would prefer that each store regulate their own temperature since they would like it warm, about 75 degrees, for their tropical plants. They want to pay for the cleaning of their floor space, but would rather not pay for the cleaning of other merchant’s floor space.
They also feel that they should hire and train their own clerks since creating floral designs requires expertise. Since they do not have much experience in advertising, they would prefer a combined campaign.

I am now going to collect the confidential information sheets and the general information for Towers Market.

COLLECT CONFIDENTIAL INFORMATION SHEETS AND GENERAL INFORMATION SHEETS
Before you get ready to meet with the other stores, I would like you to fill out this questionnaire.

PASS OUT THE STORE QUESTIONNAIRE

Please write the number and letter on the index card in front of you. We would like you to fill this questionnaire out individually without communicating with other members of your group.

Please fill this questionnaire out with regard to what was on the confidential information sheet. As I mentioned previously, when you meet with representatives from other stores, you may or may not choose to back off of your store's initial position for purposes of group discussion. However, for now, we want to assess whether you have learned your store's initial views and positions.

WAIT FOR Participants TO FILL IT OUT

We would now like you to compare and discuss your answers to the questions on the first two and a half pages. You do not have to discuss your answers to the questions below the starred line on the last page. Please do NOT erase or change any of your answers—just discuss them amongst yourselves so you are clear as to what your store's views and positions are.

It is very important that you also talk about the reasons behind your store's goals. Together, try to come up with additional reasons for why your store might have the views and positions stated on the confidential information sheet.

I should note that this discussion will NOT be tape-recorded. The microphones are set up for the next phase of the exercise.

I will now return the confidential information sheets for your discussion.

RE-DISTRIBUTE CONFIDENTIAL INFORMATION SHEETS

COLLECT ALL THE PENS/PENCILS FROM Participants. IF THEY PROVIDED THEIR OWN, THEN TELL THEM THEY CAN PUT IT AWAY SINCE THEY WILL NOT BE NEEDING IT FOR THE NEXT SEVERAL MINUTES.

You can begin to discuss now.

ALLOW Participants 7 MINUTES OF DISCUSSION TIME

WRITE DOWN THE TIME THE DISCUSSION STARTED ON YOUR OBSERVATION SHEET AND WRITE DOWN OBSERVATIONS OF GROUP DISCUSSION

TIME DISCUSSION STARTED

WARN Participants WHEN THEY HAVE 2 MINUTES LEFT

Participants DO NOT HAVE TO DISCUSS ANSWERS TO ITEMS ON THE LAST PAGE OF THE QUESTIONNAIRE.

WHEN COLLECTING THE STORE QUESTIONNAIRES, CHECK TO MAKE SURE THAT Participants HAVE WRITTEN DOWN THE RIGHT NUMBER FROM THEIR CARD. RETURN THE QUESTIONNAIRES TO THE TABLE.
COLLECT THE CONFIDENTIAL INFORMATION AND RETURN IT TO THE TABLE.

We are now going to go back into the waiting area to divide up into decision making groups with representatives from other stores. Please take your index card with you. If we have to wait for other groups to finish, I would appreciate it if you not talk to members of other store groups at this time, but you can talk amongst yourselves. Please take your things with you.

(IF YOU HAVE AN OBSERVER, COLLECT ALL INFORMATION FROM THEM AND TELL HIM OR HER NOT TO DISCUSS THE INFORMATION WITH STORE GROUP MEMBERS).

MOVE Participants INTO THE WAITING AREA

1 PERSON SHOULD BE IN THE WAITING AREA WHILE Participants ARE OUT THERE.

693'S will be in the same room for the decision making groups as they were in for the constituency groups.

<table>
<thead>
<tr>
<th>Room</th>
<th>Constituency Group</th>
<th>Decision Making Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>112D (Inside)</td>
<td>Grocery</td>
<td>1</td>
</tr>
<tr>
<td>112B (A2)</td>
<td>Flower Shop</td>
<td>2</td>
</tr>
<tr>
<td>109L (A4)</td>
<td>Liquor Store</td>
<td>3</td>
</tr>
<tr>
<td>108L (Aviation)</td>
<td>Bakery</td>
<td>4</td>
</tr>
</tbody>
</table>

The 693 that had the grocery constituency will have decision making group 1 and will ask all the participants with a 1 on their index card to follow them to 112D (same room they had before).

The 693 that had the Flower shop constituency will have decision making group 2 and will ask all the participants with a 2 on their index card to follow them to 112B. ETC.
Appendix D: Consent Form
CONSENT FOR PARTICIPATION IN GROUP DECISION MAKING STUDY

During this experiment, subjects will participate in a business game in which they will represent various stores that are interested in forming a Market. The store representatives must come together and discuss issues that must be resolved if the Market venture is to be successful. During the course of this exercise, subjects will be asked to complete several questionnaires.

This business game will take approximately 2 hours and subjects will receive extra credit in return for participation.

Group discussions will be tape-recorded. However, subjects will NOT be asked to identify themselves by name, and no data will be able to be matched to a subject’s identity. Data will only be seen by members of the research team, and the tapes will be erased at the conclusion of the study.

Participation is completely voluntary, and subjects are free to withdraw consent and discontinue participation at any time without penalty. At the end of the exercise, subjects will be informed of the purpose of this study. If subjects have any questions about this research, they are free to contact the Principle Investigator, Dr. Robert Billings (292-8115), or the experimenter, Susan Mohammed (292-8175).

I consent to participating in research entitled: "Group Decision Making Study." I acknowledge that I have read and fully understand this consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _______________ Signed: __________________________

(Participant)

Signed: __________________________
Principal Investigator

Witness: _______________________

Please clearly print your full name below so that we can forward the information on to your instructor for extra credit.

_____________  ________________
Last name      First name
Appendix E: Background Information for Towers Market
A developer has proposed creating a Market consisting of a number of shops all catering to a similar upscale clientele. The idea is to have each shop owned and managed by specialists, other retailers who have successfully created a niche for themselves by providing quality products to a similar consumer group.

The Market will have an open plan. The food and other products would be arranged in "departments", where customers will be able to purchase imported beer and wines, deli sandwiches, and fresh pastries by crossing aisles instead of crossing streets. There will also be a common area with tables where customers may sit down and sample some of the items sold in the stores.

The Market plans to lease two floors of a primarily residential building, one level for the Market and the other for storage, offices, preparation areas, etc. The Market would be located on the upper West Side, an area which is currently being settled by young urban professionals--the potential customer pool. A suitable building has been located, the 88th Street Towers. The owner is excited about leasing the retail space of his building to one group, since this will reduce his searching for new tenants and he will be able to negotiate only one contract.

The merchants who have shown some interest in joining the Market are Parducci's Grocery and Deli, Jardin Florist, Jacqui's Bakery, and Donovan's Liquors. Parducci's is a successful gourmet grocery and deli currently located on the East Side. They carry a wide range of high quality grocery items ranging from Russian caviar to English tea biscuits to organically grown produce. In addition, a noticeable percentage of their sales are from ready-to-eat sandwiches and take-out foods.

Jardin Florist has built a reputation for their artistic styling of bouquets reminiscent of French and English country gardens. Their past business has been mostly catering to special orders, and they are interested in using the Market to demonstrate their unique style and to expand their production to include made-to-order, while-you-wait arrangements that will still incorporate their elegant styling.

Jacqui's Bakery is a traditional French bakery currently located on the East side. They offer a wide selection of French breads, croissants, and brioches, and pizzas as well as delectable pastries and desserts. In previous discussions with the other partners, they agreed to sell coffees, espresso and tea.

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1This exercise was developed by Rebecca Beggs, Jeanne Brett and Laurie Weingart, Kellogg Graduate School of Management, Northwestern University, Evanston, Illinois, 60208-2011
Donovan’s Liquors is proud of its claim that they stock over 300 international beers as well as many prized wines. Customers are drawn by their fine selection of imported and domestic wines. In spite of declining per capita alcohol consumption, Donovan’s sales continue to rise.

These potential partners, while having shown some interest in the idea of the Market, nevertheless are concerned about several issues that are not yet resolved. They have agreed to meet to try to resolve these issues so that they can make preparations to open the market. The issues they are to resolve include:

**Advertising.** Some of the interested merchants feel that the Market should be promoted as a unit while others would prefer to do their own advertising in the manner which they have found to be most successful. Some suggested options are:

1) combined campaign, advertising for market as a whole, costs to be divided equally amongst the Market merchants.
2) combined campaign, advertising for market as a whole, to be paid according to percentage of the market’s gross profits contributed by the merchant
3) combined campaign, advertising the stores as individual units but on the same flyers, with each member given (and paying for) 1/4th of ad
4) separate campaign for each member, 6% of expected gross profits to be spent on advertising
5) separate campaign for each member, amount spent up to individual merchant
6) other ____________________

**Clerks.** The major issue here seems to be whether the Market should continue to offer the extremely personalized service that the participating merchants offered in their original stores, or whether they should economize and share costs of hiring and training. The options are:

1) hire by group, train by group, distribute equally, paid for by group
2) hire by group, train by group, distribute according to floor space, paid for by group
3) hire by group, train individually, distribute according to demand for service, paid for by group
4) hire individually, train individually, distribute according to demand for service, each merchant to pay from individual profits
5) hire individually, train individually, each merchant to decide how many clerks, each merchant to pay from individual profits
6) other ____________________
Custodial Services. One of the benefits of this venture is the reduction in custodial costs for each merchant's retail space. However, there is a disagreement on how those costs should be distributed and whose responsibility cleaning of the common areas should be. Options are:

1) shared, each responsible for 1/4th of total costs
2) shared, each responsible for percentage according to floor space occupied
3) shared, each responsible for percentage according to floor space occupied, but with the bakery paying double its percentage because of the nature of its carry out business
4) separate, each responsible for own floor space, plus common area cleaning cost as a function of floor space occupied
5) separate, each responsible for own floor space plus equal contributions for common area cleaning
6) other

Temperature. Since the merchants will be sharing common space, they must decide what temperature to maintain. Some of the merchants feel that the temperature of their department as well as the common area might affect the demand for their products.

