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GENDER DIFFERENCES IN QUESTIONS ASKED DURING SMALL DECISION-MAKING GROUP DISCUSSIONS

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Sixty minutes each of group discussions from 18 four- to seven-member decision-making groups were audiotaped and transcribed for analysis. Results indicated that questions constituted 15.6% of total turns by group members. Probes were the most frequently occurring question type (89.2%). There was a significant gender difference in only one of the five question types: Female group members asked significantly more probing questions than did their male counterparts. Implications of these findings are discussed.

To ask a question is to apply one of the most powerful tools in communication. Questions allow us to reduce uncertainty in a variety of different contexts, including interpersonal (e.g., initiation of new relationships), organizational (e.g., employment interviewing), and small group communication (e.g., decision making). The latter was the focus of this investigation. Specifically, this research is a descriptive analysis of questions asked in small group decision making. Further, this study examined gender differences in questions asked in that context.

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The definition of a question seems intuitively obvious. Although a number of scholars have discussed the various forms and functions of questions, few have defined *question* per se. However, there appears to be agreement that the essential function of a question is to elicit a verbal response from those to whom the question is addressed (Kearsley, 1976).

Several scholars have called for more thorough investigation of questions in discourse. For example, Graesser (1990) noted that few researchers have focused on questions as their object of inquiry; "questions have been lost in the shuffle with other categories of speech acts such as assertions, requests, directives, and greetings" (p. 259). He identified the important role played by questions in acquiring information, maintaining conversational coherence, and managing the flow of communication between speakers. Goody (1978) argued that questions are fundamental to problem solving. Krone (1993) observed that questions pervade communication. She added that skill in question asking and answering are critical to communication competence in a variety of contexts. For all these reasons, communication scholars should direct more attention to the study of questions in discourse.

Questions have been studied as they relate to a wide variety of communication contexts and issues, including detection of deception (Burgoon, Buller, Ebesu, & Rockwell, 1994; Stiff & Miller, 1986), performance appraisals (Adams, 1981), employment interviews (Tengler & Jablin, 1983), uncertainty reduction (Ayres, 1979; Sanders, Wiseman, & Matz, 1990), classroom instruction (Pearson & West, 1991; West & Pearson, 1994), and communication apprehension (Aitken & Neer, 1993). However, as will be seen, little communication research has addressed the use of questions in small decision-making group contexts.

QUESTIONS AND SMALL GROUP COMMUNICATION

In her comprehensive review and assessment of communication research on question asking and answering, Krone (1993) identified small group decision making as one context in which communication scholars have researched the use of questions in discourse. Bales's (1950) development of "interaction process analysis" (IPA) stimulated a great deal of research on the content of small group communication, including question asking. The IPA is a 12-category coding scheme, including three categories describing questions: asks for information, asks for opinion, and asks for suggestion. Krone summarized IPA research on use of questions in small group interaction as follows:

It appears that: (a) approximately 6%-7% of a group's total acts are questions, (b) 6%-7% of a group's total acts are direct answers to questions, (c) attempted answers appear routinely to follow asking of questions, and (d) attempted answers to questions comprise as much as 56% of the total acts in a group. (p. 197)

However, beyond the body of descriptive work generated by Bales's (1950) development of IPA, she cited only five studies addressing questions in small group decision making. In chronological order, the five studies she identified were Baird (1974), Gouran (1982), Hirokawa and Pace (1983), Hirokawa (1985), and Hiltz, Johnson, and Turoff (1986).

In all but one case, the content of questions themselves were of only secondary focus. For example, Baird's (1974) primary concern was the degree to which group members asked for information in cooperative versus competitive groups. Hirokawa and Pace (1983) were primarily concerned with whether judicious question asking affected the effectiveness of group decision making. Hirokawa (1985) investigated the relative efficacy of the "single question" approach to decision making versus three other methods. Hiltz et al. (1986) were most interested in whether the message medium (computer mediated or face-to-face) affected patterns of question asking.

Only Gouran's (1982) work focused on types of questions asked in small group interaction. He posited four types of questions that could be addressed by small groups: fact, conjecture, value, and policy. The objective of a question of fact is to determine what is true, whereas that of a question of conjecture is to determine what is probable. Answers to questions of value determine what is acceptable, whereas answers to questions of policy determine the most desirable course of action to be taken in a given situation. Although Gouran's taxonomy appeared to have heuristic and practical value, Krone (1993) observed that "the model remains empirically unproven" (p. 198).

