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THE IMPACT OF ABILITY AND BEHAVIORAL STYLE
ON PERCEPTIONS OF CREDIBILITY AND ACTUAL INFLUENCE
UNDER CONDITIONS OF VARYING SOLUTION SPECIFICITY

DISSERTATION

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

By
Mark D. Whitmore, B.S., M.A.

* * * * *

The Ohio State University
1985

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Don Dell

Approved by
Richard Klimoski
Advisor
Department of Psychology
Copyright by
Mark D. Whitmore
1985
ACKNOWLEDGEMENTS

It's Oscar night. We are about to be regaled with the latest recipient's list of acknowledgements. Will he spare us a lengthy diatribe on why he was destined for success and all those little people who helped him along the way? Perhaps he will simply smile and say thank you with the knowledge that all those who have helped him already know of his deep appreciation for the efforts on his behalf... Are you kidding! I've been writing this acknowledgement for the past six years!

First and foremost I would like to thank my advisor, Richard Klimoski, not only for his help on this dissertation but also for six years of collaboration. When I came to graduate school, I was full of questions but did not understand how to find the answers. While most of the answers are still elusive I now know of a means to uncover them. I attribute this to my association with Rich. Perhaps more important than the technical advise has been Rich's enthusiasm for research. It's very contagious.

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decision when I selected Don Dell to be on my committee. His knowledge of interpersonal behavior as well as his research and expertise on behavioral styles was invaluable. He is also a nice guy.

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I would like to thank my parents for their constant support. All of those "Do your best dear, that's all you can do" really helped. The "We're so proud of you" weren't so bad either. Knowing that the two of you were there and that you had faith in me helped me through many a crisis.

Finally I would like to thank Eve who has had to put up with me for the past year and a half. Eve you are the most sensible person I know. You always manage to interpret things in a more positive and rational way. Your love and support has helped make this a reality. I only hope that I can do as well for you as you face this same process.
VITA

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INTRODUCTION

One of the more vexing problems in the area of small group research has been to understand the relationship between the expertise that a group member possesses and the influence they can exert over their group. French and Raven (1959) were the first to include expertise in a formal theory of social power. Social power is the degree to which an individual can influence others to produce changes in behavior (French & Raven, 1959). Since that article, group member influence has been investigated in both field and laboratory settings.

Much of the field research on experts in groups is largely anecdotal and exploratory (Barnowe, 1975; Ganesh, 1978; Pelz & Andrews, 1976; Pettigrew, 1974; Smith, 1966; Steele, 1969; Yukl, 1981). This research has found that task forces and project groups which contain technical specialists or leaders with expertise are more likely to produce high quality solutions, i.e. freedom from errors, than groups without expert members (Andrews & Farris, 1967; Barnowe, 1975; Jarvis, 1975; Morton, 1971; Pelz & Andrews, 1976). In contrast, laboratory findings suggest that groups often fail to incorporate expert ideas into the group solution (Hill, 1982; Sorrentine & Boutillier, 1975). Group members are unable to recognize the source of expertise (Bottger, 1984; Lord, 1977;
Riecken, 1958) or do not perceive the group expert to be influential (Jaffee & Lucas, 1969; Lord, 1977; Regula & Julian, 1975; Riecken, 1958; and Sorrentino & Boutillier, 1975).

In addition to these contradictions, some studies have found that group members' perceptions of influence are unrelated to actual influence (Bottger, 1984; March, 1956; Riecken, 1958). That is to say, groups observed in these studies adopted one member's solution while attributing expertise to another member. If as Hackman and Morris (1975) state, the effectiveness of a group is dependent upon how well they utilize group members resources, these studies cast serious doubt upon the utility of experts in task oriented groups.

Most of the studies concerning expertise in task oriented groups employ an input-output paradigm. They examine characteristics of group members such as special knowledge, ability and credentials and certain desired outcomes such as status attainment on the part of individuals and solution adoption (Bottger, 1984; Gintner & Lindskold, 1975; Jaffee & Lucas, 1969; Riecken, 1958; Sorrentino & Boutillier, 1975). These studies ignore the role of group interaction process as a mediator of the input-output relationship (McGrath, 1964).

Hackman and Morris (1975) define interaction process as all observable interpersonal behavior that occurs between two arbitrary points in time. The purpose of this research will be to examine the process by which individuals form perceptions of group member expertise, trustworthiness and credibility and in doing so are influenced. It will be proposed that individuals will attribute
credibility, trustworthiness, and expertise to a focal group member based upon source characteristics such as special ability and expert behavioral style. Subjects' perceptions of the focal person will in turn mediate the relationship between source characteristics and actual influence.

It should be clarified that this study will be examining observations of group members in task oriented groups and not the import of actual group interaction. Moreover, it does not equate observation with interaction. Interaction involves both a rich and complex interchange of behaviors among group members that includes processes such as the allocation of status, differentiation of group roles, solution adoption and the exchange of socioemotional and task oriented behaviors. However, one could argue that observation is a critical element of all these processes. For example, leader attribution theory proposes that leadership is a social construction used by observers to make sense out of past events. Leadership is inferred when actors are perceived as causal agents. Thus, inferences of causality are critical to perceptions of leadership. Furthermore, it is suggested that these inferences will be influential in future interactions between leaders and followers (Phillips & Lord, 1981). Thus, by studying observations of group processes we may greatly enhance our knowledge of perceptions of credibility and influence in task oriented groups; although, we may be limited in terms of generalizing these results to actual interacting groups.
Research in the area of small group processes has found that the type of group task will greatly effect the group interaction process. The relationship of perceived to actual influence may vary according to the properties of the group task. Group tasks in the area of expertise in task oriented groups vary from cryptograms where subjects must decode various crypts (Lord, 1977) to brainstorming tasks which involve determining an appropriate title for a piece of abstract art (Gintner & Lindskold, 1975).

One characteristic of tasks that has been identified as important in the field research on expertise is the ambiguity and complexity of the problem (Rosenblum, 1972). It has been suggested by this author that when the problem faced is ambiguous, that is the individual has no way of determining with certainty a correct solution, there is greater reliance placed upon the information given by an individual perceived as credible.

Shaw (1981) identifies four basic parameters of tasks. Of these, solution specificity seems to be closely related to ambiguity. Solution specificity is the extent to which there is more than one plausible alternative solution to a problem. It will be posited that the solution specificity of a task may impact the relationship between perceptions of credibility and actual influence, i.e. solution adoption.

This study is based upon the findings of past research in the area. It presents a different perspective towards examining influence processes in task oriented groups. In the following chapters a review of the literature, hypotheses, methodology,
findings of the data analysis, and a discussion of the implications of the study to both the research and field will be presented.
CHAPTER 1

REVIEW OF LITERATURE

Source Characteristics

This chapter will examine the process by which individuals attribute expertise, trustworthiness, and credibility to others and are influenced by them. Source characteristics relevant to perceptual processes in task oriented groups will be examined. The literature on expertise will be reviewed, and conceptual and operational definitions will be presented. The research on behavioral styles will also be reviewed. Studies of credibility with respect to experts will be explored. A process model of interpersonal influence will be presented with a discussion of the literature in the area of persuasion research. The relationship of task parameters to the expertise influence process will be presented. Finally, based upon the literature a series of hypotheses will be presented.

