

Toward a Social Psychological Programme for Improving Focus Group Methods of Developing Questionnaires

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Although focus groups are being used increasingly by survey and market researchers who are developing questionnaires, research to evaluate focus group methodology is scant and the social psychological dimensions of focus group processes are insufficiently examined. We review social psychological research in the areas of non-verbal communication, gender and interaction, interaction process analysis, and brainstorming groups. We demonstrate how this research is relevant to three elements of focus group methods: group composition, group size, and moderator training. We conclude that social psychological research raises several fundamental questions about commonsensical focus group practices and, accordingly, sketch out the priorities for a social psychologically motivated research programme that would address these issues.

Key words: Survey methodology; questionnaire development; focus groups; social psychology.

1. Introduction

Focus groups are rapidly proliferating as tools for developing questions, designing questionnaires, and determining public opinions, beliefs, or behaviors in conjunction with quantitative surveys. Surprisingly, their proliferation has occurred in the absence of systematic investigations by survey and market researchers of the focus group method, and in the absence of a clear set of standards or measures to use to evaluate the quality of the method. In the nearly two decades that have passed between Biel's (1978) remarks on "the most abused form of research" and Morgan's (1996) more optimistic overview of research on focus group methods, recommendations for future research have changed but little. And, in these two decades, our literature search has identified fewer than ten studies that provide a systematic or experimental comparison of focus group methods. Conclusions about the value of focus groups in questionnaire design and development, such as Sudman, Bradburn and Schwarz's assertion that "combining focus groups with other methods, especially thinkalouds, increases the value of all the methods" (1996, p.46), are therefore generally of unknown accuracy. The dearth of methodological studies evaluating the quality of focus group methods of pretesting is not surprising given the lack of scrutiny survey methodologists have paid to pretesting strategies more generally. Only a

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few studies evaluate the effectiveness of techniques such as conventional pretests, cognitive interviewing, interviewer-respondent interaction coding, and expert review (e.g., Presser and Blair 1994).

The problem is compounded by the tendency to include focus groups among the ever-expanding array of “cognitive laboratory” methods of questionnaire development (e.g., Dippo and Norwood 1992; Royston, Bercini, Sirken, and Mingay 1986; Sudman, Bradburn, and Schwarz 1996). Laboratory researchers use focus groups in questionnaire development in order to explore question comprehension and information retrieval, both of which are cognitive outcomes. However, emphasis on cognitive psychological concerns has the potential to detract from the issues of group dynamics and interpersonal relations that make focus groups fundamentally social psychological in character. Both the conduct of a group and the interpretation of the results must be understood within the context of group interaction (Merton 1987; Stewart and Shamdasani 1990).

In this research, our goal is to review relevant aspects of the literature in social psychology to explore the extent to which focus group methods of questionnaire design and development are informed by sound theory and research based on principles of group dynamics. We will identify ways in which social psychologists’ findings in areas including expectation states theory, interactional process analysis, brainstorming, leadership, and nonverbal communication raise fundamental questions about certain taken-for-granted guidelines for conducting group interviews and, accordingly, sketch out a programme of research on which survey researchers could embark in order to evaluate and improve focus group methods of pretesting.

We begin with a brief description of the range of focus group goals, followed by a delimitation of the goals that concern us and the aspects of focus group methods to which we orient our investigation. Focus groups are used in diverse fields for a variety of research purposes, including: (1) familiarizing the researcher with a new topic of study; (2) generating hypotheses for later testing; (3) evaluating different populations and sites for conducting research; (4) assisting survey researchers in developing questionnaires by discovering how participants talk about phenomena under study and in identifying the native constructs they use to describe phenomena; (5) interpreting results from quantitative analysis; and (6) stimulating new ideas, creative concepts, evaluations, and impressions about products or services (DeMaio et al. 1993; Morgan 1988; Morgan 1996; Forsyth and Lessler 1991; Stewart and Shamdasani 1990).

Our exclusive concern is the use of focus groups by survey and market researchers as a pretesting strategy to develop questions and questionnaires for use in a survey. Broadly speaking, this entails using focus groups to orient the researcher to a new field by obtaining background information on the topic, uncovering how participants discuss a phenomenon, and developing and testing questions. To these ends, quantitative researchers use a variety of group interview techniques (Desvousges and Frey 1989; Dippo and Norwood 1992; Forsyth and Lessler 1991; Royston et al. 1986). In one of them, subjects are first provided with potential survey questions or an entire questionnaire. While subjects may or may not be asked to answer the questions as they would in an actual interview, the questions serve to stimulate subsequent group discussion. In this discussion, participants explain how they and others might interpret specific terms in questions, how well the reference periods and response categories in the question worked, how they remembered the kinds

II. PRESENTATION OF QUESTIONS

Present sample survey questions, e.g., Have you ever tried cigarette smoking, even one or two puffs?

- A. I am passing out some questions that I would like you to look at. You will not have to answer these questions; I just want you to think about them.

READ QUESTIONS OUT LOUD TO GROUP ONE AT A TIME. ENCOURAGE GROUP TO MAKE COMMENTS IN THE QUESTIONNAIRE AS THEY GO ALONG.

- B. Now let's talk about these questions.
- C. Do you think that people your age will understand the questions?
- D. How do you think that people your age will react to these questions?
- E. Do you think that people your age will answer these questions?
- F. Do you think that people your age will answer these questions truthfully?

Fig. 1. Sample page from a focus group with adolescents (Cannell et al. 1992)

of information sought, how they felt while answering the questions, how sensitive the questions might be, and so forth. As an example, Figure 1 shows a list of questions asked in group interviews conducted with adolescents as part of a revision of the National Health Interview Survey (Cannell, Camburn, Dykema, and Seltzer 1992). A second technique is to use a semi-structured interview in which participants are asked how they and people like them think and feel about specific issues, without concentrating on preformulated survey questions. During the group discussion, members may be asked to generate ideas or brainstorm about certain topics.

Focus group experts frequently identify a set of guidelines to use to conduct a group. The prototypical focus group consists of six to twelve participants, often chosen to be homogeneous on various demographic characteristics, and a specially trained moderator (Krueger 1988; Morgan 1988; Morgan and Spanish 1984). This prototype provokes some immediate methodological questions for questionnaire designers and developers: Why a group interview? Why similar participants? Why six to twelve of them? How does a moderator become "specially trained?" In this review, we explore how the social psychological literature raises questions about three aspects of focus group methods that are frequently emphasized:

1. What is the ideal composition of a group with respect to gender and other sociodemographic characteristics?
2. What is the ideal group size?
3. What do leadership and nonverbal communication studies imply about moderator selection and training?

Clearly, responses to these questions depend on our understandings of what "ideal" or even "good" focus groups and pretest outcomes are. Here again, the focus group methods and pretest methods literatures have their lacunae. With rare exceptions (e.g., Fern 1982; Presser and Blair 1994), survey researchers who use focus groups or who assess pretest

methods have not developed replicable measures of “success,” relying instead on undefined measures of “what feels successful.” Potentially helpful measures of success that we will use include measures of the quantity and quality of information produced (e.g., number of native constructs generated, number of plausible questionnaire revisions suggested) and measures of the quality of the group experience (e.g., equality of members’ participation levels, equality of members’ opportunities to participate, members’ willingness to speak candidly, and feelings of group harmony).

A few cautions to readers are necessary. First, the social psychological research areas we will use to address these questions themselves emphasize different sets of measures. This means that we cannot provide a summary of how each of our three questions can be answered with respect to each possible measure of success. For example, brainstorming researchers emphasize the quantity and quality of information their groups produce, but forego measures of group harmony. Second, while the social psychological areas we review all clearly pertain to the dynamics of groups, few of the groups studied precisely mirror a focus group carrying out a questionnaire development task. Instead, some groups are solving logic problems, some are given the task of getting acquainted, some are spontaneously occurring groups that set their own tasks, and so forth. Because several studies point out that conclusions about group outcomes are mediated by task factors (e.g. Kimble, Yoshikawa, and Zehr 1981; Littlepage 1991), we attempt to avoid generalizing freely from the social psychological research groups to questionnaire development focus groups when differences between their tasks appear meaningful.