An additional search of related literatures revealed only a few additional studies relating questions to small group decisionmaking effectiveness. Kochen and Badre (1974) investigated how group members responded to poorly defined problems in the absence of instruction on how to proceed. They found that the degree to which groups eventually solved the problem was related to the quality of the questions they asked during the problem identification stage. These results were consistent with Hirokawa's (1983) later work stressing the importance of quality problem analysis in effective small group decision-making processes.

Gouran and Hirokawa (1986) suggested that, in some situations, question asking may be a potent counteractive influence in group decision making. For example, if a group is using faulty information in its decision making, a group member may ask questions about the validity of the information to counteract the negative influence of using poor quality data.

In summary, beyond early work based on Bales's (1950) IPA, there is a dearth of empirical research describing the quantity and nature of question asking in small group interaction. Given the elementary categories used in Bales's coding scheme, there is much left to determine about the nature of question asking in small group decision making.

GENDER DIFFERENCES IN QUESTION ASKING

Do gender differences exist in question asking? Pearson, Turner, and Todd-Mancillas (1991) concluded, "it is not clear which sex asks more questions" (p. 115). Certainly, little doubt can remain that there are systematic gender differences in communication (Borisoff & Merrill, 1992; Lakoff, 1975; Tannen, 1990). Wood (1994), among others, argued that these differences reflect contrasting male and female worldviews that arise as a consequence of differing life experiences for men and women. Indeed, it may be argued that the two genders represent distinct cultures with contrasting values, norms, and role expectations (Gilligan, 1982; Lakoff, 1975; Meyers, Brashers, Winston, & Grob, 1997; Wood, 1994). For example, women are believed to value cooperation and connection with others, whereas men are believed to value competition and to focus more on the self. In addition, some argue that women are more free to express their emotions, whereas men tend to be more reticent in that regard.

These contrasting cultures may manifest themselves in observed gender differences in question asking. Wood (1994) maintained that one consistent feature of women's speech style is conversation maintenance, which has the consequence of establishing connections with others through talk. An example of this may be seen in Fishman's (1983) analysis of male-female couple communication. The women in her sample asked two and one half times the number of questions as did the men. Fishman asserted that women asked so many questions of their male partners because of the demand characteristic of questions. That is, when one partner asked a question, there was a demand characteristic for the other partner to answer. In this way, women encouraged conversational involvement on the part of their male partners.

Results of other studies supported Fishman's (1983) early work. For example, Kemper (1984) suggested that women may ask more questions than do men to indicate responsiveness and a desire for inclusiveness. Beck (1988) stated that women ask more questions and more personal questions than do men. He concluded this to be a consequence of women's attempt to maintain conversational involvement. So, it appears that question asking in interaction is a means to encourage inclusion and connection in communication, distinctly feminine values.

GENDER DIFFERENCES IN QUESTION ASKING IN GROUPS

Although gender differences have long been recognized in group behavior (Shaw, 1981; Wood, 1987), few studies

investigating gender differences in question asking in a group context could be located. There are a small number of studies addressing use of tag questions in small group settings, though not necessarily decision-making contexts. Tag questions are declarative statements followed by a question relating back to the statement, as in the following example: "This seems like a good course of action, *don't you think?*" Work by McMillan, Clifton, McGrath, and Gale (1977) indicated that women used more tag questions in mixed-sex groups than in all-female groups. Conversely, Dubois and Crouch (1975) found that in a professional meeting, men used more tag questions than did women.

More recently, Meyers et al. (1997) tested the hypothesis that women would ask significantly more questions than would men during group arguments. Questions were defined as propositions or "statements that call for support, action, or conference on an argument-related statement" (p. 28). They found support for this hypothesis, suggesting that women's concern for connection led them to ask questions of their fellows to include them in the group interaction.

In summary, gender differences exist in general communication and, more specifically, in group settings. These differences arise from the contrasting life experiences of men and women, the consequence of which is that women value connection, cooperation, and emotional expression more than do men. There may be gender differences in question asking, as well. However, results of research in this area appear to be mixed and to leave unanswered specific questions regarding the nature of question asking in group settings, as well as the existence of gender differences in the amount and content of questions asked in small group decision-making contexts. Therefore, it is appropriate to ask the following research questions:

- RQ#1: What is the content of questions asked in small group decisionmaking contexts?
- RQ#2: What gender differences exist in the number and content of questions asked in small group decision-making contexts?

