THE USE OF FOCUS GROUPS IN EXPLORATORY RESEARCH: THE EFFECTS OF GROUP SIZE, GROUP TYPE, ACQUAINTANCESHIP, AND THE MODERATOR ON RESPONSE QUANTITY AND QUALITY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

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CHAPTER 1
INTRODUCTION

During the past twenty years many marketing researchers have reported the successful use of focus group interviewing to solve a variety of problems faced by marketing managers. Yet, focus groups have received relatively little notice in the marketing literature and virtually no notice in the literature of any other discipline. Apparently the use of focus groups is unique to marketing. Marketing texts and journals abound with information on personal interviews, mail surveys, and other information collection techniques. In stark contrast, books and journal articles on the use of focus groups to collect marketing information are in short supply. The lack of available information would be understandable if focus groups were limited to use in special situations. However, it appears focus groups are widely used and are routinely employed in a variety of situations.

The widespread use of focus groups has been reported by Greenberg et al.¹ Of the 262 companies responding to their survey, 47 percent indicated they had used focus groups. Consumer goods companies led the list with 81 percent reporting the use of focus groups while marketing research and consulting firms were second with 61 percent. By comparison 79 percent of the consumer goods companies reported using personal interviews and 91 percent of the marketing research and consulting firms used personal interviews. The use of mail surveys

was reported by 79 percent of the consumer goods companies and 70 percent of the marketing research and consulting firms. It is somewhat surprising to find focus groups being more widely used among consumer goods companies than either individual interviews or mail surveys.

The extent to which focus groups are currently used in marketing research is not in itself alarming; but the reported misuse and potential for abuse is. One group of moderators, in discussing this issue, suggested focus group researchers have a responsibility to prevent clients from using the focus group technique as a sole piece of representative research. A study carried out among members of the Market Research Society in 1970 found that 60 percent of those who claimed to use group discussions did so instead of (i.e., independently of) a questionnaire study. This finding represents at least the potential for wide scale abuse of focus group research. It also suggests that a frequent disclaimer included in most focus group reports (the results of this study should not be generalized) quite often goes unheeded. However, situations where follow-up quantitative studies are unnecessary do exist, and they will be addressed in greater detail later.

The current popularity of focus groups is not difficult to understand. Frequently reports on the use of this technique point to the

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relatively low cost compared with other information collection techniques as well as the speed with which a focus group report can be obtained (if transcripts are not required, it may take only a few days). Also, focus groups are apparently flexible since they can be used to solve a wide variety of problems faced by marketing managers. Among the reported uses of focus groups, the following are apparently quite common:

1. Generating research hypotheses
2. Exploring opinions, attitudes, and product attributes
3. Testing new product ideas
4. Evaluating television commercials
5. Describing product experiences
6. Pre-testing questionnaires
7. Identifying potential questionnaire items
8. Exploring underlying product purchase motives

The range of uses appears to be limited only by marketing researchers' ingenuity and creativity. Yet, focus groups have not been empirically tested nor has a theory of focus group interviewing evolved. A wide range of notions about why focus groups work appears in the available literature. However, agreement among authors on the subject is only at the most superficial level (e.g., participants should have something in common).

Although no research was found to indicate what marketing managers think about the technique, indirect evidence suggests a
"growing insecurity" about the widespread uses of focus groups.\textsuperscript{4} Much of the current concern surrounds errors in the use of the technique, interpretation of the results, and the implementation of the insights drawn from focus groups.

If a reliable methodology of focus group interviewing is to be developed, more fundamental issues need to be explored. First some boundaries need to be drawn around the use of the technique. Some tasks seem more appropriate for focus group research than others. It should be remembered that focus groups are highly interactive discussion groups. Therefore an individual's behavior in the group setting may be influenced by the presence of other group members. To the extent the presence of others has unintended or unwanted effects on individual behavior, focus groups may be an inappropriate data collection technique. A second issue deals with the focus group methodology. Most researchers in this area have their own "tricks of the trade" for structuring group sessions. Within reason this may be essential. Yet, it would seem that some general guidelines should be applicable to a specific focus group task regardless of the idiosyncrasies of the moderator. Finally, naive theoretical explanations about why focus groups work have all too frequently gone unchallenged. Moreover much of the trade jargon is rhetorical and provides little or no understanding of this phenomenon. Additionally, there is no empirical evidence to support any of these explanations.

Statement of the Problem

Experiences with the focus group technique have led some researchers to report their observations along with naive theories or hypotheses about why the technique was successful. The commonalities running through these reports are accepted as underlying assumptions upon which successful use of the technique hinges. The four assumptions included in the study were chosen for three reasons. First, although there is little agreement among focus group researchers on the exact methodology to be used, these four assumptions are more widely held than the others. Secondly, the results of studies in the areas of group problem solving, brainstorming, and counseling psychology contradict these assumptions. In view of the contradictory evidence it was thought that the more widely held assumptions should receive primary emphasis in this initial study. Thirdly, these assumptions were considered to be representative of the "state of the art," and by choosing them it could be shown that much of what is accepted on the basis of past focus group experience can be empirically tested.

The first assumption—that the group's output is in some way better than the output from individual interviews—generally follows from the intuitively appealing idea that two heads are better than one and that groups benefit from synergy in generating ideas. The brainstorming studies have found just the opposite—individuals working alone generate more ideas than an equal number of individuals working in groups. This contradiction is presented in the form of the first hypothesis:
Focus groups of eight members will produce more different ideas than combining the output of eight individual interviews.

A second assumption which pervades all the literature on focus groups is that the moderator plays a crucial role in obtaining the desired information from group members. The moderator's expertise, personality, sex, and procedures are seen as critical in promoting group interaction. Lieberman provided evidence against the crucial role of moderators.\(^5\) The second hypothesis tests the divergence between reports of focus group moderators and studies on clinical counseling.

Moderated focus groups generate more different ideas than groups without moderators.

A third assumption, which is not as widely accepted as the first two, is that the ideal group size is eight to twelve members. Some focus group moderators use as many as twenty participants while a few use less than eight. Of course, the number of actual participants is quite often not the number planned because of recruiting problems and last minute cancellations. In the group problem solving and brainstorming studies four members were generally accepted as the optimum group size. The third hypothesis tests these competing notions.

Focus groups of eight members generate significantly more different ideas than focus groups of four members.

A fourth assumption is that group participants should not be

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acquainted. Anonymity is frequently cited as an important factor in accounting for focus group results. Groups of strangers presumably feel more anonymous, respond more spontaneously, and provide more revealing personal information than groups comprised of acquaintances. Support for these notions was found in studies on face-saving behavior. The acquaintance hypothesis is:

Focus groups of eight strangers will generate more different ideas than groups of acquaintances.

In summary, four widely held assumptions about focus group methodology were selected for empirical investigation. Other areas of research which were reviewed seem to contradict these assumptions. The contradictions were formulated as research hypotheses to be tested.

Scope of the Study

Two aspects of the study support its generalizability while one serves as a limiting factor. Adding to the generalizability was the selection of moderators and interviewers as well as the sample of subjects used. The services of the moderators and interviewers were donated to the project by four market research firms and one advertising agency. All of the moderators and interviewers were female and had considerable experience in using their respective data collection techniques. This should increase external validity and allow the results to be generalized to other female moderators and interviewers who do exploratory research. The results of this study cannot be attributed to the characteristics of a single moderator or interviewer.

External validity was also enhanced due to the sample of middle-class
housewives used in the study. All subjects belonged to the women's auxiliary of a children's hospital in Columbus, Ohio. Although the particular group of women chosen was a convenience sample, they represent a population of middle-class housewives frequently used in market research. Columbus is a widely used test market because its population is representative of the United States population. Also the hospital auxiliary has provided respondents for local as well as national market research projects. However none of the subjects participating in this project reported having been involved in focus groups or individual interviews previously.

The study was purposely constrained to the use of focus groups in exploratory research. This was done in recognition of the different approaches to focus group interviewing proposed by Calder. According to Calder, three approaches to focus groups can be identified: (1) the exploratory approach, (2) the clinical approach, and (3) the phenomenological approach.

The exploratory approach defines those situations in which the researcher is looking for ideas or hypotheses that may lead to scientific investigation and theory. It also covers situations where the researcher is interested in testing new product ideas or pretesting questionnaires. In this approach results from small samples should not be generalized. The clinical approach reflects the perspective of clinical psychology. Its purpose is to uncover the underlying or subconscious causes of behavior. The phenomenological approach seeks

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everyday or experiential knowledge. This approach has been most often used to discover how consumers think, feel, and behave in product purchase situations. As an aid to planning marketing strategies, the phenomenological approach seeks to uncover consumers' product experiences. Unlike the others, this approach requires the moderator to share or at least exhibit the same background as the participants. That is, the moderator should be unobtrusive.

Figure 1 positions some commonly reported uses of focus groups within the Calder typology. The research task used in this study falls under the heading of Idea Generation, within the Exploratory Approach. It would be a mistake to make inferences, based on this study, about either of the other two approaches.

1. Exploratory Approach
   A. Idea Generation
      1. Hypothesis generation
      2. Attribute generation
   B. Testing
      1. New product tests
      2. Commercial evaluation
      3. Market testing
      4. Package debugging
      5. Questionnaire pretest

II. Clinical Approach
   A. Exploring Motives

III. Phenomenological Approach
   A. Exploring attitudes and opinions
   B. Exploring psychographic/life style profiles
   C. Describing product experience

Figure 1. Focus Group Uses.
Importance of the Study

This study contributes to knowledge in three areas of related research: (1) focus group interviewing, (2) creative problem-solving and brainstorming, and (3) small group process theory. The results should provide information of value to marketing practitioners—both focus group researchers and buyers of research. Although the study does not fill the void in research on focus groups, it does provide indications as to the importance of group size, moderator expertise, anonymity, and acquaintanceship on focus group output. This information should be helpful in structuring a focus group methodology. It also provides cost-benefit information to aid in choosing between focus groups and individual interviews when exploratory research is being considered.

This study also contributes to knowledge about creative problem-solving and brainstorming. First, it expands the research paradigm used in the creativity studies to include (1) a population other than college students (i.e., middle-class housewives), (2) a widely used market research technique, and (3) a more complex task than was previously used. Therefore, the study should indicate how generalizable the previously reported findings are. The study did not deal directly with creativity, yet it provides insight into the effects of a discussion leader on ideation. Discussion leaders were not used in the reported studies on brainstorming. The study also offers theoretical explanations for the results—something that has not been done in this area.
A contribution was made to group process theory by showing how three social psychological theories of individual behavior could be integrated into a more general theory of social impact. Additionally, social impact theory was extended to predict the effects due to the presence of other people on the group's productivity. No previous attempt had been made to test social impact theory on an interacting discussion group.

The research problem was introduced and was followed by a discussion of the scope and importance of the study. The remaining task is to present a brief overview of the chapters that follow.

Overview of Remaining Chapters

The first two chapters following this introduction provide the literature base upon which the dissertation was built. Chapter two reviews the relevant focus group and brainstorming literature. The first part of this chapter will deal with the focus group literature and the assumptions upon which the technique is structured. The second part of the chapter provides contradictory evidence from studies on creative problem-solving and brainstorming. Three different potential theoretical explanations for these contradictions will be integrated into a theory of social impact in chapter three. The implications that social impact theory holds for focus group interviewing will conclude the chapter.

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Chapter four will outline the methodology that was used in this study. The hypotheses derived from the contradicting studies in problem-solving and brainstorming will be presented along with the rationale behind them. Justification will be provided for the selected variables. Finally, the research design, the experimental procedure and the data preparation for analysis will be delineated.

Analysis of the data and the results of the hypothesis tests are reported in the fifth chapter. The findings will be accompanied by an analysis of the appropriate post-experimental questionnaire items. Emphasis will be placed on explaining the empirical findings in terms of the group process theories reviewed in chapter three.

The insights and conclusions drawn from this study will be reviewed in the final chapter. Chapter six will also assess the general contributions to (1) focus group interviewing (2) knowledge about brainstorming and creative problem-solving, and (3) small group process theory. Finally, this chapter will suggest areas for future research.
CHAPTER 2

REVIEW OF THE RELEVANT LITERATURE

The first step taken to provide a structure to the methodology of focus group interviewing was to review the available literature on the use of the technique. Procedures that were more generally accepted by focus group researchers were thought to be the most appropriate starting point for structuring the methodology. Therefore, a review of the focus group literature was undertaken to uncover the common procedures and the assumptions which led to adoption of these procedures. Since no research on focus groups was uncovered to support these assumptions the literature review was extended to other areas involved in small group research.

Therefore, this section includes a review of the literature in group problem solving, brainstorming, and psychotherapy. Many of the studies reviewed contradict the underlying focus group assumptions. These studies do have one thing in common with the focus group literature—they offer no theoretical explanations for the reported findings. A review of four group process theories will be used as a basis for restating the contradictory evidence as research hypotheses. This review will be presented in the chapter that follows.
Common Assumptions of Focus Group Interviewing

One assumption commonly made about focus groups is that the group output is in some way better than individual interviews. Most authors on group interviewing discuss the advantages of groups in terms of the interaction among discussion participants. Goldman views interaction and a common interest (e.g., shoe buyers, drug manufacturers, or purchasers of luxury items) among group members as providing more information that is qualitatively different from that obtained by summing the results of individual interviews.⁸ According to Hess, respondent interaction should result in a wider range of information, insight, and ideas from the combined effort of the group than from combining the work of individuals.⁹ Several authors, although not explicitly stating groups are better than individual interviews, imply this when discussing the advantages of group interviews. Advantages of group interviewing have been characterized as: synergism, stimulation, spontaneity, candor, release of inhibition, and security.

Synergism, according to Hess, should result from covering the common ideas rapidly, leaving more time for exploring, groping, forcing or otherwise seeking new ideas.¹⁰ Presumably this does not occur in individual interviews. Contrary to the synergism hypothesis, Smith sees a

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¹⁰Ibid.
point of diminishing returns as group size increases.\textsuperscript{11}

In any shared conversation, two people are apt to produce more ideas than one; three more than two; and so on up to a point of diminishing return.

Whether or not synergism is to be found may depend on the extent of participant stimulation.

Stimulation from a warm-up period, in which participants get "turned-on," results in increased excitement and enthusiasm which leads to "wanting to get their ideas out and exposing their feelings."\textsuperscript{12} Goldman sees positive, neutral, or negative group reaction to an idea brought up by a group member, as stimulating new ideas.\textsuperscript{13} From Smith's viewpoint, interstimulation broadens the base of thinking which leads to increased productivity when individuals are interviewed together.\textsuperscript{14}

Spontaneity and candor have also been cited as advantages of group interviews. According to Goldman:

Candor is permitted not only because the members of the group feel comfortable with one another, but because they draw social strength from each other. The group provides support to its members in the expression of anxiety-provoking or socially unpopular ideas.\textsuperscript{15}


\textsuperscript{12}Hess, "Group Interviewing."

\textsuperscript{13}Goldman, "The Group Depth Interview."

\textsuperscript{14}Smith, Motivation Research in Advertising and Marketing.

\textsuperscript{15}Goldman, "The Group Depth Interview." p. 63.
Spontaneity may be more readily achieved in a group interview than in individual interviews. Hess observes the following:

In the person-to-person interview, the interviewer asks a question of one respondent, who then, by the rules of the game, is expected to give some kind of answer. Such situation encourages the conventional answer; the interviewee feels that once he has given an answer he is "off the hook" and has no further responsibility for participation. In the group situation it is obvious that the group as a while is looking for the answer, and each individual spontaneously seeks to participate in finding answers. 16

Spontaneous responses may result from the release of individual members inhibitions. Both Merton 17 and Smith 18 discuss conditions under which groups may inhibit or release inhibitions. In the course of the group discussion, the less inhibited individuals "ventilate" their experiences, which encourages others to ventilate theirs. If the "self-starters" are rewarded or receive approval, standards of conduct or norms will be established for the more inhibited members. The interviewer can encourage this by offering approval early in the discussion. Once the process is well under way it tends to be "self-maintaining and self-reinforcing." As other members see the atmosphere becoming more permissive, they become less reluctant to discuss personal habits.

An alternative explanation involves the anonymity afforded group members. Hess depicts security in a group as being life a fugitive finding


18 Smith, Motivation Research in Advertising and Marketing.
security in a crowded city. Participants may find it safer to speak from "the midst of the lonely crowd," rather than talk alone with an interviewer. This explanation would seem to imply lowered identifi-
ability or anonymity would be afforded members of a group which tends to lessen inhibition. In contrast, Berent, in discussing difficulties encountered in individual depth interviews, states:

It is essential to the success of a depth interview that the informant should be alone with the inter-
viewer. The presence of another member of the family or of a friend is likely to distract and inhibit the informant and may seriously distort and falsify what she says...the third person destroys one of the basic conditions for the success of a depth interview--anonymity.²₀

A second assumption is that the ideal group size is eight to twelve members.²¹ Sampson, however, believes there is no "correct" size for any group.²² The value of a discussion group is independent of its size. Size may vary from 5 to 12 depending on how articulate and fluent the members are. According to Wells, the ideal group size

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¹⁹Hess, "Group Interviewing."


²¹Danny N. Bellinger, Kenneth L. Bernhardt and Jac L. Goldstrucker, Qualitative Research in Marketing, American Marketing Association Monograph Series No. 3, 1976.

depends on the seating arrangements, and the interviewer's personal style.\footnote{William D. Wells, "Group Interviewing" in Handbook of Marketing Research (ed.) Robert Ferber. (New York: McGraw-Hill Book Co., 1974).} Hess prefers twenty or more people because large groups have a greater synergistic effect although they do not achieve depth as quickly.\footnote{Hess, "Group Interviewing."} Merton et al. suggests ten to twelve members.\footnote{Merton et al., The Focused Interview.} Smith thinks eight to ten are adequate because larger numbers tend to become unmanageable, and smaller numbers may not produce a wide enough range of ideas.\footnote{J. M. Smith, "Group Discussions."} According to Payne, no group discussion should ever have more than eight respondents—six or seven is perfectly adequate.\footnote{Melanie S. Payne, "Preparing for Group Interview," in Beverlee Anderson (ed.) Advances in Consumer Research 3 (Ann Arbor, Michigan: University of Michigan, 1976), pp. 434-436.} With more than eight everyone cannot participate and the groups may splinter into several conversations. Attempts to maintain control destroy the "group dynamic."\footnote{Merton et al., The Focused Interview.}

A third assumption is that focus group participants should be strangers. Payne calls for screening out certain groups "who, for some reason, might bias your results. According to her, respondents from the same neighborhood, church, club, or ethnic group are not desirable.\footnote{Payne, Ibid.} Smith claims that the dynamics of the group will be seriously upset, and
inhibited responses will result if friends are included in groups.

After discussing the pros and cons of including friends in the same group, Wells concludes on the other hand that "The assets and liabilities of allowing friends to participate in the same group almost balance out."\(^3\)

A fourth assumption is that the moderator plays a crucial role in obtaining the desired information from focus groups. The moderator's expertise, and his/her personality traits, and the procedures used are seen as critical in promoting group interaction. Expertise includes ability, knowledge in social or clinical psychology, past focus group experience, and product or problem knowledge.\(^3\) Traits deemed important are sensitivity, outward personality, and genuine interest in people.\(^3\)

Merton et al.\(^3\) outline the procedures which seem to be most common in conducting focus group interviews under the general headings: (1) facilitating reports by the entire group, (2) handling silence, (3) regulating group interaction, (4) coping with interruptions, (5)

\(^{30}\)Wells, "Group Interviewing."


\(^{32}\)Ibid.

\(^{33}\)Merton et al., The Focused Interview.
ascertaining response frequencies, and (6) counteracting the leader effect.

In attempting to get all members to participate in the group discussion the moderator faces three potential problems: controlling the loquacious interviewees, activating the reticent interviewees, and extending coverage of the group. Each of these problems will be briefly discussed along with the reported remedies.

Controlling an interviewee may be necessary when the discussion begins digressing and also when one individual begins monopolizing the conversation. The latter situation has variously been described as controlling the monopolist, the pest, and the dominant respondent. The usual remedy in this situation is for the moderator to intervene and bring other group members back into the conversation. The intervention may range from mildly suggesting that others may want to contribute to cutting the dominant respondent off in mid-phrase and pointedly asking if there are others who want to express an opinion.34 The shy interviewee poses a different problem.

Activating a reticent or shy interviewee is required to draw uncommunicative individuals into the conversation. Several approaches have been recommended for accomplishing this. Smith suggests asking a direct question about something the respondent is sure to know.35 Merton et al. claim direct questions will contribute to the respondent's

34Wells, "Group Interviewing."

35J. M. Smith, "Group Discussions."
embarrassment and force him to shrink further into his shell.\textsuperscript{36} They suggest asking these people openended and unstructured questions. Whatever the specific technique, it is generally agreed the reticent individual should be given support and should be encouraged to participate in the group's discussion. Control is not limited to just the dominant and reticent group members.

Regulating interaction among all group members can promote the purposes of the interview. This may be accomplished by encouraging the interchange of views, by encouraging the expression of different opinions, and by redirecting the course of the conversation. The difficulty lies in determining when the interaction is functional and when it is dysfunctional. This distinction is by no means easy nor is the decision by the moderator to intervene.

Moderators must learn to cope with interruptions if interview rapport is to be maintained.\textsuperscript{37} The interruption may represent a direct expression of intense opinion or sentiment. Intervention by the moderator, particularly if it is frequent, may restrain spontaneous participation by the rest of the group. The interruption may be handled by allowing it to run its course unless it results in a lengthy digression. The interrupted speaker may return, on his/her own, to the original point or the moderator may come back to the interrupted speaker at a more appropriate time. Frequent interruptions may come from a leader within the group.

\textsuperscript{36}Merton et al., The Focused Interview.

\textsuperscript{37}Ibid.
Counteracting the leader effect is possible although eliminating it is not possible. As previously mentioned, certain individuals may tend to dominate the discussion. Their influence can be reduced by drawing the less active members into the conversation.

In summary, four assumptions about focus group methodology and the rationale behind them have been reviewed. None of the assumptions are supported by empirical evidence. Therefore, a review of the literature in related fields was undertaken to see if these assumptions were reasonable.

Contradictory Evidence

Although no empirical evidence was found to support assumptions about focus groups and the information they provide, evidence that seems to contradict these assumptions has been found in related fields. If these empirical findings are applicable to focus groups, it may be possible to structure a focus group methodology.

The specific assumptions under current study are: (1) group interviews are better than individual interviews, (2) the moderator is instrumental in accounting for group results, (3) the ideal group size is eight members, and (4) group members should be strangers. Empirical evidence which seems to cast doubt on these assumptions will be reviewed next. This review will be followed by an examination of theoretical explanations of group behavior.

Individuals versus Groups

As previously discussed, focus groups are often assumed to provide
advantages not available in individual interviews. Most of the advantages seem to indicate that group interaction facilitates the performance of individuals. Yet studies in creative problem solving and brainstorming have consistently shown that interacting groups are inferior to an equal number of individuals working alone.

For example, Taylor et al.\textsuperscript{38} used Osborn's\textsuperscript{39} brainstorming procedure in comparing the number of ideas generated by junior and senior undergraduate males working alone with those working in groups. The individuals working alone were randomly assigned to "nominal groups"\textsuperscript{40} which were used as a baseline against which four man interacting groups (real groups) were compared. The most important finding was that the nominal groups outperformed real groups in terms of number of ideas produced and number of unique\textsuperscript{41} ideas produced. The mean quality scores for real groups were also inferior to those of the nominal groups. The second finding was that the mean number of ideas produced by groups of four

\textsuperscript{38}Donald W. Taylor, Paul C. Berry, and Clifford H. Block, "Does Group Participation When Using Brainstorming Facilitate or Inhibit Creative Thinking," Administrative Science Quarterly, Vol. 3 (June 1958), pp. 23-47.