2. Group Composition

Composition of the focus group with regard to demographic characteristics is an important consideration for researchers who conduct group interviews. The crux of the debate centers around whether groups should be homogeneous to encourage candid expression or heterogeneous to promote diversity in the discussion. That group composition should be a source of concern is supported by findings from expectation states theory (Berger, Cohen, and Zelditch 1972; Berger, Conner, and Fisek 1974; Berger, Fisek, Norman, and Zelditch 1977; Ridgeway and Walker 1995; Ridgeway and Balkwell 1997). Expectation states theory was originally developed to explain Bales’s (Bales 1958; Bales and Slater 1955) finding that even in groups that are homogeneous with respect to status characteristics such as age, race, gender, and socioeconomic location, distinct roles emerge and create stratification within the group. This effect is more pronounced in heterogeneous groups, as members who occupy high status positions in society tend to be afforded privileges in the group such as having more frequent opportunities to participate in discussion or exerting more influence over the group (Berger, Fisek, Norman, and Zelditch 1977; Webster and Driskell 1978, 1983; Ridgeway and Balkwell 1997). For example, in a classic demonstration of the effect of status characteristics, Strodtbeck, Simon, and Hawkins (1965) formed mock juries from voters registered in an urban area. The groups of men and women from various occupations listened to a recording of a trial, selected a foreman, deliberated, and reached a verdict. Analysis of the interactions within the groups showed that men and individuals from higher status occupations initiated more interaction and were perceived as more helpful in reaching the verdict than women and individuals from lower status occupations.

In this review we concentrate primarily on the ideal sex composition of focus groups, for two reasons. First, sex is the status characteristic that predominates in studies of small group dynamics, where its effects are often considered to exemplify those that other characteristics might produce (e.g., Henley, Hamilton, and Thorne 1985). Few are the studies of the effects of racial group composition on dynamics; fewer yet are studies dealing with other characteristics such as age or socioeconomic status, despite their potential importance (e.g., Baker 1988).³ Second, in expositions of focus group techniques, researchers frequently note that sex composition is relevant to the process and quality of group discussion. Recommendations that members of a given focus group all be of the same sex, owing to the sensitivity of a topic or the relation of sex roles to expertise, are quite common (e.g., Morgan 1988). However, focus group researchers less often refer to social psychological studies on sex roles that might inform decisions about group composition. For example, Krueger (1988) notes that men might dominate mixed-sex discussions in ways that women might find to be annoying, while Morgan (1988) states that it is unclear whether men and women interact differently depending on group composition. The social psychological research on gender and small groups suggests a rather more complex model of the influence of gender on group interaction that is worth attending to.

Some evidence suggests that women's input in focus groups would indeed be enhanced by participating in all-female groups. Specifically, research in conversational dynamics has found that women are more likely to be interrupted by men than the converse (Zimmerman and West 1975) and that men's interruptions are disproportionately directed toward women (Smith-Lovin and Brody 1989). In mixed-sex groups, women tend to speak less than men (Thorne and Henley 1975; Aries 1982; Baker 1988), to feel more self-conscious than men (Diener, Lusk, DeFour, and Flax 1980), to exercise less control over topic choices than men (Fishman 1978; West and Garcia 1988), and to speak less assertively than in all-female groups (Carli 1990; Kimble, Yoshikawa, and Zehr 1981). Although women dominate in conversations about "women's" topics (e.g., sewing), men show more dominant verbal and nonverbal behavior than women when discussing "men's" topics (e.g., an oil change) and when discussing a gender-neutral topic (e.g., gardening) (Dovidio et al. 1988; see also Balkwell and Berger 1996). All of these findings imply that sex segregation in focus groups is appropriate – even for gender-neutral topics – if the researcher is concerned about the productivity of women in focus groups relative to men, or about the quality of women's experiences in the group.

For men participating in focus groups, however, studies of sex differences in conversation point to negative effects of sex segregation. One factor is that men tend to disclose personal information less readily or easily than women (Hatch and Leighton 1986; Sermat and Smyth 1973). Men regard emotions, beliefs, and personal habits as more intimate topics than women do (Solano 1981). They tend to discuss people and relationships less than women do (Bischoping 1992; Hacker 1981), even in conversations with close friends (Aries and Johnson 1983; Johnson and Aries 1983). Sermat and Smyth suggest that "men view other males who make intimate self-disclosures as acting in a manner somewhat

³ Baker (1988) found that increased age was associated with increased participation by group members in a mock-jury discussion of mandatory retirement, while socioeconomic status had no effect on participation. Crosbie (1979) also found that socioeconomic status did not affect discussion group participation.

atypical of the predominant cultural norm'' (1973, p. 345). Indeed, half the male groups involved in Walker and Wright's (1976) research refused to cooperate in an experimental condition requiring intimate self-disclosure between same-sex dyads! A second factor is that while women tend to get to know one another through self-disclosure, men more often emphasize themes of personal competition and size up their locations in the group hierarchy (Aries 1977). The combination of these factors suggests that all-male focus groups might be particularly plagued with unwillingness to disclose information on personal topics. In contrast, in the presence of women, men may be more likely to discuss themselves or personal topics (Aries 1977). This suggests that both the overall productivity of men in focus groups and the equality of participation among men may be enhanced in mixed-sex groups.

This summary has been presented as though the ideal sex composition of a group could be determined by answering a simple cost-benefit question: given the discussion topic, how much will women's and men's contributions be positively or negatively affected by single-sex versus mixed-sex groupings? However, the question ought to be more nuanced. Certain differences between focus groups formed to develop questionnaires and the groups in research we have cited may be significant, and relevant experimental research on focus groups has not been conducted. For instance, while focus groups are conducted by a moderator who attempts to improve group dynamics, the groups that are typically studied lack a moderator. How serious are sex-based group dynamics issues when a moderator makes a conscientious effort to address them? Johnson's (1994) research suggests that raising the status of female group members could mitigate the effects of sex on group dynamics (see also Ridgeway and Walker 1995; Walker, Ilardi, McMahon, and Fennell 1996). Further, experimental comparisons of male and female moderators might be just as important as experimenting with single-gender versus mixed-gender participants. What if a woman moderated a group of men? Would men then self-disclose somewhat more readily? Finally, the tasks involved when focus groups develop questionnaires do not correspond precisely to the tasks set in small groups research, which range from informal discussion to brainstorming and logical problem solving, or even, in one case, to acting like a chimpanzee. This is important because Kimble, Yoshikawa, and Zehr (1981) find that sex differences in interaction can vary with a group's task. Therefore, some results from research using small groups may not translate smoothly into directives for survey researchers who use focus groups to develop questionnaires.

Moreover, research on sex and conversation may be subject to substantial researcher effects (Bischoping 1992). Since the goal of this research is often to find sex difference, discovery and interpretation of differences may be emphasized, and the statistical significance of a difference stressed in preference to its magnitude. Participants in laboratory groups might react to group composition in ways that support the hypotheses that are being tested. For example, noticing that her group of six to eight people is composed only of women, a participant might feel that she is present solely in her capacity as a woman and respond accordingly. In comparison to research on differences between men and women, variations within each sex have received relatively less attention. However Drass (1986) suggests that "gender identity, as the set of meanings individuals attribute to themselves as males or females, is more important for shaping role performance than gender per se" (p. 294).

Drass' conclusion that both men and women with relatively masculine personalities dominate interactions parallels Sollie and Fischer's (1985) finding that sex-role orientation and self-disclosure are related for women. Taken together, these studies suggest that decisions about sex composition in focus groups might create the very effects that they seek to avoid, or falsely convey a sense of security deriving from the conviction that the root problem of dominating and reticent personalities has been solved. Therefore, research tailored to users of focus groups that investigates the magnitude of sex differences in questionnaire development tasks is essential.