QUESTION TAXONOMIES

As was noted at the outset of this paper, the essential function of a question is to elicit verbal responses from the person or persons to whom the question was addressed (Kearsley, 1976). The issue of intent to elicit a response figures prominently in distinguishing true questions from what Kearsley refers to as "rhetorical questions"; questions to which no answer is expected or required (p. 359). Determining a speaker's intent is often problematic, so the presence or absence of a relevant response from the next speaker provides a clue as to the nature of the original utterance (i.e., whether it was a question).

A number of question taxonomies have been developed. A thorough review of the relevant literature identified a number used in such contexts as cognition, interpersonal conflict, and uncertainty reduction. For example, Krone (1993) offered an overview of questions used in various communication contexts. The examples given below are offered to suggest the range of taxonomies offered and are not intended to be exhaustive.

Kearsley (1976), in his cross-disciplinary review of questions and question asking in verbal discourse, argued that it is difficult to precisely define the form and function of questions based on their syntactic and semantic characteristics, at least in part due to the difficulty in distinguishing semantic from syntactic elements of questions. Even in light of this challenge, Kearsley posited two question taxonomies. The first taxonomy was based on form and contained 10 categories (e.g., verbal-direct-open-simple). The other taxonomy was based on function and contained six categories (e.g., response elicitation-epistemic-evaluative). Kearsley cautioned investigators that his taxonomies were based on nonrepresentative samples of discourse (i.e., taped psychotherapy sessions and fictional discourse). In addition, his taxonomies were designed exclusively for use with conversational discourse.

Lehnert (1978) identified 13 conceptual question categories in her work, developing a computer simulation of question answering. Among the categories were causal antecedent, goal orientation, and enablement. Although Lehnert focused mainly on listeners' cognitive processes as they interpret and prepare to answer questions, her research served as one of the foundations on which later investigations were based.

Berger and Kellerman (1983) developed a question taxonomy for use in conducting social cognition research, specifically, how speakers use questions to gain information about strangers. Their taxonomy contained three main categories (e.g., questions about partner's self) and an additional category labeled "verbal prompts," for utterances that appeared in question form but were not necessarily requests for specific information (e.g., "Oh, really?"). The three main categories were divided into additional subcategories, resulting in 23 total categories into which questions could be coded. They also identified 10 question asking strategies used by interactants.

Graesser, Lang, and Horgan (1988) provided a question taxonomy based on cognitive science or "knowledge representations and computational procedures in the cognitive system which explain regularities in human thought, action, and emotion" (p. 3). In this taxonomy, questions were categorized along three dimensions: semantic (type of information requested), pragmatic (social, personal, or communicative motive behind the request), and communicative (computational parameters of the communication process). There were 12 semantic categories (e.g., verification), four communicative categories (e.g., scope of the question), and six pragmatic categories (e.g., information acquisition) with 12 accompanying subcategories (e.g., clarify common ground). Graesser et al. offered the taxonomy as an heuristic device and admitted that the corpus of questions they used to develop the taxonomy (none derived from spontaneous interaction) was not representative of the full range of communication contexts in which question asking occurs.

Note that none of the elaborate taxonomies described above were developed from or for coding small group interaction, the focus of this investigation. According to Krone (1993), Bales's (1950) IPA is the most widely used taxonomy in research addressing use of questions in small group interaction. Of the 12 categories in the IPA coding scheme, three involve questions: asks for information, asks for opinion, and asks for suggestions. Although these are rather general categories, they do capture many of the important functions of questions in small group decision making, where exchange of information is critical.

It is possible to supplement Bales's (1950) question typology with later work by Waln (1984). Building on still earlier work by Stewart and D'Angelo (1975) and Weitzel (1975), Waln offered a question taxonomy designed to assess degrees of openness in interpersonal interaction. She identified four categories (information, opinion, probing, and paraphrasing) that signal openness and one category (confrontation) that signals defense of self or attack on the conversational partner. Waln's investigation examined the utility of observer judgments in determining the intensity of interpersonal affect during conflict.