\textsuperscript{39}Alex F. Osborn, Applied Imagination (New York: Charles Scribner's Sons, 1953), pp. 297-300.

\textsuperscript{40}Actually, the ideas generated by individuals were pooled as though they had been generated by a group with no interaction among the members. Repeated ideas are not counted. The resulting pool of ideas is referred to as a nominal group.

\textsuperscript{41}Unique ideas were suggestions made by only one of the total number of groups both nominal and real.
members was larger than the mean number of ideas produced by one individual. This led Taylor et al. to observe:

Such group superiority may very well account for the widespread impression that group participation does facilitate production of ideas. The individual who compares his own performance working alone with that of a group in which he participates at another time may understandably conclude that group interaction stimulates creative thinking, whether or not this is in fact that case.\textsuperscript{42}

Taylor et al. conclude that "group participation when using brainstorming inhibits creative thinking." In trying to account for the results, they suggest that individuals working in groups feel less free of possible criticism than do individuals working alone. They also suggest individuals working in groups are more likely to pursue the same train of thought which reduces the number of different ideas produced by groups.

Dunnette et al., using research scientists and advertising men rather than students replicated the Taylor et al. findings.\textsuperscript{43} Additionally they attempted to define the conditions under which individual and group effort can be combined for optimal results. Each subject participated in both the group and individual brainstorming sessions. Subjects either worked individually and then in a group session or worked in a group followed by individual sessions. All subjects were briefed on

\textsuperscript{42}Taylor, et al., "Does Group Participation When Using Brainstorming Facilitate or Inhibit Creative Thinking."

using the brainstorming procedure. Comparisons were made between the number of different ideas produced by group participation and the number of different ideas produced by the same group members during the individual sessions. The results showed individual brainstorming sessions produced more unique ideas than group sessions. Also more ideas were produced by individuals after participating in group sessions than individuals who had not participated in group sessions. Dunnette and colleagues saw inhibition resulting from the presence of other members as a reason for their results. They concluded that for creative thinking the efforts of many people should be pooled, with an initial group session to serve as a warm-up.

Campbell used managers from a public utility in a study of individual performance and how it is related to individual difference variables.⁴ By contrast, most previous studies used the group as the unit of measurement. All respondents were mailed a personal history and personality questionnaire along with a problem which would not be used later in the group discussions. The subjects were then assembled into twelve four-man experimental groups and eight four-man control groups. The experimental groups faced three different solution situations: (1) an individual solution while working alone,⁵


⁵This solution was in response to the problem the subjects received in the mail.
(2) an **individual solution** after hearing and participating in a group discussion, (3) a **group solution** after discussion. Since the control group received a different mailed problem it only offered solutions under the last two conditions. According to Campbell none of the differences between experimental and control groups were significant and therefore it is safe to conclude no practice effect exists. Also there was no change in average individual solution scores after group discussion. For comparing nominal groups with real groups, both the group composite score and the average of individual scores within the group were used. Campbell found the judged quality of real group solutions to be inferior to nominal groups on both measures. None of the personality main effects nor their interactions with the experimental treatments were significant.

Several studies have attempted to determine why individual brainstorming is superior to group brainstorming and how group brainstorming may be made more effective. Bouchard studies the effects of training, motivation, and personality on brainstorming.\(^6\) In the first of two experiments, he tested the hypothesis that these three variables would have an additive effect on performance. Groups scoring high on the personality scales, training, and motivation would perform better than groups who scored low on these variables.

The experimental design was a 2x2x2 factorial with four-man groups per cell. Highly motivated groups compared to the low were told they were in competition and the best performing group would receive $40. Training was operationalized by practicing on three problems (high training) and no practice (low training). High and low scores on the first five scales from the California Psychological Inventory\textsuperscript{7} were used for determining the two personality levels. This experiment differed from past studies in that a procedural rule was used. Each respondent contributed ideas in sequence with each saying "pass" if he had nothing to say. For the total number of ideas no main effects were significant. There was a significant motivation by training interaction however, which appears to be due to the high interpersonal effectiveness of these groups. The groups that were low on the interpersonal effectiveness scales appeared to be insensitive to both motivation and training.

In the second experiment only subjects scoring low on interpersonal effectiveness were used and the personality factor was replaced with group versus individual problem solving. Consistant with the first experiment there were no significant training or motivation main effects. Nominal groups outperformed real groups on two of the three problems and real groups provided more good ideas than nominal on one

\textsuperscript{7}Bouchard calls this the interpersonal effectiveness scale. The scales measure dominance, capacity for status, sociability, social presence, and self-acceptance.
of the problems. Bouchard attributed this finding to the sequence procedural rule employed by the real groups in this study.

Street attempted to determine the causes for an individual's decreased responsiveness in a group setting. Two competing explanations were examined: (1) social facilitation theory, and (2) diffusion of responsibility theory. According to social facilitation theory the mere presence of others may lead to decrements in performance and could account for the ineffectiveness of real groups compared with nominal groups. It would be expected that coacting groups (i.e., individuals working in the same room but not interacting) would perform about the same as interacting groups if the mere presence hypothesis is applicable and both would be inferior to individual output. On the other hand, the diffusion hypothesis suggests individuals withhold involvement in the task because others are present to share the work. Under this hypothesis individuals and coacting groups would perform about the same but both would outperform interacting groups. The results showed no difference between individuals and coacting groups which were both superior to interacting groups. Street saw this as supporting the notion that people are more productive if they are working under conditions of anonymity or privacy.

Although the individual versus group issue has received the most attention in studies on brainstorming, the effects of group size on

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group productivity has also received much attention. The review to follow is by no means complete. However, it does provide evidence that (1) group size is a significant factor in accounting for productivity; and (2) the optimal group size for creative tasks is somewhat less than eight members.

**Group Size**

Although various studies purport to show the group size that is optimum, there is little agreement on an operational definition of optimum group size. Slater found that group participants considered five members to be optimum (i.e., neither too large nor too small) for the task of discussing a human relations problem. He also found members of larger groups less satisfied with the amount of time available for discussion, with their opportunity to participate, and with the group meeting or its decision.

In a game of "twenty-questions," Taylor and Faust had students work alone, in pairs, or as a member of a four-person group. They found no significant difference between groups of two and groups of four in terms of the number of questions required to reach a solution. The performance of individuals working alone was inferior to either size group. The number of failures to reach a solution per problem was significantly greater for two person groups than for four person groups.

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groups. In terms of man-minutes (total elapsed time multiplied by the number of individuals in the group), the performance of individuals was superior to groups of two and four, with groups of two being superior to groups of four. They concluded, and perhaps erroneously, that the optimum size group is no larger than four because there were negligible differences between groups of two and four in terms of number of questions and elapsed time. Extrapolating beyond the range of the independent variable in this case is questionable. In attempting to reconcile the conflicting evidence between number of questions and both number of failures and elapsed time, they suggest increasing from two to four members reduced the probability of a persisting wrong set resulting in complete failure.

In another study which examined group sizes of two through seven, Bales and Borgatta coded every observed act of verbal and non-verbal behavior using the Bales method of interaction process analysis. These researchers noted that as group size increased (1) each individual had relatively less time to talk, and (2) had more people to talk with. Therefore, as group size increased, individuals felt more time pressure to establish and maintain social relationships.

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Some time could be gained by talking faster but effective communication limits the amount of time that can be saved in this way. Another way of dealing with the time pressure is to change the types of activities engaged in to those that require less time.

The lack of available time in which to support an argument may account for the observed increase in giving suggestions as well as a decrease in asking for and giving opinion. Two lines of reasoning were offered as justification: (1) when the time is at a premium, members feel pressure to take the most direct approach (i.e., making suggestions without justifying them with opinions), and (2) the larger groups may pose as a more formidable sanctioning system and thereby inhibit evaluative statements.

Another apparent result of time pressures is that the number of people who perform or participate at absolutely low rates will increase. Reluctant participants will tend to be forced to engage in behaviors which can be performed simultaneously such as listening, showing tension (i.e., withdrawal, nervous mannerisms, or awkward pauses that occur for the group as a whole), and showing tension release (primarily through laughter of the group as a whole). Surprisingly, however, as group size increased, the observed tension

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\(^{52}\)Ibid.

\(^{53}\)Ibid.
decreased. Two hypotheses were advanced for this decrease in tension. First, the task of maintaining group solidarity in larger groups may be shared by more people, so there is a greater likelihood that these requirements will be performed without difficulty. Second, the larger size group permits relatively more anonymity for persons who might become nervous if forced into greater group involvement. That is, being able to hide in the group reduces the probability of involvement along with the accompanying anxiety.

Osborn has suggested the optimum group size is between five and ten.\(^5^4\) Bouchard and Hare have suggested there may be more rapidly diminishing returns in nominal groups than real groups.\(^5^5\) If individual problem solvers reported many ideas in common with others while group members wasted little time on repeated ideas and moved on to new ideas, this result might be expected. Using male students, with group size (five, seven and nine), group type (nominal and real), and experimenter sex (male and female), Bouchard and Hare attempted to extend previous findings to other group sizes. The main effects for group size and group conditions were both significant. The main effects as well as interaction involving the experimenters were not significant. For the group sizes used in this study, the data seems to contradict the hypothesis of more rapid diminishing returns for nominal groups. The means from the study are plotted in Figure 2.

\(^{5^4}\)Osborn, *Applied Imagination*.

Bouchard and Hare's discussion of the results indicated there might be a time confound. Both individuals and groups had 25 minutes to work on the problem which clearly suggests that individuals working in groups had less time to speak than individuals working alone. The researchers observed that individuals exhausted their repertoire of ideas long before time ran out and none of the groups felt that they had been cut off before substantially saying everything they wanted to. They also point to the lack of difference between idea production of size five groups and size nine groups as evidence that time was not a factor. Presumably if five person groups outperformed nine person groups given the same time constraint, time would be a significant factor. Moreover they observed long lags in conversation in the group conditions. They conclude that mismanagement of time is the culprit rather than lack of time. According to Bouchard and Hare:
individual problem-solvers initially find it difficult to tolerate silence, even brief breaks create an uneasiness which motivated the individual to continue to produce even when the intellectual motivation or goal directed set which the experiment has produced appears exhausted. On the other hand, Ss in the group situation do not experience this drive to any appreciable extent. The result is that some participants monopolize much of the time in a very inefficient manner, elaborating in ways that do not contribute significantly to the problem and taking the pressure to contribute off the shoulders of the other participants who might have something different and useful to say.\(^{56}\)

In a later study, Bouchard used a sequencing procedure which seemed to increase productivity of real groups. This procedure was discussed in the section on Individuals versus Groups. In still another study which will be discussed later, the procedural rule had no effect.

Bouchard, Barsaloux, and Drauden\(^{57}\) varied group size in a study designed to determine the effects of environmental concordance\(^{58}\) on problem solving. Nominal groups were again superior to real groups with real groups being unresponsive to any of the manipulations. Bouchard and his colleagues conclude that, while increasing nominal

\(^{56}\)Bouchard and Hare. "Size, Performance, and Potential in Brain-storming Groups."


\(^{58}\)Environmental concordance is a specific example of the synectics approach discussed earlier. In this study the problem was one dealing with blindness and, to make the environment concordant with the problem, the lights were dimmed.
group size increases performance dramatically, increasing real group size adds very little to performance.\(^5\) This finding replicates the previous Bouchard and Hare finding. The sequencing procedure was again employed in this study with little apparent effect on the gap between real and nominal group performance. This result seems to disconfirm the time mismanagement hypothesis or at least the previous finding that sequencing was important in increasing real group productivity.

**Acquaintanceship**

None of the reported studies on creative problem-solving and brainstorming varied acquaintance. Most of these studies involved college students as subjects. Many of the subjects were acquainted through previous courses or the course they were taking when they volunteered to be a subject. One study used research scientists and advertising personnel but only individuals who worked together or were well acquainted with one another were assigned to a group.\(^6\) Another study used second and third line managers from a public utility; again they were all fairly well acquainted.\(^7\)

The important implications of the previously reported findings of nominal group superiority over real groups give acquaintanceship added

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\(^5\)Bouchard and Hare, "Size Performance and Potential in Potential in Brainstorming Groups."

\(^6\)Dunnette, Campbell, and Jaastad, "The Effect of Group Anticipation on Brainstorming Effective for Two Industrial Samples."

\(^7\)Campbell, "Individual Versus Group Problem Solving in an Industrial Sample."
significance. Individuals working alone do not suffer the effects of acquaintanceship—the interacting groups do. If focus group moderators are correct in their assumption about the effects of friendship on group interaction, they may offer a partial explanation for brainstorming findings. Specifically, groups of acquaintances may have an inhibiting effect on individual members. Theoretical support for this line of reasoning is examined in Chapter three.

The Moderator

Another factor that is noticeably absent in the brainstorming studies is a group leader or moderator. However, group studies in psychotherapy have compared professionally led groups with self-directed groups and groups led by inexperienced counselors. These studies seriously question the assumption that trained counselors are necessary for effective group therapy.

Vicino and his fellow researchers have developed a set of self-administered exercises to facilitate learning in T-Groups (training groups). Group members were provided a set of written exercises and instructions on their use. The participants took turns acting as the administrator. They had responsibility for clarifying instructions, helping participants stay within time limits, and distributing and collecting materials. To evaluate the exercises a field experiment was conducted using 48 male and 48 female freshman class volunteers.

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as subjects. Compared with individuals randomly assigned to the no treatment control group (i.e., they did not receive the training), the self-directed groups: (1) showed a decrease in the discrepancy between their perceived actual behavior and their preferred behavior over a four week period, and (2) matched peer ratings more closely after the training sessions than before (it was expected that the subjects would see themselves more like their friends saw them after the training sessions were completed). Although 90 percent of the respondents thought the instructions were clear and 78 percent thought the content was clear, only 53 percent thought the process and learning was valuable and 57 percent would probably recommend the program to a close friend. These evaluative responses to the program were lower than the responses in a previous study where a consultant led the group. The Vicino study only showed that self-administered training groups are more effective in accounting for perceived behavior change than a no treatment condition. A more crucial test would have resulted if the above procedure had been compared with trained counselors.

In reviewing studies pointing to a placebo effect (e.g., psychiatric patient recovery simply by attending a clinic without receiving treatment), Poser suggests that the therapeutic outcome may be due to factors other than the theoretical training or experience of the therapist.\textsuperscript{63} If other factors are responsible for the

therapeutic outcome, then two treatments in which patients had equal faith but which in theory would not be expected to produce the same outcome could be used to determine their presence. To test this notion Poser used 343 hospitalized male chronic schizophrenics to compare differences in behavior change between patients treated by lay persons and those treated by professional therapists. Each patient was assigned to a ten person group using age, severity of illness, and length of hospitalization as criteria to achieve within group homogeneity. The resulting groups were then randomly assigned to the control condition or to one of the 28 therapists. Each group met one hour daily five days a week over a five month period. Before and after each therapy session patients were tested with a battery of six psychological tests.

Comparisons of post-therapy test behavior showed (1) patients treated by lay therapists were significantly superior to the untreated controls on four of the six tests, (2) those treated by professionals were superior to the untreated controls in two of the six, and (3) patients treated by lay therapists performed significantly better on three of the six tests than those treated by professionals with the other three differences insignificant. In conclusion Poser states:

64 The lay persons were eleven young women undergraduates with no background in psychology and two inpatients--one an alcoholic and the other suffering from hysteria. Among the professional therapists were seven certified psychiatrists with five to seventeen years experience, six psychiatric social workers, and two occupational therapists.
The findings support the conclusion that traditional training in the mental health profession may be neither optimal nor even necessary for the promotion of therapeutic behavior change in mental hospital patients.\textsuperscript{65}

In a sensitivity training group setting, Conyne used 48 students in a group counseling course to compare the effectiveness of self-directed (leaderless) groups with facilitator-directed (with leaders) groups.\textsuperscript{66} Assigning eight students to each of the three groups in each condition, all interaction was monitored and tape recorded over a five week period. Although both conditions showed pre to post-experimental changes there was no significant difference between conditions on the development of perceived self-congruency, and self-disclosure. Conyne concluded that self-directed group experiences could be a viable alternative to groups with leaders.

The quasi-experimental nature of the above studies, along with insufficient controls, have caused some serious concern about the validity of the results. Nevertheless the evidence indicates that other means of structuring group interactions are no less effective than using professional therapists.\textsuperscript{67} Why then has the role of the

\textsuperscript{65}Poser, "The Effect of Therapist's Training on Group Therapeutic Outcome."


leader been depicted as a central force in theories behind personal change in groups? Lieberman suggests several reasons: (1) most theories have been developed by highly charismatic leaders who have been myopic in overestimating their contribution to the curative process, (2) supercharged feelings toward the leader are often generated in groups, and (3) professionalization, distinctive languages and fee structures tend to emphasize the centrality, prominence, and indispensability of the leader's role.

Lieberman's reasoning may provide a rationale for the central role of focus group moderators. The very fact that moderators are present in structure the sessions and control group members. Moreover, most of the available literature on the use of this technique was written by focus group moderators. Who among them would suggest their role is less than central to the whole process? Their experience provides a very narrow view of the whole process. All of the procedures advocated for conducting focus groups have come from experience limited in scope to moderated groups. Therefore, what is known about "group dynamics" and group interaction is very narrowly constrained to the self-reports of a few people who view themselves as central to this process.

Professionalism, experience, distinctive languages, and fee structures may also account for the moderator's perceived centrality. Competition among research firms may cause the importance of moderator attributes such as experience, personality, and professional training
to be frequently overstated. The importance of the moderator's role to the focus group process was the final assumption examined in this study.

Summary

Four commonly made assumptions about focus group methodology were reviewed in this chapter: (1) focus group output is in some way better than the output of individual interviews; (2) the ideal focus group size is eight to twelve members; (3) focus group participants should be strangers; and (4) the focus group moderator plays a crucial role in accounting for the groups output. Contradictory evidence was presented which casts doubt on the validity of these assumptions.

A review of the brainstorming literature suggests that individuals working alone produce more ideas than individuals working in groups. Although the evidence is not as consistent, studies in the brainstorming area also suggest that the optimal group size is somewhat less than eight members. No evidence was found in either the focus group or brainstorming literature to support the acquaintanceship assumption. Several alternatives to moderated group discussions were tested in studies on psychotherapy. The results of these tests suggest the moderator may not be crucial for efficient group performance. Resolution of the contradictions between the results of brainstorming studies and the reports on focus groups have implications for the focus group methodology.
If a market researcher is interested in collecting a large number of different ideas, it would be helpful to know whether individual interviews or focus groups are more efficient for this purpose. Additionally, the effect of group size on idea generation has implications for research costs. The addition of group members beyond the optimal group size is not only inefficient in terms of resource utilization but may be counterproductive as well. Efficient resource utilization and productivity may also be adversely affected if fewer than the ideal number of participants show up for the group session. Research costs may also be reduced if acquaintances do not perform differently from strangers. It is frequently less costly to recruit group participants from the same organization and in many cases they are more reliable than participants not representing an organization. Testing the crucial role of the moderator provides answers to two types of questions. First, is the role of the moderator essential to the conduct of focus groups? The second, is the magnitude of the moderator's contribution worth the cost? Specific implications are detailed in the conclusions chapter.
CHAPTER 3
THEORETICAL EXPLANATIONS OF GROUP BEHAVIOR

Focus group researchers claim that groups release individual members from inhibited behavior while creative problem solving and brainstorming researchers argue that groups foster inhibited behavior. The latter group of researchers presents a rather lengthy stream of evidence to support their claim while the focus group researchers present none. Neither group has offered a theoretical explanation for their observed results. The intent of this chapter is to offer a theoretical foundation which will account for the reports from both areas. The theories deemed most appropriate for this purpose are deindividuation theory, social facilitation theory, diffusion of responsibility theory, and social impact theory.

Deindividuation

According to Zimbardo, the deindividuated internal state is characterized by diminished self-awareness and self-evaluation and less concern for the evaluation of others. Anonymity, group presence, altered responsibility, and arousal will all lead to deindividuation

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which in turn results in less restrained or uninhibited behavior. Several studies have supported the prediction that high anonymity and low identifiability result in uninhibited behavior. The effect of group size or audience presence on deindividuation has been reported less consistently.

Diener studied the effects of group presence, anonymity, and arousal on aggression and deindividuation in a laboratory experiment using 80 male introductory psychology course students. The presence of other group members allows an individual to lose his/her personal identity and should result in increased antinormative behavior. Anonymity produces conditions where people are not identifiable as individuals and therefore cannot be evaluated as individuals. Increased physical activity (e.g., mob activities such as throwing bricks) leads to increased arousal which tends to release uninhibited behavior.

The study was a factorial design with two levels of group presence (groups vs. alone), two levels of anonymity (anonymous vs. nonanonymous), and two levels of activity induced arousal (arousal vs. no arousal). Arousal was induced by having subjects throw bottles against a wall. Aggression was defined as "any potentially pain-producing stimuli" delivered to a role player acting as the target of

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69 See Dipboye, Robert L., "Alternative Approaches to Deindividuation," Psychological Bulletin, Vol. 84, No. 6 (November 1977), pp. 1057-1075, for a recent review of this literature.

aggressive behavior. The role player sat in the middle of a room in which types of aggressive weapons were placed (e.g., foam swords and newspaper balls). Subjects were told they could do "various things" to the role player with the materials present but specific behaviors were not suggested. An aggression score was compiled based on behavior recorded by two independent observers. Deindividuation was measured using a post-experimental questionnaire.

The aroused subjects displayed significantly more aggressive acts than the unaroused subjects. Individuals in the three person group condition were less aggressive than those in the alone condition. Anonymity (whether or not other members and the role player knew the subjects' names) did not result in greater aggressive behavior as expected. The latter two findings were contrary to the predictions from deindividuation theory and are relevant to the study reported here. The first is that even though subjects in the anonymous condition felt less concern about social evaluation, this did not result in a significant difference in aggressive behavior. This finding might suggest that anonymity is not a sufficient condition for causing a state of deindividuation. Anonymity alone may not account for the release in inhibition noted by focus group moderators. The second unexpected finding was that groups were less inclined to behave aggressively than individuals. Moreover, neither groups nor individuals exhibited evidence of the deinidivudated state as measured by the
questionnaire.\footnote{Although several deindividuation measures were used in this study, social evaluation (i.e., concern for what others would think of them) was the only one on which anonymous subjects differed significantly.} In this particular study groups did not cause a release of inhibition. High levels of aggression were only noted in the aroused subjects and the aggressive behavior was extreme. But the arousal manipulation was also extreme. Who would consider aggressive behavior unexpected after subjects, who had been throwing bottles at a wall, were told to do "various things" to the role player with weapons?

In another study on deindividuation theory, Gergen, Gergen, and Barton observed group behavior under extreme anonymity.\footnote{Kenneth Gergen, Mary M. Gergen and William H. Barton, "Deviance in the Dark," \textit{Psychology Today}, Vol.7, No. 5 (October 1973), pp. 129-130.} Approximately fifty 18-25 year old college students were divided into groups of eight, half male and half female. Each group was put into a 10x12 foot chamber with only a pinpoint of red light for one hour. The subjects were told "You will be left in the chamber for no more than an hour with some other people." "There are no rules... as to what you should do together." Tape recorders and infrared cameras were used to record the group's behavior. Subjects in this condition were compared with a lights-on condition to determine how a situation which is free from normative pressures affects behavior.