We turn now to the question of racial composition of focus groups, summarizing the sparse literature on the effects of race on group or dyad dynamics and outcomes in the United States in order to determine whether any clear prescriptions for questionnaire developers arise and be in the position to ask whether sex is rightly treated as a paradigm for other status characteristics that could influence group process.⁴ Some research indicates that minority group members would participate better in a racially homogeneous group, for reasons consistent with a conceptual parallel between females' and minority group members' experiences. For example, Davis (1997) suggests that African American respondents acquiesce to white interviewers, while Kirchmeyer (1993) finds that members of minority groups contribute less than white participants to group problem-solving tasks, in part because orientations to cooperation and dominance behaviors tend to differ by race. Yet when we turn to the preferences and responses of white group members, the conceptual parallel to males is weak. Studies of white participants' responses emphasize their unhappy or anxious emotional state – a quite different focus from that of research on men in groups. For example, white research participants are described as “trying too hard” and feeling undue stress in interactions with African Americans (Ickes 1984), and as feeling the atmosphere is less harmonious as the proportion of African Americans in a group increases (Davis, Cheng, and Strube 1996; see also Davis and Burnstein 1981). These findings illustrate that we cannot readily generalize findings about the effects of sex composition to determine the effects of other variables.

Moreover, while these studies suggest that racially homogenous groups might feel best, the scant literature also offers some evidence of the benefits of heterogeneity for group productivity. McLeod, Lobel, and Cox (1996) note that despite their lower levels of interpersonal attraction, brainstorming groups that are ethnically and racially diverse produce ideas that are of higher quality than groups composed of only Anglo participants. Further, Davis, Cheng, and Strube (1990) find that members are most motivated to participate when there is no clear racial majority. In response to research showing that diversity can hinder group performance, McLeod, Lobel, and Cox (1996) suggest that it is critical to examine how groups handle their diversity and what instructions about group process foster productivity in a diverse group. Once again, these issues point to the potential role of focus group moderators in directing group dynamics.

3. Optimal Group Size

What is the ideal number of members for a pretest focus group? A review of the

⁴ The following discussion draws on research conducted in the United States. The differences in ethnocultural or racial dynamics from country to country mean that these findings cannot freely be generalized to other sites.

recommendations by the experts regarding optimal group size suggests that focus group researchers must balance the need of running a group which is small enough to allow all participants to have an equal voice against that of having a group large enough to ensure diversity in opinions and perceptions (see, for example, Fowler 1995; Krueger 1988; Morgan 1988; Stewart and Shamdasani 1990). Commonly they recommend setting the upper bound at twelve, claiming that groups with more than twelve members prohibit everyone from making a substantial contribution. Other problems with large groups include fragmentation, division into subgroups, and increased need for intervention by the moderator in order to maintain equality in participation. In contrast to the recommendations regarding the maximum number of participants, there is less agreement about the optimal lower bound: while estimates range from four to eight, the consensus appears to be near six. Interestingly, Morgan (1988) argues that among the disadvantages of using smaller groups are that they may be more prone to faulty dynamics and less productive than larger groups. The social psychological research on patterns of small group interaction offers striking challenges to both these claims.

With regard to the claim that smaller groups may be more susceptible to faulty dynamics, extensive investigations by Bales (1950, 1970), using the Interaction Process Analysis (IPA) coding scheme, provide some of the most damaging evidence that bigger is not always better. The IPA scheme measures many dimensions of group process, such as distinguishing between goal-related behaviors and socio-emotional ones. One of the most interesting findings to come out of the IPA research was that as group size increases, group members' participation varies increasingly (Bales and Borgatta 1965; Bales 1970).⁵ For example, Bales (1970) found that among groups of four members, interaction was divided roughly 30%–30%–25%–15%, meaning that the most active member spoke twice as much as the least active member. However, as group size increased, a disproportionate increase in the participation of the most active group members was found. Thus, in groups of eight, the most active member took about 40 percent of the turns, ten times more than the least active member, while the second most active member took roughly 25 percent of the turns. Bales (1970) also found that group size interacted with other communication processes in ways that hindered equal participation. Members who dominated discussions were more likely to be addressed as the group leader by other speakers, and they, in turn, tended to address the group as a whole when they spoke. In contrast, members who participated the least, addressed one another instead of the group as a whole.

Further research indicates that group members typically divide participation tasks soon after they begin discussion, in patterns that stabilize rapidly (Fisek 1974; Webster 1975). For example, Baker (1988) found that a group member's participation level in the first minute of discussion is among the strongest predictors of his or her participation in the time remaining. These findings indicate that, to be effective, focus group moderators must intervene swiftly to temper group dynamics. Yoell (1974) proposes that the moderator's role would be simpler in small groups of six members than in groups of eight or twelve. Taken together, these findings indicate that focus groups smaller than is usually

⁵ Bales and Borgatta (1965) point out that some of the increased variation arises from sampling factors, since measures of each person's participation become less reliable. Nevertheless, Webster (1975) calculates that group size continues to have an effect after sampling factors are taken into account.

recommended could have members who participate more equally in discussions, in part because of the participation patterns typical in smaller groups, and in part because of the greater opportunity for close observation by the moderators of such groups. This tentative conclusion runs counter to Morgan's (1988) assertion that smaller groups are more prone to faulty dynamics than larger groups.

Research on the relation of group size to group productivity of ideas, problem solutions, and other outputs poses a second challenge to conventional recommendations about focus group size. As might be expected, increasing group size has generally led to increased productivity (see e.g., reviews in Yetton and Bottger 1983; Littlepage 1991), though some studies show no relation between these two factors. For example, Fern (1982) cites brainstorming studies by Bouchard and Hare (1970) and Bouchard, Barsaloux, and Drauden (1974) in which groups of five and nine members, or groups of four and seven members, were equally productive. Further, increases in group size have been observed to have rapidly diminishing returns (Littlepage 1991). These studies offer provocative evidence that small groups of four or five members might easily approach the productivity of larger groups.⁶

Of potential value in understanding this possibility are projects by brainstorming researchers who compare nominal and real groups. A nominal group exists in name only; its members work entirely independently and produce ideas that are later combined by the researcher. In real groups, brainstorming is done by all group members working together. Even though brainstorming groups have been touted as a means of enhancing productivity, with creative ideas emerging from group process, a considerable body of research (reviewed by Diehl and Stroebe 1987) shows that real brainstorming groups almost always produce fewer unique ideas than nominal groups. In fact, nominal groups outperform real groups by producing nearly twice the number of unique ideas (Lamm and Trommsdorff 1973; Mullen, Johnson, and Salas 1991; Street 1974), with less of the problem of diminishing returns than occurs among real groups (Bouchard, Barsaloux, and Drauden 1974).

Having repeatedly confirmed that nominal groups are more productive than real ones, brainstorming researchers have begun to search for explanations. For example, Diehl and Stroebe (1987) asked: How much do free riders contribute to this result? How important is evaluation anxiety? Are subjects cognitively "blocked" when grappling with the simultaneous tasks of generating new ideas, holding ideas in short-term memory while others are speaking, and figuring out when to speak? Finding that cognitive blocking is a significant factor, they tested whether it would be helpful to give subjects pencil and paper to record ideas, to use a speakers' list to organize turn-taking, or to ensure that real and nominal group members each had equal amounts of time per person. None of these measures proved successful (Diehl and Stroebe 1991). Paulus and Dzindolet (1993) have determined that social matching occurs in real brainstorming groups. That is, members interpret how well they are doing by comparing their input to that of others, which in turn reinforces the effects arising from cognitive blocking. Having obtained such

⁶ Dunbar et al. (1995), who study spontaneously forming conversation groups in a variety of naturalistic settings, have observed that groups rarely exceed four members. They suggest that larger groups have more difficulty conversing because of the greater difficulty in monitoring one another visually.

discouraging effects for a method so widely regaled, brainstorming researchers have begun to reformulate their research question to ask why we so widely believe in the advantages of groups (Diehl and Stroebe 1991; Paulus and Dzindolet 1993).

On the whole, the brainstorming research implies that focus groups intended to generate ideas are less productive than sets of individual interviews, combined as for a nominal group. Because Littlepage (1991) demonstrates that task characteristics affect group productivity, we must ask how well findings about brainstorming tasks can be generalized to understand focus groups engaged in generating native constructs or assessing a draft questionnaire. Of particular value in addressing this concern are Fern's (1982) experiments in which focus groups were asked to brainstorm about research topics for a survey – a task that more nearly approaches those of focus groups used in questionnaire development. Fern found that eight-member groups were more productive than four-member groups, though with a clear effect of diminishing returns (so that the eight-member group was not doubly productive). Moreover, confirming the brainstorming conclusions, he found that ideas aggregated from sets of individual interviews, to produce nominal group output, were superior in quality and quantity to ideas from real focus groups. These findings held regardless of whether the real groups were moderated. The striking conclusion in this research was:

From a market researcher's perspective, individual interviews may be a better alternative for exploratory research than focus groups. The sheer volume of ideas, as well as the quality of ideas, suggests using individual interviews. The cost of conducting interviews, transcribing the tapes, editing the transcripts, and reporting the results may be lower for individual interviews (Fern 1982, p. 12).