1) one common temperature throughout the building, 74 degrees
2) one common temperature throughout the building, 71 degrees
3) one common temperature throughout the building, 68 degrees
4) separate store temperatures; common area temperature determined jointly by all stores
5) separate store temperatures; common area temperature determined by stores whose customers will use it the most
6) other

NOTE: The options noted above are not an exhaustive list, but are simply suggestions. You are free to create additional options in your decision making groups.
Appendix F: Confidential Information for Store Groups
Confidential Information for Parducci’s Grocery and Deli

We are extremely enthusiastic about the Towers Market development, and feel that it provides an excellent chance for our store to increase our profit potential. We are confident that we will be able to economize on costs and will benefit substantially from the larger group of customers that the Market will attract. Therefore, we think that participating in the Market venture will be a great opportunity for our store.

We have certain ideas about how a Market should operate. In our view, forming a Market should be a truly collaborative joint venture which involves much more than just sharing a building. We will be more than just a group of stores; we will function as a cooperative network. In order for the Market to be a success, the stores involved will have to share resources, personnel, and costs. Parducci’s Grocery and Deli has always believed in true cooperation in business ventures.

Because we have this viewpoint, we feel that advertising, clerks, and custodial costs, and temperature should all be shared by Market participants.

We have the following positions with regard to the issues to be discussed in the upcoming meeting:

Advertising: We feel that there should be a combined campaign with each store paying according to a percentage of their contribution toward the market’s gross profits. A combined advertising campaign will establish the image of the Market and generate the synergies that we anticipate from this particular grouping of stores. In addition, customers that come to one store will most likely visit other stores as well; therefore, everyone would benefit from a combined campaign.

Clerks: We feel that in order to economize on costs in this new venture, we should hire and train the clerks as a group. We would like to distribute them according to floor space, however. Turnover has been a big problem for us in the past, so having a pool of employees to draw from would be very beneficial to us. The clerks in our department do not require any special expertise, beyond being trained to offer exceptional service. Service is most essential to our success.

Custodial Services: We feel that cleaning costs should be shared by all involved merchants. One advantage of forming this Market, was to share and thus reduce these costs. It seems to us only fair to divide the costs of custodial services equally since customers are often shopping in more than one of our stores per visit to the market. Dividing the costs according to floor space seems ridiculous to us; just because our store is larger doesn’t
mean our customers are messier.

Temperature: We feel that the Market should have one common temperature, preferably 68 degrees. Sharing a common temperature will reduce utility costs, while allowing the temperature to vary from store to store will add unnecessary expense.
Confidential Information for Jardin Florist

We have some reservations about the Towers Market development. We have operated successfully for a couple of years now and have built up a strong customer base. Moving to a new location and changing our current operation could prove to be very risky. We are concerned that our costs will increase significantly with a Market and our profit potential will be threatened.

At the same time, the larger group of customers that the Market will attract may enable us to more than pay for increased costs. We feel mostly threatened by this Market venture, but if things are handled correctly, it could turn out to be an opportunity for our store.

We have certain ideas about how a Market should operate. In our view, forming a Market would mainly involve just sharing a building with other stores. In order for the Market to be successful, the stores involved will need to maintain independent resources, personnel, and costs. However, on the issues where stores have little experience, the Market should cooperate jointly. Jardin Florist values independence, but only up to a point.

Because we have this viewpoint, we feel that each store should have separate clerks, custodial services, and temperature controls, but advertising should be shared by the other stores involved.

We have the following positions with regard to the issues to be discussed in the upcoming meeting.

Temperature: We would prefer the temperature warmer rather than cooler, with our most preferred outcome being 75 degrees. Some of our cut flowers will be displayed in cases with their own temperature controls, but we intend to specialize in tropical flowers and they thrive in warmer temperatures. Because we recognize that 75 degrees will probably be too warm for other merchants, we feel that each store should have their own temperature control. The temperature of the common area should be decided jointly by all stores.

Custodial Services: This could be a very expensive item for us. We are willing to pay for the cleaning of the share of floor space we occupy. We would rather not share in the cleaning of the common area - our customers will not be using it - but will, if the share is a function of floor space occupied. It seems unfair that merchants whose selling area is smaller should pay for the cleaning of other merchants' floor space.
Clerks: Our business is built on the expertise of our personnel. We spend considerable time training our clerks to build elegant floral designs incorporating the customers preferences and ideas. We feel that this sensitivity and creativity are very important to our customer's satisfaction with the final product. For this reason, it is essential to hire and train our own clerks.

Advertising: We do not have a lot of experience in this area. In the past we have done minimal advertising, thus we would prefer not to have to develop our own separate campaign. A combined campaign which requires us to contribute an equal share will be too expensive. However, we would be willing to contribute to a combined campaign based on our share of the market's gross profits.
Confidential Information for Donovan’s Liquor

We are somewhat enthusiastic about the Towers Market development and feel that it provides an opportunity for our store to increase our profit potential. We may benefit from the larger group of customers that the Market will attract.

However, at the same time, moving to a new location and changing our current operation could prove to be risky, especially if our costs increase significantly. We feel that the Market venture is mostly an opportunity for our store, but if things are not handled correctly, it could turn out to be a threat.

We have certain ideas about how a Market should operate. In our view, forming a Market should be a mostly collaborative joint venture which involves more than just sharing a building. In order for the Market to be successful, the stores involved will need to share some resources, personnel, and costs.

However, on issues where the stores have considerable experience, they should operate independently. Donovan’s Liquor believes in cooperation in business ventures, but only up to a point.

Because we have this viewpoint, we feel that clerks, custodial costs, and temperature should be shared by all Market participants, but each store should have their own advertising campaign.

We have the following positions with regard to the issues to be discussed in the upcoming meeting.

Clerks: We feel that the clerks should be hired as a group, but have enough individual training so that they can direct customers and discuss alternatives with them. It seems that we could effectively economize by sharing the costs of hiring service personnel. Also, if the clerks are trained in each store’s specialty, it will be possible to move the clerks around according to shifting demands in different departments.

Custodial Services: We feel that cleaning costs should be shared equally by all involved merchants. Sharing and thus reducing these costs were among the major advantages of forming this Market. Dividing the costs according to floor space seems ridiculous to us; just because our store is larger doesn’t mean our customers are messier.

Temperature: In order to economize on utility costs, we feel that all the stores in the Market and common area should have a common temperature, preferably 71 degrees.
Advertising: We think our advertising campaigns will be crucial to our success in the market. We already have a very successful ad style and our own popular lingo that would have to be changed in a combined campaign. We are vehemently opposed to having our campaign restricted by the other merchants' limited vision.
Confidential Information for Jacqui’s Bakery

We have some serious reservations about the Towers Market Development. We have operated successfully on our own for several years and have developed a regular clientele among young urban professionals. Unfortunately, we can no longer continue our lease. We have searched extensively for other locations, but most of the available space is located in areas servicing the lower middle class. Towers Market is the only available lease space in an area servicing upscale clientele, our customer base.

We would much rather set up another independent store, but have no other viable options for moving our business. We are especially concerned that our costs may increase significantly with a Market; the start-up costs alone may break us. We are willing to discuss the issues with the other stores, but feel that if things are not set up right, our profit potential will be in jeopardy. In short, we feel a great deal of threat.

We have certain ideas about how a Market should operate. In our view, a Market would involve only the sharing a building with other stores; everything else would be separate. In order for the Market to be successful, the stores involved must maintain independent resources, personnel, and costs.

Since we have established ways of doing things which have been successful in the past, we want to continue to operate independently, just as we always have done. Jacqui’s Bakery has always valued its independence and we are not about to change that now.

Because we having this viewpoint, we feel that each store should have separate advertising, clerks, custodial services, and temperature controls.

We have the following positions with regard to the issues to be discussed in the upcoming meeting:

Custodial Services: We feel that each merchant should be responsible for maintaining his/her own floor space with each also responsible for common area cleaning cost as a function of floor space occupied. We have a smaller selling area than other stores, so it seems unfair that we should have to pay for the cleaning of other merchants’ floor space. Since a bakery requires a high level of cleanliness, we want to be responsible for our own custodial services.

Clerks: Hiring and training clerks individually and paying them ourselves is important to us. We would prefer to hire and train our clerks ourselves and to pay them from our own profits. We feel that having clerks be responsible only to us will make them more committed to servicing our customers. If the clerks are hired by the Market as a whole, we feel that they will be
confused about their exact duties and will be inefficient in servicing any customers.

Temperature: A cool temperature of 66 degrees would be helpful in selling our coffees and espressos. In the past we have sold only pastries and would like to add beverages to our list of products. But we feel that if the Market's climate is maintained at a very warm temperature, customers will be much less likely to buy our merchandise. Since 66 degrees may be too cool for other customers, we feel that each store should have their own temperature control option. In addition, the temperature of the common area should be determined by the stores whose customers will use it most.