Compared to the lights-on condition, conversation in the dark became "muted, disjointed, and faltering." Subjects in the lighted
chamber found seats where they remained throughout the session. However, in the dark, subjects moved about continuously and frequently touching each other. Fifty percent of the dark room subjects reported hugging another person with 80 percent reporting sexual excitement. Some subjects reported feeling free, more serious, less anxious to be known by others, and less anxious to know others.

It can be argued that the red light in the Gergen study and the bottle throwing warm-up in the Diener study provided non-verbal cues to the subjects as to what behavior was expected of them. Although this possibility decreases one's confidence in the reported findings, it does not decrease the potential value of deindividuation theory in explaining group behavior.

In a follow-up study, Gergen and his associates used an additional 22 college students similar to those in the first experiment but told them they would meet after the session. Compared with the complete anonymity situation, these subjects were more likely to be bored, less likely to hug, and in general had less intense relationships.

Although studies conducted prior to the Diener study seemed to indicate anonymity was responsible for increased aggression, such was not the case in the Gergen studies. The Gergen report concludes "the state of anonymity seems to encourage whatever potentials are most prominent at the moment—whether for good or for ill." This statement is no doubt an attempt to reconcile the reports that in some situations anonymity leads to aggressive behavior and in other situations it leads to sexual behavior.
Dipboye, in an extensive review of the literature, attempts to integrate two different theoretical and research approaches to deindividuation. The above studies are examples of the first approach where lowered personal identifiability reduces moral constraints and results in antinormative behavior. For the deindividuated person, lowered identifiability is a positive or desirable experience. The second perspective views man as actively seeking an unique identity. A loss of personal identity results in a renewed search, presumably through antinormative behavior, for identity. The loss of identity in this case is a negative or undesirable experience. This contrast in approaches is summarized by Dipboye:

On the one hand, anonymity and the submergence of identity are pleasurable because the self-consciousness that inhibits behavior is minimized. On the other hand, there is a desire to be a discriminate stimulus in the social environment to define one's self as an unique individual and to maximize a sense of self. (p. 1058).

Whether or not the effect associated with deinindividuation is positive or negative may depend on the "inputs" or antecedent conditions. Among the conditions cited as fostering a positive effect are anonymity, large group size, diffusion of responsibility, and the presence of other people doing the same task. Negative effect is more closely

73 Dipboye, "Alternative Approaches to Deindividuation."
74 Ibid.
related to using category labels rather than individual's names, large groups, rigid adherence to rules, group as opposed to individual evaluations, and dominant leadership. Apparently large groups, under certain conditions, are related to both types of affect.

In attempting to integrate these differing perspectives on deindividuation, Dipboye hypothesizes three moderating variables, (1) structure of the social system, (2) the person's self-evaluation, and (3) prior self-awareness. He notes a common element among the studies demonstrating a release of inhibition; they involved groups of strangers in novel situations. In unorganized groups, facing the uncertain reactions of others in the group, deindividuation is likely to reduce inhibiting self-consciousness and arouse positive affect. In an organized permanent group where an individual occupies a role central to his or her self-concept, deindividuation is likely to serve as a threat arousing negative affect and a search for identity.

Given the above unorganized social situations, the reaction of individuals to deindividuation may depend upon their self-esteem. People with low self-esteem should have positive feelings when self-awareness or self-consciousness is reduced due to the effects of anonymity, being part of a large group, or responsibility is diffused. On the other hand, a person with high self-esteem facing the unorganized group may react by seeking out experiences that will heighten self-awareness and to react to deindividuation with negative feelings and identity-seeking behavior.

The final moderating variable is prior self-awareness. Reactions
to deindividuation may depend on the prior level of self-awareness but Dipboye is not at all clear on how the two concepts are related. Therefore, just what predictions would follow from this variable are uncertain.

Deindividuation theory was thought to provide a plausible explanation for what occurs in interacting discussion groups. A review of the recent studies in this area makes this notion less tenable. The manipulations used in many of these studies can be questioned as to whether they operationalize the concepts as Zimbardo intended. Notwithstanding these apparent shortcomings, arousal, anonymity, and group presence are still viewed potential antecedents to some of the observed behavior in brainstorming and focus groups. Group presence also plays an important role in yet another theory of group behavior.

Social Facilitation

Unlike deindividuation theory, social facilitation theory posits the mere presence of others is a sufficient condition for explaining behavior in groups. How the mere presence of others affects individual performance has been studied using either: (1) the audience paradigm, or (2) the coaction paradigm. Audience refers to the presence of passive spectators. The presence of others doing the same work simultaneously but independent of the subject is termed coaction. Studies using these paradigms have resulted in divergent findings. Some studies have shown that the mere presence of others facilitates individual performance while other studies have shown the mere presence
of others leads to decrements in performance.

Using the audience paradigm Travis,\textsuperscript{75} and Dashiell\textsuperscript{76} have shown that mere presence of others facilitates performance. Travis had college students learn a pursuit-rotor task. In this task, the subject is required to hold a stylus on a small revolving target. If the stylus wanders from the target an error is recorded. After learning the task, subjects were required to perform in the presence of from four to eight people. Travis found improvement in performance when other people were present. Dashiell also found improvement in simple multiplication or word association tasks when subjects performed in front of others. Not all studies have supported these findings, however.

Pessin asked college students to learn nonsense syllables either with others present or alone.\textsuperscript{77} When in front of an audience, subjects required more trials in learning the list than when alone, and the audience condition produced significantly more errors. Other researchers using other tasks have supported the Pessin finding. Zajonc has attempted to resolve these differences by noting the Travis and Dashiell studies involved well learned tasks while the Pessin studies involved learning or acquiring a set of new responses in front of an audience.

\textsuperscript{75}R. B. Zajonc, "Social Facilitation," \textit{Science} Vol. 149, No. 7 (July 1965), pp. 269-274.

\textsuperscript{76}Ibid.

In a review of many past studies involving humans, ants, birds and cockroaches, as well as a wide range of behaviors, Zajonc finds support for the idea that coaction and the presence of an audience facilitates learned responses and leads to decrements in performance of not well learned responses. Zajonc reasons that this effect is due to the audience enhancing the dominant response. The dominant response is the most profitable response whether it is the right or wrong one. If the task is well learned, the dominant response is the right response. If the task has not been learned, the dominant response is most likely to be the wrong response or error. Thus, Zajonc offers a simple generalization to cover both situations, "audience enhances the emission of dominant responses."

Zajonc also provides evidence that drive, arousal, and activation all enhance emission of dominant responses. It is hypothesized that the presence of others increases the individual's general arousal which enhances emission of dominant responses. Cottrell summarizes the Zajonc hypothesis as follows:

Thus the Zajonc hypothesis states that the mere presence of others enhances the emission of dominant responses by increasing the individual's level of general drive. If the appropriate responses are dominant, then the presence of others will improve performance by increasing the probability of correct responses. If, on the

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78 Zajonc, "Social Facilitation."
other hand, the appropriate responses are subordinate to stronger incorrect responses, then the presence of others will impair performance by increasing the probability of incorrect response.\(^7^9\) (p. 199)

Cottrell suggests individuals learn to anticipate positive and negative outcomes when others are present. As children grow up they are punished or rewarded in the presence of others. Individuals learn through classical conditioning to anticipate and associate outcomes with the presence of others. This anticipation and not the mere presence of others is hypothesized to increase the individual's drive level. The anticipation of negative outcomes should lead to decrements in performance of a not well learned task, while anticipated positive outcomes for a well learned task should facilitate performance. The presence of others may also lead to decrements in performance if each individual feels less responsible for completion of the task at hand.

**Diffusion of Responsibility**

Diffusion of responsibility is another plausible explanation of why groups are less productive than individuals. Two different areas of study on group behavior have led to the explication of a diffusion of responsibility.\(^8^0\) Wallach, Kogan and Bem have used a diffusion of responsibility hypothesis to explain "risky shifts" in group choice

\(^7^9\)Cottrell, "Social Facilitation," p. 199.

situations.\textsuperscript{81}

Both the unresponsive bystander and the member of a decision making group face essentially the same dilemma. Standing alone, each individual carries the burden of responsibility for the consequences of their decision to act or remain passive. Failure to intervene in an emergency results in the individual receiving all the blame. Likewise, the responsibility for a risky choice falls on the individual. If others are present, however, the individual is less likely to receive all the blame. The presence of other people, unlike the mere presence hypothesis in social facilitation theory, allows for interaction among group members.

Diffusion of responsibility to others in a crowd has been offered by Latané and Darley as an explanation for the lack of bystander intervention in emergency situations. To test this hypothesis, male and female introductory psychology students were used in an epileptic seizure study. Subjects were led to believe they would be part of a group discussion on problems associated with college life. Actually all participants except the subject were recorded voices. Each subject was put in a room and was told the discussion would be held over the intercom to preserve anonymity. Each participant was to present his or her problems to the group with a free discussion to follow. The epileptic seizure victim spoke first during the discussion pointing

out that he was prone to seizures, particularly when he was studying hard or taking an exam. The naive subject spoke last, after the last prerecorded voice was played. When it was the victim's next turn he feigned an epileptic seizure. The major independent variable was the number of other people in the discussion group. The lapsed time from the start of the seizure until the subject left the room to seek help was the dependent variable.

The speed of response along with the percent responding is presented in Table 1. Analysis of variance on the reciprocal of response time indicated the effect of group size was highly significant.

Table 1
Effects of Group Size on Likelihood and Speed of Response

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Percent responding by end of seizure</th>
<th>Percent ever responding</th>
<th>Time in seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (Subject and victim)</td>
<td>13</td>
<td>85</td>
<td>100</td>
<td>52</td>
</tr>
<tr>
<td>3 (Subject, victim, and one other)</td>
<td>26</td>
<td>62</td>
<td>85</td>
<td>93</td>
</tr>
<tr>
<td>6 (Subject, victim and 4 others)</td>
<td>13</td>
<td>31</td>
<td>62</td>
<td>166</td>
</tr>
</tbody>
</table>

All comparisons, except between two and three person groups, were significant. Latané and Darley do not see these findings as indication that the nonintervening subjects decided not to respond. Rather they see the subjects in a state of conflict and indecision.
On the one hand, subjects worried about the guilt and shame they would feel if they did not help the person in distress. On the other hand, they were concerned not to make fools of themselves by not overreacting, not to ruin the ongoing experiment by leaving their intercoms, and not to destroy the anonymous nature of the situation, which the experimenter had earlier stressed as important.\(^{82}\)

In a follow-up study using the same methodology, Latane and Darley varied acquaintanceship. Fourteen pairs of female friends were used, necessitating an alteration in the equipment to accommodate two people. Subjects who thought their friends were present were more likely to report the emergency and did so significantly faster than subjects who thought a stranger was there. Latane and Darley offer two lines of explanation, although post-experimental discussions with subjects provided no support for either. The first explanation is that subjects know they will eventually meet their friend and probably discuss the experiment. Wanting to maintain the friend's good opinion, the subject may react quickly to the emergency situation. Although responsibility is diffused, the diffusion effect is cancelled by the quickness of the report. The second explanation involves a sense of "we" rather than "me." According to this explanation responsibility cannot be diffused if friends share (in the "we" sense) 100 percent of the responsibility.

\(^{82}\)Latane and Darley, *The Unresponsive Bystander Why Doesn't He Help?*. 
Although diffusion of responsibility is a widely reported phenomenon, other types of social inhibition have been reported, namely social influence and audience inhibition. More recently Petty et al. reported group members put forth less cognitive effort in an evaluative task than did individuals. Seventy-five introductory psychology students of both sexes were asked to evaluate an editorial and a poem either alone or as one of four or sixteen others. After reading the communication, the students answered four questions that constituted a general evaluation of the communication and a set of three questions that comprised an effort index. As predicted, the individuals felt they put more effort into the task than did subjects in groups. The researchers claim this finding supports their hypothesis that responsibility diffusion should lead to reduced cognitive effort. Further implications in terms of social impact theory will be presented when the theory is presented.

Wallach et al. provide support for viewing diffusion of responsibility as the causal factor in a study on group risk taking. A rather elaborate procedure and set of instructions was developed to isolate two distinct components of the decision making process—group

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decision and group responsibility. The participants in this study were 336 male and female college undergraduates enrolled in the summer session. The procedure involved five experimental conditions representing combinations of group decision and group responsibility.

Booklets of questions from past College Board Examinations were given to the subjects. Each question was coded as to level of difficulty, ranging from ten percent of previous test takers failed to 90 percent failed. A correct answer could win from 17 cents to $1.50 depending on the level of difficulty of the question. Each group or individual first had to decide on the difficulty level and then answer the question. The personal responsibility condition involved a group decision on difficulty but each individual answered each question (therefore no responsibility to the group should be felt). The group responsibility—individual decision condition had each individual deciding on his own level of difficulty. One individual was randomly selected to answer the question with each member winning or losing based on that individual's performance. This should have resulted in a conservative choice of difficulty. The group responsibility-group decision conditions involved the group deciding on the difficulty with either a randomly selected individual or a responsible individual selected by the group answering the question. Since, in the random condition, each member faced an equal chance of being selected, felt responsibility to the group should have resulted in a conservative choice of difficulty. That is, each individual should have chosen a less difficult question than if he or she were only responsible to
himself of herself. Presumably if subjects felt responsible to the group they would want to maximize the chances of the group being rewarded for a correct answer.

The results show that in the personal responsibility—group decision condition the shift indicated increased risk taking compared to the control group. In the group responsibility-individual decision condition the shift was as expected in the conservative direction. When group responsibility and group decision were both present there was a strong shift toward greater risk taking whether the responsible person was randomly selected or chosen by the group. The researchers saw these findings as supportive of the diffusion of responsibility hypothesis. Since the individual was answering the questions at a difficulty level determined by the group, he may have felt that the group would have absolved him of the blame for failure. In summary, Wallach et al. suggested the group decision brought about diffusion of responsibility in two ways:

First, it appeared at a level of decision making itself, pushing decisions in the risky direction. Second, it reduces the felt responsibility of any group member designated to act as the group's representative. In the eyes of the responsible group member, the group shares his responsibility since the decision is a group product. 87

Higher risk levels with greater probability of failure apparently could be tolerated more in this situation than when the responsible individual

86 The shift index was the difference in means of a practice booklet involving no payoffs and the real booklet containing payoffs.

must carry out his responsibility without benefit of communicating with the group.

**Acquaintanceship**

None of the previously reviewed theories conceptualize acquaintance as an antecedent condition. However, studies on face-saving behavior have manipulated this factor with mixed results. The following section reviews studies on how acquaintance affects face-saving behavior.

Brown has shown that face-saving behavior occurred following the embarrassing act of sucking, biting, and licking a rubber pacifier.\(^{88}\) In the first of two experiments, freshmen male students were given a monetary payoff depending on which of four methods they chose to describe and demonstrate the above behavior to an audience. The highest payoff was for performing in front of an audience while being videotaped and the lowest for writing a descriptive statement which involved no audience contact. Understandably, subjects who sensed the pacifier accepted lower payoffs and suffered less public exposure (writing about the experience rather than describing the experience to a panel for $1.50) than did subjects sensing a rubber soldier. The major reason why subjects chose not to describe the oral experience to the panel was a fear of "looking foolish." The subjects who played with the rubber soldier avoided talking to a live panel, at a payoff of $1.50, because of feelings of "discomfort" rather than looking foolish.

A second experiment similar to the first was conducted to assess

the effects of an evaluative audience versus a non-evaluative audience. Using only the pacifier, with all male participants, Brown found the desire to avoid looking foolish in front of an audience was greater when they reported to an evaluative audience. When the subjects knew the audience consisted of all males, they exhibited more face-saving behavior than when the audience was both male and female.89

To what extent should face-saving occur when confronted with acquaintances rather than strangers? Two alternative answers to this question seem plausible. First, individuals may be more open or revealing in front of strangers if the relationship is short-lived and no future encounter is expected. The cost in terms of looking foolish in this situation is relatively low. On the other hand, acquaintanceship provides more opportunities to convey positive impressions to overcome the effects of looking foolish in a specific situation. Performing in front of strangers with no past or expected future interaction means there is only one opportunity to convey a positive impression. Therefore, the threat of looking foolish may be greater in front of strangers than in front of friends.

Brown and Garland,90 in the first of two experiments, tested the hypothesis that face-saving should be greater before an audience


90Brown and Garland, "The Effects of Incompetency, Audience Acquaintanceship, and Anticipated Evaluative Feedback in Face-Saving Behavior."
of acquaintances than before total strangers. Seventy-two freshman males attending an introductory psychology course participated in the experiment. For the acquaintance condition, half the subjects were told the audience consisted of classmates while the other half were told the audience was comprised of visitors from another campus. The task was to sing "Love is a Many-Splendored Thing" to a panel of evaluators sitting behind a one-way mirror. Contrary to the prediction there was no significant difference in the time spent singing, between subjects singing in front of acquaintances and subjects singing in front of total strangers.

In an attempt to strengthen the acquaintanceship manipulation, Brown and Garland conducted a second experiment. Forty male psychology students were assigned to one of three acquaintanceship conditions: (1) classmates previously nominated by the subjects as most friendly, (2) classmates they knew but not closest friends, and (3) students from another campus. The results indicated subjects sang for a significantly shorter time in front of close friends than acquaintances or strangers. Also, subjects sang longer (four times longer) when they did not expect to meet the strangers afterwards than when they expected a meeting. In a post-experimental questionnaire, subjects confronted with close friends indicated significantly greater embarrassment than those singing before acquaintances or strangers. The researchers see the results as casting considerable doubt on the argument that friends are seen as less threatening than strangers.

The effects of subject's and audiences' sex on face-saving behavior
as studied by Garland and Brown.\textsuperscript{91} Using twenty male and twenty female high school students as subjects, each subject was assigned to an audience condition of the same sex or the opposite sex. Among male singers the sex of the audience provided no significant difference. Females, however, sang four times longer in front of males than in front of females. Females facing other females reported highest on feelings of inadequacy, felt more foolish while singing, felt least similar to their audience, and felt that their audience was most critical of them.

**Social Impact Theory**

Latané has proposed a more general theory of social impact which should accommodate both the inhibiting and facilitating effects of a group on an individual.\textsuperscript{92} Latané defines social impact as "any effect of the presence or actions of other people on an individual." The effect may be "changes in physiological states, motives, cognitions, emotions, beliefs, values, and behavior that occur in an individual as a function of the real or imagined presence or actions of other people." Three basic principles of the theory will be briefly discussed.

The first principle states that the amount of impact experienced by an individual should be a multiplicative function of the strength


\textsuperscript{92}Latané, "Social Impact Theory and Group Influence: A Social Engineering Perspective."
(S), immediacy (I), and number (N) of social forces or \( I = f(SIN) \).

The second principle specifies a marginally decreasing impact on an individual as another person is added to a social situation. That is, the addition of a fourth person should have a greater impact than the addition of the eighth holding individual difference variables constant. Specifically, Latané proposes social impact (I) should equal some root (t) of the number of sources (N) times a constant (s) (i.e., \( I = sN^t \), where \( t < 1 \)).

To support the second principle, Latané and Harkins\(^9^3\) sought to determine if a power law applies to the multiplication of impact prediction. Ten of 26 introductory psychology course students were used in a pretest with the remaining sixteen used in the main experiment. The main experiment involved four cross-modality matching tasks. In two of the tasks, subjects matched brightness of light with sound levels and loudness with levels of luminance. In the other two, subjects were asked to imagine reciting a poem in front of audiences of size one, two, four, eight, and sixteen, whose faces were presented on colored slides. Subjects were to make the light as bright or the sound as loud as they would be anxious, nervous, or tense in performing in front of an audience whose faces they had just been shown. The audience was composed of either males or females in their early teens or late 30's. As predicted from social impact theory, tension increased at a decreasing rate as audience size increased. The exponent for the effect of

audience size was estimated to be .52.

Where the second principle deals with an individual as a target of social forces, the third principle deals with others together with the individual. Increasing strength, immediacy, and number of other people in this situation should lead to a division of impact. Each person in the group should feel less social force than if he/she were the sole target of the social forces. The effect of a social force from outside the group should be some power of the number of people that is negative but less than one. Therefore, the prediction to this situation would be \( I = sN^{-t} \) where \( 0 < t < 1 \). This principle was derived from the diffusion of responsibility hypothesis discussed previously.

Several studies support the idea of division of impact. A recent study by Petty \textit{et al.}\textsuperscript{94} (reviewed in the Diffusion of Responsibility section) examined the effects of group size on cognitive effort and evaluation. If cognitive effort, such as required in critically evaluating a poem or editorial, is viewed as costly to the individual and other people are available to share the cost or load, each individual may be tempted to reduce his/her own share. A trend analysis on the logarithm transforms of group size and effort index scores was significant, accounting for 91 percent of the variance. The exponent implied by the linear trend was—.10, supporting the hypothesis that perceived effort is an inverse power function of group size with an exponent less than one.

\textsuperscript{94}Richard Petty, \textit{et al.}, "The Effects of Group Size on Cognitive Effort and Evaluation,"
Theoretical Implications for Focus Group Research

The theories reviewed in this chapter may provide a basis for reconciling the contradictions between what focus group researchers perceive to occur in group sessions and what brainstorming researchers report as actually occurring. An attempt will be made to integrate deindividuation theory, social facilitation theory, and diffusion of responsibility into a more general theory of social impact. Rather than seeking to explain why individuals behave as they do in groups, the intent is to provide several plausible explanations for group outcomes and to test their plausibility. It will be left to future research to determine which specific theories are in fact applicable and in which situations.

Although most of Latane's studies have dealt with social impact in terms of social inhibition, it would appear in certain instances that the effect attributed to social impact could be attributed to deindividuation, identity seeking, and the facilitating effects of the presence of others. First, it will be shown how social impact theory could account for the observed phenomena in focus groups. The previously discussed theories will be integrated to help explain the predictions from social impact theory. A resulting model depicted in figure 3 is offered to bring the relevant theories into sharper focus. The model is not intended to represent a crucial test of competing theories. The current effort represents an exploration into explorations for discussion group phenomena and should be viewed as an attempt to determine which theoretical explanations are applicable in this specific situation.

According to the second principle of social impact theory (multiplication of impact), the social forces directed at an individual
Deindividuation
  Arousal
  Anonymity
  Group Presence

  Diminished Self-awareness

  Release of Inhibition

  Multiplication of Impact
  \((I=SN+t, t>1\) or \(o<t<1\))

  Nature of Participation

Social Facilitation
  Mere Presence of others

  Increased Drive

  Gives Dominant Response

  Division of Impact
  \((I=SN-t, t<1\))

  Decision to Participate

Diffusion of Responsibility
  Presence of Others

  Diffusion of Responsibility

Figure 3.
Integrative Model of Social Impact
member could be expected to increase at a marginally decreasing rate as the size of the group increases. In addition to the Latané studies, it would appear the brainstorming studies conform to this principle. The data for real groups presented in figure 2 (p. 33) appear to support this principle although a trend analysis was not done on these data.

Social facilitation theory provides a plausible explanation for the multiplication of impact finding. If the presence of others is actually facilitating, the dominant response would most likely be well rehearsed thoughts rather than spontaneous thoughts. In addition, the fear of being negatively evaluated by group members and little promise of reward for participation could inhibit spontaneous thought generation. With the repetition of previously stated ideas and irrelevant stories occupying much of the groups' discussion time, it would seem likely that the number of different ideas generated would increase, at a decreasing rate, as group size increased. That is, the number of ideas should be fitted by an exponential function \( I = SN^t \) with a positive exponent that is less than one \((0 < t < 1)\). However, focus group researchers claim a synergistic effect or a release of inhibition in group discussions among strangers. These researchers imply that the number of ideas generated is a monotonically increasing function of group size \((t > 1)\), at least for the range of group sizes from one to sixteen members. One explanation for this effect might be that discussion participants become deindividuated or are freed from personal inhibition. Therefore, the lack of concern for personal evaluation would lead to greater freedom in thought generation and more different ideas of better quality. Both social facilitation theory and deindividuation theory are depicted in
figure 3 as affecting the nature of the individuals contribution to the group discussion (i.e., the quantity and quality of the thoughts presented). If deindividuation theory explains group behavior an exponent greater than one would be expected and if social facilitation theory explains the behavior the exponent should be bounded by zero and one.