Ability, Knowledge, and Expertise

In recent years social and behavioral scientists have increasingly focused their research interests on the behaviors of experts. The populations examined vary widely and include consultants (Ganesh, 1978; Steele, 1969), counselors and therapists
corporate staff specialists (Pettigrew, 1974), scientists (Barnowe, 1975; Pelz & Andrews, 1976; Smith, 1966) and fortune tellers (Aphek & Tobin, 1983). One common quality of experts across these various populations is that they either have or appear to have special knowledge. Another common quality of these experts is that their expertise has been brought about by a number of years of study within a specific area and they usually have credentials or titles which attest to their educational or experiential backgrounds. For example, in Aphek and Tobin's (1983) study on fortune tellers, they identified a type of fortune teller which they labeled as a "technical expert". These fortune tellers had diplomas, licenses and other documents to establish their educational backgrounds, called themselves chirologists rather than palm readers and used technical language similar to counselors and clinical psychologists in their interactions with their clients.

A very different class of experts are those described by Bales (1955). Bales has suggested that given the proper situation any individual, regardless of their background may be designated an expert provided that they have either a greater variety or a greater degree of valued abilities or information than other group members. In his research on group roles, Bales identified a common role found in most task oriented groups which he labeled the "technical specialist". Bales felt that the technical specialist could best be identified as that group member perceived by other members to have contributed most towards the correct solution of the task. Yukl
(1981) has a similar conception of expertise which he applies to leaders. A leader may enhance their status by appearing to be expert in certain areas. This expertise would be based more upon showing correct interpersonal behaviors such as asking technical questions, clarifying technical information for less well-informed subordinates or demonstrating technical competence by answering questions related to a few of the areas they are well versed in.

In both Bales (1955) and Yukl's (1981) conceptions, expertise is not based upon extensive educational background or previous experiences, rather, because experts possess a greater degree of task related ability than other group members. Thus, expertise may be based upon absolute criteria, years of education, experience, credentials, or it may be based upon an individual's assessment of the ability level of another in comparison to their own. It is the intent of this thesis to focus more upon the latter class of experts. However, useful insights may be obtained by examining both groups. The most commonly cited conceptual definitions of expertise represent either the absolute or relative distinctions of knowledge and ability.

**Conceptual definition of expertise.** The most important factor in defining expertise appears to be the possession of special knowledge or abilities. Two definitions common in the literature are "what a person knows about a formal area of knowledge and is based upon a proven capacity in a skill or discipline" (Tedeschi, 1972), or "the amount of relevant information possessed by a group member which is useful to another's goal achievement" (Jaffee & Lucas, 1969). Two
basic dimensions of expertise are implied by these conceptual definitions: the individual may possess special knowledge relevant to the task or they have some demonstrable ability or skill.

Operational definitions of expertise. A second issue concerns the operational definitions of expertise. In a recent review of literature on the social influence of counselors, Corrigan, Dell, Lewis and Schmidt (1980) identify three types of clients' perceptions of counselors' trustworthiness, expertise and credibility. These cues are evidential, reputational and behavioral. Evidential cues are nonbehavioral and would include appearance, attire and situational aspects such as office decor or location. Reputational cues refer to credentials, history of success in solving problems, educational background and experience. Behavioral cues include both verbal and non-verbal behaviors such as manner of speaking, language, body movement and placement. While these cues suggest a wide variety of ways to operationalize expertise, experimenters in the small group processes literature have used primarily reputational cues. Table 1 contains a number of operational definitions categorized by the two conceptual definitions. It should be noted that the studies represent a fairly comprehensive review of the current published literature on expertise in small groups. All of the studies refer to expertise, expert information or quality of information interchangeably. As can be seen by Table 1, researcher's operationalizations of expertise vary widely. However, few studies manipulate more than one conceptual dimension of expertise. The most common operationalization of expertise is to simply give one member
of the group special knowledge or expert information (Bottger, 1984; Gintner & Lindskold, 1975; Hemphill et al., 1956; Regula & Julian, 1973; Riecken, 1958; Sorrentino & Boutillier, 1975; Yetton & Bottger, 1983). However, this operationalization of expertise may confound informational influence with expert influence (French & Raven, 1959).

Informational influence can be defined as accepting a solution because the target recognizes the accuracy of the information. Expert influence is where an individual accepts information because they perceive the expert as a worthy source of information. Thus, French and Raven suggest that these two influence processes are entirely different. When one operationalizes expertise by giving a group member expert information it is impossible to determine whether the subjects accept the information because they view the source as expert or because they are able to assess the accuracy of the information. If the latter is true, it would be possible to view the source as not being an expert and yet, still accept the information they contribute. Thus, under these circumstances it would be possible that perceptions of expertise and influence would be unrelated to actual influence.

A superior way of operationalizing expertise would be to demonstrate ability of skills on previous similar problems or by stating the credentials of the source person. Researchers have generally operationalized this variable by providing the confederate with correct answers in the first few trials and than observed the influence they exert over group members on subsequent trials (Jaffee & Lucas, 1969), or by providing subjects with real or fictitious
Table 1

Operational Definitions of Expertise

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<th>Special Knowledge</th>
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<td>Median Splits on Number of Errors on Solution determined Post Hoc</td>
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feedback on the expert's ability on previous tasks (Gintner & Lindskold, 1975; Lord, 1977; Shevitz, 1955). Since the individual is not given expert information, and assuming that the designated expert does not generate his or her own expert solution, group members who adopt the source's solution would be more likely to do so based upon attributions of expertise.

Summary. Conceptual definitions of expertise stress that the source must possess special skills, abilities, or task relevant information. It has been noted that when expertise has been operationalized by providing the subject with accurate information, it is uncertain whether subjects accept the influence because they recognize that the solution is accurate or because they view the group member to be expert. Thus, this operationalization may confound informational influence with expert influence. It has been suggested that a better operationalization would be to manipulate expertise by establishing high ability levels on previous tasks either through giving expert information to the focal person on the first few trials and subsequently observing influence on the following trials, or by providing subjects with real or fictitious feedback about the focal group member's performance on previous, similar tasks.

Research on expertise. Social power theorists view expertise as an important base of power (French & Raven, 1959; Patchen, 1974). Essentially, social power involves an exchange process between people. An individual desires power over others and to some extent others confer power upon the individual. For example, an individual
possesses resources such as relevant expertise which they exchange for certain desired outcomes such as high group status, leadership or the group adopting the expert's solution. Thus, researchers in the area of small group processes have focused their attention on source characteristics such as expertise and talkativeness and certain group outcomes including leader status attainment and solution adoption. Furthermore, many studies have compared expertise versus talkativeness and its impact on the allocation of status and solution adoption (Stein and Heller, 1979). There have been three general research questions explored in this literature. Does special knowledge or ability lead to perceptions of expertise and substantive group outcomes such as leader status and solution adoption? Are perceptions of expertise and actual influence related? Which is a more powerful indicator of leader status, and solution adoption, expertise or talkativeness?