This conclusion poses a radical challenge for focus group users who measure a group's success in terms of outputs such as the maximum number of native constructs participants use to describe a phenomenon or all the reasons why a particular question may be sensitive. Clearly, additional experimental research is needed that tests the possibility that our usual group sizes are larger than concerns about productivity and equality in participation would warrant. Another research direction is to test systematically the efficacy of focus group methods which combine an initial, nominal stage of independent contributions by group members with a second stage of real group discussion (see Albrecht, Johnson, and Walther 1993).

4. Moderator Training

The preceding discussions of group composition and group size raise some hopes about the potential of moderators to improve the dynamics and outputs of questionnaire development focus groups – by altering gender dynamics, for example, or by influencing the participation patterns of beleaguered large groups. At the same time, there are some causes for unease. Fern's (1982) research, alarmingly, finds no effect of moderators on questionnaire development focus groups. Offner, Kramer, and Winter (1996) conclude that in the case of brainstorming groups, the presence of a facilitator does not raise real groups' productivity beyond that of nominal groups. This result is generally confirmed by Oxley, Dzindolet, and Paulus (1996), with the exception that groups with highly trained facilitators outperform nominal groups. These studies highlight the importance of evaluating and improving moderator selection and training. In this section, we explore

the possible contributions of social psychological studies of leadership and nonverbal communication to moderator selection and training, respectively.

According to focus group literature, moderators should be selected on the basis of abilities to listen well, probe nondirectively, and keep a group on track (see Stewart and Shamdasani 1990, for a review of attributes related to skillful moderating). Thus, a moderator could be conceived of as a group leader, one who is “central to the creation, maintenance, and redirection of group or organized culture” (Wheelan and Johnston 1996, p. 34). For example, a focus group moderator performs many leadership functions for the maintenance of the group, including outlining the group’s goals (e.g., evaluation of a questionnaire), describing methods for achieving goals (e.g., engaging in group discussion about problems with questions), implementing methods for keeping the group on track and the lines of communication open (e.g., cutting off a rambling informant), dealing with group conflict (e.g., indicating at the beginning of the interview that all opinions are of interest), and delivering feedback to group members about their performance (e.g., providing neutral praise to members who participate) (Hollander 1985; Stogdill 1974; Michener and DeLamater 1994.)

Studies of leadership indicate that the degree to which a moderator is successful in maintaining the group will depend partly on real ability and partly on the group members’ perception of the moderator as a leader. Accordingly, characteristics that are associated with being perceived as a leader might be used by investigators when they select moderators. These characteristics include being perceived as intelligent, confident, socially perceptive, masculine in personality, skilled at the task that group members are performing, and more talkative than other group members (Lord, De Vader, and Alliger 1986; Rice et al. 1984; Sorrentino and Boutillier 1975; Stein and Heller 1983; Stogdill 1974; Zaccaro, Foti, and Kenny 1991). While this list may be promising, we caution that it draws on studies of leaders who emerge in the course of group activity by initially leaderless groups, while the situation of moderators, who are appointed formally to a leadership role, may differ. For example, Wheelan and Johnston (1996) outline important differences between emergent and formally appointed leaders. Moreover, because focus group moderators are to facilitate group discussion, it could be counterproductive for a moderator to be extremely talkative.

Further studies have found that the similarity between a leader and group members can influence members’ evaluations of the leader’s efficacy. Hains, Hogg, and Duck (1997) determined that group members’ perceptions of an appointed leader as similar to themselves can influence their acceptance of this individual, if belonging to the group is salient or made important to the group members. However, when belonging to the group is unimportant to the members, the similarity of the leader to the members is not important. This finding implies that groups discussing sensitive experiences, or groups that are homogeneous with respect to societally salient factors such as race or sex, could evaluate most favorably a moderator who is seen to be similar in experience, race, or sex, respectively. In a meta-analysis of laboratory and organizational studies on sex and group composition, Eagly et al. (1995) conclude that while men and women are equally effective as leaders, their level of effectiveness varies both with the level of masculinity afforded to their role and with the overall number of men in the group. Men are more effective in roles labeled masculine, women are more effective in less masculine roles, and men are more effective

in groups in which the ratio of men to women is large. This study again implies that moderator sex should be matched to group members' sex, depending on the topic under study. Additionally, if a woman is moderating a group, the sex ratio of the group should not favor males.

A second area in social psychology that has the potential to inform moderator training procedures and performance is the large body of research on the role of nonverbal channels of communication (Archer and Akert 1977; DePaulo 1992; Ekman and Friesen 1969, 1974). Discussions of the moderator's role tend to emphasize verbal behaviors, such as framing questions effectively, probing well, and maintaining a smoothly flowing discussion. Findings from nonverbal communication studies could be used to develop training procedures so that moderators could more easily detect cues about participants' emotions and perceptions of one another. Using insights about the relation of nonverbal cues to status and the expectation states paradigm (e.g., Ridgeway 1987; Ridgeway, Berger, and Smith 1985), moderators might be able to attend closely to their own nonverbal behaviors and to evaluate whether they are projecting constructive feedback. These skills could be particularly significant in addressing the serious group dynamics problems that can arise in focus groups. Below we outline key nonverbal indicators and ways that focus group moderators might respond to them.

High participation and the need to dominate may be likely from group members who sit at heads or centers (as opposed to corners) of a rectangular seating arrangement (Hare and Bales 1963; Nemeth and Wachtler 1974). Hare and Bales (1963) found group members who selected central positions during group discussion not only participated more, but scored high on tests of dominance. Seating preference is just one nonverbal demonstration of feelings of power or dominance. Others observed in group interaction include gesturing, leaning back, extending the legs, initiating speech, speaking a long time, looking at others when speaking, and looking away while others speak (Dovidio et al 1988; Gifford 1991; Mehrabian 1969). These feelings and behaviors are problematic from the perspective of the moderator seeking to encourage members to participate equally. Using nonverbal cues, trained moderators could identify which group members may appear powerful to others and likely to dominate discussion as well as those who are likely to "shy away" from discussion and need encouragement. Moderators could be taught to project a dominant message toward potentially difficult members who may come to monopolize discussion time, once these persons have been identified. Particularly because differentiation in group members' participation can occur rapidly, these skills could be very useful.

Anxiety, negative feelings, or submissive feelings are indicated by increased random movement, increased "grooming" (self-touching) behavior (Burgoon et al. 1992; Dovidio et al. 1988), by moving objects around more (Gifford 1991), and by a high rate of blinking. Moderators could make similar use of these indicators to evaluate group dynamics and to modify their own nonverbal messages. Moderators could be trained to use feedback and nondirective probes specifically designed to put members at ease after diagnosing negative feelings in the group (e.g., "I know talking about these issues makes some people uncomfortable. How is it for you?"). These skills would be especially useful in groups evaluating questionnaires on sensitive or personal topics.

Friendly or positive feelings are indicated by leaning forward, constancy in a gaze (Burgoon 1991), stillness of the head in speaking (Burgoon et al. 1992), stillness of the

legs, and open arms with more arm gestures (Gifford 1991). While smiles can indicate friendliness, relaxation and engagement (Burgoon 1991), they are surprisingly ambiguous: at times they can indicate nervousness, dishonesty, social tension or approval-seeking (Dovidio et al. 1988; Ekman, Friesen, and O'Sullivan 1988). Moderators could be trained to project calm and friendly feelings toward group members and to monitor whether they appear to favor one member's input over another's using more interpretable and reliable cues than smiles. Further, they could determine whether coalitions among members are forming and develop constructive methods to deal with these.