Another argument against the synergism hypothesis follows from the identity seeking side of deindividuation studies. Although some participants may seek solace by hiding in the crowd, others—most likely those with high self esteem—may have a disruptive effect with their attempts to reestablish their lost personal identity. The focus group moderator, through the previously discussed techniques of control, may serve to thwart attempts to hide and at the same time serve as a road block to identity seeking. Insofar as hiding and seeking activities continue, they may be disfunctional to the group's task. By performing the very activities moderators deem necessary control techniques may be unwittingly attenuating the groups effectiveness. As with the social facilitation explanation the exponent would be expected to lie between zero and one \((0 < t < 1)\).

To illustrate the above effects, let \(I\) be the number of ideas generated in group discussion. The individual is the target of social forces for all other members of the group. The inhibiting effects of the group, as well as the hypothesized synergistic effects can be modeled by simply changing the exponent in Latane's formula. Figure 4 summarizes the effects, on the number of ideas generated as a function of group inhibition, facilitation, and no group effect. If focus groups provide a synergistic effect through interaction, an exponent greater
than one would be expected. That is, the number of ideas generated by the group would be greater than the sum of the ideas generated by individual members. If group size is inhibiting, an exponent of less than one would be expected. The number of ideas generated by the group would be less than the sum of the contributions of an equal number of individuals. An exponent of one suggests that group size has no effect or the number of ideas generated by a group is the same as the number generated by members independent of each other.

![Graph showing the number of ideas as a function of group inhibition, facilitation, and no group size effect.](image)

**Figure 4.**

Number of Ideas as a Function of Group Inhibition, Facilitation, and No Group Size Effect.

The third principle (division of impact) depicts the individual as part of a group receiving communication from another single individual such as the moderator or discussion participant. The division or diffusion of impact hypothesis would suggest that, as group size increases any one individual would feel less compelled to attend to the comments of others or would be less likely to participate in the discussion.
Therefore, the number of ideas contributed by each individual should decrease as group size increases. This effect would be modeled by an exponential function but in this case the exponent would be negative as depicted in the third column of figure 3. The diffusion effect may be caused by audience inhibition, diffusion of responsibility for participation to others, or by diffusion of cognitive effort. Figure 5 provides a more graphic representation of this function. Impact (I) in this figure could be either the number of ideas generated per individual or the amount of effort each individual devoted to the task.

![Figure 5](image)

\[ I = sN^{-t} \text{ where } 0 < t < 1 \]

**Figure 5.**

**Diffusion of Impact as a Function of Group Size.**

A major difference between performing in front of an audience and participating in an interacting discussion group is that each individual is both the source and the target of social forces in a discussion group. As a result each individual switches roles from a talker to listener. When talking the individual is a target of social forces emanating from the group and when listening the individual is a target of social forces emanating from the speaker. As group size increases the social forces aimed at the speaker should increase. Also, as group size increases there is a greater chance for diffusion of the
force emanating from any one speaker. This suggests the presence of both the multiplication of impact principle and the diffusion of impact principle in interacting discussion groups. Since the function that depicts the diffusion process (I=tN^-t) is simply the inverse of the multiplication function (I=N^t), either function could have been used in this study. The average number of ideas per person would have been the dependent variable if interest was primarily in the diffusion process. However, since one of the purposes of the current study was to determine which of two competing hypotheses (synergism versus diminishing returns) would predict the effects of group size or group productivity, the multiplication function was used.

How can the principles of social impact theory be used to explain focus group outcomes? If the multiplication of impact is accounted for by the previously discussed sources of social impact, then individual interviewees should be the target of fewer social forces than individuals in focus groups. Freed of the constraints faced by members of groups, the summed ideas generated by individual interviews should be significantly greater than an equal number of individuals participating in a focus group. Also the number of ideas generated by individuals should be a linear function of group size. Bouchard and Hare suggested that, rather than a linear function, diminishing returns may occur because of increased redundancy as group size increases. Based on the results of their study, however, this idea was rejected. Their data appear to suggest an exponent equal to 1 as depicted in figure 2.

\[95\text{Bouchard and Hare, "Size, Performance and Potential in Brain-Storming Groups."} \]
It is not unreasonable to assume groups might produce ideas of higher judged quality than individuals. The expression of opposing viewpoints should lead to recombination and refinement of previously stated ideas. On the other hand, quality may be positively correlated with quality. By generating more ideas the probability of finding higher quality ideas is increased. Taylor et al. using covariance analysis support the latter notion. When controlling for the total number of ideas generated, the difference between nominal and real groups, on the number of unique ideas, was not significant. They concluded the difference between nominal and real groups was primarily a difference in number of responses and not a difference in the uniqueness or originality of the responses produced. If the presence of others leads to well rehearsed tales of past experience, however, the quality of ideas may suffer. By dwelling on irrelevant topics and ideas, group discussion participants may spend relatively less time in discussion that leads to "good" ideas than individual interviewees.

In the previous discussion on the principles of social impact theory two causes were suggested which could account for the expected diminishing returns in focus groups. The first has something to do with the group itself. In some sense the group may be inhibiting. The second has to do with what the group moderator does or does not do. A review of the psychotherapy literature suggests a less critical role for the moderator. The effect of the moderator on the number of generated ideas can be tested by comparing moderated groups with unmoderated
groups. Moreover, the effect of the interviewer on the individual can be tested in the same way. Finally, by subtracting the effects of the group, the number of ideas from moderated groups less the number of ideas from unmoderated groups, a comparison can be made between the group moderator and the individual interviewer.

In summary, social impact theory may be useful in accounting for several observed phenomena in focus groups and brainstorming groups. According to the second principle (multiplication of impact), as the size of the group increases the social force directed at an individual member could be expected to increase at a marginally decreasing rate. The fear of being negatively evaluated by other group members and little promise of reward for participation could inhibit individual participation in group discussion. On the other hand the group could facilitate performance by rewarding or providing positive evaluation for the individual participant.

The social forces could have two effects. If the individual feels uncomfortable in relating ideas to the group, he/she may withhold participation because of potentially negative outcome. Since there are no goals to strive for in focus groups there is no way for the individual to share in the rewards associated with meeting the group's goals. Therefore, one might expect group members to minimize the cost of failure. If the cost of failure is looking foolish, individuals may withhold participation and let others assume the risk of failure. Also, an ambiguous situation calling for unrehearsed behavior may cause people to look to others for support. If others respond in a safe or neutral way, the individual may see comfort in doing likewise. If
others on the other hand respond brilliantly, the individual may feel his/her contribution would appear foolish by comparison. The net result might be a diffusion of responsibility or an avoidance of responsibility for contributing to the group output. This effect, as depicted in figure 5 under diffusion of responsibility, will have a negative influence on the individual's decision to participate in the conversation. The net result could be fewer individuals participating in the discussion and consequently fewer ideas from the group as a whole.

Summary

Four theories were presented in this chapter for the purpose of determining which ones might explain the empirical results of this study. The theories reviewed were deindividuation theory, social facilitation theory, diffusion of responsibility theory, and social impact theory. The first three were incorporated into the more general theory of social impact. Deindividuation theory was viewed as a plausible explanation for the uninhibited behavior of individuals in groups. On the other hand, if the presence of others causes the repetition of well rehearsed anecdotes, social facilitation theory may explain the notion that groups inhibit individual behavior. Additionally, to the extent others are present to share the task, individuals may feel less responsible for task accomplishment, and put forth less effort than if they alone were responsible for the task.

Since none of the theories explicitly account for the effects of acquaintanceship, studies in face-saving behavior were reviewed
to determine whether or not this factor was as important as focus group reports indicated. Two findings are applicable to the current study. First, subjects who performed in front of close friends felt greater embarrassment than subjects who performed in front of strangers. The second finding was that females appeared to be more apprehensive when performing in front of other females than when performing in front of males. These findings are thought to support the focus group contention that friends have an inhibiting effect on group interaction.

Following the literature review was a discussion on how social impact theory could account for the observed phenomena in focus groups. Since this theory predicts social impact as a multiplicative function of group size, the sign and magnitude of the exponent was prescribed for each of the other three theories if it were to account for the results. An exponent greater than one (t>1) would be expected if individuals felt deindividuated, an exponent between zero and one (0<t<1) would be expected if groups were facilitating and between zero and was predicted if task responsibility was diffused. The specific hypotheses to be tested will be presented in the next chapter.
CHAPTER 4
METHODOLOGY

Introduction

The preceding review of theoretical studies provides justification for several hypotheses that were tested in this study. The intent of these hypotheses was to resolve the differences between the observations of focus group moderators and the reported empirical studies on group problem-solving and brainstorming. This chapter will outline the methodology used in this research. The following sections describe (1) the hypotheses and the rationale behind them, (2) the topic that was discussed by the respondents, (3) the research design and experimental procedure, and (4) the variables and how they were operationalized.

Research Hypotheses

The following hypotheses were derived from the contradictions between reports on focus groups and empirical studies on problem-solving and brainstorming. Each general hypotheses is the product of a focus group assumption discussed in chapter two and will be presented along with this attendant research hypotheses. Results from the tests on the research hypotheses will subsequently be presented as evidence which either substantiates or contravenes the focus group assumptions.

Focus group researchers commonly assume that "two heads are better than one," or groups are better than individuals in generating
new ideas. Yet, a vast number of studies on creative problem-solving and brainstorming suggest individuals working alone not only produce more different ideas than groups but higher quality ideas. Theoretical support for both the focus group observations and brainstorming studies was presented in terms of deindividuation theory, and diffusion of responsibility. Arousal and/or anonymity resulting in a release of inhibitions may cause groups to generate more ideas than individuals according to deindividuation theory. On the other hand, identity seeking may result in disruptive behavior which might lower group productivity compared with individuals. Still another explanation deals with one's own responsibility. If other people are present, responsibility for participation in group discussion may be diffused. Reluctance to participate in a group discussion may account for greater productivity among individuals than groups. The first general hypothesis (H1.0) embodies the assumption that focus groups provide more information than individual interviews.

H1.00: Groups produce more different ideas than the combined output of individuals.

H1.10: Moderated focus groups of eight members will generate more different ideas than the combined output of eight individual interviews.

H1.12: Moderated focus groups of four members will generate more different ideas than the combined output of four individual interviews.

H1.21: Unmoderated groups of eight members will generate more different ideas than the combined output of eight individuals working alone.

H1.22: Unmoderated groups of four members will generate more different ideas than the combined output of four individuals working alone.
The first two research hypotheses (H_{1.10} and H_{1.11}) reflect the implied predictions from the focus group literature. Contradictions of the brainstorming findings, which also reflect the focus group perspective, are presented as the third and fourth research hypotheses (H_{1.20} and H_{1.21}).

The next set of hypotheses raise the issue of whether or not the difference between focus groups and individual interviews is related to group size. According to focus group researchers, the superiority of groups over individuals should increase as group size increases. Brainstorming researchers would expect the superiority of individuals to be enhanced as group size increases.

\[ H_{1.31} \]: The difference, in number of ideas generated, between focus groups and individual interviews is greater in groups of eight members than in groups of four members.

\[ H_{1.32} \]: The difference, in number of ideas generated, between unmoderated groups and individuals working alone is greater in groups of eight members than in groups of four members.

Brainstorming researchers report that higher quality ideas are generated by individuals than by groups. This clearly contradicts what is thought to result from focus group research. Whether or not the combined output of individuals is of higher quality than the output of focus groups will be tested in the following hypothesis.

\[ H_{1.40} \]: Focus groups will generate ideas of higher judged quality than individual interviews.

Bouchard and his colleagues have attempted to make real group performance comparable to that of nominal groups by (1) providing the subjects training, (2) using different brainstorming techniques,
and (3) using a sequencing procedure.\textsuperscript{95} The literature on focus groups suggests the moderators may be instrumental in accomplishing this end. If the moderator can alleviate the time mismanagement problems discussed by Bouchard and Hare, moderators should perhaps be used in group problem-solving and brainstorming. Doubt as to the effectiveness of group moderators has been raised in the studies reported by Lieberman.\textsuperscript{96} If focus groups perform equally well without moderators, lower cost methods of conducting research should be explored. The effect of the moderators on idea generation was tested in the second general hypothesis and the relevant research hypotheses.

\begin{align*}
H_{2.00}: & \text{ Moderated focus groups will generate more different ideas than groups without moderators.} \\
H_{2.11}: & \text{ Moderated focus groups of eight members will generate more different ideas than unmoderated groups of eight members.} \\
H_{2.12}: & \text{ Moderated focus groups of four members will generate more different ideas than unmoderated groups of four members.} \\
H_{2.13}: & \text{ Moderated focus groups will generate ideas of higher judged quality than unmoderated groups.}
\end{align*}

As group size increases, the role of the moderators may become more critical. Guidance and management activities would be expected to be more important in large groups than small. This common sense notion was tested in the next hypothesis.

\begin{align*}
H_{2.21}: & \text{ For the number of different ideas generated, the difference between moderated groups and unmoderated groups is greater in groups of eight members than in groups of four members.}
\end{align*}

\textsuperscript{95}This literature was reviews in Chapter 2.

\textsuperscript{96}Lieberman, "Change Induction in Small Groups."
The difference between unmoderated groups and moderated groups may be due to the effectiveness of the moderator. The moderator's effectiveness can be measured by subtracting the number of ideas generated by unmoderated groups from those generated by moderated groups. This difference is thought to be a result the moderator's participation in the interview process and will be referred to as the moderator effect. Doing the same for nominal groups of individuals working alone and individuals being interviewed, should produce a measure of the interviewer's effectiveness which will be referred to as the interviewer effect. Since expertise, personality and the procedures used are crucial to the focus group process, it might be expected that focus group moderators are more effective than individual interviewers. It is generally acknowledged that focus group moderators are required to have more education, skill, and experience than interviewers. The nature of the moderating task is also quite different from the interviewing task--requiring more coordination and management activities. A comparison of the interviewer effect with the moderator effect, should indicate whether the interviewer or moderator is more effective in generating ideas.

$H_{2.31}$: For the number of different ideas generated, the moderator effect in groups of eight members is greater than the interviewer effect.

$H_{2.32}$: For the number of different ideas generated, the moderator effect in groups of four members is greater than the interviewer effect.

97This observation is based on the author's telephone conversations with personnel at market research firms and advertising agencies.
Eight member focus groups should generate significantly more ideas than groups of four members if the optimum group size is eight. The brainstorming literature, however, appears to suggest no significant difference between these two group sizes. The third general hypothesis and the associated research hypotheses summarize the focus group position on this issue.

$H_{3.00}$: Groups of eight members will generate more different ideas than groups of four members.

$H_{3.11}$: Moderated groups of eight members will generate more different ideas than moderated groups of four members.

$H_{3.12}$: Unmoderated groups of eight members will generate more different ideas than unmoderated groups of four members.

Synergism implies group output which is greater than the sum of the contributions of individuals working independently of each other. One reason given for wanting larger focus group sizes was a greater synergistic effect. A counter argument to the synergism hypothesis is that the incremental number of ideas generated as group size increases will decrease -- this was referred to as diminishing returns. Theoretical support for the latter prediction was provided by social impact theory. Testing these competing hypotheses requires the antithetical notion that individuals are groups of one member -- groups by definition have more than one member.

$H_{3.21}$: The incremental number of different ideas will increase as moderated group size increases from one to eight members.

$H_{3.22}$: The incremental number of different ideas will increase as unmoderated group size increases from one to eight members.
Anonymity has been offered by focus group researchers as a factor accounting for enthusiastic, honest, and spontaneous responses among group participants. Brainstorming studies report that groups are inhibiting. However, none of the latter studies attempted to manipulate anonymity. In all of the studies reviewed, the subjects were either students from the same college or were acquaintances at their place of employment. Therefore, it is doubtful that subjects felt any degree of anonymity. Acquaintanceship among group members could have resulted in inhibition. Acquaintances may be seen as more threatening and providing more social sanctions on behavior than strangers. The anonymity afforded by strangers might lead to less inhibited behavior and greater spontaneity of response according to individuation theory. These ideas were tested in the following hypothesis:

\[ H_{4.0}: \text{Focus groups of eight strangers will generate more different ideas than focus groups of eight acquaintances.} \]

The Research Setting

This study was conducted at the Behavioral Science Laboratory at The Ohio State University in Columbus, Ohio from May 31 to June 12, 1978. Three experimental sessions were held each day for a period of seven days with a final make-up session held on June 12th. The first session on each day began at 10:15 a.m., the second at 1:00 p.m. and the third at 7:15 p.m. All of the data were collected with the relatively short time period to avoid problems such as a news story relating to the discussion topic appearing in the media.

The Behavioral Science Lab provided several advantages for this type of study. First, the lab was equipped to provide
equivalent interview settings across experimental conditions. Small rooms were available for individuals with a large room to be used for group discussions. Second, the lab had recording equipment and a trained technician to insure that the equipment was set up and operating properly. Third, the lab is located under the stands of the O.S.U. football stadium, with adequate parking facilities to which most respondents could drive without difficulty. Fourth, this lab had been previously used by commercial market research firms to conduct

**The Discussion Topic**

This project dealt solely with the exploratory approach described in Calder's typology of approaches to focus group interviewing. Exploratory research is usually employed when relatively little background information or knowledge is available. The major criterion in choosing a discussion topic, therefore, was that little or no information was available on the topic.

A second criterion was that the topic be fairly complex. Some topic areas might raise so few discussion issues that the "average" person could mention all of them in one interview. Such a topic area would virtually assure no differences between experimental conditions and would not provide a satisfactory test of the hypotheses. Also, it would not represent typical focus group topics.

A third criterion was relevance of the discussion topic to a marketing problem (e.g., eliciting new product ideas). An additional factor was the availability of funds through the Department of Defense for an exploratory study on the public's thoughts about expanding the role of

---

women in the military. The Department of Defense wanted the information in order to formulate contingency promotion appeals if Congress approved the expanded role of women in the armed services. In addition to the funding, the sponsor also expressed interest in the research and agreed to judge the quality of the ideas generated in this project.

The topic selected, "Expanding the Role of Women in the Military," met all of the above criteria. The research problem was to uncover ideas the public held about expanding the types of jobs that should be open to women in the military service. The Department of Defense was interested in the general public's reaction to several levels of female involvement in the military. These levels ranged from the more traditional roles (e.g., nurses, clerks, and administrators) to full combat status including hand-to-hand combat.

Recruiting and Sample Characteristics

The participants in this study were recruited from the women's auxiliary of a children's hospital and from a garden club in Columbus, Ohio. Since social class homogeneity within focus groups is claimed to be important by authors writing on the use of focus groups, it was determined that all respondents included in this study be as homogeneous as possible. Since most members of the hospital auxiliary and the garden club were 30 to 50 year old middle class housewives residing in suburban areas, they met the criterion of homogeneity. Another reason for selecting the auxiliary was that they frequently provide respondents for local marketing research firms and are experienced in recruiting. Demographic characteristics are shown in Appendix A.
Payment for participation in this study was a $10 per subject donation to the auxiliary. All recruiting was done by a member of the organization at no extra cost. Subjects were selected by the recruiter from approximately two hundred neighborhood units of the auxiliary with a combined membership of over 4,300 members. No more than two members from the same neighborhood unit were allowed to ride together. The effect of this decision on the acquaintanceship factor will be discussed later. The recruiter asked the women to participate in a study on "Job Opportunities for Women." The nature of the experimental conditions was not revealed nor was there any mention of the military. Every effort was made to maintain the subject's anonymity to the researcher, and the subjects were asked to provide only their first names and the name of their organization.

The Design

The design was a partial factorial design with group size (three levels), group type (two levels), acquaintanceship (two levels), and moderator (two levels) as the factors. Since four or eight members were required for a single observation, the cost of a full factorial design (with sixteen experimental conditions) would have been prohibitive. Also, much of the additional information provided by a factorial design would have been irrelevant. Since acquaintances are not possible in individual interviews, the level of acquaintanceship was dropped from both individual conditions and the nominal groups. Acquaintanceship was also dropped from groups of size four because none of the hypothesized interactions involving this variable were thought to be important. Focus
groups are typically not done with four members so the effects of
acquaintanceship of four member groups is not of great importance. Since
the primary interest in acquaintanceship was in how it would affect focus
results and not unmoderated groups, acquaintances were also dropped from
the unmoderated conditions. The resulting design is depicted in Figure 1.
The design can be viewed as a series of experiments: group size (one,
four, and eight) within real and stranger conditions; group size and
group type within stranger conditions; moderator within stranger's
group type (nominal vs. real), and group size (one, four and eight):
and acquaintanceship within moderated groups.

<table>
<thead>
<tr>
<th>Group Size</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Four</td>
<td>Eight</td>
</tr>
<tr>
<td></td>
<td>Real</td>
<td>Nominal</td>
</tr>
<tr>
<td>Strangers</td>
<td>Strangers</td>
<td>Strangers</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>n=32</td>
<td>n=32</td>
<td>n=16</td>
</tr>
<tr>
<td>g=4</td>
<td>g=4</td>
<td>g=4</td>
</tr>
</tbody>
</table>

n= number of individuals per cell

g= number of groups per cell

Figure 6

RESEARCH DESIGN

In this design the nominal groups were randomly selected from individuals
in groups of size one.
Independent Variables

The independent variables in this study were (1) group type, (2) moderator, (3) group size, and (4) acquaintanceship. Each variable will be presented along with the method for operationalizing it.

Group Type. Group type was varied at two levels. Either respondents were part of a real interacting discussion group or they were aggregated into nominal groups after discussing the topic individually. Nominal groups represent the combined output of individuals without the effects of group interaction. Therefore, nominal groups serve as a baseline against which the effects of real group interaction can be measured.

Moderator. Groups were either moderated or unmoderated. Real groups were moderated by focus group moderators; and the interviewer was the moderator in nominal groups. Four experienced focus group moderators were used to conduct focus groups of each size and three experienced interviewers were used to conduct individual interviews. Since each moderator used slightly different approaches to moderating groups, any moderator effect could not have been attributed to a single moderator. The results should, therefore, be more generalizable to other focus group moderators. Moderator styles must be somewhat similar (e.g., all unstructured) or within cell variance will overpower between cell variance and mask treatment effects.

For the purpose of this study, individual interviewers are viewed as being analogous to the moderator condition—except they moderate individuals rather than groups. There is a confound in comparisons
between nominal groups and focus groups because the moderators and interviewers were not the same people. In practice, focus group moderators do not interview individuals and interviewers do not moderate groups. Therefore, this confound was acceptable because it reflects actual field research conditions and increases realism.

**Group Size.** Groups were either comprised of one, four, or eight members. These sizes reflect those used in individual interviews, brainstorming groups, and focus groups respectively. It would have been desirable to have additional groups of twelve to increase the levels in this treatment beyond the hypothesized optimal group size. However, it was decided the additional funds that would be required could be more effectively utilized by increasing the number of observations within each cell.

**Acquaintanceship.** Acquaintancehip was manipulated by assigning eight members of different neighborhood units to the stranger condition and eight members of the same neighborhood unit to the acquaintanceship condition. The first condition is comparable to a high anonymity condition and the second is comparable to a relatively low anonymity condition. Choosing acquaintances from the same organization was done for two reasons. First, if these acquaintances were no less productive than groups of strangers, all eight people in a focus group could be recruited from the same organization. This might both simplify respondent recruiting and reduce the cost. The second reason is that it would be difficult to find groups of eight that had stronger friendship ties. Pairs of personal friends could have been recruited but the pairs might be strangers to each other. In short, it was determined that more
control could be achieved by recruiting acquaintances within an organization and there were practical management implications in doing so.