There is mixed support for the proposition that group member ability or special knowledge will lead to group outcomes. A study examining the impact of expertise and participation on leader choice (Gintner & Lindskold, 1975) found that a confederate introduced to the group as an expert and given special knowledge was more likely to be chosen as leader than low expert members. Furthermore, experts were perceived as contributing more to the group task than low expert members. Sorrentino and Boutillier (1975) found that confederates who delivered high quality verbal interactions, i.e. given the correct solution, were perceived as more competent, influential and contributing more to the group task than confederates with low verbal
quality. However, high verbal quality of a confederate was unrelated to leader nominations made by the group members.

Several other researchers have also found no relationship between group member ability or knowledge and leader status attainment or solution adoption (Hemphill et al., 1957; Jaffee & Lucas, 1969; Lord, 1977; Regula & Julian, 1973; Riecken, 1958). While Bottger (1984) found a relationship between an individual's level of ability and group outcomes only in groups with overall high levels of performance. He suggested that in high performing groups there is more interaction and thus group members have a better opportunity to determine their colleagues' level of ability. While these studies suggest that level of ability or special knowledge is not influential, perceptions of expertise appear to be highly significant. Bottger, (1984), Jaffee & Lucas (1969), Lord (1977) and Riecken (1958) found that when expert group members were perceived as experts by their fellow group members, possessing special knowledge was significantly related to group outcomes. In an article concerning expert power, Richardson et al. (1973), suggests expertise will be influential to the extent that it is perceptually manifest to other group members.

This research suggests that findings of nonsignificant relationships between group outcomes and expertise may be due to alternative reasons than the suggestion that group members do not value expertise as some authors have stated (Hill, 1982; Zander, 1979). When group members accurately perceived the source of expertise, the group expert was influential. What this research does
suggest is that manipulations of mere ability do not necessarily result in perception of expertise by group members. It is difficult to determine whether this is due to other factors which may be more likely to lead to perceptions of expertise, such as talkativeness, or whether it is due to weak manipulations of expertise.

Although many studies manipulate expertise by providing a subject or confederate special knowledge or in N.R.F. Maier's words, an "elegant solution" (Maier, 1950), few studies assess whether indeed subjects believe the solution is elegant or even accurate. Researchers, in general have also failed to determine whether subjects given expert information view themselves as experts. As Riecken (1958) suggests, if the subject given the expertise does not believe it is correct they will probably not be able or willing to convince others of its accuracy. Of the studies reviewed, only Bottger (1984) has examined self-perceptions of expertise, attributions of expertise by other group members and influence over the group task. He found that group members who believe themselves to be expert were more likely to be perceived by others as experts and were more influential.

A second reason given for the lack of evidence to support a relationship between ability and perceptions of expertise is that other variables such as talkativeness may overpower manipulations of expertise. For example, Regula and Julian (1973) suggest that the information processing demands placed on a group member are so great that they base perceptions of expertise on participation rates of a group member which are easier to observe than ability level or
special knowledge.

Most of the research comparing the level of ability and talkativeness on group member perceptions and actual influence have found a strong significant relationship for talkativeness and a weak or no relationship for expertise (Bottger, 1984; Jaffee & Lucas, 1969; Lord, 1977; Regula & Julian, 1973; Riecken, 1958). However, in a meta-analysis conducted on these and other studies, Stein and Heller (1979) found that measurements of talkativeness and ability are confounded. For example, it was found that group members who possess superior abilities made more task related contributions to the group discussion which resulted in increased participation rates. Thus, expertise should not be dismissed as unimportant in the formation of perceptions and group member influence.

Summary. Most of the research examining the impact of expertise in task oriented groups has used an input-output paradigm. That is, these studies manipulate or index certain source characteristics such as ability and talkativeness and examine their relationship to group outcomes. None of the studies reviewed examined the process in which source characteristics lead to perceptions of expertise and actual influence. Although research findings are mixed concerning the relationship between ability and group outcomes, there is substantial support for a relationship between perceptions of expertise and group outcomes. Specifically, group members perceived to be expert exert more influence over group outcomes, particularly solution adoption, than group members low in perceived expertise. Thus, the failure to find a relationship between ability and group outcomes seems to be a
result of a weak linkage between manipulations of ability and perceptions of expertise. Another possible explanation may be that a group member may be perceived to be expert but untrustworthy. For example, subjects may view the expert's advocation of a solution to be due to certain self-serving motives. Unfortunately, most of the research in small group processes have failed to examine perceptions of trustworthiness or credibility of group experts.

**Behavioral Style**

Most of the researchers of expertise in small group have examined level of ability or special knowledge. Both Yukl (1981) and Pettigrew (1974) suggest that for leader and staff members, possessing information may not be enough. These individuals must also appear to be expert by the strategic manner in which they behave in the presence of others. In fact Yukl (1981) suggests that a leader does not need to have special knowledge at all in order to appear expert. By merely asking appropriate technical questions and displaying a general knowledge of the phenomenon, a leader may appear to be expert. Several researchers have theorized that by displaying an appropriate behavioral style, one might appear to be expert and influential (Klaus & Bass, 1981; Moscovici, 1976).

According to Moscovici (1976) a behavioral style can be defined as the "organization of behaviors and opinions, and the timing and intensity of their expression". Moscovici states that there are five components of behavioral style. Investment is the commitment to an opinion which is determined by the amount of energy and resources
exerted in espousing the opinion. **Autonomy** involves independence of judgment, objectivity and extremism. **Consistency** is the maintenance of an opinion over time. **Fairness** is a combination of perceived open-mindedness, and desire for open dialogue. Each of these four components is seen to increase the individual's ability to influence group member. The last component, **rigidity** reduces the influence an individual may possess. This component occurs when the group member is viewed as inflexible and dogmatic. Moscovici states that by consistently advocating one's opinion, the group member may influence the group into adopting a solution. Consistency serves to convince the group that the individual is credible and expert and once this has been accomplished the group members will make some declaration about adopting the minority decision. Consistency is the major component of this behavioral style and there is substantial empirical evidence that the individual who consistently advocates a position will be more influential than individuals who are inconsistent (Moscovici, 1976; Levine, 1980). A point which should be clarified is that consistency is not the same as repetitiveness. An individual who is consistent may advocate a position by using a variety of different behaviors.

Klaus and Bass (1981) in their research concerning interpersonal communication in organizations use a concept similar to Moscovici's behavioral style which they call communication style. This can be defined as "a set of critical, essential elements or behaviors that in combination can be described in a generalized way as how a focal person communicates with colleagues" (Klaus & Bass, 1981). Their
conception of behavioral style is less concerned with the timing of the presentation of behaviors or consistency of a position but instead focuses on identifying specific behaviors which would lead to attributions of credibility, expertise, and trustworthiness. Components of an effective communication style include being a careful transmitter of technical information, engaging in open two-way communication, and being a careful listener. In a study conducted in three different organizations, Klaus and Bass (1981) found that the focal person's communication style leads to attributions of credibility, trustworthiness, and expertise. In further analysis, they found that these attributions were based more on the style of communication than on its content. Thus perceptions of credibility were based more on how you said it than what you said.