Lying is notoriously difficult to detect, particularly because we believe that certain behaviors like "not looking someone in the eye" are characteristic of lying (Bond, Omar, Mahmoud, and Bonser 1990), so that when we do lie, we do our best to convincingly avoid such behaviors. Indeed, our usual ability to detect lies is at best only slightly better than chance (Ekman and O'Sullivan 1991). Some of the best cues that a lie is being told are that lies are delivered in relatively high-pitched tones and with a decline in hand movements apparently caused by the liar's concentration on effective speaking (Ekman 1988; Ekman, O'Sullivan, Friesen, and Scherer 1991). Other vocal clues include hesitating, stuttering, stammering and providing short answers to questions (DePaulo, Stone, and Lassiter 1985; Zuckerman, DePaulo, and Rosenthal 1981), while nonvocal clues include dilated pupils, excessive blinking and inordinate touching of the body (Kraut and Poe 1980). While the cues for lying are quite unreliable and could be difficult for a moderator to use, the ability to detect deception can be increased through training and emphasis on vocal cues over visual ones (DePaulo, Lassiter, and Stone 1982; Zuckerman, Koestner, and Alton 1984). Given that many survey research topics involve sensitive issues (e.g., politics and health) and that participants in focus groups are often asked whether they think people will answer certain questions honestly, training moderators to detect and constructively handle deception would be a useful endeavor.

How well do these findings regarding dominance, negative and positive affect and deception, gleaned largely from laboratory studies of dyad interaction, transfer to a focus group setting? One issue is whether subjects' behaviors in these studies reflect their day-to-day nonverbal behavior and the behavior that might be shown in a focus group. Researchers studying nonverbal behavior in the laboratory tend to generalize their results quite freely to daily life, possibly because nonverbal behavior is so often unconsciously performed that conscious reactions to being studied are not expected. However, they are very cautious about assigning a single definitive interpretation to any given gesture, pointing out, for example, the varied social meanings of a smile (Dovidio et al. 1988). From this perspective, cautious generalizations to the focus group appear feasible.

A second issue is whether focus group moderators can incorporate observation of nonverbal communication with their many other tasks in running a group. On this point, the research suggests a mixed response. On one hand, it is most likely that moderators already do use their skill as nonverbal communicators and interpreters in focus groups, often without realizing it. As Smith, Archer, and Costanzo (1991) suggest, articulating nonverbal cues is a more unusual and difficult activity than the day-to-day task of perceiving and interpreting them. Moreover, although nonverbal communications researchers often use extraordinarily precise measures of micro cues such as voice pitch, angles of facial orientation, and durations of silence, "macro" cues such as larger gestures could be

more easily noticed and addressed by moderators (Gifford 1991). Findings across a number of studies demonstrate that independent observers are able to code both “micro” and “macro” behaviors fairly reliably with training (Burgoon and Baesler 1991). On the other hand, moderators’ duties in conducting a semi-structured interview and tracking verbal group dynamics are already quite considerable. How much more could a moderator realistically be expected to do without cognitive overload? In the arguably less complex situation of one-to-one interviews, trained survey interviewers have repeatedly been found to give inappropriate feedback to respondents (Mathiowetz and Cannell 1980).

5. Conclusions

This review has indicated a multitude of ways in which empirical findings from social psychological research in group dynamics challenge commonsensical focus group practices. Expectation states theory leads to questions about recommendations that groups be homogeneous, while interactional process analysis and brainstorming studies indicate that smaller than usual groups could be highly productive. Leadership and nonverbal communication studies point to new criteria for moderator selection, new concerns for training, and most radically, new questions about whether moderators have any effect. Clearly, myriad experiments could be done that contrast outcomes for groups of varied sociodemographic characteristics, size, moderator selection, and moderator training, as well as examining how these variables interact. Given the large range of choices, we believe that the most serious issue is the order of priorities for a social psychologically informed research programme. In this conclusion, we indicate our priorities, emphasizing conceptual and measurement issues that should be addressed before experimentation commences.

The highest priority research, relevant to each area discussed in this review, will be to clarify what is meant by a “good” or “successful” focus group. Researchers who are committed to focus group use should be concerned primarily with comparisons among groups of various sizes, compositions, leader selection and training methods, and so forth. Their inquiries will require, first, development of indicators to measure various aspects of group process and products. As Yoell (1974) suggests, measures developed to study group interaction (e.g., Bales 1950, 1970; Dabbs and Ruback 1987; Fern 1982) might be adapted here. In addition, modifying interviewer-respondent behavior coding systems used to measure data quality and interaction quality in standardized interviews might be particularly useful (e.g., Dykema, Lepkowski, and Blixt 1997; Fowler and Cannell 1996). Coding systems could be used to capture and evaluate interactions among participants, between participants and moderators, and in the group as a whole, and might be combined with information from moderators’ and participants’ subjective evaluations of the group experience.

Other methodologists may question whether focus group approaches are as effective as other pretesting methods, particularly in light of the brainstorming studies that contrast the productivity of real groups to that of “nominal” groups constructed using one-to-one interviews. Those who strive to design optimal questionnaire development strategies will cast a wide net by comparing focus group approaches to a broad range of other pretest methods, including expert review, interviewer debriefing, cognitive interviewing methods,

and interviewer-respondent interaction coding. Again, the indicators used to identify a “good” pretest are diverse. While some studies have evaluated the number of potential problems that a pretesting method identifies (e.g., Fowler 1992; Presser and Blair 1994), others have assessed how reliably problems are identified (e.g., Bischooping 1989; Presser and Blair 1994), how much detail about the nature of the problem is given (e.g., Oksenberg and Kalton 1989), and how costly the method is (e.g., Presser and Blair 1994). Arguably the most critical indicator in evaluating a pretest strategy is its validity or the degree to which the strategy identifies problems that could influence survey error. While the record-check methods ordinarily used to assess validity have a host of problems, they nonetheless raise questions about the other criteria for “good” pretesting. For example, in a record-check study evaluating the relation of interviewer-respondent interaction codes to response accuracy, Dykema et al. (1997) found that respondent codes believed to identify problematic questions effectively, such as respondent expressions of uncertainty, were unrelated to response accuracy.

As we develop indicators, we should also be sensitive to the relation between various indicators and potential contradictions in assumptions about the meaning of a “good” pretest. Researchers who are comparing one focus group design to another may find that the goals of equal participation and high quality output are contradictory. For example, Ridgeway and Walker (1995) point out that hierarchies in groups can lead to greater efficiency as tasks are completed. Other cautions apply to researchers who are comparing focus group methods to other questionnaire development methods. Morgan (1996) notes that researchers have approached comparisons between focus groups and other methods in contradictory ways: while some researchers judge focus groups to be effective when the groups lead to the same conclusion as other methods, others consider the unique contribution of focus groups to be the sign of their efficacy. Therefore, it is plausible that researchers seeking to identify a single, optimal questionnaire development method will draw different conclusions from those with designs that allow triangulation among methods.

As a second priority, we recommend that a more complete enumeration of the dimensions of a focus group be undertaken. Our review has concentrated on group size, gender composition, and moderator selection and training because these are three dimensions commonly regarded as important in preparing for a focus group and because social psychological research has definite bearing on each. However, two of these three dimensions pertain to static characteristics of a group that do not change once it is underway, meaning that variations in the dynamic and interactive dimensions of the interview process have received relatively little attention here. For example, the ways in which participants are oriented to the focus group task, the extent to which they are asked to work independently at the beginning of the interview, and the degree to which they are aware of the list of topics for discussion may all be factors that influence the equality of participation.

We turn now to the three dimensions that we have investigated and to specific experiments that should be conducted. The most dramatic challenge to current practice arises from the implications of brainstorming research for decisions about group size. There are strong indications that typical focus groups are larger in size than is ideal, yet these indications generally arise from groups convening to complete tasks that are quite different from the typical focus group task. Drawing preliminary conclusions about the

basic issue of group size, and testing the extent to which Bales and brainstorming group tasks generalize to focus groups, would be most helpful. Another important research direction will be to develop a moderator training system, incorporating the insights from studies of nonverbal behavior, and test how it influences focus group outcomes. Given that there are questions about the efficacy of any moderator, such tests should include unmoderated groups among the experimental conditions. Third, there is a clearly defined and testable hypothesis in the area of gender composition of focus groups – namely, that men’s and women’s contributions are differently influenced by composition. We recommend that research on this hypothesis be accompanied by further discussion of how other demographic characteristics affect group interaction, and of how these variables are conceptualized. For example, are sex or race considered to be rough and practically applicable indicators of personality traits and group interaction styles, or are they considered important in themselves? Finally, while our literature review has explained why such a research programme is relevant for questionnaire developers, certainly it has broad implications for survey researchers who conduct focus groups for other purposes, such as providing vivid examples that shed light on quantitative analyses.