**Dependent Variables**

Two primary dependent variables were used in this study: (1) the number of different or unique ideas relevant to the discussion topic; and (2) the judged quality of ideas.

The number of different relevant ideas is simply the total number of ideas relevant to the discussion topic minus the redundant ideas. An idea was only counted once even though it was given by different members of a group. This was done for nominal groups by eliminating redundancy after the individual interviews were combined into a group transcript.

The second primary dependent variable of interest is the quality of ideas generated. There is little agreement among researchers as to what constitutes quality of ideas. Most operational definitions of quality are specific to the particular task the subjects were asked to do. Some of the definitions that have been used are (1) originality, (2) feasibility, (3) effectiveness, (4) importance, and (5) uniqueness.

Much like the tasks in creative problem-solving and brainstorming studies, the specific task in this study was to determine what the perceived consequences (i.e., benefits and/or problems) would be if women were to be included in combat positions. This task differed from the tasks used in brainstorming studies because the instruction calling for "free wheeling" or wild ideas was omitted. (See Appendix B for the task instructions). The focus of this task, therefore, was not on creativity;
however, this is not to say that the subjects were uncreative. The purpose of the task was to generate ideas useful to a policy maker in one of two ways: (1) provide insights into focal issues for a communications strategy, and (2) suggest areas of public concern to be included in a survey study.

It seemed to make sense that the policy maker should judge the ideas in terms of how useful or how good they might be for his purposes. Consequently, the individual that would be making policy suggestions agreed to do the quality judging. He was provided lists of ideas and a number of suggestions to help use his time most efficiently. These suggestions are outlined in Appendix C.

**Explanatory Variables.** Other dependent variables were required to link the theory to the empirical results. Eleven point rating scales on a post-experimental questionnaire were used for this purpose. If focus groups provide more ideas and/or higher quality ideas it could be due to the respondents (1) finding the task more exciting, (2) feeling more enthusiastic, (3) providing more spontaneous responses, and/or (4) finding the task more enjoyable. Reports on focus groups suggest all of the above characterized reactions of participants in these sessions.

According to deindividuation theory, a deindividuated state during focus group sessions would cause subjects to feel (1) free, (2) carefree, (3) anonymous, (4) uninhibited, and/or (5) relaxed. On the other hand, if subjects were individuated they might feel (1) restrained, (2) concerned, (3) inhibited, and/or (4) nervous. Scales to measure how subjects felt during this task were included on the questionnaire.
Focus group productivity may be the result of participants becoming more involved in the task and expending more effort. The results of Petty et al.'s study on cognitive effort and evaluation found individuals to be more involved and expend more effort than groups. This was in accord with their predictions from social impact theory. The effort index from the Petty study was also incorporated into the questionnaire. However, the task in this study, unlike the task in Petty's study, was not meant to be effortful.

Other measures included in the questionnaire were (1) satisfaction with participant's own participation, (2) satisfaction with other group members' participation, (3) satisfaction with the moderator's participation, (4) general attitude toward the moderator, (5) general attitude toward "women in the military," and (6) perceived adequacy of available time. See Appendix D for the questionnaires.

Experimental Procedure

This section will deal with (1) the unit of analysis, (2) choice of moderators and interviewers, (3) subject assignment to experimental conditions, and (4) nature of experimental conditions.

The Unit of Analysis.

The main interest in this study was on group performance, therefore the group was chosen as both the unit of measurement and analysis.

The Petty effort index consisted of the summated ratings on three questionnaire items designed to measure (1) how hard the subjects were trying, (2) how much effort they put into the task, and (3) how involved they were in the task.
Self-report data obtained through a post-experimental questionnaire given to individuals will be used to help explain group performance.

Selection and Instruction of Moderators and Interviewers.

Letters explaining the nature of the study and requesting the donation of focus group moderator and interviewer time were sent to advertising agencies and market research firms. As a result, four experienced focus group moderators and three experienced interviewers were donated to this project. In order that variances in moderator sex and age would not be a factor, all moderators and interviewers were women within the allowable age range for the respondents.

Each focus group moderator came to Columbus and conducted an afternoon and evening group on the first day and a morning group on the second day. This procedure eliminated potential fatigue problems which might arise if all three groups had been conducted on the same day. Each moderator conducted focus groups of four strangers, eight strangers, and eight acquaintances. Each type of group was systematically varied among moderators as to time of day. Because of problems in scheduling interviewers, no individual interviews were conducted during the evening sessions.\textsuperscript{100}

All moderators and interviewers received the same set of instructions and were briefed in essentially the same manner. The instructions are provided in Appendix D. The firms donating their services were told

\textsuperscript{100} It should be noted that the small number of individual interviewers resulted in one interviewer doing sixteen individual interviews in one eight hour period. This was less than ideal since fatigue could have adversely affected her performance. If focus groups generated more ideas than individual interviews it could be partially attributed to the performance of this one interviewer.
what the study was about and what hypotheses were being tested. All questions from the participating firms and their moderators were answered, and no information was withheld. Any attempt at deception or withholding information would not only have been unethical but would have resulted in the failure to obtain the donated services which were so critical to the external validity of this study.

**Assignment to Experimental Conditions.**

Upon subjects' arrival at the Behavioral Science Lab, the researcher listed their first names and the name of their organization. The list did not reflect order of arrival because it was compiled after all subjects had arrived and had been seated for several minutes. All subjects were greeted at the door and ushered into a waiting room where coffee was available. No attempt was made to isolate individual subjects so there was an opportunity for strangers to converse and to become casually acquainted. This could weaken the acquaintanceship manipulation by decreasing anonymity. The waiting time was limited to approximately ten minutes.

When all subjects for a given session had arrived, every other one on the list was selected for the group session; the remainder were assigned to individual sessions. As a result, a few pairs of subjects that came together were assigned to the same group in the stranger condition.¹⁰¹ In order to assure that last minute no-shows did not result in an insufficient number of subjects to fulfill the needed group sizes,

¹⁰¹It is not known how many times this occurred. Two focus group moderators pointed out that they each had one pair of friends in their groups of eight strangers.
four additional subjects were recruited for each session. If all subjects showed up, the additional ones were put into individual conditions. On the days individual interviews were conducted, six to eight extra individuals were recruited for each session.

Subjects selected for the group conditions were ushered first into the group room for their discussion. The remaining subjects were then taken, one at a time, to the individual rooms. When the group session was finished, all subjects were reunited and debriefed. First, they were asked what they thought the study was about. The subjects were then told the true purpose of the study and were asked to not discuss their participation with anyone until the study was concluded.

The Nature of the Experimental Conditions

The experimental conditions in this study were (1) individuals working alone, (2) individual interviews, and (3) groups of four strangers without moderators, (4) groups of eight strangers without moderators, (5) moderated focus groups with four strangers, (6) moderated focus groups with eight strangers, and (7) moderated focus groups with eight acquaintances.

Individuals working alone were led to small rooms (approximately 8 ft. X 10 ft.) and told "Please have a seat, read the instructions and do as they say. I will be back in about 30 minutes." The subjects sat at a table facing the wall with the set of instructions shown in Appendix

102 Among the subjects remaining in the waiting room, numerous references were frequently made as to why they were left behind and what was happening to their friends. Their main concern seemed to be getting reunited with the person they were riding with. They were assured they would be rejoined with their friend. During the debriefing the subjects said they were aware most of the others were being treated differently but they were not apprehensive or overly concerned in any way. They also indicated they had no idea why they were being treated differently and that it had no bearing in their performance.
E. The microphones were placed approximately two feet in front of the subjects with one on each side so the subjects did not have to look directly at them. Pretests indicated subjects "froze" when a single mike was placed directly in front of them, and they did not talk much.

Thirty minutes were allowed for each person to read the instructions and state her ideas. Ten minutes were usually required to read the instructions, leaving approximately twenty minutes for idea generation. At the end of 30 minutes, the researcher returned with a post-experimental questionnaire (see Appendix D for the post-experimental questionnaire). All subjects appeared to be finished by the time the researcher returned; the average time of recorded conversations was from ten to fifteen minutes. Upon completion of the questionnaire, which usually took from eight to ten minutes, the subjects were taken to a second waiting room to be reunited with the others.

Individual interviews were conducted in the rooms used by the persons working alone. A slight alteration of the seating arrangement was necessary to accomodate the interviewer.

Time equivalence across experimental conditions was controlled by limiting talking time per subject to the average time available to individuals working alone. Written instructions were not used in this condition. However, the interviewers used approximately five minutes of the available time for either reading the instructions or paraphrasing the scenario. Fifteen additional minutes were available for probing and questionning. Time equivalence could not be controlled exactly because the amount of interviewer participation varied across subjects. As in the individual-alone condition, the available time seemed adequate. At the end of twenty
minutes the post-experimental questionnaire was administered, and subjects were taken to the waiting room.

The unmoderated group discussions of four and eight members were held in a room approximately twelve by twenty feet. Subjects were seated at a conference type table adjusted for the size of the group. The table used for size four groups was approximately four by five feet. That used for size eight groups was approximately four by seven feet. The subjects were arranged as depicted in figure 7.

![Diagram of seating arrangement](image)

Figure 7. Seating Arrangement

Subjects were positioned so that each was approximately from two to three feet from a microphone.

Each subject was provided the same instructions as those provided the individuals working alone except for minor changes in wording to reflect the group condition. One hour and fifteen minutes were allowed for groups of four and two hours were allowed for groups of eight. Typically, fifteen minutes were spent on introductions and reading the instructions. At the end of the allotted time, discussion was interrupted and the post-experimental questionnaire was administered.
Cubicles were provided each subject for the purpose of filling out the questionnaire. Past experience indicated group discussion often continues into the questionnaire stage if measures are not taken to prevent it. Upon completion of the questionnaire items, all subjects — both individuals and groups — were assembled and debriefed.

Moderated focus groups of four strangers, eight strangers, and eight acquaintances were conducted in the same room as were the unmoderated groups. The table arrangement was altered to accommodate the moderator. In groups of size four the moderator sat at the end with two subjects on each side. Three subjects sat on each of the two sides with two at the end when size eight groups were conducted.

As previously noted, four group moderators chose not to use the written instructions. They also used a portion of the available time (approximately 30 minutes) to lead into the discussion topic. However, the allotted time for moderated focus groups was equivalent to the time allotted to unmoderated groups. The use of that time was essentially beyond the control of the researcher. A couple of groups, in each of the moderated-unmoderated conditions, finished before the allotted time was up. When this occurred, or when the allotted time ran out, the group discussion was terminated and the post-experimental questionnaire was administered.

Data Preparation and Editing

Preparing tape recordings of twenty group interviews and sixty-four individual interviews for analysis was an enormously complex and time consuming task. Although the following sections provide some insight
into the major problem areas and decisions that were made, they do not capture the full magnitude of the data preparation task.

**Data Preparation.** Fifty hours of recorded conversation resulted in six hundred pages of verbatim transcripts. The researcher randomly selected segments from all transcripts and checked them against the original tapes to insure the transcripts were accurate. This check resulted in two group recordings being transcribed a second time because of gross inaccuracies in the first transcript. The most frequent problem was inaudible comments. Some women lowered their voices at the very end of a thought making it difficult to understand the last few words. In groups, but not in individual conditions, laughter and people talking at the same time masked some quips and short comments. Many of these comments were not retrievable. After listening to many hours of recorded conversation, it is the researcher's judgment that very few of these comments would have qualified as relevant ideas and, therefore, the loss of these comments did not significantly affect the results.

**Editing.** The editing procedure involved determining what linguistic unit was to be considered an idea, who the editors would be, and preparation of the instructions to provide consistency between editors. Horowitz and Newman distinguish between major ideas, subordinate ideas, ancillary ideas, communicative signals, and orientation signals.¹⁰³ A major idea is an utterance that expresses a thought in a meaningful, relevant, and unique way. The thought must be meaningful to the editor.

must be relevant to the topic area and must be unique rather than a restatement or elaboration of a previously stated idea. Instructions to the editors provide more insight into these definitions. The complete instructions to the editors are provided in Appendix F. Subordinate ideas are expansions or amplifications of previously stated ideas. Ancillary ideas are meaningful and unique ideas but are not relevant to the topic.

Communication and orientation signals are not ideas. A communication signal is simply a signal by the respondent that an idea is forthcoming such as "I have one more idea along that line." An orientation signal is often used by the subject to make sure he or she is doing what is expected of them such as "I'm not sure this is what you are looking for, but..." The first task of the editors was to isolate the three types of ideas from the signals. This was done by having the editors bracket all ideas whether major, subordinate, or ancillary. A second pass through the transcripts was made to determine which ideas met the criteria to be labeled major ideas.

Editors. Two criteria were employed in choosing the editors. Since the respondents in this study had a relatively high level of education it was determined the editors should be at least as well educated. This equivalence was to ensure that the linguistic skills of the editors were at a comparable level to the material they were editing. The second criterion was that the editors have a managerial perspective. Since the information from the study was to be used by managers it was determined that ideas that make sense to managers would be preferred to some more objective editing
that might be accomplished using psychology students or communications people. Therefore, two female MBA students were used to edit the transcripts.

The editors were provided a set of instructions and six pages of transcript randomly selected from one hundred pages that had been transcribed. Several decision rules were added after the editors practiced on the six pages of transcripts. Even though the individual interviews and focus groups were supposed to be non-directive, many questions were answered by simply agreeing or disagreeing. Since the study is primarily concerned with conditions that foster spontaneous responses, it was determined that agreement type responses did not constitute spontaneous thought production by the respondents. Rather, the thought came from the interviewer and the respondent simply accepted or rejected it. If the accept/reject statement was followed by a related idea or example of why the respondent agreed, it was counted as an idea. This was more of a problem in individual interviews than focus groups.

Thoughts deemed too general (i.e., "It would be a problem") were not counted as ideas. A statement with an obvious referent was counted as an idea. For example, "It's an opportunity to learn skills, to travel..." when taken out of context would not be counted as an idea. Knowing, however, that the conversation dealt with opportunities for women in the military, the editors counted this idea. Examples which were used to more clearly explain other ideas were counted if they were explained. A simple listing of examples did not constitute a list of ideas.
Summary

The purpose of this chapter has been to explicate the research hypotheses and to outline the methodology used to test them. Four general hypotheses, reflecting current assumptions about focus group interviewing, were presented along with the specific research hypotheses which were tested in the study. The rationale behind each hypothesis was based on focus group reports, brainstorming studies, and common sense notions about how and why groups perform differently from individuals. These differences were measured using a methodology that replicates actual field conditions in which focus group interviews and individual interviews are conducted.

The Behavioral Science Laboratory at the Ohio State University provided the setting for interviews with 192 middle class housewives. The interview topic was chosen to reflect a task which one might expect focus groups to handle reasonably well. The task involved collecting information which was to be used in solving a "real world" marketing problem.

A partial factorial research design was chosen with group type, moderator, group size, and acquaintanceship as the factors. Justification for each factor was provided and the method used to operationalize it was explained. Comparisons among experimental conditions were made using two dependent variables: (1) the number of different relevant ideas, and (2) the judged quality of ideas. In addition, explanatory variables, used in linking the theory to the empirical results, were measured by post-experimental questionnaire.
The external validity of the study was enhanced by using experienced moderators and interviewers who were donated to the project. Specific attention, in formulating the experimental procedure, was given to controlling extraneous factors by: (1) standardizing instructions, (2) insuring comparable interviewing facilities; (3) randomly assigning subjects to conditions, and (4) making equivalent time available for interviewing. Since editing and data preparation were particularly crucial in this study, the chapter ended with a discussion of the methods used.
CHAPTER 5

RESULTS

Introduction

The results from tests of the previously stated hypotheses will be presented in this chapter. Each hypothesis comprised a comparison between two means or among several means and was tested using the t statistic. All comparisons were planned but not orthogonal. It can be argued that the t statistics is inappropriate for nonorthogonal comparisons.\textsuperscript{104} However, the author, with one note of caution, sees the t test as the most appropriate method of analyses in this case. First, all comparisons were planned in advance of data collection and in no way represent data snooping which should be done using the more conservative statistical tests.\textsuperscript{105} Second, the failure to reject the null hypotheses in several instances will be interpreted as support for one of two competing theories or common sense notions. In these instances, failure to reject will be interpreted with greater confidence if a more powerful statistical test is used. The t statistic provides a relatively more powerful test than the other procedures that were considered. Power is a particularly crucial factor when the small sample size is taken into account. More will be said about power and

\textsuperscript{104}For a concise review of arguments surrounding this issue see Roger E. Kirk, Experimental Design: Procedures for the Behavioral Sciences (Belmont, California: Brooks/Cole Publishing Company, 1968), pp. 82-86.

\textsuperscript{105}Ibid.
sample size in Chapter six. Finally, the consequences of spuriously rejecting a true null hypothesis (Type I error) were considered to be less serious than the consequences resulting from the failure to reject a false null hypothesis (Type II error). Therefore, more stringent tests which control for the experiment wide error rate were not considered necessary.

Results of Hypothesis Tests

Thirteen research hypotheses were derived to test the following general hypotheses: (1) groups produce more different ideas than the combined output of individuals; (2) moderated focus groups will generate more different ideas than groups without moderators; (3) groups of eight members will generate more different ideas than groups of four members; and (4) focus groups of eight strangers will generate more different ideas than focus groups of eight acquaintances. Additionally, two hypotheses which address the issue of diminishing returns and two more which compare the quality of ideas were presented. Each of the seventeen research hypotheses will be presented and discussed along with the general hypothesis to which it is most closely related. A graphical summary of the data is provided in figure 8. More detail is presented in figure 9 which includes the mean number of ideas and the standard deviations for each experimental condition.

Figure 10 shows the contrast coefficients used to test each hypothesis, the observed difference between means, the critical t value a difference must exceed to be significant, and the probability
Figure 8

Mean Number of Relevant Ideas as a Function of Group Size
of falsely rejecting the null hypothesis (Type I error).\textsuperscript{106} The within cell means presented in figure 9 and the contrast coefficients from figure 10 (part a) can be used to calculate the observed difference (part b) in figure 10. For example, the comparison between unmoderated groups of four and individuals working alone (H\textsubscript{1.22}) was accomplished by a t test on the difference between the means of cells three and five \[ (1)(63.5) + (-1)(100.7) = 37.2 \].\textsuperscript{107} The differences for the more complex contrasts were derived in a similar manner. For illustrative purposes, the moderator effect versus the interviewer effect hypothesis (H\textsubscript{2.32}) will be used. This comparison involves the difference between the moderator effect (cell four minus cell three) and the interviewer effect (cell six minus cell five). The means from figure 9 and the proper coefficients used to establish the above relationship are as follows:

\[ (1)(78.0) + (-1)(63.5) - (1)(112.2) + (-1)(100.7) = 3. \]

\textsuperscript{106} Two-tailed tests were used in all cases. The \( \alpha \) level for rejecting \( H_0 \) was .05.

\textsuperscript{107} The t statistics for comparisons among two means is given by

\[ t = \frac{C_j (\bar{X}_j) + (C_j') (\bar{X}_j')}{{\sqrt{2 \text{MS error}}}} \]

and for more than two means by

\[ t = \frac{C_j (\bar{X}_j) + C_j' (\bar{X}_j') + \cdots + C_{j''} (\bar{X}_{j''})}{{\sqrt{\text{MS error}}} \left[ \frac{(C_j)^2}{n_j} + \frac{(C_j')^2}{n_j'} + \cdots + \frac{(C_{j''})^2}{n_{j''}} \right]} \]

where

\[ C_j = \text{coefficient for the } j\text{th mean}, \bar{X}_j = j\text{th treatment mean}, \text{MS error} = \text{unbiased estimate of the population error variance, and } n_j = \text{the number of scores in the } j\text{th treatment level.} \]
<table>
<thead>
<tr>
<th>Group Size</th>
<th>One</th>
<th>Four</th>
<th>Eight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Type</td>
<td>Real</td>
<td>Real</td>
<td>Nominal</td>
</tr>
<tr>
<td>Acquaintanceship</td>
<td>Strangers</td>
<td>Strangers</td>
<td>Strangers</td>
</tr>
<tr>
<td>Moderator</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cell Number</td>
<td>1, 2</td>
<td>3, 4</td>
<td>5, 6</td>
</tr>
<tr>
<td>Mean</td>
<td>24.2</td>
<td>27.7</td>
<td>63.5</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.1</td>
<td>8.5</td>
<td>20.2</td>
</tr>
</tbody>
</table>

FIGURE 9

Mean Number of Different Relevant Ideas
<table>
<thead>
<tr>
<th>Cell Number (a)</th>
<th>(b) Observed Difference</th>
<th>(c) t value</th>
<th>(d) Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Groups vs. Individuals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1.11</td>
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<td>-85.0</td>
<td>-5.03</td>
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<tr>
<td>H1.12</td>
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<td>-34.2</td>
<td>-2.03</td>
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<tr>
<td>H1.21</td>
<td>0 0 0 0 0 0 1 0 0 -1 0</td>
<td>-55.7</td>
<td>-3.30</td>
</tr>
<tr>
<td>H1.22</td>
<td>0 0 1 0 -1 0 0 0 0 0 0</td>
<td>-37.2</td>
<td>-2.20</td>
</tr>
<tr>
<td>H1.31</td>
<td>0 0 0 -1 0 1 0 1 0 0 -1</td>
<td>-50.8</td>
<td>-2.12</td>
</tr>
<tr>
<td>H1.32</td>
<td>0 0 -1 0 1 0 1 0 0 -1 0</td>
<td>-18.6</td>
<td>.78</td>
</tr>
<tr>
<td><strong>Moderator</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>H2.11</td>
<td>0 0 0 0 0 0 0 -1 1 0 0 0</td>
<td>5.0</td>
<td>.30</td>
</tr>
<tr>
<td>H2.12</td>
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<td>14.5</td>
<td>.86</td>
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<td>H2.21</td>
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</tr>
<tr>
<td>H2.31</td>
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<td>-29.2</td>
<td>-1.22</td>
</tr>
<tr>
<td>H2.32</td>
<td>0 0 -1 1 1 -1 0 0 0 0 0 0</td>
<td>3.0</td>
<td>.12</td>
</tr>
<tr>
<td><strong>Group Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H3.11</td>
<td>0 0 0 -1 0 0 1 0 0 0 0 0</td>
<td>36.7</td>
<td>2.17</td>
</tr>
<tr>
<td>H3.12</td>
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<td>46.2</td>
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<td><strong>Acquaintanceship</strong></td>
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<td></td>
</tr>
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<td>H4.00</td>
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<td>26.7</td>
<td>1.59</td>
</tr>
</tbody>
</table>

Note: The probabilities were obtained by graphical interpolation.

FIGURE 10
Contrast Coefficients, Observed Differences, and t Values for Tests on the Number of Relevant Ideas
This equation can be written as

\[(1)(78.0) + (-1)(63.5) + (-1)(112.2) + (1)(100.7) = 3,\]

where the contrast coefficients are (1), (-1), (-1), and (1) for cells four, three, six, and five respectively. See \(H_2.32\) in figure 10 to verify this result.\(^{103}\) Now the results will be explored in detail.

**Groups Compared with Individuals**

The primary interest in the study was whether or not focus groups produced more different ideas than individual interviews. Looking at only those ideas relevant to the discussion topic, nominal groups of eight individual interviews generated significantly more ideas than eight member focus groups. On average, nominal groups of eight member generated eighty-five more ideas than focus groups of eight members. Therefore, research hypothesis \(H_{1.11}\) appears to be rejected. The same result can be noted when the analysis involves four individuals. Nominal groups of four individual interviews produced 34.2 more ideas than four member focus groups.