Lord (1977), in a study investigating expert leaders, also identified what might be considered a behavioral style of experts. The behavioral style consists of technical behaviors, which are behaviors intended to facilitate the problem-solving processes (i.e., calling for factual information) and socio-emotional behaviors, such as complimenting the group on the progress that has been made. He developed a technique for observing task related behaviors which involve recording the frequency of technical and socio-emotional behaviors displayed by group members. A focal subject received special training on solving a problem to a task and then participated with several naive subjects in solving the same problem. Groups were observed by independent raters and their behaviors were recorded using Lord's observation method. Lord found that individuals who
displayed technical and socio-emotional behaviors were perceived by other group members as experts. What is most interesting is that the set of behaviors accounted for more of the variance in perceived expertise than the focal person's training. However, a significant amount of the variance in expertise was not accounted for by the frequencies of specific behavior, leading the author to suggest that perceptions of expertise may be generally stereotypic in nature and based on other perceived individual qualities not examined such as intelligence and status.

Research on clients' perceptions of counselors has examined the relationship between counselor behaviors and observers' perceptions of expertise. It was posited that the communicator's behavior would be an important source of expert cues in interpersonal perception (Schmidt & Strong, 1970). These authors videotaped six five minute interviews between counselors with varying degrees of experience and education and a male confederate. Subjects viewing each interview were asked to rate the counselors on the degree that their behavior evidenced expertise and to indicate which behaviors or incidents were most representative of the impressions of counselors expertise. Expert behaviors for counselors included being well-informed, relating conversation to facts, asking direct or thought-provoking questions, and being attentive and friendly. Inexpert counselors were described as awkward, tense, vague, unprepared, cold, domineering and disinterested. Thus, there seems to be a relationship between perceptions of expertise and observed behaviors. This study has led to research investigating the impact of expert and
inexpert counselor roles on client perceptions and attitude change. In a subsequent study, Strong & Schmidt (1970) examined the impact of credentials and counselor roles on influence. Two confederates were coached to portray expert or inexpert counselors. Subjects were first asked to complete the Edwards Personal Preference Schedule. They were then interviewed three weeks later. The interview concerned achievement motivation. The confederate counselors were introduced to the clients as either mister or doctor. During the interview, the counselor gave his impression of the client's motivation which was discrepant with the client's self-perceptions. Following the interview the client completed a series of questionnaires measuring once again the client's self-perception of achievement motivation as well as perceptions of counselor expertise. The findings indicated that when the expert introduction was combined with the expert counselor role, clients changed their self-perceptions in the direction of the counselor's assessment.

Dell (1973) conducted an experiment examining referent versus expert power basis of counselors, influence attempts and behavior change. Two confederates were trained to exhibit an expert or referent role. In the expert role, the confederate displayed behaviors which conveyed professional concern for obtaining an objective opinion of the subject problems. In the referent role condition, the confederate personalized subjects' concerns by admitting that he had faced similar problems. Confederates were
given either an expert influence attempt, based upon previous effective treatment, or a referent influence attempt based upon personal experience. The confederates were attempting to persuade the client to adopt an action plan designed to prevent procrastination. Subjects reported to the counseling center and were interviewed for 30 minutes by the confederate concerning their personal experiences with procrastination. After the interviews subjects' perceptions of the counselor were measured. Eight to ten days later, subjects were contacted and completed a questionnaire which measured the extent to which they had followed the action plan. A significant main effect was found between confederate's role and perceptions of expertise. Subjects in the expert role condition rated their counselors as more knowledgeable and more experienced than subjects interviewed by the referent role counselor. Subjects were also more likely to complete action plans if their counselors used role influence attempts congruent with their role; however, there were no significant differences between expert or referent influence attempts and client's completion of action plans. The research on counselor behavior supports the notion that a specific set of behaviors may be used as cues to judge the expertise of a source. The research suggests that there is a strong relationship between expert behaviors and perceptions of expertise. However, the relationship between role behaviors and attitude or behavioral change is not as clear.

**Summary.** There are two major aspects of behavioral style which are related to perception of expertise and credibility. A behavioral
style, as in Moscovici's view, may be highly persuasive. It consists of numerous behaviors which serve to promote or advocate an idea or solution. Social psychologists have generally accepted the view that argumentation will augment an expert's persuasiveness and lead to increased perceptions of credibility (Cialdini, Petty & Cacioppo, 1981; Eagly & Himmelfarb, 1978). However, based upon Yukl's (1981) work, a behavioral style may increase an individual's credibility beyond that explained by providing persuasive arguments. He suggests that an individual may appear to be an expert by displaying behaviors characteristic of a stereotypic notion of experts. The work of Klaus and Bass (1981), Lord (1977), and Schmidt and Strong (1970) provide some support for this contention. If behavioral style represented merely a collection of persuasive arguments, then the content of the behavioral style should have a significant impact on perceptions of credibility. For example, Petty and Cacioppo (1980) found that strong arguments significantly increased perceptions of expertise and credibility while weak arguments resulted in a decrease in these perceptions. However, neither Klaus and Bass (1981) nor Lord (1977) found that the content explained a large portion of the variance in perceptual measures of expertise and credibility. Rather, as Lord's research suggests, an appropriate behavioral style may account for perceptions of expertise because the behaviors fit the target's stereotypic notion of how an expert should behave in a task oriented group.

Research on expertise in task oriented groups has suggested that perceptions of expertise may be based upon persuasive behaviors
characteristic of experts as well as credentials, special knowledge or abilities. An expert behavioral style may be an extremely important quality for technical experts. Moscovici (1976), Klaus and Bass (1981) and Schmidt and Strong (1970) have found that individuals who display effective behavioral styles are more influential than those who do not. The work of Lord (1977) on functional leadership and expertise suggests that a behavioral style composed of technical and socioemotional behaviors leads to perceptions of expertise. Thus, technical experts who display an expert behavioral style consisting of technical and socioemotional behaviors may be of more influence than those who do not.

Both the research of expertise and behavioral style indicate that an important requirement of influence over a group task is the formation of credible impressions of the expert focal person. Therefore, in order to understand the process by which group members are influenced, we need to understand the concept of credibility and the role it plays in the influence process.

**Credibility**

The research on expertise in task oriented groups has demonstrated the importance of perceptions of expertise for group member influence over group outcomes. However, the concept of credibility has largely been ignored. In light of the fact that manipulations of ability were often found to be unrelated to perceptions of expertise it would seem that the failure to examine credibility may have been a serious oversight.
Hovland, Janis and Kelly (1953) in their seminal work on persuasion and communication state that credibility consists of two important factors: the extent to which a focal person is considered to be a source of valid assertions and the degree of confidence held by the target individuals that the focal person will communicate the assertions he or she considers to be most valid. According to Hovland et al., these two factors should lead to perceptions of expertise and trustworthiness. This represents the most widely held conception of credibility.