6. References

- Albrecht, T.L., Johnson, G.M., and Walther, J.B. (1993). Understanding Communication Processes in Focus Groups. In *Successful Focus Groups: Advancing the State of the Art*, ed. D.L. Morgan, 51–64, Newbury Park, CA: Sage.
- Archer, D. and Akert, R. (1977). How Well Do You Read Body Language? *Psychology Today*, 68–69, 119–120.
- Aries, E. (1977). Male–Female Interpersonal Styles in All Male, All Female and Mixed Groups. In *Beyond Sex-Roles*, ed. A.G. Sargent, St. Paul: West.
- Aries, E.J. (1982). Verbal and Nonverbal Behavior in Single-Sex and Mixed-Sex Groups: Are Traditional Sex-Roles Changing? *Psychological Reports*, 51, 127–134.
- Aries, E. and Johnson, F.L. (1983). Close Friendship in Adulthood: Conversational Content Between Same-Sex Friends. *Sex Roles*, 9, 1183–1196.
- Baker, P.M. (1988). Participation in Small Groups: Social, Physical, and Situational Predictors. *Small Group Behavior*, 19(1), 3–18.
- Bales, R.F. (1950). *Interaction Process Analysis: A Method for the Study of Small Groups*. Cambridge, MA: Addison-Wesley.
- Bales, R.F. (1958). Task Roles and Social Roles in Problem Solving Groups. In *Readings in Social Psychology* (3rd edition), eds. E.E. Maccoby, T.M. Newcomb, and E.L. Hartley, 437–447.
- Bales, R.F. (1970). *Personality and Interpersonal Behavior*. New York: Holt, Rinehart, and Winston.
- Bales, R.F. and Borgatta, E.F. (1965). Size of Group as a Factor in the Interaction Profile. In *Small Groups: Studies in Social Interaction*, eds. A.P. Hare, E.F. Borgatta, and R.F. Bales, New York: The Free Press.
- Bales, R.F. and Slater, P.E. (1955). Role Differentiation in Small Decision-Making Groups. In *The Family, Socialization, and Interaction Process*, eds. T. Parsons, R.F. Bales et al., 259–306, Glencoe, IL: Free Press.

- Balkwell, J.W. and Berger, J. (1996). Gender, Status, and Behavior in Task Situations. *Social Psychology Quarterly*, 59(3), 273–283.
- Berger, J., Cohen, B.P., and Zelditch, M., Jr. (1972). Status Characteristics and Social Interaction. *American Sociological Review*, 37, 241–255.
- Berger, J., Conner, T.L., and Fisek, M.H. (1974). *Expectation States Theory: A Theoretical Research Program*. Cambridge, MA: Winthrop.
- Berger, J., Fisek, M.H., Norman, B.Z., and Zelditch, M., Jr. (1977). *Status Characteristics and Social Interaction: An Expectation States Approach*. New York: Elsevier Scientific Pub. Co.
- Biel, A. (1978). Focus groups: The Most Abused Form of Research. *Viewpoint*, 17, 6–7.
- Bischoping, K. (1989). An Evaluation of Interviewer Debriefing in Survey Pretests. In C. Cannell, L. Oksenberg, F. Fowler, et al., *New Techniques for Pretesting Survey Questions*. Final report to National Center for Health Services Research and Health Care Technology Assessment, grant HS 05616. Ann Arbor, MI: Survey Research Center, University of Michigan.
- Bischoping, K. (1992). Gender Differences in Conversation Topics: 1922–1990. *Sex Roles*, 28, 1–18.
- Bond, C.F., Omar, A., Mahmoud, A., and Bonser, R.N. (1990). Lie Detection Across Cultures. *Journal of Nonverbal Behavior*, 14, 189–204.
- Bouchard, T.J., Barsaloux, J., and Drauden, G. (1974). Brainstorming Procedure, Group Size, and Sex as Determinants of the Problem-Solving Effectiveness of Groups and Individuals. *Journal of Applied Psychology*, 59, 135–138.
- Bouchard, T.J. and Hare, M. (1970). Size, Performance, and Potential in Brainstorming Groups. *Journal of Applied Psychology*, 54, 51–55.
- Burgoon, J.K. (1991). Relational Message Interpretations of Touch, Conversational Distance, and Posture. *Journal of Nonverbal Behavior*, 15, 233–259.
- Burgoon, J.K. and Baesler, E.J. (1991). Choosing Between Micro and Macro Nonverbal Measurement: Application to Selected Vocalic and Kinesic Indices. *Journal of Nonverbal Behavior*, 15, 57–78.
- Burgoon, J.K., le Poire, B.A., Beutler, L.E., Bergan, J., and Engle, D. (1992). Nonverbal Behaviors as Indices of Arousal: Extension to the Psychotherapy Context. *Journal of Nonverbal Behavior*, 16, 159–178.
- Cannell, C.F., Camburn, D., Dykema, J., and Seltzer, S. (1992). *Applied Research on the Design and Conduct of Surveys of Adolescent Health Behaviors and Characteristics*. Institute for Social Research, The University of Michigan, Ann Arbor, MI.
- Carli, L.L. (1990). Gender, Language, and Influence. *Journal of Personality and Social Psychology*, 59, 941–951.
- Crosbie, P.V. (1979). The Effects of Sex and Size on Status Ranking. *Social Psychology Quarterly* 42(4), 340–354.
- Dabbs, J.M. Jr and Ruback, R.B. (1987). Dimensions of Group Process: Amount and Structure of Vocal Interaction. In *Advances in Experimental Social Psychology*, 20, ed. L. Berkowitz, 123–169, San Diego, CA: Academic Press.
- Davis, D.W. (1997). The Direction of Race of Interviewer Effects Among African-Americans: Donning the Black Mask. *American Journal of Political Science*, 41(1), 309–322.