The above result is not limited to moderated groups. In comparing unmoderated discussion groups with individuals working alone, the individuals appear to be more productive. It makes little difference whether the comparison is between eight member groups \((H_{1.21})\) or four member groups \((H_{1.22})\), individuals produced significantly more ideas.

\(^{108}\) The \(t\) value \((t = .1255)\) was obtained by:

\[
\frac{(1)(78.0) + (-1)(63.5) + (-1)(112.2) + (1)(100.7)}{\sqrt{571.6133} \left[ \frac{(1)^2}{4} + \frac{(-1)^2}{4} + \frac{(-1)^2}{4} + \frac{(1)^2}{4} \right]} = .1255.
\]
For moderated groups the difference between individuals and groups of eight members was significantly greater than the difference between the individuals and groups of four members. This result was not found in the unmoderated conditions. The contrast between individuals and groups was more disparate at the level of eight members than four members, but it was not significant.

The objections of one firm participating in the study led to moderators not using the provided instructions. This resulted in focus groups spending the first fifteen or twenty minutes in general discussion. It was decided that any theoretical explanations would have to be offered in light of differences in the total number of unique ideas rather than the number of unique ideas relevant to the discussion topic. Additional analyses were done on both four person and eight person focus groups of strangers using the total number of different ideas as the dependent measure. These results are presented in figures 11 and 12. The gap between focus groups and nominal groups of eight members (H_{1.11}) decreased to 59.75 ideas when total ideas was used but this difference was still significant. However, for four person groups

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It was originally planned to use the same set of instructions in all experimental conditions so the only differences among conditions was due to the planned manipulations. After receiving the focus group moderator's guide and instructions, one research firm objected to using the instructions for the subjects. These instructions required the subjects to begin discussing the relevant topic immediately without the preceding discussion of a more general issue. The representative of this firm pointed out focus groups did not use instructions and if this was to be more than an "academic exercise" the moderator should have the choice of using them or not using them. Subsequently moderators and interviewers were given a choice and all decided to not use the instructions.
<table>
<thead>
<tr>
<th>Group Size</th>
<th>One</th>
<th>Four</th>
<th>Eight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Type</td>
<td>Real</td>
<td>Real</td>
<td>Nominal</td>
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<tr>
<td>Acquaintanceship</td>
<td>Strangers</td>
<td>Strangers</td>
<td>Strangers</td>
</tr>
<tr>
<td>Moderator</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cell Number</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Mean</td>
<td>24.2</td>
<td>27.7</td>
<td>63.5</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.1</td>
<td>8.5</td>
<td>20.2</td>
</tr>
</tbody>
</table>

FIGURE 11
Mean Number of Total Ideas
<table>
<thead>
<tr>
<th>Cell Number (a)</th>
<th>(b)Observed Differences</th>
<th>(c)t value</th>
<th>(d)Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>i 2 3 4 5 6 7 8 9 10 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups vs. Individuals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1.11 0 0 0 0 0 0 1 0 0 -1</td>
<td>-59.7</td>
<td>-3.39</td>
<td>.002</td>
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<tr>
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<td>.433</td>
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<td>-55.7</td>
<td>-3.30</td>
<td>.003</td>
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<td>-2.20</td>
<td>.038</td>
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<td>-1.83</td>
<td>.075</td>
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<td>.407</td>
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<td></td>
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<td>1.72</td>
<td>.096</td>
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<td>34.7</td>
<td>1.97</td>
<td>.060</td>
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<td>7.800</td>
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<tr>
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<td>-4.0</td>
<td>-1.6</td>
<td>7.800</td>
</tr>
<tr>
<td>H2.32 0 0 -1 1 1 -1 0 0 0 0 0</td>
<td>23.2</td>
<td>.93</td>
<td>.360</td>
</tr>
<tr>
<td>Group Size</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>H3.11 0 0 0 -1 0 0 0 1 0 0 0</td>
<td>41.7</td>
<td>2.37</td>
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<td>.010</td>
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<td>Acquaintanceship</td>
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<tr>
<td>H4.00 0 0 0 0 0 0 0 1 -1 0 0</td>
<td>--- *</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Φ The transcripts from focus groups of acquaintances were not reedited for the total number of ideas.

Note: The probabilities were obtained by graphical interpolation.

FIGURE 12
Contrast Coefficients, Observed Differences, and t Values for Tests on the Total Number of Ideas
The difference was not significant. The difference between nominal groups and focus groups as group size went from four to eight members was no longer significant when the total number of different ideas was used as the criterion.

It could be argued that the number of ideas is not in itself an acceptable criterion for evaluating the performance of focus groups. Although individuals generate more ideas, focus groups should generate qualitatively better ideas. A separate analysis of the judged quality of ideas was conducted. Table 2 shows the mean and standard deviation of the summed quality of ideas for groups of eight members.

Table 2
Mean and Standard Deviations for the Summed Quality of Ideas

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmoderated Groups</td>
<td>193.5</td>
<td>92.7</td>
</tr>
<tr>
<td>Moderated Groups</td>
<td>218.7</td>
<td>27.4</td>
</tr>
<tr>
<td>Individual Interviews</td>
<td>367.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

The same information is provided for the number of "good" ideas in Table 3. "Good" ideas were those ideas that were rated a four or five.

Table 3
Mean and Standard Deviations for the Number of "Good" Ideas

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmoderated Groups</td>
<td>29.0</td>
<td>16.4</td>
</tr>
<tr>
<td>Moderated Groups</td>
<td>40.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Individual Interviews</td>
<td>62.5</td>
<td>11.1</td>
</tr>
</tbody>
</table>
on a five-point scale. (This scale is presented in Appendix C.) Results of the analysis are presented in figure 13. Contrary to the prediction of

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Cell Number</th>
<th>Observed Difference</th>
<th>T Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summed Quality</td>
<td>1</td>
<td>-1</td>
<td>-148.5</td>
<td>-7.9</td>
</tr>
<tr>
<td>Good Ideas</td>
<td>1</td>
<td>-1</td>
<td>-22.5</td>
<td>-3.4</td>
</tr>
</tbody>
</table>

FIGURE 13
Comparisons on Quality of Ideas Between Focus Groups and Individual Interviews

hypothesis $H_{1.23}$, the summed quality of ideas from individual interviews was significantly higher than the summed quality of ideas from focus groups. Individual interviews also accounted for significantly more "good" ideas than focus groups.

One of the theoretical explanations offered for the superiority of focus groups over individual interviews was a release of inhibition due to being part of a group. Several questionnaire items attempted to measure this possibility. The only questionnaire item that indicated a significant difference between nominal groups and focus groups was the anonymity item. Individuals that were individually interviewed felt more anonymous ($\bar{x} = 5.6875$) than did individuals in focus groups of strangers ($\bar{x} = 4.063$).\textsuperscript{110} This seems to contradict the notion that individuals in focus groups employ a hide-in-the-crowd strategy or

\textsuperscript{110} A two-tailed t-test with pooled variance estimate was used in this analysis. Anonymity was the only item significant at the .05 $\alpha$ level.
become deindividuated due to greater anonymity. This same result was found in comparing four person focus groups \( (\bar{X} = 4.5625) \) with individual interviews \( (\bar{X} = 5.7500) \). Additionally, four person focus groups indicated they felt more carefree and less concerned \( (\bar{X} = 4.5, p = .165) \). Also, it should be noted that no differences in felt anonymity existed between four person and eight person focus groups. If individuals employ a hide-in-the-crowd strategy it would be expected that they would feel more anonymous in larger groups. This, apparently, is not the case.

Before concluding that individuals confronted with an interviewer felt more anonymous than individuals facing a group, an alternative hypothesis will be explored. When the subjects were recruited they were told they would be anonymous. Again, when they arrived at the interview site they were requested to give their first names only. It was quite apparent to all participants that the interviewers, moderators, and the researcher knew only their first names. Also, there was no reason for the subjects to expect any future interaction with the people conducting the study. The case might have been somewhat different for subjects participating in group discussions. The threat of future encounters and, therefore, decreased anonymity may have affected group members coming from the same organization. This would not have been the case if subjects were not recruited from the same organization. This could account for individuals feeling more anonymous than groups. However, if this were the case, groups of strangers should have felt more anonymity than groups of acquaintances. This was not found \( (t = .46, p = .647) \). An alternative explanation will be presented in chapter six. Therefore, it is reasonable to assume that decreased anonymity was due to the presence of other group members and not due to the instructions
the recruiter read to the subjects.

Ideally, focus group moderators and individual interviewers should have been the same person. Since moderators typically do not conduct individual interviews and interviewers do not conduct focus groups, this was not possible. One positive aspect of this confound is that it reflects actual field conditions. Each technique purportedly requires different types of training and interviewing skills. Focus group moderators appear to require more training and social skills than are required of interviewers.

The negative side of this confound is that the test results may be attributable to moderator-interviewer differences. A semantic differential format was used on the questionnaire to measure moderator-interviewer differences on four variables. Respondents were asked "How did you feel about the moderator during this task?" As can be seen in table 2, there was no significant difference between how subjects felt about the moderator and how they felt about the interviewer. Based on personal conversations with both moderators and interviewers, it is the researcher's judgment that the focus group moderators had more formal education and more training in the use of their technique. If the confound affected the results it should have done so in favor of focus group moderators.

Table 4
Differences in Average Ratings of Feelings Toward Moderators and Interviewers

<table>
<thead>
<tr>
<th></th>
<th>Interviewer</th>
<th>Moderator</th>
<th>T-value</th>
<th>2-Tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive</td>
<td>5.87</td>
<td>5.59</td>
<td>0.57</td>
<td>0.569</td>
</tr>
<tr>
<td>Sincere</td>
<td>6.56</td>
<td>6.00</td>
<td>-1.46</td>
<td>0.150</td>
</tr>
<tr>
<td>Domineering</td>
<td>3.18</td>
<td>3.69</td>
<td>1.12</td>
<td>0.267</td>
</tr>
<tr>
<td>Friendly</td>
<td>6.34</td>
<td>6.34</td>
<td>0.00</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Moderated Groups Compared with Unmoderated Groups

Groups led by focus group moderators did not produce significantly more ideas than unmoderated discussion groups. Whether moderators led groups of four members (H2.12) or groups of eight members (H2.11), this same result was noted. As in the comparison between focus groups and nominal groups, this result could be due to the difference in techniques and the time available for discussing the relevant topic. Therefore, the comparison was also made using the total number of different ideas. Focus groups were superior by 34.7 ideas for four person groups and 30.2 ideas for eight person groups but these differences were not significant at the .05 level.

It could be argued reasonably that the focus group moderator brings expertise to the focus group that is not available in unmoderated group discussions. It might be expected that professional moderators would elicit ideas of higher judged quality than would be elicited in unmoderated groups which were under the influence of informal discussion leaders. However, from figure 14 this does not appear to be the case. Using the judged quality of ideas as the dependent variable, focus groups were not significantly different from unmoderated groups. Nor were focus groups different in terms of number of good ideas.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Cell Number</th>
<th>Observed Difference</th>
<th>T Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summed Quality</td>
<td>-1</td>
<td>1</td>
<td>25.2</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.62</td>
</tr>
<tr>
<td>Good Ideas</td>
<td>-1</td>
<td>1</td>
<td>11.0</td>
<td>1.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26</td>
</tr>
</tbody>
</table>

FIGURE 14
Comparisons on Quality of Ideas Between Focus Groups and Unmoderated Groups
Several items were included in the questionnaire to measure some dimensions of the atmosphere in focus groups which have been reported by focus group moderators. Focus groups have been reported as exciting and enjoyable with participants being enthusiastic in responding spontaneously. The evidence in table 5 seems to support these observations. All responses were made on eleven point bi-polar semantic differential scales. The items were (1) How exciting did you find the task? (2) How enthusiastic did you feel in doing this task?

Table 5

<table>
<thead>
<tr>
<th></th>
<th>Focus Groups</th>
<th>Unmoderated Groups</th>
<th>T-Value</th>
<th>2-Tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitement</td>
<td>6.66</td>
<td>4.23</td>
<td>-3.52</td>
<td>.001</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>6.72</td>
<td>4.97</td>
<td>-2.47</td>
<td>.016</td>
</tr>
<tr>
<td>Spontaneity</td>
<td>7.56</td>
<td>6.77</td>
<td>-1.10</td>
<td>.278</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>7.53</td>
<td>5.71</td>
<td>-2.48</td>
<td>.016</td>
</tr>
</tbody>
</table>

(3) How spontaneous was your contribution to this task? and (4) How enjoyable was this task? Clearly focus groups seem to generate more excitement, more enthusiasm, and greater enjoyment for the discussion participants than unmoderated groups. Apparently the focus group atmosphere, which has been referred to by some enthusiastic supporters as "magic," is not necessarily related to the group's output in terms of quantity or quality of information.

Group size is not a significant factor in determining focus group moderator's effectiveness. That is, moderators are no more or less effective in groups of eight members than in groups of four members ($H_{2.21}$). This is so, regardless of whether relevant-unique ideas
or total-unique ideas is the dependent measure. Therefore, Hypothesis $H_{2.21}$ has not been supported by the data.

Individual interviewers were no more effective than focus group moderators in eliciting relevant-unique ideas ($H_{2.31}$ and $H_{2.32}$). Additional support for this result came when the total number of unique ideas generated in focus group sessions was used in the comparison—no significant difference was detected. Failure to support the moderator effect hypothesis seems to suggest the reported difference between nominal groups and focus groups may be due to the inhibiting effects of group interaction and not moderator-interviewer differences. Group inhibition was previously related to group size.

The Effects of Group Size

If groups inhibit responses from participating members, then this effect should be present to greater degree in large groups than small groups. Groups of eight members may generate more ideas than groups of four members, but if the larger groups cause greater inhibition then the difference in magnitude of idea production should not be proportional to the increase in group size. That is, groups of eight members should not produce twice as many ideas as groups of four members. In fact, the brainstorming literature suggests there should be no significant difference between four person groups and eight person groups.

Contrary to the brainstorming reports and in support of focus group researchers, there was a significant group size effect. Focus groups of eight members generated 36.7 more ideas than focus groups of four members. Additionally, unmoderated groups of eight members generated 46.2 more ideas than groups of four members. These findings tend to
support hypotheses $H_{3.11}$ and $H_{3.12}$. However, in looking at the data presented in figures 9 and 11, it is clear that eight member groups do not produce twice as many ideas as four member groups.

The above analysis does not appear to support the synergism hypotheses ($H_{3.21}$ and $H_{3.22}$). Attention will now be directed towards determining whether or not diminishing returns occur as group size increases.

According to social impact theory, the relationship between the number of ideas generated and group size should be a multiplicative function with an exponent between zero and one ($0<t<1$). The existence of this power function implies a linear relationship in log-log coordinates. Since it was expected that the data from this study would conform to the multiplication of impact principle, an attempt was made to determine the exact nature of the function ($I=N^t$). For this purpose the log transformation of both the dependent variable (number of relevant-unique ideas) and the independent variable (group size) were subjected to regression analysis. If the incremental difference in the number ideas generated decreases as group size increases, the regression analysis should provide a significant linear function using log-log coordinates. The resulting function is depicted in figure 15. The exponent of the power function implied by these data is .7 with eighty-six percent of the variance explained (adjusted $R^2 = .86$) by the group size factor. The exponent was significantly different from zero ($t = 8.29, p < .005$) and significantly different from one ($t = 3.50 < .005$). The exponential function derived from the regression analysis is shown in figure 16. It would appear from the above analysis that the diminishing returns hypothesis is supported.
The Number of Relevant-Unique Ideas as a Function of Group Size.

**Figure 15**

Log $I = 3.3 + 0.7 \log N$

**Figure 16**

$I = 27.2N^{0.7}$

The Number of Relevant-Unique Ideas as a Function of Group Size.
The previous analysis suggests that the incremental number of relevant-unique ideas decreases as the size of moderated groups increases. Although this finding sheds some light on optimal group size, it provides no insight into the inhibiting effects of group size. Any inhibiting effects are masked by difference in time available for discussing the relevant topic. To say anything about group inhibition the analysis must be based on the ideas generated over the whole period of time available for discussion. Therefore, the data were reanalyzed using the total number of unique ideas as the dependent variable. For groups of one there was no difference between the number of relevant-unique ideas and the total number of unique ideas since all of the available time was used to discuss the relevant topic. However, for groups of four members, the mean of the number of unique ideas increased from 78.00 (relevant ideas) to 98.25 (total ideas) and for groups of eight members the mean increased from 114.75 (relevant ideas) to 140.00 (total ideas).

The exponential function implied by the regression analysis using the logarithmic transformations is provided in figure 17. This function is expressed in linear coordinates. Although the magnitude of the exponent increased, it still suggests decreasing returns as group size increases. The exponent was significantly different from zero ($t = 9.45$, $p < .005$) and significantly different from one ($t = 2.27$, $p < .025$). This analysis seems to support the notion that groups are inhibiting and that as group size increases this apparent inhibition increases.
There was no significant difference between focus groups of four members and eight members on any of the questionnaire items. However, when comparing individuals participating in focus groups with those being interviewed individually, one significant difference was noted. Individuals felt more anonymous than did members of either four person or eight person groups. This finding was previously noted when the results of the nominal-focus group comparisons were presented.

**Acquaintanceship**

As can be seen in figure 10, the difference in relevant ideas between focus groups of strangers and focus groups of acquaintances is 26.75 ideas but it is not significant. Since the transcripts from the acquaintanceship
condition were not reedited for the total number of ideas, no comparison was made between strangers and acquaintances on this variable. However, since each moderator conducted one group of strangers and one group of acquaintances these conditions were comparable using the number of different relevant ideas as the dependent measure. There was one confound that should be reported. The number of ideas for acquaintances was slightly inflated. One focus group had been conducted using the set of instructions before the decision was made to not use instructions in focus group sessions. Therefore, this group had the whole time period available to discuss relevant ideas. This group generated fifty-seven more ideas than the average of the other three groups in the condition.\textsuperscript{111} The data were reanalyzed with the outlying group removed. Using the $t$ test for unequal $n$, focus groups of strangers generated significantly more ideas than focus groups of acquaintances ($t = 2.25$, $p = .025$). Due to the magnitude of the quality rating task and the amount of judging time required, the quality of ideas generated by acquaintances was not evaluated.

The questionnaire data provide no clues as to why the acquaintanceship result was obtained. There was no difference between the stranger and acquaintance conditions on feelings of anonymity. It was thought that a weak manipulation of acquaintanceship may have accounted for this result. One focus group moderator pointed out that when she stipulated no friends to be recruited, she meant people living in the same apartment or apartment building. Although the women in this study were friends, they lived in the suburbs where they did not expect daily interaction.

\textsuperscript{111}This group generated 131 relevant ideas and the other three groups generated sixty-, sixty-seven, and ninety-four relevant ideas.
Therefore, the negative consequences associated with expected future confrontations may not have been salient in this case. Yet, when the outlier was removed and the data were reanalyzed, strangers were shown to be more productive than acquaintances—in spite of a possible weak manipulation. The issue will be discussed again in the next chapter.

**Summary**

This chapter has provided a summary of the findings along with a detailed report of the hypothesis test results. The method of analysis was explained and justified. Based on the analysis, support was found for the notion that combining the output of individuals results in significantly more ideas than combining individuals into groups. The same result was obtained for both moderated and unmoderated groups. It was also found that focus groups did not generate ideas of higher judged quality than individual interviews.

Moderated focus groups, contrary to popular belief did not generate significantly more ideas than unmoderated discussion groups. It made no difference whether the groups were composed of four members or eight—focus groups were no more productive than unmoderated groups. The summed quality of ideas and the number of "good" ideas were also equivalent for both group conditions.

Although groups of eight members generated significantly more ideas than groups of four members, they did not generate twice as many ideas. Regression analysis indicated that diminishing returns occur in the number of ideas generated as group size increases. As predicted from social impact theory, the number of ideas generated was related to group size as an exponential function with an exponent
less than one (.7).

It was determined that acquaintanceship may be as crucial a factor as focus group moderators think, although it is not clear why. Strangers in this study did not feel more anonymous than acquaintances. Particular problems relating to the acquaintanceship manipulation remain to be discussed.

The results in this chapter suggest the need for critical evaluation of some of the commonly held assumptions about focus group interviewing. The next chapter will offer conclusions and implications that might be drawn from these results. Additionally, it will explore areas for future research into focus group methodology.
CHAPTER 6

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

FOR FUTURE RESEARCH

Focus group interviews are a widely used data collection technique among consumer goods companies. It was suggested in Chapter one that, if a reliable methodology of focus group interviewing is to be developed, consideration must be given to (1) the appropriate uses of the technique, (2) the development of general guidelines for conducting focus group sessions, and (3) the theoretical explanations supported by empirical research. Additionally, it was stated that this study should contribute to knowledge about creative problem-solving and brainstorming as well as small group process theory. This chapter will review the results of the statistical analysis, offer conclusions and implications about the contributions of the study, and suggest additional areas for future research.

Review of Results

Theoretically based hypotheses were derived to explain the contradictions between what focus group researchers have observed and what research on brainstorming and group psychotherapy have found. The results of the hypothesis tests will be summarized and a discussion of the conclusions that can be drawn from these tests and their implications will follow. The results are:
1. Nominal groups of eight individuals generated significantly more ideas than eight member real groups.

2. The overall quality of ideas was higher for individual interviews than for focus groups.

3. Individual interviews accounted for significantly more "good" ideas than focus groups.

4. Focus groups were not significantly different from unmoderated discussion groups in generating unique ideas.

5. There were no differences between focus groups and unmoderated groups in terms of the overall quality of ideas and the number of good ideas generated.

6. For the number of different ideas generated, the difference between focus groups and unmoderated groups was not significantly greater in groups of eight than in groups of four members.

7. For the number of different ideas generated, the difference between focus groups and unmoderated groups was not significantly different from the difference between individual interviews and individuals working alone.

8. Groups of eight members generate significantly more ideas than groups of four members.
9. The incremental number of different ideas decreased as group size increased from one to eight members.

10. The effect of acquaintanceship on idea production in focus groups was not resolved.

Discussion

This section will raise several issues that may have had an effect on the results just reviewed. The first issue is whether or not the sample size was sufficiently large to provide a fair test of the hypotheses. Since the power of a statistical test is dependent on sample size, among other things, it can be reasonably argued that four observations may not have provided sufficient power to detect the moderated-unmoderated group differences.

There were three primary reasons for using four groups per experimental cell. First, and perhaps foremost was the cost of each observation. Rather than scale down the magnitude of the study, permitting an increase in the number of observations, it was decided to keep the sample size at four groups per cell. This decision was influenced heavily by the sample sizes used in the brainstorming and problem-solving studies.

A second reason was that the brainstorming studies achieved rather large treatment effects with two to four observations per cell. Finally, data from past brainstorming studies, were analyzed to determine how large a sample was needed to detect these treatment effects. For
example, the Bouchard, Barsaloux, and Drauden study\textsuperscript{108} provided evidence of treatment effects of approximately 81 ideas for group size (four vs. seven) and 141 ideas for group type. Using an approximation technique provided by Cohen,\textsuperscript{109} it was found that four observations would provide a better than 80% chance of rejecting a false null hypothesis. More specifically, to achieve .80 power for the above group size effect only three observations would be needed and to achieve the same level of power for the group type effect only two observations would be needed. A range of treatment effects (35 to 85 ideas) and error variances (170 to 570) were used in this analysis and it was determined that four observations were adequate.