Recently, a number of factor analytic studies examining the dimensionality of credibility have generally been supportive of Hovland's original conception. Barak and LaCrosse (1975) examined the multidimensionality of credibility in a study of perception of counselor behavior. Subjects viewed three films of counselor interviews conducted by Rogers, Perls, and Ellis, and then rated these therapists using the Counselor Rating Form. This form consists of eighty-three bipolar adjectives intended to measure expertise, trustworthiness and attractiveness. A factor analysis was conducted for the ratings of each counselor and consistently yielded dimensions related to trustworthiness and expertise although the pattern of factor loadings differed for each of the therapists. Barak and LaCrosse view credibility as a rather heterogeneous construct of subjects' perceptions of both expertise and trustworthiness.

More recently, Klaus and Bass (1981) conducted a factor analysis of credibility based upon earlier factor analytic work by Berlo (1969) and Falcione (1974). They identified three dimensions of
credibility: informativeness, trustworthy and dynamic.

Informativeness is the extent to which an individual is seen as well-qualified, well-informed, skilled, experienced, and well-trained for the job. Trustworthiness is a sense of interpersonal safety that a person may feel towards another. Dynamism is the activeness of the person and includes how forceful, energetic and aggressive they are.

A factor analysis of twenty behavioral items representing these three dimensions was conducted in three different organizations: an information technology firm, a naval civilian agency and a social service agency. The analysis yielded three distinct factors representing each of the hypothesized dimensions and was stable across all three organizations. However, there were differences between the organizations on the factor loadings of the three dimensions. For example, there were high loadings for each dimension for the information technology firm, but both the navy civilian agency and the social service agency had low to moderate factor loadings on the dynamic dimension. Unfortunately, the authors do not report eigenvalues so the proportion of variance accounted for by the factors cannot be determined. The factor analytic studies of Barak and Lacrosse (1975) and Klaus and Bass (1981) have shown that credibility consists primarily of dimensions of expertise and trustworthiness.

Summary. Hovland's et al. definition of credibility includes both perceptions of expertise and trustworthiness. Factor analytic studies by Barak and LaCrosse (1975) and Klaus and Bass (1981) provide confirmation of this finding. Based upon this research,
credibility would seem to be a multidimensional construct which may be a function of both perceptions of expertise and trustworthiness. Thus, this research suggests that in order to understand the relationship between subjects' impressions of the group expert and actual influence, perception of trustworthiness, expertise and credibility must be examined.

Source Characteristics, Credibility and Solution Adoption

Studies of expertise in task oriented groups use what McGrath (1964) calls an input-output research paradigm. That is, they examine characteristics of a source and its relationship to group outcomes. They do not examine the process in which experts become influential. These studies have not been particularly fruitful in adding to our knowledge of small group processes. Mixed results, possibly due to poor manipulations or confounds between measures of participation and ability have obfuscated the relationship between group member abilities, group member perceptions, and group outcomes. As noted earlier, the research on expertise in task oriented groups suggests that group member ability and special knowledge is unrelated to leader status attainment or solution adoption (Hemphill et al., 1957; Jaffee & Lucas, 1969; Lord, 1977; Regula & Julian, 1973; Riecken, 1958), or perceptions of expertise (Jaffee & Lucas, 1969; Regula & Julian, 1973; Riecken, 1958). However, perceptions of expertise are related to influence over group outcomes (Bottger, 1984; Gintner & Lindskold, 1975; Jaffee & Lucas, 1969; Lord, 1977; Riecken, 1958) and experts perceived by group members as having
Figure 1. Source Characteristics, Credibility and Solution Adoption Model
expertise are influential (Bottger, 1984; Gintner & Lindskold, 1975; Riecken, 1958). Based upon this research, there seem to be two important linkages: The linkage between source characteristics and subject's perceptions, and the linkage between perceptions and group outcomes.

On the following page is a hypothesized process model for group member source characteristics, perceptions and outcomes. It is posited that observations of source characteristics such as special ability or persuasive behavior style will lead to perceptions of credibility. Credibility will mediate the relationship between source characteristics and certain desired outcomes such as solution adoption. This model has been adopted from the research by Klaus and Bass (1981) and is similar to group process models by McGrath (1964) and Hackman and Morris (1976).

Source characteristics and perceptions of credibility. Social psychologists in the area of persuasion research have for some time examined the process in which individuals influence others. A substantial amount of research has been focused on communicator characteristics such as expertise and credibility (Petty & Cacioppo, 1981; Eagly & Himmelfarb, 1978). Unfortunately most persuasion theories do not examine causal relationships (Klaus & Bass, 1981). However, one exception is the research on cognitive response theory. This theory states that persuasion is the result of thoughts generated in response to externally originated messages. An individual will be persuaded to the extent that the communication evokes cognitive responses that are supportive of the message.
Antagonistic cognitive responses, sometimes referred to as counter-arguments, will result in disagreement. These cognitions will in turn determine the amount and direction of attitude change. As such, the cognitions serve as mediators between source characteristics and attitude change (Petty, 1981). While there is substantial support for cognitions serving as mediators of attitude change (Eagly & Himmelfarb, 1978) these studies do not examine what brings about perceptions of credibility. Instead, credibility is often considered a precondition that influences the extent to which a communicator can bring about changes in attitude and behavior (Klaus & Bass, 1981). However, individuals may generates cognitive responses with respect to source characteristics of the communicator which may lead to perceptions of credibility and result in message acceptance (Chaiken & Eagly, 1983). This theory suggests that individuals engage in careful observation and evaluation of source characteristics.

Cognitive categorization theories of social interaction suggest that individuals may process information based upon certain held prototypes. A prototype is an abstract concept of the most representative member or having the most widely shared features of a given cognitive category (Phillips, 1984). Prototypes guide the processing of social information by aiding the individual in matching currently perceived stimuli with those stimuli which are representative of a pre-existing category. This greatly reduces the information processing demands placed upon the individual. They need only to observe a few prototypic behaviors in order to classify someone else. However, when asked to recall information they may
rely on the label and its associated stimuli rather than the behaviors actually observed. Thus, processing information based upon prototypes may lead to memory distortions (Skull & Wyler, 1979). Phillips (1984) and Phillips and Lord (1982) have found that there was greater accuracy of recall for nonprototypic behaviors than for prototypic effective and ineffective behaviors. That is, observers stated that leaders displayed prototypic behaviors which did not actually occur. Thus both theories stress the importance of observation of critical characteristics of a source person determining perceptions. However, regardless of the cognitive processes involved, source characteristics such as special ability and expert behavioral style should lead to perceptions of credibility.

Credibility as a mediator. Mediation can be defined as the antecedent variable X affecting a consequence Y indirectly through transmission of influence from X to a third variable M. Thus, all or most of the influence of X on Y is transmitted by M (James & Brett, 1984). Mediators can be classified as complete or partial. In complete mediation all of the influence of X on Y is transmitted by the mediator. With partial mediators, only some or most of the relationship between the antecedent and consequence is mediated.