Advertising: We have always managed to do good business without a formal advertising campaign. Baked goods pretty much sell themselves. Therefore we prefer to have advertising at the discretion of each member. We should not have to pay for advertising if we do not need it.
STORE QUESTIONNAIRE

Please write the letter on your card______
Please write the number on your card______

What store do you represent?
(1) Parducci's Grocery & Deli
(2) Donovan's Liquor
(3) Jardin Florist
(4) Jacqui's Bakery

How does your store view the Towers Market development?
(1) a great opportunity
(2) mostly an opportunity, but it could turn out to be a threat
(3) mostly a threat, but it could turn out to be an opportunity
(4) a great threat

Why does your store have this view toward the Market?

My store believes that if the Market is to succeed, participating stores should:
(1) share everything, including personnel, resources, and costs.
(2) share mostly everything, but operate independently on some things
(3) operate mostly independently, but share some things
(4) operate independently, except for sharing the building with other stores

Why does your store have this view of a Market?

What additional reasons can you think of for why your store would have this view of a Market?

With regard to advertising, my store would prefer:
1) combined campaign, advertising for market as a whole, costs to be divided equally amongst the Market merchants.
2) combined campaign, advertising for market as a whole, to be paid according to percentage of the market's gross profits contributed by the merchant
3) combined campaign, advertising the stores as individual units but on the same flyers, with each member given (and paying for) 1/4th of ad
4) separate campaign for each member, 6% of expected gross profits to be spent on advertising
5) separate campaign for each member, amount spent up to individual merchant

What are the reasons behind your store's position on advertising?
What additional reasons can you think of for why your store would adopt its position on advertising?

With regard to clerks, my store would prefer to:
1) hire by group, train by group, distribute equally, paid for by group
2) hire by group, train by group, distribute according to floor space, paid for by group
3) hire by group, train individually, distribute according to demand for service, paid for by group
4) hire individually, train individually, distribute according to demand for service, each merchant to pay from individual profits
5) hire individually, train individually, each merchant to decide how many clerks, each merchant to pay from individual profits

What are the reasons behind your store’s position on clerks?

What additional reasons can you think of for why your store would adopt its position on clerks?

My store would prefer to have custodial services that are:
1) shared, each responsible for 1/4th of total costs
2) shared, each responsible for percentage according to floor space occupied
3) shared, each responsible for percentage according to floor space occupied, but with the bakery paying double its percentage because of the nature of its carry out business
4) separate, each responsible for own floor space, plus common area cleaning cost as a function of floor space occupied
5) separate, each responsible for own floor space plus equal contributions for common area cleaning

What are the reasons behind your store’s position on custodial services?

What additional reasons can you think of for why your store would adopt its position on custodial services?

My store would prefer:
1) one common temperature throughout the building, 74 degrees
2) one common temperature throughout the building, 71 degrees
3) one common temperature throughout the building, 68
4) separate store temperatures; common area temperature
determined jointly by all stores
5) separate store temperatures; common area temperature
determined by stores whose customers will use it the
most

What are the reasons behind your store’s position on temperature?

What additional reasons can you think of for why your store would
adopt its position on temperature?

******************************************************************************
To what extent do you identify with this store group?

                                1     2     3     4     5     6     7
                                Not at all A great deal

To what extent do you feel comfortable representing the issues of . .
importance to this group?

                                1     2     3     4     5     6     7
                                Very Uncomfortable Very Comfortable

To what extent do you accept and agree with the initial positions
of this store group?

                                1     2     3     4     5     6     7
                                Not at all A great deal

How well do you know each of the members of this group? Please
refer to each person’s index card number.
Person 1:
  myself seen only seen had class acquaintance friend close
  today before with friend

Person 2:
  myself seen only seen had class acquaintance friend close
  today before with friend

Person 3:
  myself seen only seen had class acquaintance friend close
  today before with friend

Person 4 (if applicable):
  myself seen only seen had class acquaintance friend close
  today before with friend
Appendix H: Store Group Observation Sheet
Store Group Observation Sheet

Name 
Date 
Time experiment began: 

Circle the store group you are observing:
Grocery    Flower Shop    Liquor Store    Bakery

Number of subjects in the group
Number of males
Number of females

List any questions subjects asked, points of clarification that were needed. Did they appear to be understanding the directions?

Time subjects began discussion

Can all subjects speak English adequately? If not, which subject is having difficulty (refer to index card number),

How readily did subjects enter into a discussion of the confidential information?

Indicate how much each subject participated in the discussion and the nature of their participation. (Refer to number on index card)

Participant #1:
Participant #2:
Participant #3:
Participant #4:

Do subjects report different answers to the questions on the store questionnaire? Describe the differences

Are subjects discussing the reasons underlying their positions?

Did subjects discuss additional reasons for why their store would have the positions stated in the confidential information?

Other observations:

Time subjects ended discussion

Subjects:
    _____ had to be told to stop discussing
    _____ ended the discussion prematurely (How many minutes did they discuss?)
Appendix I: Cover Story for Decision Making Groups
DECISION MAKING GROUP PROTOCOL

CONDITION: HIGH COMMITMENT/UNANIMITY

First, I would like you to put on a store label so that the other group members can know what store you represent.

PUT LABELS IN THE CENTER OF THE TABLE AND LET SUBJECTS SELECT THE STORE THEY REPRESENT

PASS OUT "KEY STEPS IN THE BUSINESS GAME" TO SUBJECTS

This sheet summarizes the key steps in this business game. You just met with members of your store group—either the grocery, flower shop, liquor store or bakery. Now, you are meeting with a decision making group, which consists of one representative from each store.

In this decision making group, you are now going to discuss the issues that need to be resolved before the Market venture can proceed. You will have 30 minutes to discuss these issues. At the end of this time period, you will make a group decision about the 4 issues that have been identified (temperature, advertising, clerks, and custodial services).

Rather than having a system where the majority wins, it is important that every group member's viewpoints are accommodated in some way. When beginning new projects like Towers Market, it is critical that individual group members not be isolated and left out of the decision making process.

Therefore, in this group, decisions must be unanimous. Simply, all four persons must be in agreement on a decision in order for a decision to be implemented. The decision must be acceptable to all.

After this group has reached a group decision on these issues, you will be meeting back with your store groups. If you represent the bakery, you will be meeting back with the other representatives of the bakery that you just met with. If you represent the grocery, you will be meeting back with other representatives of the grocery that you just met with, and so forth. You will report back to your store group to explain and justify to the other members how well you represented the issues of importance to your store. Specifically, you will report what decisions were made in THIS group, and the other members of your store group will evaluate them based on your store's goals.

Before you begin discussing, I would like you to fill out a questionnaire. Please fill this out individually, without communicating with other members of this group.

PASS OUT INITIAL QUESTIONNAIRE
**TURN ALL 4 MICROPHONES ON**

COLLECT INITIAL QUESTIONNAIRE WHEN THEY ARE THROUGH, BUT LEAVE THE KEY STEPS IN THE BUSINESS GAME ON THE TABLE.

We would now like you to discuss the issues that need to be resolved. Because we are trying to assess the dynamics that occur in an actual group decision making environment, we would very much appreciate it if you take this discussion seriously.

I am now going to re-distribute the general information sheet and your confidential information sheet.

PASS OUT GENERAL INFORMATION AND CONFIDENTIAL INFORMATION SHEETS TO THE CORRECT STORE REPRESENTATIVES BY LOOKING AT THEIR STORE LABEL. BE CAREFUL NOT TO HAND OUT THE WRONG CONFIDENTIAL SHEET TO THE WRONG STORE REPRESENTATIVE!!

Remember that your confidential information is confidential. You may refer to it to discuss your positions and the rationales behind them, but do not show the sheet to anyone.

Blank paper is provided if you need to use it. (PUT SOME ON THE TABLE IF NOT ALREADY THERE) We would appreciate it if you not write on any of the materials.

The nature of the research questions require that we tape record the group discussion. Please attach the microphones to THE MIDDLE OF YOUR SHIRT (INDICATE WHERE).

**WATCH AND MAKE SURE THAT MICROPHONES ARE NOT TOO FAR DOWN OR OFF TO THE SIDE**

Again, in this group, the decisions must be unanimous. After the discussion, you will be reporting back to your store groups to justify and explain how you represented the issues of importance to your store

**TURN ON TAPE RECORDER**

You may begin discussing now.

NOTE TIME DISCUSSION BEGINS

FILL OUT OBSERVATION SHEET

CHANGE TAPES AS NEEDED (DO NOT TURN TAPES OVER!!)

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DECISION MAKING GROUP PROTOCOL

CONDITION: HIGH COMMITMENT/MAJORITY RULE

First, I would like you to put on a store label so that the other group members can know what store you represent.

PUT LABELS IN THE CENTER OF THE TABLE AND LET SUBJECTS SELECT THE STORE THEY REPRESENT

PASS OUT "KEY STEPS IN THE BUSINESS GAME" TO SUBJECTS

This sheet summarizes the key steps in this business game. You just met with members of your store group--either the grocery, flower shop, liquor store or bakery. Now, you are meeting with a decision making group, which consists of one representative from each store.

In this decision making group, you are now going to discuss the issues that need to be resolved before the Market venture can proceed. You will have 30 minutes to discuss these issues. At the end of this time period, you will make a group decision about the 4 issues that have been identified (temperature, advertising, clerks, and custodial services).