The five categories Waln (1984) used capture the main elements of Bales's (1950) work, at the same time providing a way to distinguish between questions that introduce new topics (i.e., information questions and opinion questions) and questions that result from topics already introduced (e.g., probing questions and paraphrasing questions). Bales's typology offers no such distinction. That information may prove important when analyzing gender differences in question asking, as some research has indicated that men attempt to control topic introduction and development more than do women (Fishman, 1983). A pilot study (described below) using a sample of transcribed group discussion determined that Waln's was the best typology for this investigation.

METHOD

Eighteen groups of four to seven members each were formed from three undergraduate classes in speech communication at a large southwestern university. The average group size was 5.44 members. A total of 98 respondents took part in the research: 39 males (40%) and 59 females (60%). Gender compositions varied

across the groups. The majority of the groups (72.2%) were genderbalanced; that is, with more than a token presence of one sex or the other (Kanter, 1977).

In each case, the group task was to produce a semester term paper that accounted for a significant portion of the final course grade. Part of each student's final paper grade depended on evaluations by fellow group members assessing the quality and quantity of the student's participation in the group process. Groups were formed at the beginning of a 16-week semester and met several times during the course of the semester. The final paper was due at the close of the semester.

McGrath's (1984) "task circumplex" describes the tasks undertaken by the groups to be "choice" tasks. Twelve of the groups addressed questions of policy or value (Gouran, 1982). McGrath defines this as a "decision-making" task for which the correctness of a decision is reached through a consensus of peers based on (a) an examination of overarching societal or cultural values, (b) social comparison and/or other influence processes, and (c) examination of relevant factual information (p. 64). The remaining groups answered questions of fact (Gouran, 1982). Specifically, the groups addressed rudimentary communication research questions. McGrath refers to these as "intellective" tasks, where the correctness of a decision is reached through a consensus of experts (p. 62).

Strictly defined, the two task types differ. However, according to McGrath (1984), they are next to each other (i.e., numbers three and four) on the continuum of six choice decision types that run from extreme intellective tasks, when the answer is clear and compelling, to extreme decision-making tasks, when the "correct" answer is far less clear. Therefore, it seemed appropriate to combine data derived from all 18 groups into one aggregated data set.

Each group recorded 30 minutes of group interaction on two separate occasions: once early in the semester and once at the end of the semester. Groups gathered in a small group observation room and were seated around a large square table with two chairs on each side. A small audiotape recorder was placed at the center of the table. In addition, two video cameras recorded the group interaction. The audio from the videotapes was of only fair quality, so data were derived from the audiotapes only. The 18 hours of audiotaped interaction were transcribed by a professional transcriptionist.

Before coding the transcripts, a pilot test was conducted on a subset of the data using a variety of coding schemes identified in the review of literature: Berger and Kellerman (1983), Graesser et al. (1988), Kearsley (1976), and Waln (1984). It soon became apparent that the more complex the coding scheme, the less reliable the coding. Most of the questions identified in the pilot sample were not adequately detailed and specific enough to make the sorts of fine distinctions required by coding schemes with large numbers of categories. Although all may be argued to be valid representations of the universe of possible questions, Waln's taxonomy emerged as the one encouraging the least coding error, thereby contributing to the highest coding reliability. In addition, as noted earlier, of the taxonomies tested, Waln's coding scheme is the most closely related to the small group decision-making context. For these two reasons, Waln's taxonomy was used to code the question data derived from the small group transcripts.

As Kearsley (1976) suggested, purely rhetorical questions (i.e., questions to which no answer is expected or required) were excluded from the analysis. In addition, the embedded "you know" (e.g., "That's kinda saying like all women should be, you know, dieting."), was labeled a disfluency, rather than a question, as it did not specifically call for a verbal response. Thus, they were excluded from the analysis. Finally, questions that were clearly off the topic of group discussion (e.g., "Makes you want to go bowling, doesn't it?") were excluded from the analysis. Had these questions been included, it would have artificially inflated the number of opinion and information questions, leaving coders unable to distinguish between group members introducing topics relevant to the group discussion from those introducing new topics that diverted the group from its task. Hirokawa (1982) and others (e.g., Pavitt & Curtis, 1994) have argued that confusing task with off-task utterances is a serious coding flaw.