The view that credibility may serve as a intervening variable can be traced back to the work of Hovland and his associates. Certain characteristics of an individual may be responsible for impressions of expertise an trustworthiness, the two components of credibility. Communicators assertions will then be weighted based
upon these perceptions which will lead to opinion change (Hovland et al., 1953). The research on expertise in task oriented groups would also suggest that subjects' perceptions may serve as an intervening variable. For example, in general abilities or special knowledge was not related to group outcomes except in studies where these characteristics lead to perceptions of expertise or credibility. Thus perceptions of credibility may mediate the relationship between characteristics of group members and group outcomes. Unfortunately little research has examined the mediating properties of credibility. One exception is the work by Klaus and Bass (1981). Using path analysis on information from a series of surveys administered at different organizations, they found that a focal person's communication style lead to varying perceptions of credibility. Credibility was found to be a mediator between communication style and outcomes such as colleague's satisfaction with the focal person, job satisfaction, role clarity, and job effectiveness. There is both theoretical and empirical support for the contention that credibility may serve as a complete mediator between source characteristics and actual influence.

Credibility and Solution Adoption. While there is little research examining the antecedents of credibility, there is ample research supporting the relationship between perceptions of credibility and actual influence, i.e. opinion change or solution adoption. The literature on persuasion and attitude change has found that source credibility is an important factor in message acceptance (Petty & Cacioppo, 1981; Eagly & Himmelfarb, 1978). Research on
perceptions of counselor expertise has found that clients will change self-perceptions in the direction of the expert's assessment (Strong & Schmidt, 1970). The literature on experts in task oriented groups supports a relationship between perception of expertise and solution adoption (Bottger, 1984; Gintner & Lindskold, 1975; Riecken, 1958). Finally, Klaus and Bass (1981) found a relationship between perceptions of focal person credibility and colleague outcomes. While there is substantial support for various aspects of this model, only Klaus and Bass (1981) have examined both the linkage between source characteristics and perceptions of credibility and the linkage between credibility and the linkage between credibility and colleague outcomes.

Summary. It has been posited that the process in which individuals form perceptions of credibility and are influenced involves two critical linkages. Cognitive response theory would suggest that subjects cognitions are of primary importance. The number of positive or negative cognitions in favor or opposed to the communicator or his solution, will determine the degree of perceived credibility.

Based upon Hovland's conception of credibility, it has been suggested that credibility serves to mediate antecedent source characteristics and consequences such as solution adoption. Finally, there is substantial research in the areas of persuasion, counseling, and small groups processes which suggest that perceptions of credibility will lead to certain outcomes such as message acceptance and attitude change (Petty & Cacioppo, 1981; Eagly & Himmenfarb,
A field study by Klaus and Bass (1981) employed path analysis to test a complete model of the impact of source characteristics on perceptions of credibility and colleague outcomes. It was found that credibility did serve to mediate the relationship between focal person's communication style and colleagues' satisfaction with the focal person, job satisfaction, role clarity, and job effectiveness.

There are most likely exogenous variables which would affect the proposed linkages in this model. For example, the subject's knowledge that there are multiple possible solutions to the task or only one correct solution would most likely influence the mediating properties of credibility.

**Solution Specificity**

In the review of literature on expertise in task-oriented groups, it was found that the studies used widely varying tasks. An examination of Table 1 will show that some studies use simple numerical problems (Sorrentino & Boutillier, 1975) and cryptograms (Lord, 1977) while other studies use creativity brainstorming tasks (Gintner & Lindskold, 1975; Regula & Julian, 1973). However, there has been little attention paid to possible interactions between task parameters and perception of credibility, expertise, and group outcomes such as status attainment and solution adoption.

Field research by Rosenblum (1972) suggests that the ambiguity of the problem will influence the impact of credibility of corporate executives, and task force members. For example, Rosenblum (1972)
found that when executives are faced with information beyond their comprehension, they reduce their feeling of uncertainty by judging the credibility of the source as a way of evaluating the information. Lord (1977) posited that under conditions of limited performance feedback a stereotypic basis may underlie the relationship between actual behavior and influence. However, when feedback is available and immediate, task ability provides the basis for influence. Thus in situations where there is ambiguity concerning a correct solution to a problem, perceptions of credibility will have a greater impact on influence. When the accuracy of a solution can be assessed the impact of credibility on influence will be less.

Shaw (1981) and Fiedler (1967) identified several dimensions of tasks. The two dimensions which reflect the ambiguity of a problem are called solution specificity and decision verifiability. Solution specificity can be defined as the degree to which there is more than one correct solution to the task. Verifiability is the degree to which correctness of a decision can be ascertained through appeal to authority, logical procedures or feedback.

One question which remains is whether the solution specificity of a task might influence the group's process. The one known study in small group processes on this task parameter combined both solution specificity and decision verifiability. The study examined the relationship of these task parameters to leadership style and effectiveness (Shaw & Blum, 1966): Groups of five subjects participated on three tasks: high, medium and low in solution specificity and decision verifiability. It was found that a
directive leadership style was more effective in the low solution specificity/verifiability task while nondirective leaders were more effective in the high and medium solution specificity/verifiability tasks. No studies have been conducted examining the effects of task parameters on perceptions of credibility on solution adoption. Given the variability of tasks used in experiments examining expertise in task oriented groups, it would seem that a careful examination of the effects of solution specificity on the relationship between perceptions of credibility and solution adoption is warranted.

Summary. It was noted that tasks used in studies examining expertise vary widely in items of task ambiguity. A field study by Rosenblum (1972) has found that task uncertainty and ambiguity will have an impact on the relationship between perceptions of credibility and actual influence. The more ambiguous the task, the greater the reliance placed upon the credibility of the source. However, when immediate and frequent feedback is available, it is posited that reliance will be placed on actual task ability rather than on group member perceptions (Lord, 1977). Shaw (1981) and Fiedler (1967) identified a task parameter called solution specificity. It has been proposed that solution specificity may influence the relationship between perceptions of credibility and solution adoption.

Summary and Hypotheses

Source characteristics and credibility. There is a substantial amount of research which suggests that a clear relationship between task relevant ability possessed by a focal person and perceptions of
credibility. For example, Gintner and Lindskold (1975), Shevitz (1955), and Sorrentino and Boutillier (1975) found that feedback about a group member's level of task related ability or actual demonstrated ability on a previous similar task lead to perceptions of expertise and credibility in task oriented groups. Based upon these studies, it is hypothesized:

**Hypothesis 1**

A focal group member with a high level of task related ability will be perceived as significantly more credible than a focal group member with no task-related ability.

Research on behavioral styles and perceptions of credibility support the contention that the style of behavior displayed will be related to perception of expertise and credibility. Strong and Schmidt (1970) and Dell (1972) have found that counselors who display an expert behavioral style were perceived as more credible than counselors who displayed inexpert or referent behavioral styles. Klaus and Bass (1981) found that a focal person's communication style consisting of asking direct questions, allowing open and two-way communication and frankness lead to colleague's perceptions of informativeness and credibility. Finally, Lord (1977) found that group members who emitted a high frequency of technical and socioemotional behaviors were perceived as more expert than those who did not. This set of behaviors say be labelled as an expert behavioral style. Based upon the literature, it is hypothesized:
Hypothesis 2

A focal group's member who displays an expert behavioral style will be perceived as significantly more credible than a focal group's member who does not display the expert behavioral style.