Rather than having one person dominate in a system where the loudest person wins, it is important that more than 50% of group members agree on a decision. Because it is fair and allows groups to reach decisions faster and more efficiently than a unanimous system, majority rule is the most popular type of decision rule. It is used pervasively in our government, in elections, and in the Supreme Court.

Therefore, in this group, the majority rule of decision making will be in effect. Simply, if three persons are in agreement on a decision, even if the fourth person disagrees, they may implement the decision, which is binding on all group members.

After this group has reached a group decision on these issues, you will be meeting back with your store groups. If you represent the bakery, you will be meeting back with the other representatives of the bakery that you just met with. If you represent the grocery, you will be meeting back with other representatives of the grocery that you just met with, and so forth.

You will report back to your store group to explain and justify to the other members how well you represented the issues of importance to your store. Specifically, you will report what decisions were made in THIS group, and the other members of your store group will evaluate them based on your store's goals.

Before you begin discussing, I would like you to fill out a questionnaire. Please fill this out individually, without communicating with other members of this group.
PASS OUT INITIAL QUESTIONNAIRE

***************TURN ALL 4 MICROPHONES ON***************

COLLECT INITIAL QUESTIONNAIRE WHEN THEY ARE THROUGH, BUT LEAVE THE KEY STEPS IN THE BUSINESS GAME ON THE TABLE.

We would now like you to discuss the issues that need to be resolved. Because we are trying to assess the dynamics that occur in an actual group decision making environment, we would very much appreciate it if you take this discussion seriously.

I am now going to re-distribute the general information sheet and your confidential information sheet.

PASS OUT GENERAL INFORMATION AND CONFIDENTIAL INFORMATION SHEETS TO THE CORRECT STORE REPRESENTATIVES BY LOOKING AT THEIR STORE LABEL. BE CAREFUL NOT TO HAND OUT THE WRONG CONFIDENTIAL SHEET TO THE WRONG STORE REPRESENTATIVE!!!

Remember that your confidential information is confidential. You may refer to it to discuss your positions and the rationales behind them, but do not show the sheet to anyone.

Blank paper is provided if you need to use it. (PUT SOME ON THE TABLE IF NOT ALREADY THERE) We would appreciate it if you not write on any of the materials.

The nature of the research questions require that we tape record the group discussion. Please attach the microphones to THE MIDDLE OF YOUR SHIRT (INDICATE WHERE).

***************WATCH AND MAKE SURE THAT MICROPHONES ARE NOT TOO FAR DOWN OR OFF TO THE SIDE***************

Again, in this group, the majority rule of decision making will be in effect. After the discussion, you will be reporting back to your store groups to justify and explain how you represented the issues of importance to your store.

TURN ON TAPE RECORDER

You may begin discussing now.

NOTE TIME DISCUSSION BEGINS

FILL OUT OBSERVATION SHEET

CHANGE TAPES AS NEEDED (DO NOT TURN TAPE OVER!!!)
DECISION MAKING GROUP PROTOCOL

CONDITION: LOW COMMITMENT/UNANIMITY

First, I would like you to indicate your store name so that other group members can know what store you represent.

LET SUBJECTS TELL WHAT STORE THEY REPRESENT

PASS OUT "KEY STEPS IN THE BUSINESS GAME" TO SUBJECTS

This sheet summarizes the key steps in this business game. You just met with members of your store group—either the grocery, flower shop, liquor store or bakery. Now, you are meeting with a decision making group, which consists of one representative from each store.

In this decision making group, you are now going to discuss the issues that need to be resolved before the Market venture can proceed. You will have 30 minutes to discuss these issues. At the end of this time period, you will make a group decision about the 5 issues that have been identified (temperature, advertising, clerks, and custodial services).

Rather than having a system where the majority wins, it is important that every group member's viewpoints are accommodated in some way. When beginning new projects like Towers Market, it is critical that individual group members not be isolated and left out of the decision making process.

Therefore, in this group, decisions must be unanimous. Simply, all four persons must be in agreement on a decision in order for a decision to be implemented. The decision must be acceptable to all.

There are several other decision making groups just like this one that are meeting now. Each of the other decision making groups is set up just like this one, with one representative from each store. Each group will be making decisions on the issues that have been identified. Since there will only be one Towers Market, the best solution needs to be selected among all decision making groups. Therefore, after this group has reached a group decision on these issues, you will be meeting with the other decision making groups. Specifically, you will report on what decisions were made in THIS group and will be asked to justify and explain why your decision is a good one. The other decision making groups will evaluate them. Amongst yourselves, you will jointly decide on the best Market solution.

Before you begin discussing, I would like you to fill out a questionnaire. Please fill this out individually, without communicating with other members of this group.
PASS OUT INITIAL QUESTIONNAIRE

***************TURN ALL 4 MICROPHONES ON***************

COLLECT INITIAL QUESTIONNAIRE WHEN THEY ARE THROUGH, BUT LEAVE THE KEY STEPS IN THE BUSINESS GAME ON THE TABLE.

We would now like you to discuss the issues that need to be resolved. Because we are trying to assess the dynamics that occur in an actual group decision making environment, we would very much appreciate it if you take this discussion seriously.

I am now going to re-distribute the general information sheet.

PASS OUT GENERAL INFORMATION

Blank paper is provided if you need to use it (PUT SOME ON THE TABLE IF NOT ALREADY THERE). We would appreciate it if you not write on any of the materials.

The nature of the research questions require that we tape record the group discussion. Please attach the microphones to THE MIDDLE OF YOUR SHIRT (INDICATE WHERE).

***************WATCH AND MAKE SURE THAT MICROPHONES ARE NOT TOO FAR DOWN OR OFF TO THE SIDE***************

Again, in this group, the decisions must be unanimous. After the discussion, you will be meeting with the other decision making groups just like this one to jointly decide on the best Market solution.

TURN ON TAPE RECORDER

You may begin discussing now.

NOTE TIME DISCUSSION BEGINS

FILL OUT OBSERVATION SHEET

CHANGE TAPES AS NEEDED (DO NOT TURN TAPES OVER!!!!)
DECISION MAKING GROUP PROTOCOL

CONDITION: LOW COMMITMENT/MAJORITY RULE

First, I would like you to indicate your store name so that other group members can know what store you represent.

LET SUBJECTS TELL WHAT STORE THEY REPRESENT

PASS OUT "KEY STEPS IN THE BUSINESS GAME" TO SUBJECTS

This sheet summarizes the key steps in this business game. You just met with members of your store group—either the grocery, flower shop, liquor store or bakery. Now, you are meeting with a decision making group, which consists of one representative from each store.

In this decision making group, you are now going to discuss the issues that need to be resolved before the Market venture can proceed. You will have 30 minutes to discuss these issues. At the end of this time period, you will make a group decision about the 4 issues that have been identified (temperature, advertising, clerks, and custodial services).

Rather than having one person dominate in a system where the loudest person wins, it is important that more than 50% of group members agree on a decision. Because it is fair and allows groups to reach decisions faster and more efficiently than a unanimous system, majority rule is the most popular type of decision rule. It is used pervasively in our government, in elections, and in the Supreme Court.

Therefore, in this group, the majority rule of decision making will be in effect. Simply, if three persons are in agreement on a decision, even if the fourth person disagrees, they may implement the decision, which is binding on all group members.

There are several other decision making groups just like this one that are meeting now. Each of the other decision making groups is set up just like this one, with one representative from each store. Each group will be making decisions on the issues that have been identified. Since there will only be one Towers Market, the best solution needs to be selected among all decision making groups. Therefore, after this group has reached a group decision on these issues, you will be meeting with the other decision making groups. Specifically, you will report on what decisions were made in THIS group and will be asked to justify and explain why your decision is a good one. The other decision making groups will evaluate them. Amongst yourselves, you will jointly decide on the best Market solution.

Before you begin discussing, I would like you to fill out a questionnaire. Please fill this out individually, without
communicating with other members of this group.

PASS OUT INITIAL QUESTIONNAIRE

***************TURN ALL 4 MICROPHONES ON***************

COLLECT INITIAL QUESTIONNAIRE WHEN THEY ARE THROUGH, BUT LEAVE THE KEY STEPS IN THE BUSINESS GAME ON THE TABLE.

We would now like you to discuss the issues that need to be resolved. Because we are trying to assess the dynamics that occur in an actual group decision making environment, we would very much appreciate it if you take this discussion seriously.

I am now going to re-distribute the general information sheet.

PASS OUT GENERAL INFORMATION

Blank paper is provided if you need to use it (PUT SOME ON THE TABLE IF NOT ALREADY THERE). We would appreciate it if you not write on any of the materials.

The nature of the research questions require that we tape record the group discussion. Please attach the microphones to THE MIDDLE OF YOUR SHIRT (INDICATE WHERE).

************WATCH AND MAKE SURE THAT MICROPHONES ARE NOT TOO FAR DOWN OR OFF TO THE SIDE*************************

Again, in this group, the majority rule of decision making will be in effect. After the discussion, you will be meeting with the other decision making groups just like this one to jointly decide on the best Market solution.

TURN ON TAPE RECORDER

You may begin discussing now.

NOTE TIME DISCUSSION BEGINS

FILL OUT OBSERVATION SHEET

CHANGE TAPES AS NEEDED (DO NOT TURN TAPES OVER!!!)
WARN SUBJECTS WHEN THERE IS 10 MINUTES LEFT.

STOP DISCUSSION AFTER THIRTY MINUTES

I would now like you to fill out a questionnaire indicating your group decision on each of the 4 issues you discussed. Please fill this out as a group, and leave your microphones on. I will randomly select a group member to write down your group responses to the questionnaire items. (Think of a number between 1 and 20. Ask each subject to pick a number between one and twenty. Select the subject that is closest to your number without going over).