Each transcript was independently coded by two trained coders using Waln's (1984) question typology described above. After initially coding all the transcripts, the coders worked together in a process dubbed "coding by consensus." The two coders worked together through each transcript, question by question, to check for agreement on question unitizing (i.e., whether it was a question) and question type (e.g., probe). That is, coders had to first agree that a particular utterance was indeed a question, as defined earlier. Second, the coders had to agree on the type of question evidenced in each case. Coders resolved disputes through discussion. Consequently, there was 100% agreement between the two coders on utterances included in subsequent analyses. Cases that defied resolution (fewer than 1% of candidate utterances) were excluded from subsequent analyses. Results of the data analysis are presented in the following section.

RESULTS

The first step in the data analysis was to determine if males and females contributed equally to the generation of turns in the transcripts. Turns were identified using Jaffe and Feldstein's (1970) simple structural definition. That is, a turn began when a person gained sole possession of the conversational floor and ended when another person gained sole possession of the floor. Using this definition, there were 16,652 turns in the 18 hours of transcribed interaction. Males accounted for 6,844 of those turns, whereas females accounted for 9,808 turns. A chi-square analysis revealed a significant gender difference in number of turns generated, $\chi^2(1) = 527.58$, p < .001, perhaps accounted for by the larger number of female respondents. The proportion of turns accounted for by males was .411, whereas the proportion of turns accounted for by females was .589. These proportions were used in all subsequent chi-square analyses.

There were 2,598 questions asked in the 18 hours of transcribed group interactions. Questions accounted for 15.6% of the 16,652 turns. The best represented question type was probes. There were 2,318 probes, accounting for 89.2% of all questions asked. For example, in a discussion of references needed for the final paper, one group member asked, "How many do we need?" Paraphrasing

questions were the second most frequently appearing question type (N = 106, 4.1%). An example can be seen in this exchange between two group members; A: "It's due March the 2nd." B: "March the 2nd?" The latter utterance is the paraphrasing question. Neither of these two question types introduced new topics to group discussion. Rather, they encouraged additional discourse on the same topic.

Opinion and information questions introduced new topics into the group discussion. Opinion questions were the third most frequently occurring question type (N = 95, 3.7%). One example can be seen in the beginning of a discussion of a deadline for completing an outline for the final paper: "Maybe we should try to get our outline done before the break?" The next most frequently appearing question type was information questions (N = 73, 2.8%). These questions sought more objective information than did opinion questions. One example occurred at the beginning of a discussion of instructor feedback on the group's progress: "Does she still have our progress sheet?" The least frequently asked question type was confronting questions. There were only six questions of this type, accounting for only 0.2% of all questions asked.

The first analysis investigated the possibility of a gender difference in the total number of questions asked by males versus females. Males asked 1,025 total questions (39.5%), whereas females asked 1,573 total questions (60.5%). The chi-square analysis (using proportions to account for the overrepresentation of turns by females) revealed no significant gender difference in the total number of questions asked, $\chi^2(1) = 2.939$, p > .05.

Subsequent analyses tested for gender differences in the types of questions asked. Results revealed no significant gender differences in any of the following: information questions, $\chi^2(1) = 0.226$, p > .05, opinion questions, $\chi^2(1) = 1.087$, p > .05, or paraphrasing questions, $\chi^2(1) = 1.904$, p > .05. There was a significant gender difference in probing questions, $\chi^2(1) = 4.278$, p < .05. Results indicated that females asked significantly more probing questions than did males. Analysis of confronting questions was deemed inappropriate, as the total number of confronting questions identified in the group interactions was negligible (see Table 1).

	Males	Females
Question type		
Information	32	41
Opinion	34	61
Probing	904	1414*
Paraphrasing	51	55
Confrontation	4	2^{a}
Total questions	1025	1573*

TABLE 1: Gender Differences in Types of Questions Asked

a. Not used in analysis.

**p* < .05.

DISCUSSION

Results indicated that 15.6% of total turns generated in the 18 small decision-making groups was devoted to asking questions. This percentage compares favorably to figures presented by Kearsley (1976), who stated that questions comprised from 10% to 30% of his discourse sample, with an average of 20% of all utterances devoted to questions. Krone (1993), summarizing the work of other researchers who used Bales's (1950) IPA, stated that questions represent approximately 6% to 7% of verbal communication in small groups. Kearsley's data were not based on small group interaction, whereas the work that Krone reports were. Given this, the number of questions asked in the observed group interactions is higher than that found by earlier researchers.