Richardson et al. (1973) states that in order for task related ability of an individual with special knowledge to be perceived as credible, it must be made perceptually manifest to observers. Strong and Schmidt (1970) found that counselors who were introduced as experts and displayed an expert counselor behavioral style were seen as more credible than counselors introduced as experts but displaying inexpert roles or counselors introduced as inexpert but displaying an expert counselor behavioral style. Thus it would seem that there may be an interaction between characteristics of a focal person and perception of expertise. Based upon the research, it is hypothesized:

Hypothesis 3

A focal person who has task related ability and displays an expert behavioral style will be perceived as significantly more credible than focal persons with only demonstrated ability or expert behavioral style and focal persons with neither task related ability or persuasive behavioral style.

Credibility as a mediator. The literature on expertise in task oriented groups has found that source characteristics of group members such as task relevant ability or special knowledge is related to solution adoption only when the focal source is perceived to be expert (Bottger, 1984; Jaffee & Lucas, 1969; Lord, 1977; Riecken, 1958). Klaus and Bass (1981), have found that credibility serves to mediate the relationship between the focal person's communication
style and colleague outcomes. Based upon the research it is hypothesized:

**Hypothesis 4**

Task related ability and expert behavioral style will covary significantly with solution adoption as a function of the focal person's perceived credibility.

**Solution specificity, credibility and solution adoption.**

Rosenblum (1972) found that executives rely more heavily on their perceptions of a staff member's credibility as a means of evaluating the accuracy of information under conditions of task ambiguity. Lord (1977) states that when feedback is immediate and frequent, group member influence will be determined by demonstrated abilities, but when there is little or no feedback, influence will be based upon stereotypic perceptions of group members. Shaw (1981) identifies a task parameter called solution specificity which represents the extent to which there is only one correct alternative. Thus the specificity of the solution may moderate the relationship between credibility and solution adoption. Based upon the literature, it is hypothesized:

**Hypothesis 5**

The relationship between credibility and solution adoption will be significantly greater under conditions of high solution than under conditions of low solution specificity.
A 2 x 2 x 2, factorial design was used to determine the effects of three independent variables over perceptions of credibility and solution adoption. The independent variables were task related ability (demonstrated/undemonstrated), expert behavioral style (effective/ineffective), and solution specificity (high/low).

Subjects

One hundred-thirty male introductory psychology student volunteers attending a large midwestern university participated in the experiment. Thirty-four of the subjects participated in a separate pilot study designed to measure the success of the behavioral style induction. The other ninety-six students participated in the main study. All data analysis was conducted on this sample of ninety-six students.

Tasks and Apparatus

During the first half of the experiment, subjects reviewed the Assembly Problem case study (Hoffman, 1979: see Appendix A). Following the viewing of a videotape tape they were asked to complete this problem. The problem concerns the work flow between seven
stations in a carburetor assembly line. Subjects were given a
statement describing the problem which they were required to review
if necessary, and select a solution. Subjects were then asked to
record their solution on a form provided to them.

Two videotapes were made. The basic scenarios for both films
consisted of a three member group, all male, with one member of the
group designated as the focal person and two "other" group members.
All of the group members were actors and their dialogue was fully
scripted. The focal person portrayed the effective expert behavioral
style in one of the videotapes and displayed an ineffective expert
behavioral style in the other. The film first identified each of the
group members by name. One of the two other group members revealed
that the boss had called them together to adopt a solution to the
problem previously discussed in another meeting. The film was
divided into three segments: the group purpose, analysis of the
problem and presentation of the solutions. One of the other group
members introduced the first solution. For example, "In the past the
company has handled similar situations by . . ." Following this
solution, the focal member introduced his solution. After the two
solutions were introduced, a discussion ensued. The group discussion
was finished when one of the other group members suggests that they
vote on the group solution. However, the video ends prior to
revealing the group member's opinions.

The solutions presented by the supervisors were to change to a
piece-rate system suggested by the other supervisor and to adopt a
worker recognition program which was advocated by the focal person.
Based upon pilot work (see Appendix J) the two solutions were found to be equal in desirability. Furthermore the mean values of both solutions were approximately midpoint on the scale, meaning that subjects would neither recommend or not recommend these solutions. This is important because it reduces the possibility that a subject would adopt a solution based upon its intrinsic superiority rather than because of some characteristics of the focal person.

Procedure

Subjects, up to seven at a time, were escorted to a large room and seated at separate desks. The desks were spaced far enough apart to discourage any interaction. Subjects were told that they will be viewing a possible training film on work groups. It was explained to them that some psychologists feel that training can be facilitated by viewing a film of a work group rather than simply lecturing on the subject. Subjects were informed by the experimenter that they would evaluate the film and then participate in a similar task.

Subjects were next given the "Pretraining Materials". These consisted of the Assembly Problem case study and the work history profiles of the three supervisors. Subjects first read the case study and were then told to look at a television monitor where each supervisor's picture was shown while their work history profile was read.

Subjects were next given an evaluation form of the pretraining materials. They were told to assess the clarity and their understanding of the material. Included in the questionnaire were
manipulations checks for the task related ability manipulation (see Appendix B). The experimenter collected the forms after ten minutes.

Subjects next viewed the videotape which lasted approximately thirteen minutes. They were given a "Film Assessment Form" to be completed (see Appendix C). This form contained measures of credibility, expertise, trustworthiness and an assessment of the qualities of the focal person or his message. Once the form had been completed and collected (approximately ten minutes), the subjects were read instructions that they would be given the same task as that viewed in the videotape. The manipulation of solution specificity was imbedded in the instructions (see Appendix D). Subjects were then given the memory check questionnaire (see Appendix E). They were told that this questionnaire was designed to measure how well they remembered the various details of the task. Imbedded in the questionnaire was the manipulation check for solution specificity. After the questionnaire had been completed (approximately 5 minutes) subjects were given the Assembly Problem case study and told to arrive at a solution to the problem (approximately 10 minutes).

After subjects had finished the task, they were asked to fill out the Post Training Questionnaire and background survey (approximately five minutes, see Appendix F). This questionnaire contained the same items measuring the supervisors credibility as those found in the Film Assessment Form. Subjects were then debriefed.
Chronological Summary of the Major Events

1. Subjects were given the pretraining materials containing the case study and supervisor profiles.
2. Subjects viewed the videotape of each supervisor and were told of the information on the profile.
3. Subjects completed the Pre-training Material Questionnaire.
4. Subjects viewed a 13 minute videotape of the supervisors work meeting.
5. Subjects completed the Film Assessment Questionnaire.
6. Subjects were read instructions about the Assembly Problem task.
7. Subjects completed the Memory Check Questionnaire.
8. Subjects completed the Assembly Problem task.
9. Subjects completed the Post-training questionnaire and background survey.
10. Subjects were debriefed.