GIVE THE DECISION QUESTIONNAIRE TO THE PERSON WHO WAS CLOSEST TO YOUR NUMBER

Group members should make sure that what is written on this sheet accurately reflects your group’s decision.
Please write as clearly as you can.

LEAVE THE TAPE RECORDER ON WHILE THEY FILL IT OUT.

TURN TAPE OVER AS NEEDED

COLLECT THE DECISION QUESTIONNAIRE, THE KEY STEPS IN THE STUDY, GENERAL INFORMATION, (AND CONFIDENTIAL INFORMATION--IF APPLICABLE) AND RETURN THEM TO THE TABLE

Now, I would like you to fill out another questionnaire. However, this is to be filled out individually. It is very important that you not communicate with other members of this group while filling this out.

I am going to turn the tape recorder off for now, but would like you to keep your microphones on.

PASS OUT THE INDIVIDUAL POST-DISCUSSION QUESTIONNAIRE

TURN TAPE RECORDER OFF.

We would like you to answer these questions with regard to what you think NOW. Your views now may or may not be different from where you started.

COLLECT THE INDIVIDUAL POST-DISCUSSION QUESTIONNAIRE WHEN THEY FINISH. AS YOU ARE COLLECTING IT, CHECK TO MAKE SURE THAT SUBJECTS HAVE WRITTEN DOWN THE CORRECT NUMBER AND LETTER FROM THEIR INDEX CARD. RETURN THE QUESTIONNAIRES TO THE TABLE.

Now, I would like you to fill out another questionnaire. I know that this is a lot of paperwork, but these measures are very important for us to collect. Please fill this out individually.

PASS OUT FINAL INDIVIDUAL QUESTIONNAIRE & WAIT FOR SUBJECTS TO FILL IT OUT.
COLLECT FINAL INDIVIDUAL QUESTIONNAIRE. CHECK TO MAKE SURE THAT SUBJECTS HAVE WRITTEN DOWN THE CORRECT NUMBER AND LETTER FROM THEIR INDEX CARD.

RETURN THE FINAL INDIVIDUAL QUESTIONNAIRES TO THE TABLE.

Now, I would like you to fill this questionnaire out as a group. I will turn the tape recorder back on.

GIVE THE GROUP POST-DISCUSSION QUESTIONNAIRE (1 per group) TO THE PERSON THAT FILLED OUT THE DECISION QUESTIONNAIRE FOR THE GROUP.

************TURN THE TAPE RECORDER ON.***************

COLLECT THE GROUP POST-DISCUSSION QUESTIONNAIRE AND RETURN IT TO THE TABLE

TURN THE TAPE RECORDER OFF

You can take your microphones off now.

***************TURN ALL 4 MICROPHONES OFF***************

IF SUBJECTS HAVE A STORE LABEL ON, ASK THEM TO TAKE IT OFF

We will now go back into the waiting area. Please take your things with you.

TAKE SUBJECTS OUT INTO THE WAITING AREA (ROOM 108L IF NOT OCCUPIED). WAIT FOR ALL GROUPS TO FINISH BEFORE DEBRIEFING.
Appendix J: Summary of Key Steps in the Business Game
KEY STEPS IN THE BUSINESS GAME

1. Just Met With Your Store Group
   (either the grocery, flower shop, liquor store, or bakery)

2. Now, Meeting With Decision Making Group
   (consists of one representative from each of the 4 store Groups)
   --Decisions Must Be Unanimous

3. Will Meet Back With Your Store Group
   To Justify and Explain How You
   Represented the Issues of Importance
   To Your Store Group
**KEY STEPS IN THE BUSINESS GAME**

1. **Just Met With Your Store Group**
   (either the grocery, flower shop, liquor store, or bakery)

2. **Now, Meeting With Decision Making Group**
   (consists of one representative from each of the 4 store Groups)
   ---Decisions Must Be Reached By Majority Rule

3. **Will Meet Back With Your Store Group**
   To Justify and Explain How You Represented the Issues of Importance
   To Your Store Group
KEY STEPS IN THE BUSINESS GAME

1. Just Met With Your Store Group
   (either the grocery, flower shop, liquor store, or bakery)
2. Now, Meeting With Decision Making Group
   (consists of one representative from each of the 4 store Groups)
   --Decisions Must Be Unanimous
3. Will Meet With Other Decision Making Groups (different people who you have not met with before) to Decide on the Best Market Solution
KEY STEPS IN THE BUSINESS GAME

1. Just Met With Your Store Group
   (either the grocery, flower shop, liquor store, or bakery)

2. Now, Meeting With Decision Making Group
   (consists of one representative from each of the 4 store Groups)

   --Decisions Must Be Reached by Majority Rule

3. Will Meet With Other Decision Making Groups (different people who you have not met with before) to Decide on the Best Market Solution
Appendix K: Initial Questionnaire
INITIAL QUESTIONNAIRE

Please write the letter on your card
Please write the number on your card

Please indicate the extent to which you agree with the following statements about the Towers Market project.

1. Towers Market represents an opportunity to my store.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree

2. Towers Market represents a threat to my store.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree

3. Forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree

4. Stores in a Market should have separate clerks, custodial services, temperature controls, and advertising.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree

5. Stores in a Market should operate independently, except for sharing a common building with other stores.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree

6. Custodial services, clerks, temperature, and advertising should all be shared by stores in the Market.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree Agree Agree
   Nor Disagree
Appendix L: Decision Questionnaire
DECISION QUESTIONNAIRE

Please indicate the decision your group arrived at on each of the following issues:

Advertising:

Clerks:

Custodial Services:

Temperature:
Appendix M: Individual Post-Discussion Questionnaire
INDIVIDUAL POST-DISCUSSION QUESTIONNAIRE

Please write the letter on your card_______
Please write the number on your card_______

Now that you have participated in this decision making group, please indicate what your own views are at this time with regard to the following questions.

What is your attitude concerning the Towers Market development (e.g., enthusiastic, reserved, etc.)? Why do you feel this way?

What is your view about the best way that the stores in Towers Market can succeed? Specifically, how much cooperation among stores should there be? How much should stores operate independently? Why do you feel this way?

In light of the decisions that were reached in your group, how well do you think your store will do in the Towers Market Development project? Why do you feel this way?
Please indicate the extent to which you agree with the following statements about the Towers Market project.

1. Towers Market represents an opportunity to the Liquor Store.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

2. Towers Market represents an opportunity to the Flower Shop.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

3. Towers Market represents an opportunity to the Grocery.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

4. Towers Market represents an opportunity to the Bakery.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

5. Towers Market represents a threat to my store.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

6. Stores in a Market should have separate clerks, custodial services, temperature controls, and advertising.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

7. Positive consequences of Towers Market are likely to occur before negative consequences for my store.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree

8. Stores in a Market should operate independently, except for sharing a common building with other stores.
   - Strongly Disagree
   - Disagree
   - Somewhat Disagree
   - Neither
   - Somewhat Agree
   - Agree
   - Strongly Agree
9. Towers Market is negative.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Somewhat Agree</th>
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<th>Strongly Agree</th>
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10. The Grocery believes that forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.

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<th>Strongly Disagree</th>
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11. The Bakery believes that forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.

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<th>Strongly Disagree</th>
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12. The Liquor Store believes that forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.

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<th>Strongly Disagree</th>
<th>Disagree</th>
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13. The Flower Shop believes that forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.

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In the near future, the stores forming Towers Market will need to decide how the Market should be designed. This will involve things like creating logos, store signs and coming up with the market decor.

14. To what extent would you agree that all the stores in the Market should have a common decor and consistent signage across stores (one artist would do all the store signs and logos in consistent signage and common decor)?

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<th>Strongly Disagree</th>
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15. To what extent would you agree that each store in the Market should independently design their own decor and signs (each store would have their own artist do their signage)?

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16. Custodial services, clerks, temperature, and advertising should all be shared by stores in the Market.

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17. Towers Market is positive.

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18. My store may lose a great deal and is unlikely to gain much from Towers Market.

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In the near future, the stores forming Towers Market will need to come to an agreement about stocking items. This will involve deciding whether stores can stock overlapping items or whether there will be a strict policy on what items each store can carry.

19. To what extent would you agree each store in the Market should be able to stock whatever it wants, regardless of overlap among stores?

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20. To what extent would you agree that all the stores in the Market should jointly agree on the items each store will stock?

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Appendix N: Final Individual Questionnaire
Final Individual Questionnaire
Please write the letter on your card
Please write the number on your card

We would like to get your perceptions about the group decisions that were made as a result of your group’s discussion.