There could be several explanations for this finding. First, and perhaps most obvious, is that the Waln (1984) typology included some utterances that might not be counted as questions under the Bales (1950) typology. For example, some IPA coders may not have counted paraphrasing questions as asking for either orientation, opinions, or suggestions. In addition, Bales's IPA would likely list confrontation questions as disagreements in the negative socialemotional expression category. So, there might be differences between the two systems that could account for some of the variation in total time spent asking questions in small group discussion. Another clue is provided by Pavitt and Curtis (1994). In discussing Bales's research program of the 1940s and 1950s, they noted that dissatisfied groups tended to spend more time asking questions (up to 10% of their time) than did members of satisfied groups (4% of their time). Specifically, "Less satisfied group members seemed to spend more time trying to understand their tasks than they did trying to get to know one another" (p. 279). This statement may provide a clue to the fact that the observed groups asked so many questions. Setting aside the issue of group members ask more questions when they are trying to understand the nature of their task.

The groups were audiotaped at the beginning of the semester, just as they were commencing their research projects and at the end of the semester, just as they were starting to write their final papers. It seems reasonable that group members would spend a substantial portion of their time in early meetings attempting to define the nature of the group task. In fact, Hirokawa (1983) argued that this is a necessary first step for groups. In addition, toward the end of the semester, it makes sense that deciding what to write and who is to do the writing would generate a larger proportion of questions than at other times in the group process.

The content of questions asked indicates that an overwhelming majority of questions asked were probing questions (89.2%) or requests for opinions or information that invite elaboration on the present subject. Only a small minority of questions asked introduced new subjects. The percentage of questions accounted for by information questions and opinion questions was only 6.5% of total questions asked. The clear conclusion that can be drawn from this information is that small group members rarely use interrogatives to introduce new topics to the group. Rather, questions are used primarily to elicit additional information and input from fellow group members on subjects already under discussion.

On the issue of gender differences, there was no significant difference between male and female group members in the production of questions as a proportion of total turns. That is, male and female group members were equally likely to ask questions. However, the

type of questions asked differed. There was a significant difference in the type of question most often posed in group discussion: probing questions. Female group members were significantly more likely to ask probing questions than were their male counterparts.

Lakoff (1975) suggested that women ask more questions than do men out of insecurity. For example, a woman might frame an assertion in the form of a question to seek affirmation from her listeners. This does not appear to be the pattern here. Rather, it can be argued that by asking probing questions, the women in the small groups were achieving two goals. First, they were encouraging interaction involvement. Second, they were drawing out details of information necessary to move the group along the path to its goal.

Earlier, it was argued that women value connection and cooperation more so than men and that this difference might be manifested in variance in patterns of question asking. Such was the case in this study. Although there weren't differences in question asking in general, there was a significant difference in the one type of question, probes, most likely to foster cooperation and connection in the small group setting. The nature of a probing question is to invite elaboration of arguments, sharing of information and opinion, and increased participation by fellow group members. The fact that women asked probing questions more than did men is entirely consistent with women's tendency to work to maintain conversation (Beck, 1988; Fishman, 1983; Kemper, 1984; Meyers et al., 1997; Wood, 1994). It may be argued that by asking probing questions, female group members were working to increase the interaction involvement of their fellow group members.

Increased interaction involvement can have a direct positive impact on group decision-making effectiveness. One of the advantages of group discussion is that the skill and information database expands with the inclusion of more group members. However, this advantage is only realized when all group members participate. Unfortunately, as group size increases, participation by individuals in the group decreases (Pavitt & Curtis, 1994). Therefore, group members must expend effort to maintain equality in participation. The probing questions asked by the female group members, it could be argued, served this purpose. In addition to encouraging participation, asking probing questions of fellow group members brings out necessary detail to enable the group to make an effective decision as well as to uncover false information and mistaken reasoning that could lead to ineffective group decisions. For example, Hirokawa (1983, 1985) posited the critical need to ask questions to adequately analyze the group task, along with its possible alternatives for action. Further, Hirokawa and Pace (1983) noted that ineffective group decisions can result when group members fail to question one another's opinions and assumptions. Mayer (1998) stated that such group behaviors as encouraging others to participate and seeking opposing views are related to perceptions of group decision-making effectiveness.