A second issue, which has been mentioned previously, is the possibility of a weak acquaintanceship manipulation. Several opportunities for this possible occurrence have been noted. First two women were allowed to come to the laboratory together. Records were not kept to indicate how many pairs of friends rode together. Secondly, the way subjects were randomly assigned to experimental conditions provided the possibility of two acquaintances being assigned to the same discussion group. Finally, the fifteen minute waiting period afforded an opportunity for strangers to become acquainted. These instances are not too alarming because (1) some market research firms allow two neighbors to attend

\textsuperscript{108}\textsuperscript{108}Bouchard, Barsaloux, and Drauden, "Brainstorming Procedure, Group Size, and Sex as Determinants of the Problem-Solving Effectiveness of Groups and Individuals."

focus groups together. (2) frequently coffee and donuts are
served before the session begins, and (3) the usual warm-up or
introductory period of the group session allows ample time for
focus group participants to become acquainted. In short, the
opportunities for strangers to become acquainted in this study were
probably no greater than the opportunities that are usually available
to focus group participants.

In chapter four it was mentioned that one interviewer conducted
sixteen individual interviews in a single day compared to eight
interviews for each of the other two interviewers. Apparently fatigue
had no appreciable effect on this interviewer's performance. There was
no significant difference between the number of ideas generated in
these sixteen interviews and the sixteen interviews conducted by the
other two interviewers ($t = 1.123, p = .3$).

The final issue that should be mentioned is the nature of the
task which includes the discussion topic. Two group moderators
pointed out that some women perceived the moderators to be military
recruiters. One moderator reported:

> I think the topic you've chosen--women in
> military combat--may generate some unpredictable
> and perhaps untypical (sic) responses among
> group members. Some of the women were suspicious
> that I was a WAC or whatever and there to recruit
> their daughters, others seemed defensive about the
> idea of drafting their children into war and so on.\(^{110}\)

\(^{110}\)This quote was taken from a letter which was written by
a moderator in response to the author's request for criticisms
of the experimental procedure and/or comments they might wish
to make.
Individual interviewers did not report similar suspicions. Therefore this factor could have influenced the results in favor of unmoderated groups and individual interviews. However, as previously reported, there were no significant differences between these groups in terms of attitude towards the moderators/interviewers or attitudes towards the military.

The task itself—generating "lots of ideas"—may have been foreign to focus group moderators. It is quite possible that moderators do not recognize the differences in approaches to group interviewing as outlined by Calder.\(^\text{111}\) It is also likely that focus groups are not the appropriate technique to be used in thought generation tasks. This idea and other conclusions will be developed in the section that follows.

**Conclusions**

If the market researcher is interested in generating a long list of ideas or thoughts about a relatively complex concept, he/she should consider using individual interviews rather than focus groups. The evidence presented in Chapter five suggests that focus group researchers operate under the faulty assumption that focus groups generate more ideas than individual interviews. The finding that individuals are more productive than groups is enhanced by two factors. First the result

\(^{111}\)Calder, "Focus Groups and the Nature of Qualitative Marketing Research."
was not restricted to groups of four members which was the size used in the brainstorming studies. Eight individuals were more productive than eight member focus groups as well. Secondly, the finding was not constrained to focus groups—unmoderated groups were also less productive than individuals. This latter finding replicates the brainstorming reports. It appears that the combined output of individuals is greater than the output of combined individuals or that individuals are more productive than groups.

It also appears that the difference between individual interviews and focus groups increased as group size went from four to eight members. The same increase was noted for the unmoderated conditions, however, it was not significant. Judgment will be withheld as to why this occurred.

Groups were not found to generate higher quality ideas either. Using both the summed quality of ideas and the number of "goods ideas," individual interviews generated ideas of significantly higher quality than focus groups.

Based on the analysis of post-experimental questionnaire items, it does not appear that focus group participants see their tasks as any more exciting or enjoyable than individuals being interviewed alone. Additionally, focus group participants felt no more enthusiastic, spontaneous, free, uninhibited, or relaxed than did their counterparts in the individual interviews. Finally, there is no evidence that individuals exerted more effort when being interviewed alone than when participating in a focus group. Therefore, it is
concluded that the reasons given by focus group researchers for focus group superiority may also be faulty.

Individuals being interviewed independently reported significantly greater feelings of anonymity than individuals in focus groups. This finding seems to refute the "hide-in-the-crowd" or deindividuation explanation of group behavior. The presence of other group members does not apparently afford a cloak of anonymity—the absence of others apparently does.

According to the previously reported results on the moderator hypothesis, focus group moderators may not be as crucial to the group process as is commonly believed. Consistent with the findings from the Vicino study, unmoderated group members were able to administer and follow the set of instructions they were provided.\textsuperscript{112} Although they were not instructed to do so, participants frequently took on the role of moderator—asking other members for ideas and redirecting the group to previously unexplored areas for ideas. The notion of an informal group moderator is not so outlandish when considered in light of the Poser study which indicated mental health training may not be necessary in treating chronic schizophrenics.\textsuperscript{113}

No evidence was found to indicate that focus group moderators may be more effective in generating ideas from groups of eight than from groups of four members. It was thought that larger groups would

\textsuperscript{112} Vicino, et al., "The Impact of PROCESS: Self-administered Exercises for Personal and Interpersonal Development."

\textsuperscript{113} Poser, "The Effects of Therapists Training on Group Therapeutic Outcome."
require more skills in management of time and people than smaller groups. However, the evidence suggests management activities are no more critical in large groups than small.

The difference between focus groups and unmoderated groups was not significantly greater than the difference between individual interviews and individuals working alone. That is, the moderator effect was no different from the interviewer effect. This finding is important because it implies that the difference between individual interviews and focus groups is not due to differences between the interviewers and moderators. This finding was supported by the lack of a significant difference between participants ratings of the interviewers and their ratings of the moderators. It is concluded that the difference between individual interviews and focus groups is a result of the group process which attentuated the productivity of the individuals in groups.

Focus groups of eight members generated significantly more ideas than focus groups of four members. This finding contradicts the reports of brainstorming researchers. Additionally, support for this finding comes from the unmoderated group data. As in the focus group condition, groups of eight members generated significantly more ideas than groups of four members. However, the data tend to support the diminishing returns hypothesis rather than the synergism hypothesis offered by focus group researchers. The diminishing returns phenomenon was found using the number of relevant ideas as well as the total number of ideas as the dependent variable. It remains to be seen if this finding holds when groups larger than eight members are used.
Although individuals felt more anonymous than focus group participants, there was no significant difference in felt anonymity between members of four person focus groups and members of eight person focus groups. Failure to find a difference between these two conditions strengthens the argument against the "hide-in-the-crowd" hypothesis and tends to support the inhibition notion expressed by brainstorming researchers.

The effect of acquaintanceship on focus group productivity has not been adequately resolved in this study. The difference between groups of acquaintances and groups of strangers was relatively large but not significant at the .05 level (p = .12). When the one group of acquaintances that used the instructions was eliminated from the reanalysis, the difference was significant. In addition to the previously mentioned problems with the acquaintanceship manipulation, it was discovered that the acquaintances may not have been friends. Members of the same neighborhood units were presumed to be friends and this may not have been the case. The debriefing sessions provided evidence that the neighborhood units in some cases did not represent small contiguous geographic areas. Some of these units had members from rather distant parts of the city and the only contact among members was through the meetings and fund raising activities. More thorough screening of subjects could have insured that friends came from the same immediate neighborhood; resulting in a stronger manipulation of this factor. The implications of these findings will be discussed in the next section.
Implications

This study has implications for (1) focus group interviewing in market research, (2) group problem-solving and brainstorming, and (3) small group process theory. From a market researchers' perspective, individual interviews may provide a more viable alternative for exploratory research than focus groups. This may be true for several reasons. First, individuals being independently interviewed produced significantly more ideas and higher quality ideas than individuals in interacting focus groups. It may be that if good ideas are wanted, the key is to generate as many ideas as possible. A naive theory would suggest that the greater the number of ideas generated the more likely it is that high quality ideas will be uncovered.

A second reason for using individual interviews in exploratory research is that the cost of conducting individual interviews is lower than the cost of conducting focus groups. Although it is generally accepted that focus group research is less expensive than individual interviews, individual interviews cost less than focus groups in the present study. Since there were no fixed costs, only the variable costs will be considered. The number of respondents and the time for interviewing in both interview conditions were equivalent, so the costs would be essentially equal. The major cost differences were due to transcribing the tapes and the cost of interviewers and moderators. Transcription costs were $4.50 per hour regardless of the number of voices on the tape. However, transcribing individual interviews was much faster than transcribing focus groups. Eight individual
interviews were transcribed in half the time it took to transcribe eight member groups whether they were moderated or unmoderated. The people doing the transcribing reported the need to replay group tapes more frequently than the tapes of individuals. This was necessary because of volume changes when the conversation switched from loud to soft voices. There was also over-talking and laughter on the group tapes which made them more difficult to transcribe. Although the interviewers and moderators were donated to this project, a survey of several market research firms indicated interviewers would cost $6.00 per hour while moderators would cost $10.00 per eight member session. The total cost of conducting eight individual interviews equivalent in time to a two hour group session is $24.00. Fixed costs depend on how elaborate the focus group laboratories are but should be considerably higher for focus groups than for individual interviews.

A cost consideration that was not examined was the cost of preparing the final research report. Whatever economies might be realized in transcribing individual interviews could be offset by additional time and costs of collating the information from eight separate transcripts and preparing the report.

The lack of moderator effectiveness in generating ideas suggests that moderators have a highly inflated perception of their contribution to the focus group process. A conclusion that professional focus group moderators are unessential and therefore research costs can be reduced by eliminating them, may be premature. It is quite likely that focus group moderators do not understand that, depending on the
nature of the research task, different procedures may be needed. For example, depth probing may be necessary in attempting to uncover underlying purchase motives. This technique may not be appropriate when the research goal is to generate thoughts. Rather, moderator skills developed to overcome the inhibiting effects of other group members may be necessary. Once the inhibition phenomenon is understood, focus group moderators can learn what procedures are most useful in dealing with it. Therefore, it is suggested that rather than eliminating their role, retraining of moderators in the use of the exploratory approach should be undertaken.

The third important finding was the significant group size effect. A frequent problem facing focus group moderators is that some participants do not show or cancel at the last minute. One way to insure the preferred group size is to overrecruit respondents to replace last minute cancellations. If all of the recruited respondents show up, the moderator must trade-off between using all the respondents, which may cause the group to be too large and unmanageable, or paying for those not used and sending them home, which is costly and disappoints the recruits who do not participate. The results of this study seem to indicate that the current practice of overrecruiting may be justified. On the other hand, this diminishing returns finding suggests that this practice may be worthwhile up to a point. That is, beyond eight members there may be a group size at which the additional cost of adding another group member may not be worth the additional information gained. The diminishing returns phenomena should be explored further.
The acquaintance results are less certain than the others but do provide the opportunity for speculation. If a relatively weak acquaintance manipulation accounted for the significant results in the reanalysis, then this variable seems to be crucial to the success of the focus group technique. Researchers, using this technique, might be well advised to not only insure that strangers are recruited but that they remain strangers throughout the group session. In other words, anonymity should be stressed. Consideration might be given to the advisability of (1) recruiting even two friends, (2) providing a coffee and donut reception, and (3) continuing the discussion warm-up period. Admittedly this is speculative. Additional research in this area should provide greater insights into the effects of acquaintance on focus group productivity.

The results from the study replicate the findings from research on group problem-solving and brainstorming. The subjects in the study were middle-class housewives which suggests the group inhibition phenomenon is generalizable to populations other than college students and business managers. The complex nature of the discussion topic suggests that individuals excel even when groups should benefit from a division of the labor. That is, individual group participants could have been searching for new areas to explore while others were focusing on the current discussion. This apparently did not happen to an appreciable extent.

The study appears to support the multiplication of impact principle from social impact theory. As focus group size increased from one to eight members the incremental number of ideas produced increased at a
a decreasing rate. The exponent of the multiplicative function was .7. This relationship had not been previously established for interacting discussion groups. Social impact theory appears to be generalizable beyond the audience paradigm reported by Latane and Harkins.

The attempt to determine which of three theories: (1) deindividuation, (2) social facilitation, or (3) diffusion of responsibility accounted for the results met with mixed success. Although focus group moderator's descriptions of group sessions appeared to fit deindividuation theory, the theory does not appear to explain what happens in focus groups. Members of eight person groups did not feel more carefree, anonymous, uninhibited, or relaxed than members of four person groups. Also the magnitude of the exponent ($t = .7$) did not conform to the expectations from deindividuation theory ($t > 1$). The exponent did fall within the bounds established for a social facilitation prediction ($0 < t < 1$).

The results suggest that the presence of others might facilitate story telling and the repetition of previously stated ideas. The evidence in support of social facilitation theory is based on inferences from the finding that nominal groups generate more different ideas than focus groups. Due to an oversight by the researcher, the items that could offer evidence of facilitating behavior were not included in the questionnaire. Among the facilitating items were: (1) How "open" were you in saying exactly what was on your mind? (2) How often have you previously expressed your ideas on this subject? (3) How much did you pre-think your ideas? (4) How critical do you think others were of your ideas? and (5) How relevant were your ideas to the subject? In a
review of the taped interviews and group discussions, it appeared that groups did spend relatively more time in discussing irrelevant topics and telling stories with high entertainment value than individuals.

Contrary to expectations, there was no diffusion of cognitive effort. There were no significant differences among groups of one, four, and eight members on the three effort scales (p > .25 using a two tailed t test for each comparison). Two factors may account for this result. First, unlike the Petty study, the current study did not prescribe an effortful task. Therefore the subjects may not have seen the task as effortful. The second factor is that each subject knew she was only one of many others participating in the study. In the Petty study, subjects were told they were the only one, one of eight, or one of sixteen people participating in the study. Therefore effort could be diffused proportional to the number of other people thought to be participating in the study. In the current study, all subjects (regardless of the experimental conditions to which they were assigned) perceived themselves to be part of one large study. In this case effort could have been diffused to others in the study as well as to members of the discussion groups. This confound could account for the lack of significant differences between any of the conditions on the effort scales. The third factor is the payment for participation that was donated to the auxiliary. After data collection began, it became apparent that the subjects were extremely happy

\[11^a\] Petty et al., 'The Effects of Group Size on Cognitive Effort and Evaluation.'
with the amount of money their organization was receiving. They were in fact being paid too much. The uniformly high effort ratings could be an attempt to justify the high payment for a voluntary task requiring little effort.

In summary, the study supports the multiplication of impact principle for social impact theory. Deindividuation theory does not appear to explain this result. The question of whether or not other group members facilitate individual participation is unanswered. Finally, the diffusion of cognitive effort notion was not supported. The lack of theoretical support for the findings as well as some other unanswered questions provide indications that additional research in this area is needed.

**Recommendations for Future Research**

Several problems encountered in this study along with many unanswered questions suggest the need for additional research on focus groups. Ample opportunities exist for research similar to the research reported here. One area of research includes extensions of the current research effort. A second area consists of additional variables that were not examined in this study, and a third area comprises additional theoretical explanations for several group phenomena.

The treatment levels of the group size factor limit the conclusions that can be made about the optimal group size. The largest focus group used in this study was eight members. Some focus group moderators prefer groups of twelve members while others recommend even
larger groups. More confidence in the diminishing returns finding would result from a test using four, eight, twelve, and sixteen member focus groups. Decreasing returns in the number of ideas generated, rather than diminishing returns, may occur beyond some relatively large group size. In large groups, control or management activities could occupy so much of the moderator's and participant's time, that fewer ideas would be generated than if smaller groups were used. From a social impact perspective, extremely large groups might focus more social forces on the individual and at the same time increase the opportunity for diffusing responsibility or effort to others in the group. In groups of sixteen members, individuals may feel less inhibited and respond more spontaneously than in smaller groups. That is, there may be a threshold group size for deindividuation to occur which is larger than eight members.

This study looked at the groups as the unit of measurement. Future research should also look at the individual as the unit of measurement. This approach would eliminate the possibility of time mismanagement problem. If the presence of others is inhibiting, then individuals should generate more ideas when alone than when they perceive themselves to be part of a group. Using a sequencing procedure much like those used on the Bouchard brainstorming studies\textsuperscript{115} and the Latané and Darley\textsuperscript{116} epileptic seizure study, individual behavior could

\textsuperscript{115}Bouchard et al., "Brainstorming Procedure, Group Size, and Sex as Determinants of the Problem-Solving Effectiveness of Groups and Individuals."

\textsuperscript{116}Latané and Darley, The Unresponsive Bystander: Why Doesn't He Help.
be measured. Tape recordings could be used to insure that each subject receives the same treatment. After introducing herself, the subject would hear introductions from other members followed by a request from the moderator to express all ideas on the chosen topic. This type of study would provide more control but at the same time would sacrifice realism.

Additional studies should look more closely at moderator characteristics. Although it is not likely the findings from the current study are due to the moderators employed, studies on moderator characteristics would contribute to knowledge about focus group research. Would male moderators provide different results? More generally, what is the impact on group output when the moderator is not of the same sex as the respondents. Garland and Brown117 provide evidence that females perform longer in front of an all male audience than an all female audience—males were not affected by the sex of the audience. Male moderators may very well obtain more information from focus groups of females than female moderators.

The weak acquaintance manipulation has been frequently mentioned in this report. Other researchers have had the same problem and still others have ignored acquaintance when it could have been a significant factor in accounting for the results. None of the brainstorming studies included this factor when comparing individuals with groups. A 2 x 2 factorial design, with group size (four and eight

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117 Garland and Brown, "Face-Saying as Affected by Subjects' Sex, Audiences' Sex and Audience Expertise."
members) and acquaintanceship (friends and strangers) as the factors, could be used to test the social impact principle that the strength (S) and number (N) of social forces are multiplicatively related. Strength (S) in this test would be operationally defined as acquaintanceship. The prediction is that acquaintanceship would have a greater impact on large groups than small.

This study has examined only a few of the many assumptions made about focus group interviewing. Since no previous studies have been reported to support these assumptions, there is need for much more future research in this area. Additional assumptions that need to be tested are:

1. Focus group participants should be homogeneous with respect to social class, demographic characteristics and/or purchase behavior,

2. Successful use of the focus group technique is dependent upon the moderators personal style in conducting focus groups,

3. Experienced focus group moderators can make accurate judgments in differentiating "true" beliefs, attitudes, and behavior from socially desirable or impression management types of responses,

4. Individuals will reveal more personal information in front of strangers than when alone or when with friends, and
5. A warm-up session or conversation on a more general topic is necessary prior to discussing the focal topic.

This list is not exhaustive but provides a starting point for additional research on focus groups.

More theory-based research is needed on brainstorming groups, focus groups, and psychotherapy groups. With only one exception, all of the studies reviewed in these areas were empirical studies with no theoretical foundation. The current research supports the notion that groups inhibit the performance of individual members. Future research efforts should strive to explain why individual productivity is adversely affected by the presence of other group members.
BIBLIOGRAPHY


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APPENDIX A

DEMOGRAPHIC CHARACTERISTICS OF THE WOMEN PARTICIPATING IN THE STUDY
### Demographic Characteristics of the Women Participating in the Study

<table>
<thead>
<tr>
<th>Age</th>
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<td>6</td>
<td>2.7</td>
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<tr>
<td>26-35</td>
<td>118</td>
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<td>36-45</td>
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<td>28.2</td>
</tr>
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<td>46-55</td>
<td>31</td>
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<tr>
<td>20,000-30,000</td>
<td>76</td>
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<tr>
<td>30,000-40,000</td>
<td>48</td>
<td>22.2</td>
</tr>
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<td>40,000-50,000</td>
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<td>More than 50,000</td>
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<td>12 years</td>
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<td>13-16 years</td>
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<td>66.4</td>
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<td>17-20 years</td>
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<td>12.7</td>
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<th>Subjects Occupation</th>
<th>Absolute Frequency</th>
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<tr>
<td>Housewife and Parent</td>
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<td>63.8</td>
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<tr>
<td>Professional Person</td>
<td>36</td>
<td>16.3</td>
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<tr>
<td>Other</td>
<td>40</td>
<td>10.9</td>
</tr>
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</table>
APPENDIX B

TASK INSTRUCTIONS
APPENDIX C
SUGGESTIONS FOR JUDGING QUALITY
INSTRUCTIONS

YOU HAVE BEEN ASKED HERE TO PARTICIPATE IN A STUDY ON "JOB OPPORTUNITIES FOR WOMEN." THE PURPOSE OF THIS STUDY IS TO DETERMINE WHAT THOUGHTS PEOPLE, LIKE YOURSELF, HAVE ABOUT EXPANDING THE TYPES OF JOBS THAT ARE AVAILABLE TO WOMEN IN THE MILITARY SERVICE. THE RESULTS OF THIS STUDY WILL BE MADE AVAILABLE TO THE GOVERNMENT FOR USE IN STUDYING THIS ISSUE. YOUR PARTICIPATION IN THIS PROJECT SHOULD TAKE ABOUT TWO HOURS. ALL INFORMATION IS CONFIDENTIAL, OF COURSE.

(TURN TO THE NEXT PAGE AND CONTINUE)
THIS STUDY DEALS WITH EXPANDING THE ROLE OF WOMEN IN THE MILITARY. WE ARE INTERESTED IN ANY IDEAS YOU HAVE ABOUT EXPANDING THE TYPES OF JOBS AVAILABLE TO WOMEN IN ALL BRANCHES OF THE MILITARY SERVICE. TO GET YOUR IDEAS WE WILL ASK YOU TO READ A SHORT SCENARIO AND THEN TELL US WHAT THOUGHTS YOU HAVE ON THE SUBJECT. YOU HAVE PROBABLY NEVER PARTICIPATED IN A STUDY LIKE THIS BEFORE, SO THE GENERAL PROCEDURE WILL BE OUTLINED FOR YOU.

YOU WILL BE WORKING WITH OTHER PEOPLE. PLEASE STATE ALL IDEAS THAT COME TO MIND OUT LOUD. IN OTHER WORDS WE WANT YOU TO THINK OUT LOUD. WE ARE TAPE RECORDING THIS AND IF YOU SPEAK SOFTLY WE WILL NOT BE ABLE TO HEAR THE IDEAS LATER.

PLEASE SAY EXACTLY WHAT YOU THINK.

WE ARE ONLY INTERESTED IN THE KINDS OF THOUGHTS YOU HAVE AND NOT HOW WELL YOU SAY THEM. WE ARE NOT MAKING A RADIO COMMERCIAL OR A TELEVISION COMMERCIAL SO THERE ARE NO HIDDEN CAMERAS. SAY EXACTLY WHAT YOU THINK BECAUSE THAT IS WHAT WE WANT TO KNOW.

BEFORE STARTING THERE ARE A FEW RULES WE WOULD LIKE YOU TO FOLLOW. THE RULES ARE:

1. CRITICISM OF IDEAS IS RULED OUT. ADVERSE JUDGMENT OF YOUR OWN IDEAS OR THE IDEAS OF OTHERS MUST BE WITHHELD. DON'T CRITICIZE ANY IDEAS. SAY EVERYTHING YOU THINK OF.

2. OPENNESS IS WELCOME. DON'T BE AFRAID TO SAY ANYTHING THAT COMES TO MIND.

3. WE WANT LOTS OF IDEAS. THE GREATER THE NUMBER OF IDEAS THE BETTER. COME UP WITH AS MANY AS YOU CAN THINK OF.

4. COMBINATION AND IMPROVEMENT OF IDEAS IS DESIRED. SOMETIMES GOOD IDEAS ARE CREATED BY IMPROVING ON OTHER IDEAS AND BY COMBINING TWO OR MORE IDEAS INTO NEW ONES. YOU CAN CHANGE IDEAS YOU MAY HAVE STATED EARLIER. DON'T BE AFRAID TO COMBINE PREVIOUSLY STATED IDEAS AND TO IMPROVE ON THEM. (turn page)
REMEMBER WE ARE ONLY INTERESTED IN YOUR IDEAS. DON'T BE AFRAID TO SAY WHAT YOU ARE THINKING. BE SURE TO SPEAK LOUD ENOUGH SO WE CAN HEAR THE IDEAS LATER. ONE MORE THING, ONLY ONE PERSON SHOULD SPEAK AT A TIME.