1. I am satisfied with the group decisions that were reached.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly
   Disagree Disagree Agree Agree Agree
   Nor Disagree

2. How important was your identity as a store representative in the decision making group?
   1 2 3 4 5 6 7
   Very Important
   Very Unimportant

3. I would look forward to working again with the members of this group on future issues regarding Towers Market.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly
   Disagree Disagree Agree Agree Agree
   Nor Disagree

4. How similar do you think your view of the issues is to other members of your group?
   1 2 3 4 5 6 7
   Very Dissimilar
   Very Similar

5. There are a few more issues that need to be resolved before Towers Market can proceed. Based on the group discussion you just had, how many more meetings with members of this group do you think would be necessary before the Towers Market Development project can be implemented?
   (1) 1-2 more meetings (2) 3-6 more meetings
   (3) 7-10 more meetings (4) more than 10 more meetings

6. Members of my group listened to what I had to say.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly
   Disagree Disagree Agree Agree Agree
   Nor Disagree

7. Before the group discussion, my group was instructed to reach a group decision by:
   (1) majority rule
   (2) unanimity
   (3) I do not recall
8. I was informed that I would be reporting back to:
(1) _______ members of my store group (grocery, bakery, flower shop, or liquor store) to explain and justify how I represented issues of importance to my store.
(2) _______ other decision making groups (different people who you have not met with before) to explain and justify why our decisions are good ones and to jointly decide on the best Market solution
(3) _______ I do not recall

9. I expect implementing Towers Market to have positive results.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree

10. I support the group decisions that this group reached regarding temperature, advertising, custodial services, and clerks.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree

11. During the group discussion, I was very committed to representing the issues of importance to my store (grocery, flower shop, bakery, or liquor store).

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree

12. Based on the group discussion we had today, I feel that Towers Market can be implemented without many problems.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree

13. I felt like my ideas were not accepted during the group discussion.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree

14. Group decisions on the 4 issues we discussed were reached unanimously.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
Disagree Agree Agree Agree Agree
Nor Disagree
15. I was satisfied with the way this group made its decisions.

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16. During the group discussion, to what extent did the thought cross your mind that you would have to explain and justify your decisions to other people?

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17. During the group discussion, I was very committed to obtaining an acceptable decision in my decision making group.

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18. I wish I could change the decisions that this group just made.

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19. Group decisions on the 4 issues we discussed were reached by majority rule.

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20. I would look forward to meeting again with my store group (liquor store, grocery, bakery, flower shop) and reporting on the decisions that were made in this group on the 4 issues we discussed.

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</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
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<tr>
<td>Disagree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
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<td>Agree</td>
</tr>
</tbody>
</table>

21. The group discussion resulted in high quality decisions.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
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<tr>
<td>Disagree</td>
<td>Agree</td>
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<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
</tr>
</tbody>
</table>
22. I think that this group would have difficulty actually carrying out or implementing the decisions we reached.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<td>6</td>
</tr>
</tbody>
</table>

23. The decisions that were reached on the 4 issues were acceptable to all store representatives.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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</tr>
</tbody>
</table>

24. During the group discussion, I was more committed to representing my store group (e.g., grocery, florist, liquor store, or bakery) than to reaching a decision in my decision making group (the group you are in now).

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

25. How well do you know each of the members of this group?

**Grocery Representative:**
- 1: Myself
- 2: Only seen today
- 3: Seen before today
- 4: Had class with
- 5: Acquaintance
- 6: Friend
- 7: Close friend

**Flower Shop Representative:**
- 1: Myself
- 2: Only seen today
- 3: Seen before today
- 4: Had class with
- 5: Acquaintance
- 6: Friend
- 7: Close friend

**Liquor Store Representative:**
- 1: Myself
- 2: Only seen today
- 3: Seen before today
- 4: Had class with
- 5: Acquaintance
- 6: Friend
- 7: Close friend

**Bakery Representative:**
- 1: Myself
- 2: Only seen today
- 3: Seen before today
- 4: Had class with
- 5: Acquaintance
- 6: Friend
- 7: Close friend

26. What did you know about this study before participating today?
Appendix O: Group Post-Discussion Questionnaire
GROUP POST-DISCUSSION QUESTIONNAIRE

What is this group's attitude concerning the Towers Market development (e.g., enthusiastic, reserved, etc.)? Why do you feel this way?

What is your view about the best way that the stores in Towers Market can succeed? Specifically, how much cooperation among stores should there be? How much should stores operate independently? Why do you feel this way?
Please indicate the extent to which you agree with the following statements about the Towers Market project.

1. Towers Market represents an opportunity to this group.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

2. Towers Market represents a threat to this group.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

3. Forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

4. Stores in a Market should have separate clerks, custodial services, temperature controls, and advertising.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

5. Group members accepted each others' goals and viewpoints.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

6. Positive consequences of Towers Market are likely to occur before negative consequences in this group.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree

7. Stores in a Market should operate independently, except for sharing a common building with other stores.
   1 2 3 4 5 6 7
   Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
   Nor Agree Agree Agree Agree Agree
8. Towers Market is negative.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>

In the near future, the stores forming Towers Market will need to decide how the Market should be designed. This will involve things like creating logos, store signs and coming up with the market decor.

9. To what extent would you agree that all the stores in the Market should have a common decor and consistent signage across stores (one artist would do all the store signs and logos in consistent signage and common decor)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>4</th>
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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>

10. To what extent would you agree that each store in the Market should independently design their own decor and signs (each store would have their own artist do their signage)?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>

11. Custodial services, clerks, temperature, and advertising should all be shared by stores in the Market.

<table>
<thead>
<tr>
<th>1</th>
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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>

12. Stores may lose a great deal from participating in Towers Market and are unlikely to gain much.

<table>
<thead>
<tr>
<th>1</th>
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<th>7</th>
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</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>

13. Towers Market is positive.

<table>
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<tr>
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<tbody>
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<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor Disagree</td>
</tr>
</tbody>
</table>
In the near future, the stores forming Towers Market will need to come to an agreement about stocking items. This will involve deciding whether stores can stock overlapping items or whether there will be a strict policy on what items each store can carry.

14. To what extent would you agree each store in the Market should be able to stock whatever it wants, regardless of overlap among stores?

<table>
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<tbody>
<tr>
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<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor</td>
</tr>
<tr>
<td>Disagree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td></td>
</tr>
</tbody>
</table>

15. To what extent would you agree that all the stores in the Market should jointly agree on the items each store will stock?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
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<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor</td>
</tr>
<tr>
<td>Disagree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td></td>
</tr>
</tbody>
</table>

16. Group members changed their views based on what others in the group had to say.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>Nor</td>
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<tr>
<td>Disagree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td></td>
</tr>
</tbody>
</table>
Appendix P: Decision Making Observation Sheet
Decision Making Group Observation Sheet for Observers

Date
Time experiment began:

Number of subjects in the group
Number of males
Number of females

Write in which store representative corresponds to each microphone:
Mic. #1
Mic. #2
Mic. #3
Mic. #4

Diagram where each store representative is sitting around the table:

Can all subjects speak English adequately and communicate effectively? If not, which subjects are having difficulty?

List any questions subjects asked, points of clarification that were needed.

List the order in which subjects discussed the issues:
Issue discussed first
Issue discussed second
Issue discussed third
Issue discussed fourth

Did subjects discuss the issues sequentially (e.g., one at a time) or in a package together? Did they start discussing an issue, put it on hold, and then come back to it?

Indicate how much each subject participated in the discussion and the nature of their participation. Does one person tend to dominate the discussion? Do certain individuals not talk much?

Liquor Store representative:

Bakery representative:

Grocery representative:

Flower shop representative:
How much are subjects discussing assumptions underlying issues (e.g., whether they see the Market as a threat/opportunity, whether they see the Market as a cooperative venture vs. an independent operation)?

What changes do you think have taken place since the beginning of the group discussion?

Other observations:

Did subjects have to be told to stop discussing, or did they end the discussion prematurely?

Please indicate the extent to which you agree with the following statements about the group you just observed.

During the group discussion, group members actively asked other group members for their store’s views and goals.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Nor Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During the group discussion, group members actively asked other group members for the reasons behind their store’s views and goals.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither</th>
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<th>Agree</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Nor Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

During the group discussion, group members accepted many of the goals and viewpoints presented by other group members.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
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<th>Neither</th>
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<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Nor Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Group members changed their views based on what others in the group had to say.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
1 2 3 4 5 6 7
Disagree Agree Agree Agree
Nor Disagree

Group members pretty much have the same views and goals as they did when they first came into the group.

Strongly Disagree Somewhat Neither Somewhat Agree Strongly Disagree
1 2 3 4 5 6 7
Disagree Agree Agree Agree
Nor Disagree

Post-Discussion Observations

Which store representative was selected to write down the group’s responses on the decision questionnaire?

How much discussion was there over the group post-discussion questionnaire (the questionnaire they fill out as a group)? How much disagreement?
Appendix Q: Debriefing
Debriefing

Thank you for participating in this study.

We are studying decisions made by people who have not known each other before, but come together to make a decision. This is the case with ad hoc task forces in industry where people from different departments may come together to make a decision or solve a problem.

The purpose of this experiment was to assess how individuals coming into a group setting with different assumptions, goals, and viewpoints come together and negotiate in order to reach a shared understanding of the issues involved.

Tape recording the group discussions was necessary in order to be able to examine how this shared understanding of the issues develops over time.

Some of you were told that you would be meeting again with other group members after discussing the issues with your decision making groups. However, this second meeting will not occur.

I appreciate your cooperation thus far and would like to make one more request. Please refrain from discussing what went on in this study with your classmates who may participate in this exercise at a later date. I am still in the process of collecting data, and any information that you pass on to others could bias their participation and the quality of the research would be compromised. Again, it is extremely important that you not discuss this study with others after you leave.

If anyone has any questions later on, I will be happy to explain the purpose of this study in more detail.

Thank you again for your cooperation.