- Davis, L. and Burnstein, E. (1981). Preference for Racial Composition of Groups. *Journal of Psychology*, 109, 293–301.
- Davis, L.E., Cheng, L.C., and Strube, M.J. (1996). Differential Effects of Racial Composition on Male and Female Groups: Implications for Group Work Practice. *Social Work Research*, 20(3), 157–166.
- DeMaio, T., et al. (1993). Protocol for Pretesting Demographic Surveys at the U.S. Census Bureau. Washington, U.S. Bureau of the Census.
- DePaulo, B.M. (1992). Nonverbal Behavior and Self-Presentation. *Psychological Bulletin*, 111, 203–243.
- DePaulo, B.M., Lassiter, G.D., and Stone, J.I. (1982). Attentional Determinants of Success at Detecting Deception and Truth. *Journal of Personality and Social Psychology*, 8, 273–279.
- DePaulo, B.M., Stone, J.I., and Lassiter, G.D. (1985). Deceiving and Detecting Deceit. In *The Self and Social Life*, ed. B.R. Schlenker, 323–370, New York: McGraw-Hill.
- Desvousges, W.H., and Frey, J.H. (1989). Integrating Focus Groups and Surveys: Examples from Environmental Risk Studies. *Journal of Official Statistics*, 5, 349–363.
- Diehl, M. and Stroebe, W. (1987). Productivity Loss in Brainstorming Groups: Toward the Solution of a Riddle. *Journal of Personality and Social Psychology*, 53(3), 497–509.
- Diehl, M. and Stroebe, W. (1991). Productivity Loss in Idea-Generating Groups: Tracking Down the Blocking Effect. *Journal of Personality and Social Psychology*, 61(3), 392–403.
- Diener, E., Lusk, R., DeFour, D., and Flax, R. (1980). Deindividuation: Effects of Group Size, Density, Number of Observers, and Group Member Similarity on Self-Consciousness and Disinhibited Behavior. *Journal of Personality and Social Psychology*, 39(3), 449–459.
- Dippo, C.S. and Norwood, J.L. (1992). A Review of Research at the U.S. Bureau of Labor Statistics. In *Questions about Questions: Inquiries into the Cognitive Bases of Surveys*, ed. J.M. Tanur, 271–290, New York: Russell Sage.
- Dovidio, J.F., Brown, C.E., Heltman, K., Ellyson, S.L., and Keating, C. (1988). Power Displays Between Women and Men in Discussions of Gender-Linked Tasks: A Multi-channel Study. *Journal of Personality and Social Psychology*, 55, 580–587.
- Drass, K.A. (1986). The Effect of Gender Identity on Conversation. *Social Psychology Quarterly*, 49, 294–301.
- Dunbar, R.I.M., Duncan, N.D.C., and Nettle, D. (1995). Size and Structure of Freely Forming Conversational Groups. *Human Nature*, 6(1), 67–78.
- Dykema, J., Lepkowski, J.M., and Blixt, S. (1997). The Effect of Interviewer and Respondent Behavior on Data Quality: Analysis of Interaction Coding in a Validation Study. In *Survey Measurement and Process Quality*, eds. Lyberg, L., Biemer, P., Collins, M., de Leeuw, E., Dippo, C., Schwarz, N., and Trewin, D., 287–310, New York: John Wiley & Sons, Inc.
- Eagly, A.H., Karau, S.J., and Makhijani, M.G. (1995). Gender and the Effectiveness of Leaders: A Meta-Analysis. *Psychological Bulletin*, 117, 125–146.
- Ekman, P. (1988). Lying and Nonverbal Behavior: Theoretical Issues and New Findings. *Journal of Nonverbal Behavior*, 12, 163–175.
- Ekman, P. and O’Sullivan, M. (1991). Who Can Catch a Liar? *American Psychologist*, 46, 913–920.
- Ekman, P. and Friesen, W.V. (1969). Nonverbal Leakage and Clues to Deception. *Psychiatry*, 32, 88–106.

- Ekman, P. and Friesen, W.V. (1974). Detecting Deception From the Body or Face. *Journal of Personality and Social Psychology*, 29, 288–298.
- Ekman, P., Friesen, W.V., and O'Sullivan, M. (1988). Smiles When Lying. *Journal of Personality and Social Psychology*, 54, 414–420.
- Ekman, P., O'Sullivan, M., Friesen, W.V., and Scherer, K.R. (1991). Invited Article: Face, Voice, and Body in Detecting Deceit. *Journal of Nonverbal Behavior*, 15, 125–135.
- Fern, E. (1982). The Use of Focus Groups for Idea Generation: The Effect of Group Size, Acquaintanceship, and Moderator on Response Quantity and Quality. *Journal of Marketing Research*, 19, 1–13.
- Fisek, M.H. (1974). A Model for the Evolution of Status Structures in Task-Oriented Discussion Groups. In *Expectation States Theory*, eds. J. Berger, T.L. Conner, and M.H. Fisek, Cambridge, MA: Winthrop.
- Fishman, P.M. (1978). Interaction: The Work Women Do. *Social Problems*, 25, 397–406.
- Forsyth, B.H. and Lessler, J.T. (1991). Cognitive Laboratory Methods: A Taxonomy. In *Measurement Errors in Surveys*, eds. P. Biemer, R. Groves, L. Lyberg, N. Mathiowetz, and S. Sudman, 393–418, New York: Wiley.
- Fowler, F.J. (1992). How Unclear Terms Affect Survey Data. *Public Opinion Quarterly*, 56(2), 218–231.
- Fowler, F.J. (1995). *Improving Survey Questions: Design and Evaluation*. Thousand Oaks, CA: Sage.
- Fowler, F.J. and Cannell, C.F. (1996). Using Behavioral Coding to Identify Cognitive Problems With Survey Questions. In *Answering Questions: Methodology for Determining Cognitive and Communicative Processes in Survey Research*, eds. N. Schwarz and S. Sudman, 15–36, San Francisco: Jossey-Bass.
- Gifford, R. (1991). Mapping Nonverbal Behavior on the Interpersonal Circle. *Journal of Personality and Social Psychology*, 61, 279–288.
- Hacker, H.M. (1981). Blabbermouths and Clams: Sex Differences in Self-Disclosure in Same-Sex and Cross-Sex Friendship Dyads. *Psychology of Women Quarterly*, 5, 385–401.
- Hains, S.C., Hogg, M.A., and Duck, J.M. (1997). Self-Categorization and Leadership: Effects of Group Prototypicality and Leader Stereotypicality. *Personality and Social Psychology Bulletin*, 23(10), 1087–1099.
- Hare, A.P. and Bales, R.F. (1963). Seating Position and Small Group Interaction. *Sociometry*, 26, 480–486.
- Hatch, D. and Leighton, L. (1986). Comparison of Men and Women on Self-Disclosure. *Psychological Reports*, 58, 175–178.
- Henley, N., Hamilton, M., and Thorne, B. (1985). Womanspeak and Manspeak: Sex Differences and Sexism in Communication, Verbal, and Nonverbal. In *Beyond Sex Roles*, ed. A. Sargeant, New York: West.
- Hollander, E.P. (1985). Leadership and Power. In *The Handbook of Social Psychology*, eds. G. Lindzey and E. Aronson, 2, 385–538, New York: Random House.
- Ickes, W. (1984). Compositions in Black and White: Determinants of Interaction in Interracial Dyads. *Journal of Personality and Social Psychology*, 47(2), 330–341.
- Johnson, C. (1994). Gender, Legitimate Authority, and Leader-Subordinate Conversations. *American Sociological Review*, 59, 122–135.

- Johnson, F.L. and Aries, E.J. (1983). Conversational Patterns Among Same-Sex Pairs of Late-Adolescent Close Friends. *Journal of Genetic Psychology*, 142, 225–238.
- Kimble, C.E., Yoshikawa, J.C., and Zehr, H.D. (1981). Vocal and Verbal Assertiveness in Same-Sex and Mixed-Sex Groups. *Journal of Personality and Social Psychology*, 40(6), 1047–1054.
- Kirchmeyer, C. (1993). Multicultural Task Groups: An Account of the Low Contribution Level of Minorities. *Small Group Research*, 24(1), 127–148.
- Kraut, R.E. and Poe, D.B. (1980). Behavioral Roots of Person Perception: The Deception Judgments of Customs Inspectors and Laymen. *Journal of Personality and Social Psychology*, 39, 784–798.
- Krueger, R.A. (1988). *Focus Groups: A Practical Guide for Applied Research*. Newbury Park, CA: Sage.
- Lamm, H. and Trommsdorff, G. (1973). Group Versus Individual Performance on Tasks Requiring Ideational Proficiency (Brainstorming). *European Journal of Social Psychology*, 3, 361–387.
- Littlepage, G.E. (1991). Effects of Group Size and Task Characteristics on Group Performance: A Test of Steiner's Model. *Personality and Social Psychology Bulletin*, 17(4), 449–456.
- Lord, R.G., De Vader, C.L., and Alliger, G.M. (1986). A Meta-Analysis of the Relation Between Personality Traits and Leadership Perceptions: An Application of Validity Generalization Procedures. *Journal of Applied Psychology*, 71(3), 402–410.
- Mathiowetz, N.A. and Cannell, C.F. (1980). Coding Interviewer Behavior as a Method of Evaluating Performance. *Proceedings of the Section on Survey Research Methods, American Statistical Association*, 525–528.
- McLeod, P.L., Lobel, S.A., and Cox, T.H. (1996). Ethnic Diversity and Creativity in Small Groups. *Small Group Research*, 27(2), 248–264.
- Mehrabian, A. (1969). Significance of Posture and Position in the Communication of Attitude and Status Relationships. *Psychological Bulletin*, 71, 359–372.
- Merton, R.K. (1987). The Focussed Interview and Focus Groups: Continuities and Discontinuities. *Public Opinion Quarterly*, 51, 550–556.
- Michener, H.A. and DeLamater, J.D. (1994) *Social Psychology*, 3rd edition. Fort Worth: Harcourt Brace College Publishers.
- Morgan, D.L. (1988). *Focus Groups as Qualitative Research*. *Qualitative Research Methods Series*, 16, Sage Publications.
- Morgan, D.L. (1996). Focus Groups. *Annual Review of Sociology*, 22, 129–152.
- Morgan, D.L. and Spanish, M.T. (1984). Focus Groups: A New Tool for Qualitative Research. *Qualitative Sociology*, 7, 253–270.
- Mullen, B., Johnson, C., and Salas, E. (1991). Productivity Loss in Brainstorming Groups: A Meta-Analytic Integration. *Basic and Applied Social Psychology*, 12, 3–23.
- Nemeth, C. and Wachtler, J. (1974). Creating the Perceptions of Consistency and Confidence: A Necessary Condition for Minority Influence. *Sociometry*, 37, 529–540.
- Offner, A.K., Kramer, T.J., and Winter, J.P. (1996). The Effects of Facilitation, Recording, and Pauses on Group Brainstorming. *Small Group Research*, 27(2), 283–298.
- Oksenberg, L. and Kalton, G. (1989). New Methods for Pretesting Survey Questions. In C. Cannell, L. Oksenberg, F. Fowler, et al. *New Techniques for Pretesting Survey*