BEFORE TURNING THE PAGE PLEASE TAKE A MINUTE FOR EACH OF YOU TO TELL US SOMETHING ABOUT YOUR FAMILY. ONE PERSON CAN START AND, GOING AROUND THE TABLE, EACH ONE OF YOU CAN TELL HOW MANY CHILDREN YOU HAVE, HOW OLD THEY ARE, WHETHER THEY ARE BOYS OR GIRLS, AND WHAT YOUR FAVORITE HOBBIES ARE.

PLEASE READ THE FOLLOWING SCENARIO. WHEN YOU HAVE FINISHED READING IT, PLEASE TURN TO THE NEXT PAGE.

EXPANDING THE ROLE OF WOMEN IN THE MILITARY

TRADITIONALLY THE MILITARY DEFENSE OF THE UNITED STATES HAS BEEN IN THE HANDS OF MEN. WOMEN HAVE GENERALLY WORKED IN THE MILITARY AS CLERKS, NURSES, AND ADMINISTRATORS. RECENT EXPANSION OF THE ROLE OF WOMEN IN THE MILITARY HAS RESULTED IN WOMEN OCCUPYING JOBS IN SUCH AREAS AS MECHANICS, ELECTRONICS, CARPENTRY, MOTOR TRANSPORT, AND COMMUNICATIONS — VIRTUALLY ALL JOB CATEGORIES EXCEPT COMBAT. WOMEN ARE CURRENTLY RESTRICTED TO LOCATIONS AWAY FROM POTENTIAL COMBAT ZONES. THIS MEANS THAT WOMEN CANNOT SERVE ON SHIPS, AIRCRAFT CREWS, NOR IN GEOGRAPHIC AREAS CLOSE TO COMBAT ZONES.

A NEW PROGRAM UNDER CONSIDERATION IS AIMED AT EXPANDING THE ROLE OF WOMEN IN THE MILITARY TO INCLUDE ALL COMBAT POSITIONS IN ALL BRANCHES OF THE MILITARY. UNDER THIS PROGRAM WOMEN COULD SERVE IN ANY AREA OF THE WORLD. IN THE NAVY THEY COULD SERVE ON ANY SHIP INCLUDING AIRCRAFT CARRIERS, DESTROYERS, AND SUBMARINES. IN THE AIR FORCE THEY COULD SERVE (PLEASE TURN TO THE NEXT PAGE)
ON ALL AIRCRAFT INCLUDING FIGHTER PLANES, IN THE ARMY WOMEN COULD SERVE IN TANKS AND AS FRONT-LINE COMBAT SOLDIERS.

(PLEASE TURN TO THE NEXT PAGE)
DO YOU THINK OUR COUNTRY IS READY FOR EXPANSION OF THE ROLE OF WOMEN IN THE MILITARY TO INCLUDE COMBAT POSITIONS? IF THIS CHANGE WERE TO OCCUR THIS YEAR, WHAT WOULD BE THE CONSEQUENCES? WHAT BENEFITS AND/OR PROBLEMS DO YOU SEE RESULTING FROM THIS CHANGE? WHAT ARE YOUR IDEAS ON THIS MATTER? PLEASE BEGIN STATING ALL IDEAS THAT COME TO MIND.
SUGGESTION FOR JUDGING QUALITY

The purpose of judging the attached ideas is to determine the relative quality of each from a manager's perspective. As we discussed in Columbus, quality is a very complex concept. Some of the dimensions of quality — reported in the literature are (1) uniqueness, (2) feasibility, (3) generality, (4) importance, (5) practicality, (6) usefulness, and (7) elaborateness. If I were judging these ideas or if I were having students judge them, I would probably select two or three dimensions and use a summated rating. However, I am more interested in how you as the user of this information will judge the quality of it. Therefore, I hesitate to put any constraints on the criteria you might use.

One way of approaching this task is looking at the possible uses of the information. Some of the ideas may be useful as indicators of the level of public knowledge and suggest advertising strategies. Other ideas may suggest policy decisions that could be made by the Defense Department or Congress. Still others might suggest items that should be included in a follow-up national survey. In the context of any one or more of these decision areas a given idea could be judged as being excellent or bad. You might judge each idea's quality by its usefulness or utility for decision-making in any of the above areas. Another strategy might be choosing a particular decision area (e.g., a Defense Department policy decision about expanding the types of jobs that should be available to women) and rate all ideas based on their usefulness in making that particular decision.

Before you begin judging you may want to go through the lists to
get a feel for the types of ideas and the types of decisions they may apply to. This may hold in planning your judging strategy. Also, a rating scale which is attached may be helpful. You can choose examples of bad and excellent ideas to use as anchors on this scale.

The following are suggestions to save you time but they can be ignored at your digression. Many ideas on the attached lists are similar. It is not critical for my purposes that all similar ideas receive exactly the same rating. Therefore, you need not go back to previously judged ideas to check your current judgment. After you have gained a little experience I would expect that your intuitive judgment will be quite reliable in determining quality. This should allow you to move swiftly down the pages without the need to study, analyze, compare, or otherwise dwell on each idea too long.

All ideas on the attached lists were edited in terms of their relevance to "Expanding the Role of Women in the Military." Since these ideas were taken out of the actual discussion context, comments were added in parentheses to help define the context. Nevertheless, some ideas are still vague, irrelevant, and/or unintelligible and this should be reflected in the rating they receive.

When you are ready to begin judging, go down the lists in the order presented and place the digit signifying your rating (bad = 0, poor = 1, fair = 2, good = 3, and excellent = 4) in the right margin next to the idea.

When you have finished, if you could write a paragraph or two about the strategy and criteria used I would appreciate it.
(Examples of excellent ideas)

1. 
2. 
3. 

(bad) (poor) (fair) (good) (excellent)

(Examples of bad ideas)
APPENDIX D

POST-EXPERIMENTAL QUESTIONNAIRES FOR FOCUS GROUPS, UNMODERATED GROUPS, INDIVIDUAL INTERVIEWS AND INDIVIDUALS WORKING ALONE
1. How exciting did you find this task?

<table>
<thead>
<tr>
<th>Not At All Exciting</th>
<th>Extremely Exciting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

2. How enthusiastic did you feel in doing this task?

<table>
<thead>
<tr>
<th>Not At All Enthusiastic</th>
<th>Extremely Enthusiastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

3. How spontaneous was your contribution to this task?

<table>
<thead>
<tr>
<th>Not At All Spontaneous</th>
<th>Extremely Spontaneous</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

4. How enjoyable was this task?

<table>
<thead>
<tr>
<th>Not At All Enjoyable</th>
<th>Extremely Enjoyable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

5. How did you feel during this task? (Put an "X" on the line that best reflects your feeling)

- Free
- Concerned
- Conspicuous
- Inhibited
- Nervous

<table>
<thead>
<tr>
<th>Free</th>
<th>Restrained</th>
<th>Carefree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. To what extent were you trying hard to think of ideas?

<table>
<thead>
<tr>
<th>Not At All Hard</th>
<th>Extremely Hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

7. How much effort did you put into this task?

<table>
<thead>
<tr>
<th>No Effort At All</th>
<th>Extreme Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>
8. How involved were you in this task?  
Not At All Involved • • • • • • • • • • Extremely Involved
0 10

9. How adequate was the time available to do this task?  
Not At All Adequate • • • • • • • • • • Extremely Adequate
0 10

10. How did you feel about the moderator during this task?  
(Put an "X" on the line that best reflects your feeling)  
Sensitive ___ ___ ___ ___ ___ ___ ___ ___ Insensitive
Sincere ___ ___ ___ ___ ___ ___ ___ ___ Insincere
Domineering ___ ___ ___ ___ ___ ___ ___ Lax
Friendly ___ ___ ___ ___ ___ ___ ___ Unfriendly

11. How satisfied were you with the amount of participation in this task by other group members? (Circle the dot)  
Not At All Satisfied • • • • • • • • • • Extremely Satisfied
0 10

12. How satisfied were you with the amount of your own participation in this task?  
Not At All Satisfied • • • • • • • • • • Extremely Satisfied
0 10

13. How satisfied were you with the nature of the moderator's participation in this task?  
Not At All Satisfied • • • • • • • • • • Extremely Satisfied
0 10

14. Please rate the concept "women in the military" on each of the following scales. Put an "X" on the scale position that best reflects your rating.  
Timely ___ ___ ___ ___ ___ ___ ___ ___ Untimely
Important ___ ___ ___ ___ ___ ___ ___ ___ Unimportant
Harmful ___ ___ ___ ___ ___ ___ ___ ___ Beneficial
Bad ___ ___ ___ ___ ___ ___ ___ ___ Good
Wise ___ ___ ___ ___ ___ ___ ___ ___ Foolish

17. Number of Children: Male Female

18. Number of years of education completed. ______

19. Approximate total family income per year.

<table>
<thead>
<tr>
<th>Less Than</th>
<th>$20,000-</th>
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<td>$40,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td></td>
</tr>
</tbody>
</table>

20. Your Occupation: ________________________________

21. Your husband's occupation (If you are married): _______

   ________________________________

22. Has any immediate family member or close friend been in the military during a time when the United States was involved in a military conflict?

   Yes _____  No _____

   If you answered NO to question 22, skip 23, 24, and 25.

23. What was the nature of your relationship with the person you consider to be closest to you?

   Husband _____ Daughter _____ Son _____ Father _____ Mother _____

   Friend _____ Other __________________________

   (Indicate Relationship)

24. Which military conflict was the United States involved in at the time?

   World War II _____ Korea _____ Viet Nam _____ Other ______________________

   (Which One?)

25. What branch of the military was the above person in?

   Army _____ Air Force _____ Navy _____ Marines _____ Other ______________________

   (Which One?)
PLEASE TAKE YOUR TIME AND BE SURE TO ANSWER EVERY QUESTION.
THANK YOU FOR YOUR TIME AND COOPERATION. THE RESULTS WILL BE
VERY HELPFUL. DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE.

Please answer each of the following questions by circling the
dot that best represents your answer.

1. How exciting did you find this task?

Not At All  Exciting  Extremely
Exciting 0 10

2. How enthusiastic did you feel in doing this task?

Not At All  Enthusiastic  Extremely
Enthusiastic 0 10

3. How spontaneous was your contribution to this task?

Not At All  Spontaneous  Extremely
Spontaneous 0 10

4. How enjoyable was this task?

Not At All  Enjoyable  Extremely
Enjoyable 0 10

5. How did you feel during this task? (Put an "X" on
the line that best reflects your feeling)

Free  __  __  __  __  __  __  __  __  __  Restrained
Concerned  __  __  __  __  __  __  __  __  __  Carefree
Conspicuous  __  __  __  __  __  __  __  __  __  Anonymous
Inhibited  __  __  __  __  __  __  __  __  __  Uninhibited
Nervous  __  __  __  __  __  __  __  __  __  Relaxed

6. To what extent were you trying hard to think of ideas?

Not At All  Extremely
Hard 0 10

7. How much effort did you put into this task?

No Effort  Extreme
At All 0 10
8. How involved were you in this task?

Not At All Involved... 0
Extremely Involved 10

9. How adequate was the time available to do this task?

Not At All Adequate... 0
Extremely Adequate 10

10. How satisfied were you with the amount of participation in this task by other group members? (Circle the dot)

Not At All Satisfied... 0
Extremely Satisfied 10

11. How satisfied were you with the amount of your participation in this task?

Not At All Satisfied... 0
Extremely Satisfied 10

12. Please rate the concept "women in the military" on each of the following scales. Put an "X" on the scale position that best reflects your rating.

Timely... Untimely
Important... Unimportant
Harmful... Beneficial
Bad... Good
Wise... Foolish

15. Number of children: _____  _____
   Male   Female

16. Number of years of education completed. _____

17. Approximate total family income per year.

<table>
<thead>
<tr>
<th>Less Than</th>
<th>$20,000-</th>
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18. Your Occupation: ____________________________.

19. Your husband's occupation (If you are married): ________________________.

20. Has any immediate family member or close friend been in the military during a time when the United States was involved in a military conflict?

   Yes _____   No _____

   If you answered NO to question 20, skip 21, 22, and 23.

21. What was the nature of your relationship with the person you consider to be closest to you?
   Husband _____ Daughter _____ Son _____ Father _____ Mother _____
   Friend _____ Other ____________________________
   (Indicate Relationship)

22. Which military conflict was the United States involved in at the time?
   World War II _____ Korea _____ Viet Nam _____ Other __________
   (Which One?)

23. What branch of the military was the above person in?
   Army _____ Air Force _____ Navy _____ Marines _____ Other __________
   (Which One?)
PLEASE TAKE YOUR TIME AND BE SURE TO ANSWER EVERY QUESTION.  
THANK YOU FOR YOUR TIME AND COOPERATION.  THE RESULTS WILL BE 
VERY HELPFUL.  DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE. 

Please answer each of the following questions by circling the 
dot that best represents your answer.

1. How exciting did you find this task?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Extremely</th>
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<tbody>
<tr>
<td>Exciting</td>
<td>Exciting</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

2. How enthusiastic did you feel in doing this task?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiastic</td>
<td>Enthusiastic</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

3. How spontaneous was your contribution to this task?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Spontaneous</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

4. How enjoyable was this task?

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Extremely</th>
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<tbody>
<tr>
<td>Enjoyable</td>
<td>Enjoyable</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

5. How did you feel during this task?  (Put an "x" on the line that best reflects your feeling)

- Free
- Concerned
- Conspicuous
- Inhibited
- Nervous
- Restained
- Carefree
- Anonymous
- Uninhibited
- Relaxed

6. To what extent were you trying hard to think of ideas?  (Circle the dot)

<table>
<thead>
<tr>
<th>Not At All</th>
<th>Extremely</th>
</tr>
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<tbody>
<tr>
<td>Hard</td>
<td>Hard</td>
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<tr>
<td>0</td>
<td>10</td>
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</tbody>
</table>

7. How much effort did you put into this task?

<table>
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<tr>
<th>No Effort</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>At All</td>
<td>Effort</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>
8. How involved were you in this task?

Not At All Involved

Extremely Involved

0

10

9. How adequate was the time available to do this task?

Not At All Adequate

Extremely Adequate

0

10

10. How did you feel about the interviewer during this task? (Put an "X" on the line that best reflects your feeling)

Sensitive

Insensitive

Sincere

Insincere

Domineering

Lax

Friendly

Unfriendly

11. How satisfied were you with the amount of your participation in this task?

Not At All Satisfied

Extremely Satisfied

0

10

12. How satisfied were you with the nature of the interviewer's participation in this task?

Not At All Satisfied

Extremely Satisfied

0

10

13. Please rate the concept "women in the military" on each of the following scales. Put an "X" on the scale position that best reflects your rating.

Timely

Untimely

Important

Unimportant

Harmful

Beneficial

Bad

Good

Wise

Foolish

16. Number of children: Male  Female

17. Number of years of education completed: _____

18. Approximate total family income per year:

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19. Your occupation: ____________________________.

20. Your husband's occupation (If you are married): ____________________________.

21. Has any immediate family member or close friend been in the military during a time when the United States was involved in a military conflict?

   Yes _____  No _____

   If you answered NO to question 21, skip 22, 23, and 24.

22. What was the nature of your relationship with the person you consider to be closest to you?

   Husband _____ Daughter _____ Son _____ Father _____ Mother _____

   Friend _____ Other ____________________________

   (Indicate Relationship)

23. Which military conflict was the United States involved in at the time?

   World War II _____ Korea _____ Viet Nam _____ Other ____________________________

   (Which One?)

24. What branch of the military was the above person in?

   Army _____ Air Force _____ Navy _____ Marines _____ Other ____________________________

   (Which One?)
PLEASE TAKE YOUR TIME AND BE SURE TO ANSWER EVERY QUESTION. THANK YOU FOR YOUR TIME AND COOPERATION. THE RESULTS WILL BE VERY HELPFUL. DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE.

Please answer each of the following questions by circling the dot that best represents your answer.

1. How exciting did you find this task?

   Not At All Exciting . . . . . . . . . . . . . . . . . . Extremely Exciting
   0 10

2. How enthusiastic did you feel in doing this task?

   Not At All Enthusiastic . . . . . . . . . . . . . . . . . . Extremely Enthusiastic
   0 10

3. How spontaneous was your contribution to this task?

   Not At All Spontaneous . . . . . . . . . . . . . . . . . . Extremely Spontaneous
   0 10

4. How enjoyable was this task?

   Not At All Enjoyable . . . . . . . . . . . . . . . . . . Extremely Enjoyable
   0 10

5. How did you feel during this task? (Put an "X" on the line that best reflects your feeling)

   Free __ __ __ __ __ __ __ __ __ __ Restrainted
   Concerned __ __ __ __ __ __ __ __ __ __ Carefree
   Conspicuous __ __ __ __ __ __ __ __ __ __ Anonymous
   Inhibited __ __ __ __ __ __ __ __ __ __ Uninhibited
   Nervous __ __ __ __ __ __ __ __ __ __ Relaxed

6. To what extent were you trying hard to think of ideas?

   Not At All Hard . . . . . . . . . . . . . . . . . . Extremely Hard
   0 10

7. How much effort did you put into this task?

   No Effort At All . . . . . . . . . . . . . . . . . . Extreme Effort
   0 10
8. How involved were you in this task?  
   
   Not At All Involved  . . . . . . . . . . .  .  Extremely Involved  
   0  10  

9. How adequate was the time available to do this task?  
   
   Not At All Adequate  . . . . . . . . . . .  .  Extremely Adequate  
   0  10  

10. How satisfied were you with the amount of your participation in this task?  
    
   Not At All Satisfied  . . . . . . . . . . .  .  Extremely Satisfied  
   0  10  

11. Please rate the concept "women in the military" on each of the following scales. Put an "X" on the scale position that best reflects your rating.  
    
    Timely  _____ _____ _____ _____ _____ _____ _____  _____  Untimely  
    Important  _____ _____ _____ _____ _____ _____ _____  _____  Unimportant  
    Harmful  _____ _____ _____ _____ _____ _____ _____  _____  Beneficial  
    Bad  _____ _____ _____ _____ _____ _____ _____  _____  Good  
    Wise  _____ _____ _____ _____ _____ _____ _____  _____  Foolish
13. Your Age: ______
14. Marital Status: ______
   Single       Married

15. Number of children: ______
   Male         Female

16. Number of years of education completed: ______

17. Approximate total family income per year:

<table>
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18. Your occupation: ______________________.

19. Your husband's occupation (If you are married): ______________________.

20. Has any immediate family member or close friend been in the military during a time when the United States was involved in a military conflict?

   Yes ______  No ______

   If you answered NO to question 20, skip 21, 22, and 23.

21. What was the nature of your relationship with the person you consider to be closest to you?

   Husband ______  Daughter ______  Son ______  Father ______  Mother ______
   Friend ______  Other ______________________
   (Indicate Relationship)

22. Which military conflict was the United States involved in at the time?

   World War II ______  Korea ______  Viet Nam ______  Other ______________________
   (Which One?)

23. What branch of the military was the above person in?

   Army ______  Air Force ______  Navy ______  Marines ______  Other ______________________
   (Which One?)
APPENDIX E

MODERATOR AND INTERVIEWER INSTRUCTIONS
Purpose of the Study

You will be conducting three focus group sessions. We would like each to be conducted as though it was the only research being done. This means that some information collected in the second and third groups will be redundant but that is okay.

The Department of Defense plans to gradually expand the role of women in the military over time. This expansion may eventually include women in combat positions the same as men. Currently it is against the law for women to be involved in combat. Women, however are being trained in combat skills with men.

Legislation will have to pass Congress if women are to be involved in direct combat. Whether or not Congress will approve the necessary legislation may depend upon the general public's reaction to this proposal. The current research effort is aimed at determining what the public's reaction will be to expanding the role of women in the military to include combat.

The information provided in this study may be useful in two ways. First, within the constraints of existing law, policy decisions can be made as to what types of jobs will be opened to women. Secondly, depending upon the public's level of knowledge and reactions to the proposed expansion, a communication program can be undertaken. An advertising strategy can be formulated and copy appeals can be designed to educate the public. Therefore, it is important that we determine what issues or problems the public sees as critical. The attached topic guide may be of some help.
General Format

The subjects in this study expect to spend two hours being interviewed on "Job Opportunities for Women." The instructions provide the first clue that the specific topic to be discussed is "The Expanding Role of Women in the Military." When each subject has finished reading the instructions the moderator may be introduced before calling on group members to "tell us something about your family." After the subjects and moderator have introduced themselves, the subjects should then read the scenario followed by the page of questions about what they are to do. At this point the moderator can take charge and lead the discussion.

The following recommendations may be at variance with the individual moderator styles but it is hoped they will not prove too great an inconvenience. If you find that the following format is too great a handicap let me know and we can work something out.

We are primarily interested in issues spontaneously raised by the group members. Therefore, we would like the first hour or hour and a half to be devoted to nondirective discussion of the topic. We are assuming that issues not raised during this part of the discussion are not deemed important by the group members. Some groups may exhaust the range of ideas in less than an hour while others may take the full two hours. In either case the time left can be used in any manner necessary to get at additional issues.

Having made the above comments it is hoped that the topic guide will not be used to suggest additional areas for probing until the group has exhausted its own thoughts.
TOPIC GUIDE

Self-image

Unfeminine job
Personal reputation
Approval of boyfriend, husband, or relatives and friends

Personal safety factors

Chance of combat injury
Noncombat injuries
Hassled by men colleagues

Personal freedom

Rules and regulations
Equal employment opportunity
Long term commitment
Moral objections to military

Personal growth

Independence
Working with others
Social life
Insufficient time for family and children

Economic considerations

Job security
Financial security
Travel opportunities
Medical benefits
Room, board, and clothing

Career development
Opportunities for promotion
Educational opportunities
Wide range of available jobs
Learning vocational skills

National security
Military effectiveness
Emotional make-up of women
Nation's image as most powerful
Some branches or all
Some jobs or all
APPENDIX F

INSTRUCTIONS FOR EDITING THE TRANSCRIPTS
INSTRUCTIONS FOR EDITING THE TRANSCRIPTS

The purpose of editing these transcripts is to identify all ideas. Additional editing will be done, later, to further categorize the ideas according to their relevance and uniqueness. At present you should only be concerned with identifying the ideas. Identification will be done by bracketing those segments of the transcript judged to be ideas and numbering them consecutively.

For editing purposes an idea is an utterance that expresses a thought, conception, notion, or impression; it may express an opinion, attitude, belief, or intention; it may also point to advantages, benefits, and/or problems. However, in expressing the thought, there need not be a subject or predicate, nor need there be grammatical correctness or literary nicety. The thought must be meaningful so that it makes sense to the editor.

In some situations an idea may be expressed as an answer to a question. The complete idea may refer to or incorporate part of the question to be meaningful. Nevertheless, it is to be considered an idea and should be counted (e.g., Question: "How would a woman perform in combat?" Answer: "Well, if that's what she wanted, I think she'd perform her duties well." The idea would be: "If that's what she wanted (combat), I think she'd perform her duties well.")

Some statements are too general to be counted as ideas (e.g., "It would be a problem"). At other times a general rule will be given along with a list of examples. The examples will not count as additional ideas
unless they are explained. Each general rule will be counted as an idea and each explained example will be counted.