I will forward your names on to your instructor, and you will receive extra credit for participating.
Appendix R: Descriptive Statistics for Entire Sample
Descriptive Statistics for Initial Questionnaire Items  
(Total Sample)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
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<tbody>
<tr>
<td>(I) TM represents an opp.</td>
<td>1</td>
<td>7</td>
<td>5.14</td>
<td>1.65</td>
</tr>
<tr>
<td>(I) TM represents a threat</td>
<td>1</td>
<td>7</td>
<td>4.19</td>
<td>2.00</td>
</tr>
<tr>
<td>(I) Market should be collaborative</td>
<td>1</td>
<td>7</td>
<td>3.89</td>
<td>2.28</td>
</tr>
<tr>
<td>(I) Stores should be separate</td>
<td>1</td>
<td>7</td>
<td>3.96</td>
<td>2.28</td>
</tr>
<tr>
<td>(I) Stores should be independent</td>
<td>1</td>
<td>7</td>
<td>4.08</td>
<td>2.30</td>
</tr>
<tr>
<td>(I) Issues should be shared</td>
<td>1</td>
<td>7</td>
<td>3.51</td>
<td>2.20</td>
</tr>
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</table>

N=276
Descriptive Statistics for Individual Post-Discussion Questionnaire Items
(Total Sample)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
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</thead>
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<tr>
<td>TM represents opp to liq. store</td>
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<td>7</td>
<td>5.73</td>
<td>.95</td>
</tr>
<tr>
<td>TM represents opp to flower shop</td>
<td>1</td>
<td>7</td>
<td>5.57</td>
<td>1.03</td>
</tr>
<tr>
<td>TM represents opp to grocery</td>
<td>1</td>
<td>7</td>
<td>5.85</td>
<td>.92</td>
</tr>
<tr>
<td>TM represents opp to bakery</td>
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<td>7</td>
<td>5.78</td>
<td>.98</td>
</tr>
<tr>
<td>TM represents threat</td>
<td>1</td>
<td>7</td>
<td>3.33</td>
<td>1.59</td>
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<tr>
<td>Stores should be separate</td>
<td>1</td>
<td>7</td>
<td>4.33</td>
<td>1.69</td>
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<tr>
<td>Pos. consequences of TM occur before neg.</td>
<td>1</td>
<td>7</td>
<td>4.99</td>
<td>1.33</td>
</tr>
<tr>
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<td>4.21</td>
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</tr>
<tr>
<td>TM is negative</td>
<td>1</td>
<td>5</td>
<td>2.11</td>
<td>.96</td>
</tr>
<tr>
<td>Grocery: Market should be collaborative</td>
<td>1</td>
<td>7</td>
<td>5.27</td>
<td>1.51</td>
</tr>
<tr>
<td>Bakery: Market should be collaborative</td>
<td>1</td>
<td>6</td>
<td>2.69</td>
<td>1.50</td>
</tr>
<tr>
<td>Liquor: Market should be collaborative</td>
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<td>7</td>
<td>4.61</td>
<td>1.51</td>
</tr>
<tr>
<td>Flower: Market should be collaborative</td>
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<tr>
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<td>1</td>
<td>7</td>
<td>3.63</td>
<td>1.87</td>
</tr>
<tr>
<td>Stores should design own decor</td>
<td>1</td>
<td>7</td>
<td>4.83</td>
<td>1.74</td>
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(continued)
Descriptive Statistics for Individual Post-Discussion Questionnaire Items  
(Total Sample)

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<th>Std Deviation</th>
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<tr>
<td>Store may lose a great deal</td>
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<td>2.69</td>
<td>1.21</td>
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<td>7</td>
<td>3.92</td>
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<td>Stores should agree on stocking items</td>
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</table>

N=273-276
Descriptive Statistics for Final Individual Questionnaire Items
(Total Sample)

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<td>Satisfied with group decisions</td>
<td>1</td>
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<td>5.58</td>
<td>1.02</td>
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<tr>
<td>Importance of store identity</td>
<td>1</td>
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<td>3.28</td>
<td>1.87</td>
</tr>
<tr>
<td>Work again with members of DM group</td>
<td>1</td>
<td>7</td>
<td>5.67</td>
<td>.99</td>
</tr>
<tr>
<td>Similarity of views to other members</td>
<td>2</td>
<td>7</td>
<td>4.75</td>
<td>1.15</td>
</tr>
<tr>
<td>How many more meetings necessary</td>
<td>1</td>
<td>4</td>
<td>1.92</td>
<td>.81</td>
</tr>
<tr>
<td>Group listened to what I said</td>
<td>3</td>
<td>7</td>
<td>6.12</td>
<td>.68</td>
</tr>
<tr>
<td>Decision rule instructed to reach</td>
<td>1</td>
<td>3</td>
<td>1.55</td>
<td>.62</td>
</tr>
<tr>
<td>Report back to what group?</td>
<td>1</td>
<td>3</td>
<td>1.54</td>
<td>.63</td>
</tr>
<tr>
<td>Implementing TM will be positive</td>
<td>2</td>
<td>7</td>
<td>5.72</td>
<td>.76</td>
</tr>
<tr>
<td>Support group decisions reached</td>
<td>1</td>
<td>7</td>
<td>5.56</td>
<td>1.03</td>
</tr>
<tr>
<td>Committed to representing store issues</td>
<td>2</td>
<td>7</td>
<td>5.73</td>
<td>.98</td>
</tr>
<tr>
<td>TM can be implemented without problems</td>
<td>1</td>
<td>7</td>
<td>4.88</td>
<td>1.22</td>
</tr>
<tr>
<td>Ideas not accepted</td>
<td>1</td>
<td>6</td>
<td>2.42</td>
<td>1.23</td>
</tr>
<tr>
<td>Decisions reached unanimously</td>
<td>1</td>
<td>7</td>
<td>4.59</td>
<td>1.90</td>
</tr>
<tr>
<td>Satisfied with the way group made decisions</td>
<td>1</td>
<td>7</td>
<td>5.75</td>
<td>.96</td>
</tr>
<tr>
<td>Justify decisions to others?</td>
<td>1</td>
<td>7</td>
<td>4.94</td>
<td>1.27</td>
</tr>
</tbody>
</table>

(continued)
### Descriptive Statistics for Final Individual Questionnaire Items
**(Total Sample)**

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed to obtaining acceptable decision in DM group</td>
<td>2</td>
<td>7</td>
<td>(5.73)</td>
<td>(.80)</td>
</tr>
<tr>
<td>Change decisions made</td>
<td>1</td>
<td>7</td>
<td>(2.73)</td>
<td>(1.34)</td>
</tr>
<tr>
<td>Decisions reached by majority rule</td>
<td>1</td>
<td>7</td>
<td>(4.71)</td>
<td>(2.06)</td>
</tr>
<tr>
<td>Meet again with store group</td>
<td>1</td>
<td>7</td>
<td>(5.59)</td>
<td>(1.13)</td>
</tr>
<tr>
<td>High quality decisions made</td>
<td>1</td>
<td>7</td>
<td>(5.64)</td>
<td>(.98)</td>
</tr>
<tr>
<td>Difficulty implementing decisions</td>
<td>1</td>
<td>7</td>
<td>(2.93)</td>
<td>(1.38)</td>
</tr>
<tr>
<td>Decisions acceptable to all stores</td>
<td>1</td>
<td>7</td>
<td>(5.26)</td>
<td>(1.31)</td>
</tr>
<tr>
<td>More committed to store group than DM group*</td>
<td>2</td>
<td>7</td>
<td>(4.35)</td>
<td>(1.56)</td>
</tr>
</tbody>
</table>

N=271-276
*N=81*
<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(G) TM represents an opp. to group</td>
<td>5</td>
<td>7</td>
<td>5.90</td>
<td>.39</td>
</tr>
<tr>
<td>(G) TM represents a threat to this group</td>
<td>2</td>
<td>6</td>
<td>3.14</td>
<td>1.21</td>
</tr>
<tr>
<td>(G) Market should be collaborative</td>
<td>1</td>
<td>5</td>
<td>3.29</td>
<td>1.11</td>
</tr>
<tr>
<td>(G) Stores should be separate</td>
<td>3</td>
<td>7</td>
<td>4.59</td>
<td>1.05</td>
</tr>
<tr>
<td>(G) Group accepted others' viewpoints</td>
<td>1</td>
<td>7</td>
<td>5.81</td>
<td>1.13</td>
</tr>
<tr>
<td>(G) Pos. consequences of TM occur before neg.</td>
<td>3</td>
<td>7</td>
<td>5.30</td>
<td>.94</td>
</tr>
<tr>
<td>(G) Stores should be independent</td>
<td>2</td>
<td>7</td>
<td>4.02</td>
<td>1.45</td>
</tr>
<tr>
<td>(G) TM is negative</td>
<td>1</td>
<td>4</td>
<td>2.02</td>
<td>.52</td>
</tr>
<tr>
<td>(G) Stores should have common decor</td>
<td>1</td>
<td>6</td>
<td>3.38</td>
<td>1.44</td>
</tr>
<tr>
<td>(G) Stores should design own decor</td>
<td>1</td>
<td>7</td>
<td>5.10</td>
<td>1.40</td>
</tr>
<tr>
<td>(G) Issues should be shared</td>
<td>2</td>
<td>5</td>
<td>3.38</td>
<td>1.21</td>
</tr>
<tr>
<td>(G) Stores may lose a great deal</td>
<td>2</td>
<td>5</td>
<td>2.32</td>
<td>.67</td>
</tr>
<tr>
<td>(G) TM is positive</td>
<td>4</td>
<td>7</td>
<td>5.87</td>
<td>.52</td>
</tr>
<tr>
<td>(G) Stores should stock independently</td>
<td>1</td>
<td>7</td>
<td>3.75</td>
<td>1.65</td>
</tr>
<tr>
<td>(G) Stores should agree on stocking items</td>
<td>1</td>
<td>7</td>
<td>4.23</td>
<td>1.58</td>
</tr>
<tr>
<td>(G) Groups changed views based on what others had to say</td>
<td>1</td>
<td>7</td>
<td>5.34</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Group N=62-64
Appendix S: Items Included in Each Scale Composite
Items Included in Each Framing Scale Composite