- Questions. Final Report to National Center for Health Services Research and Health Care Technology Assessment, grant HS 05616. Ann Arbor, MI: Survey Research Center, University of Michigan.
- Oxley, N.L., Dzindolet, M.T., and Paulus, P.B. (1996). The Effects of Facilitators on the Performance of Brainstorming Groups. *Journal of Social Behavior and Personality*, 11(4), 633–646.
- Paulus, P.B. and Dzindolet, M.T. (1993). Social Influence Processes in Group Brainstorming. *Journal of Personality and Social Psychology*, 64, 575–586.
- Presser, S. and Blair, J. (1994). Survey Pretesting: Do Different Methods Produce Different Results? In *Sociological Methodology*, ed. P.V. Marsden, 24, 73–104.
- Rice, R.W., Yoder, J.D., Adams, J., Priest, R., and Prince, H.T. (1984). Leadership Ratings of Male and Female Military Cadets. *Sex Roles*, 10(11–12), 885–901.
- Ridgeway, C.L. (1987). Nonverbal Behavior, Dominance, and the Basis of Status in Task Groups. *American Sociological Review*, 52, 683–694.
- Ridgeway, C.L. and Balkwell, J.W. (1997). Group Processes and the Diffusion of Status Beliefs. *Social Psychology Quarterly*, 60(1), 14–31.
- Ridgeway, C.L., Berger, J., and Smith, L. (1985). Nonverbal Cues and Status: An Expectation States Approach. *American Journal of Sociology*, 90, 955–978.
- Ridgeway, C.L. and Walker, H.A. (1995). Status Structures. In *Sociological Perspectives on Social Psychology*, eds. K.S. Cook, G.A. Fine, and J.S. House, 281–310, Needham Heights, MA: Allyn & Bacon.
- Royston, P., Bercini, D., Sirken, M., and Mingay, D. (1986). Questionnaire Design Research Laboratory. *Proceedings of the Section on Survey Research Methods*, American Statistical Association, 703–707.
- Sermat, V. and Smyth, M. (1973). Content Analysis of Verbal Communication in the Development of a Relationship: Conditions Influencing Self-Disclosure. *Journal of Personality and Social Psychology*, 26, 332–346.
- Smith, H.J., Archer, D., and Costanzo, M. (1991). “Just a Hunch”: Accuracy and Awareness in Person Perception. *Journal of Nonverbal Behavior*, 15(1), 3–18.
- Smith-Lovin, L. and Brody, C. (1989). Interruptions in Group Discussions: The Effects of Gender and Group Composition. *American Sociological Review*, 54, 424–435.
- Solano, C.H. (1981). Sex Differences and the Taylor-Altman Self-Disclosure Stimuli. *Journal of Social Psychology*, 115, 287–288.
- Sollie, D.L. and Fischer, J.L. (1985). Sex-Role Orientation, Intimacy of Topic, and Target Person Differences in Self-Disclosure Among Women. *Sex Roles*, 12, 917–929.
- Sorrentino, R.M. and Boutillier, R.G. (1975). The Effect of Quantity and Quality of Verbal Interaction on Ratings of Leadership Ability. *Journal of Experimental Social Psychology*, 11(5), 403–411.
- Stein, R.T. and Heller, T. (1979). An Empirical Analysis of the Correlations Between Leadership Status and Participation Rates Reported in the Literature. *Journal of Personality and Social Psychology*, 37(11), 1993–2002.
- Stewart, D.W. and Shamdasani, P.N. (1990). *Focus Groups: Theory and Practice*. Applied Social Research Methods Series, 20, Newbury Park, CA: Sage Publications.
- Stogdill, R.M. (1974). *Handbook of Leadership: A Survey of Theory and Research*. New York: Free Press.

- Street, W.R. (1974). Brainstorming by Individuals, Coacting and Interacting Groups. *Journal of Applied Psychology*, 59, 433–436.
- Strodbeck, F.L., Simon, R.J., and Hawkins, C. (1965). Social Status in Jury Deliberations. In *Current Studies in Social Psychology*, eds. I.D. Steiner and M. Fishbein, New York: Holt, Rinehart, and Winston.
- Sudman, S., Bradburn, N.M., and Schwarz, N. (1996). *Thinking about Answers: The Application of Cognitive Processes to Survey Methodology*. San Francisco: Jossey-Bass.
- Thorne, B. and Henley, N. (1975). Difference and Dominance: An Overview of Language, Gender, and Society. In *Language and Sex: Difference and Dominance*, eds. B. Thorne and N. Henley, Rowley, MA: Newbury House.
- Walker, H.A., Ilardi, B.C., McMahon, A.M., and Fennell, M.L. (1996). Gender, Interaction, and Leadership. *Social Psychology Quarterly*, 59(3), 255–272.
- Walker, L.S. and Wright, P.H. (1976). Self-Disclosure in Friendship. *Perceptual and Motor Skills*, 42, 735–742.
- Webster, M., Jr (1975). *Actions and Actors: Principles of Social Psychology*. Cambridge, MA: Winthrop.
- Webster, M., Jr. and Driskell, J.E., Jr. (1978). Status Generalization: A Review and Some New Data. *American Sociological Review*, 43, 220–236.
- Webster, M., Jr. and Driskell, J.E., Jr. (1983). Processes of Status Generalization. In *Small Groups and Social Interaction*, eds. H.H. Blumberg, A.P. Hare, V. Kent, and M. Davies, 1, 57–67, London: John Wiley & Sons.
- West, C. and Garcia, A. (1988). Conversational Shift Work: A Study of Topical Transitions Between Women and Men. *Social Problems*, 35, 551–575.
- Wheelan, S.A. and Johnston, F. (1996). The Role of Informal Member Leaders in a System Containing Formal Leaders. *Small Group Research*, 27(1): 33–55.
- Yetton, P. and Bottger, P. (1983). Relationships Among Group Size, Member Ability, Social Decision Schemes, and Performance. *Organizational Behavior and Human Decision Processes*, 32, 145–159.
- Yoell, W. (1974). How Useful is Focus Group Interviewing? Not Very . . . Post-Interviews Reveal. *Marketing Review*, 29, 15–19.
- Zaccaro, S.J., Foti, R.J., and Kenny, D.A. (1991). Self-Monitoring and Trait-Based Variance in Leadership: An Investigation of Leader Flexibility Across Multiple Group Situations. *Journal of Applied Psychology*, 76(2), 308–315.
- Zimmerman, D.H. and West, C. (1975). Sex Roles, Interruptions and Silences in Conversations. In *Language and Sex: Difference and Dominance*, eds. B. Thorne and N. Henley, Rowley, MA: Newbury House.
- Zuckerman, M., DePaulo, B.M., and Rosenthal, R. (1981). Verbal and Nonverbal Communication of Deception. In *Advances in Experimental Social Psychology*, ed. L. Berkowitz, 14, 1–59, San Diego, CA: Academic Press.
- Zuckerman, M., Koestner, R., and Alton, A.O. (1984). Learning to Detect Deception. *Journal of Personality and Social Psychology*, 46, 519–528.

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