Indeed, failure to critically examine information and proposed actions can lead to groupthink, a negative group process that prevents a group from adequately assessing the probability of success of its actions (Janis, 1983). Janis suggested assigning a group member or members the task of asking critical questions as a way to lower the possibility of groupthink. Probing questions asked by the female group members could be argued to have served the dual purposes of bringing out necessary detail to serve as a basis for an effective group decision as well as to engage in critical evaluation of the group's opinions and assumptions.

It is worth noting that there were no gender differences in the two question types related to introducing new topics for group discussion. Only 6.5% of total questions asked served this function, but female group members were equally as likely to introduce new topics in this manner as were males. Fishman (1983) and Zimmerman and West (1975) presented evidence that males tend to control topic introduction and development in mixed-gender interactions. At least in this sample, males did not use question asking to serve this purpose. Of course, other means of topic introduction were not investigated in this study, so no conclusions may be drawn about gender differences in topic introduction overall.

There are several limitations inherent in this study. For example, the small group members in this study were all college students from a large southwestern university. For this reason, the respondents were younger, better educated, less conservative, and had a

larger proportion who were White than the general population. In addition, the group experience itself, although achieving a relatively high level of ecological validity, perhaps lacked the duration and complexity of true life group experiences. Therefore, caution should be used when attempting to generalize beyond this sample population and context for small group decision making.

Five of the 18 groups examined in this study were not genderbalanced. In each of these five groups, men were represented in only a token capacity (less than 20% of group membership, according to Kanter, 1977). Participants in gender-balanced groups differ from those in token groups in a number of ways (Bettenhausen, 1991; Cota & Dion, 1986; Kanter, 1977). McGuire's (1984) distinctiveness theory suggested that in interpersonal perception, people tend to focus on what is special or unique about the self or others with whom one interacts. This applies to gender in group interaction in that gender is more salient for group members in groups in which gender tokens are present. Specifically, Kanter argued that the token gender (in our case, males) is more visible than the majority, that differences between the token and the majority are magnified, and that interpersonal perceptions of the token are distorted to fit with majority expectations.

Consequently, tokens feel performance pressure, isolation from the majority of the group, and constraint from the majority's role expectations of them (Kanter, 1977). As five of the 18 groups included token males, some of them may have exhibited behavior inconsistent with the manner in which they might have behaved had they been in more gender-balanced groups. For example, a male group member may have been abnormally reticent; perhaps asked fewer questions; or asked different kinds of questions, out of a concern that his female fellows might view him as attempting to dominate the group. In addition, Meyers et al. (1997) suggested that when women are in the majority, they may feel free to abandon gender-role stereotyped behaviors and take on more masculine characteristics. Perhaps female group members in majority female groups may have talked more or asked more questions than they would have in a more gender-balanced group. Given that our data do not allow us to address these queries, future research contrasting question asking in gender-balanced versus unbalanced groups is clearly indicated.

Bales's (1950) IPA generated a great deal of interest in small group process. However, according to McGrath (1984), perceived limitations in IPA led to a decline in research in that area. The consequence was that "The *study* of group interaction waned, but the conceptual use of hypotheses about such processes did not" (McGrath, 1984, p. 144). Rather, interest shifted to unobserved intervening variables, not subject to direct observation. Sykes (1990) criticized much small group research, in that scholars have not yet collected the descriptive database necessary for theory building: "We have not done most of the basic descriptive research necessary for identifying and inventorying the domain of messages" (p. 206).

Sykes's (1990) comments have direct bearing on the study of questions in small group decision making. For example, there are no studies addressing other demographic variables, such as age and race, on the production of questions in small decision-making groups. In addition, little is known about the production of questions across the various phases of group decision making. Are there more questions at the outset of the group discussion, when the task is being defined, or more during the conflict stage of the group's process, when secondary tensions are being resolved, or perhaps less during the final confirming stages of group process? Future research can answer these intriguing questions.

Once an adequate descriptive base is established, there are numerous avenues of inquiry open to study questions in small decision-making groups. For example, how is question asking related to other variables of interest in the group, such as leadership development, decision-making effectiveness, or intragroup attraction? Again, future research can address these important questions.

The goal of the reported research was to identify the amount and types of questions asked in small decision-making groups, as well as to discern whatever gender differences might exist therein. Results indicated that questions play an important role in small group decision making and that gender is a factor in their production. Still, many opportunities remain for small group scholars to ask and answer questions about questions.

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