<table>
<thead>
<tr>
<th>Scale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Category Scale</strong></td>
<td>Towers Market represents an opportunity to my store (#1)</td>
</tr>
<tr>
<td></td>
<td>Towers Market represents a threat to my store. (#2, RS)</td>
</tr>
<tr>
<td><strong>Initial Assumption Scale</strong></td>
<td>Forming a Market should be a truly collaborative joint venture where personnel, resources, and costs are shared among the stores involved (#3)</td>
</tr>
<tr>
<td></td>
<td>Stores in a Market should have separate clerks, custodial services, temp. controls, and advertising. (#4, RS)</td>
</tr>
<tr>
<td></td>
<td>Stores in a Market should operate independently, except for sharing a common building with other stores. (#5, RS)</td>
</tr>
<tr>
<td></td>
<td>Custodial services, clerks, temperature, and advertising should all be shared by stores in the Market. (#6)</td>
</tr>
<tr>
<td><strong>Initial Frame Scale</strong></td>
<td>All 6 items listed above</td>
</tr>
<tr>
<td><strong>Post Discussion Category Scale</strong></td>
<td>Towers Market represents an opportunity to my store. (#1-4)</td>
</tr>
<tr>
<td></td>
<td>Towers Market represents a threat to my store. (#5, RS)</td>
</tr>
<tr>
<td></td>
<td>Positive consequences of Towers Market are likely to occur before negative consequences for my store. (#7)</td>
</tr>
<tr>
<td></td>
<td>Towers Market is negative. (#9, RS)</td>
</tr>
<tr>
<td></td>
<td>Towers Market is positive. (#17)</td>
</tr>
<tr>
<td></td>
<td>My store may lose a great deal and is unlikely to gain much from Towers Market. (#18, RS)</td>
</tr>
<tr>
<td><strong>Post Discussion Assumption Scale</strong></td>
<td>Same Items as in the Initial Assumption Scale (#10-13, 6, 8, 16)</td>
</tr>
<tr>
<td><strong>Post Discussion Frame Scale</strong></td>
<td>All 10 framing items listed above</td>
</tr>
</tbody>
</table>

**Note.** RS indicates that the item was reversed scored.
### Items Included in Other Dependent Variable Scale Composites

<table>
<thead>
<tr>
<th>Scale</th>
<th>Items</th>
</tr>
</thead>
</table>
| Implementation Scale      | Based on the group discussion you just had, how many more meetings with members of this group do you think would be necessary before the TM development project can be implemented? (#5)  
I expect implementing TM to have positive results (#9)  
I would look forward to working again with members of this group on future issues regarding TM (#3)  
Based on the group discussion we had today, I feel that TM can be implemented without many problems (#12)  
I think that this group would have difficulty actually carrying out or implementing the decisions we reached (#22, RS) |
| Market Decor Scale        | To what extent would you agree that all the stores in the Market should have a common decor and consistent signage across stores? (#14)  
To what extent would you agree that each store in the Market should independently design their own decor and signs? (#15, RS) |
| Stocking Items            | To what extent would you agree each store in the Market should be able to stock whatever it wants, regardless of overlap among stores? (#19, RS)  
To what extent would you agree that all the stores in the Market should jointly agree on the items each store will stock? (#20) |
| Decision Outcome Satisfaction Scale | I am satisfied with the group decisions that were reached (#1)  
The decisions that were reached on the four issues were acceptable to all store representatives (#23)  
I wish I could change the decisions that this group just made (#18, RS)  
The group discussion resulted in high quality decisions (#21)  
I support the group decisions that this group reached regarding temperature, advertising, custodial services, and clerks (#10) |
| Decision Process Satisfaction the Scale | Members of my group listened to what I had to say (#6)  
I felt like my ideas were not accepted during group discussion (#13, RS)  
I was satisfied with the way this group made its decisions (#15) |
(continued)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Identity Scale</td>
<td>To what extent do you identify with this store group?</td>
</tr>
<tr>
<td></td>
<td>To what extent do you feel comfortable representing</td>
</tr>
<tr>
<td></td>
<td>the issues of importance to this group?</td>
</tr>
<tr>
<td></td>
<td>To what extent do you accept and agree with the</td>
</tr>
<tr>
<td></td>
<td>initial positions of this store group?</td>
</tr>
</tbody>
</table>

*Note.* RS indicates that the item was reversed scored.
Appendix T: Intercorrelations Among the rwg_{13, s} of Framing Items
### Intercorrelations among Independent Variables and the rwg\textsubscript{11} of Individual Framing Items

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>Category Items</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1. Opportunity</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Threat (RS)</td>
<td>.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Lose (RS)</td>
<td>.48</td>
<td>.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. Negative (RS)</td>
<td>.31</td>
<td>.19</td>
<td>.55</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Positive Consequences</td>
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<td>.42</td>
<td>.37</td>
<td>.14</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. Positive</td>
<td>.50</td>
<td>.29</td>
<td>.70</td>
<td>.67</td>
<td>.35</td>
<td></td>
<td></td>
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<tr>
<td>Assumption Items</td>
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<tr>
<td>7. Separate (RS)</td>
<td>.22</td>
<td>.04</td>
<td>.04</td>
<td>.15</td>
<td>.01</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Independent (RS)</td>
<td>.28</td>
<td>.06</td>
<td>.25</td>
<td>.06</td>
<td>-.01</td>
<td>.17</td>
<td>.27</td>
<td>.46</td>
<td></td>
<td></td>
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<tr>
<td>10. Collaboration</td>
<td>.21</td>
<td>.14</td>
<td>.02</td>
<td>.06</td>
<td>.07</td>
<td>.12</td>
<td>.15</td>
<td>.35</td>
<td>.16</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** N=69 groups

** p < .01  * p < .05  + p < .10
Appendix U: Coding Scheme for Type of Decision
Advertising

Ready-Made Decisions

Shared combined campaign, advertising for market as a whole, costs to be divided equally amongst the Market merchants.

Shared combined campaign, advertising for market as a whole, to be paid according to percentage of the market's gross profits contributed by the merchant.

Mixed combined campaign, advertising the stores as individual units but on the same flyers, with each member given (and paying for) 1/4th of ad.

Separate separate campaign for each member, 6% of expected gross profits to be spent on advertising.

Separate separate campaign for each member, amount spent up to individual merchant.

Examples of Custom-Made Decisions:

Mixed Each store pays for their own advertising. In addition, once or twice per year, the Market as a whole will do an ad campaign and share the costs equally (Group #7).

Mixed We wanted a combined campaign for advertising, but more emphasized on the grocery and florist 35% paid by grocery and florist 15% paid by liquor and bakery (Group #5).

Mixed Combined campaign, but can keep individual campaigns Pay according to portion of Market ad that is ours (Group #45).

Clerks

Ready-Made Decisions

Shared hire by group, train by group, distribute equally, paid for by group.

Shared hire by group, train by group, distribute according to floor space, paid for by group.

Mixed hire by group, train individually, distribute according to demand for service, paid for by group.

Separate hire individually, train individually, distribute according to demand for service, each merchant to pay from individual profits.

Separate hire individually, train individually, each merchant to decide how many clerks, each merchant to pay from individual profits.

Examples of Custom-Made Decisions

Mixed Each store has own specialized employees. Also have floating pool of relief employees, hired as a group and placed where needed (Group #14).

Mixed Hire individually. First phase of training as a group. Second phase of training as individualized stores. Specialized pay for special positions (Group #6).

Mixed Bakery and Florist go separate and train individually. Grocery and Liquor hire and train by group.
Custodial Services

Note: The cleaning of the common area was deleted from consideration in the coding of custodial services decisions. Therefore, only statements regarding the cleaning of the four store areas was included in the coding scheme for type of decision.

Ready-Made Decisions

Shared shared, each responsible for 1/4th of total costs
Shared shared, each responsible for percentage according to floor space occupied
Shared shared, each responsible for percentage according to floor space occupied, but with the bakery paying double its percentage because of the nature of its carry out business
Separate separate, each responsible for own floor space, plus common area cleaning cost as a function of floor space occupied
Separate separate, each responsible for own floor space plus equal contributions for common area cleaning

Examples of Custom-Made Decisions

Mixed Liquor, grocery, and florist have one service. Bakery has own contract. (Group #1)

Shared Shared custodial for trial period of one month Then, evaluate later (Group #28)

Shared Shared, pay according to the time elapsed in cleaning the areas of each store. (Group #10)

Temperature. Since the merchants will be sharing common space, they must decide what temperature to maintain. Some of the merchants feel that the temperature of their department as well as the common area might affect the demand for their products.

Note: The temperature of the common area was deleted from consideration in the coding of temperature decisions. Therefore, only statements regarding the temperatures of the four store areas was included in the coding scheme for type of decision.

1) one common temperature throughout the building, 74 degrees
2) one common temperature throughout the building, 71 degrees
3) one common temperature throughout the building, 68 degrees
4) separate store temperatures; common area temperature determined jointly by all stores
5) separate store temperatures; common area temperature determined by stores whose customers will use it the most
6) other ________________________________