Independent Variables

Manipulation of task related ability. This variable was manipulated by presenting subjects information about the work history of each of the members in the videotaped group. The work history profile included the ages of the subjects, their position, functional title and length of employment at the company. In the high ability condition the focal person's work history profile included a statement that this supervisor participated on a similar project which he successfully solved. In the low ability condition a
statement was included which said that the supervisor participated on a problem unrelated to the current one in which he was unable to successfully solve (see Appendix A).

A manipulation check for this variable consisted of two questions: the subject's perception of the supervisor's ability and their perception of the focal supervisor's ability compared with that of the other supervisors. These questions were imbedded in the Pretraining Materials Questionnaire (see Appendix B).

**Manipulation of behavioral style.** Effective or ineffective expert behavioral style was defined as the display of prototypic effective and ineffective behaviors of experts. In the effective condition the expert focal person displayed nine behaviors that have been found to be prototypic of an effective technical expert (see Appendix J). These behaviors were identified based upon pilot work on prototypic expert behaviors (see Appendix I). Six of the behaviors are effective technical behaviors and include analyzing the solution with respect to the needs of the organization, calling for factual information and identifying sub-problems related to the situation. Some examples of effective socio-emotional behaviors are, complimenting the group on the progress made, recognizing the validity of other group member's comments, stating the importance of the group and complimenting the group on the progress made.
In the ineffective expert behavioral style condition, the focal person displayed nine ineffective behaviors. These behaviors were also identified through pilot work (see Appendix J). Six of the ineffective behaviors were technical and three were socio-emotional. The ineffective technical behaviors include: letting details of the task overwhelm them, frequently changing one's own mind and making recommendations without justification. The socio-emotional behaviors are, making fun of group members, insisting on having his or her own way, and needling other group members.

The behaviors are evenly dispersed throughout the thirteen minute videotapes. There were three behaviors displayed in each of the first two segments and four behaviors displayed in the last segment. An attempt was made to match the display of effective and ineffective behaviors in the two videotapes (see Appendix G). For example, during the first segment of the videotape for the effective expert condition, the focal person identifies the group purpose. This behavior was matched with an ineffective technical behavior in the ineffective expert condition. In this videotape the focal person lets the details of the task overwhelm him. In a similar manner effective technical and socio-emotional behaviors were matched with ineffective technical and socio-emotional behaviors. Except for the display of prototypic behaviors by the focal person the dialogue in the two conditions was held constant as much as possible.

In order to control for any effects due to differences in participation rates, the number of lines given group members was held constant within conditions and between conditions. Each of the
supervisors in both conditions received approximately 90 lines of
dialogue. Furthermore, the length of time of the two videotapes
differed by less than 3 seconds. Several steps were taken to
minimize effects due to respondents, that is the responses of the
other group members toward the focal person. The dialogues were
fully scripted to control for differences across conditions.
Furthermore, the videotaped discussion ends prior to the supervisors
expressing their opinions about the proposed solutions.

The manipulation of behavioral style involved imbedding nine
effective or ineffective behaviors in the dialogue of the focal
supervisor. To check for the success of the induction, it was
decided to determine the extent to which subjects actually observed
these imbedded behaviors. In order to protect against any possible
reactivity between the manipulation checks and the dependent
variables, a separate sample of 34 male introductory psychology
students was used. An equal number of subjects were assigned to the
effective and ineffective behavioral style conditions. These
subjects were run exactly the same as those in the main study except
for two exceptions. Immediately after viewing the videotape
discussion, they were given The Interpersonal Behaviors Questionnaire
(see Appendix K). This questionnaire contained twenty-six behaviors
including the nine effective and nine ineffective behaviors being
manipulated. Subjects responded to the extent to which they were
certain that the focal person had displayed these behaviors. It is
important to note that, as in the main study, subjects were not
informed about who was the focal person prior to observing the
videotape. Therefore, subjects were not primed to focus their attention on the focal group member.

If the inductions were successful it would be expected that subjects in the effective expert behavioral style condition would report with greater certainty that they had observed effective behaviors than would subjects in the ineffective expert behavioral style condition. While, just the reverse would be true for the ineffective behaviors.

The second exception with these subjects was that due to time constraints, the experiment was terminated after subjects had completed the Film Assessment Form.

Manipulation of solution specificity. In the low solution specificity condition, subjects were informed that there is only one correct solution to the task. This information was included in the instructions read to them by the experimenter when they were asked to determine their own solution to the Assembly Problem (see Appendix D). In the high solution specificity condition subjects were told that there were many possible solutions to this task.

A manipulation check was administered assessing the extent to which subjects believe there is only one correct solution.

Dependent Variables

Credibility. Following the work by Klaus and Bass (1981) on credibility in interpersonal communication, three attitude measures were chosen. The three scales measured the subject's perceptions of the focal person's trustworthiness, expertise and credibility. These
measures were included in the Film Assessment Form given to the subjects following the videotape (see Appendix C).

**Solution adoption.** Subjects were asked to recommend any solution to the Assembly Problem that they felt was best. An index of solution adoption was created which represented the degree to which the subject's solution corresponded with that of the solution advocated by the focal person. This index is similar to that used by Hoffman (1979). Zero on the index represented no agreement. One and two on the scale represented partial agreement. A solution was coded one if it contained some element of the focal person's solution. For example, "use an employee rotation system but post production charts as well." A solution was coded two if it consisted of the focal person's solution combined with another. For example, "Combine the piece-rate system with the employee recognition program." A solution was coded three when it totally agreed with the focal person's solution. For example, "I would go along with the employee recognition program."

Solutions were scored independently by two raters. After the independent ratings had been completed the raters met and any disagreements in ratings were resolved. The raters were blind to the experimental conditions and they received extensive training (see Appendix L).

**Ancillary Measures**

**Source or message characteristics.** Subjects were given one minute to write down the thoughts and ideas that occurred to them
while viewing the video concerning the focal person or the solution he advocated. This procedure was intended to capture subject's ideosyncretic thoughts about persuasive communication (Petty & Cacioppo, 1984). A time limit of one minute was imposed to maximize the likelihood that subjects record only those responses which actually occurred to them while viewing the focal person and prevent them from generating any new ideas or thoughts. Responses were scored independently by two raters, blind to conditions. Each rater had received extensive training (see Appendix M). The scoring procedure was developed by Chaiken and Eagly (1983). Statements are scored as either message (M) or communicator (C) oriented and as either positive (+), negative (-) or neutrally valenced (0). For example, a statement such as "seemed friendly", would be scored C+. "The incentive system seems unreasonable", would be scored M-. A neutral statement might be "He seems older than the others"; CO or "He mentioned that many organizations have incentive systems": MO.

Perceived Credibility. After completing the task at the end of the experiment, subjects were again asked the same questions concerning the credibility of the focal person that were imbedded in the Film Assessment Form (see Appendix C).
CHAPTER 3
RESULTS

The relationship between level of ability and effective or ineffective expert behavioral style on impressions of expertise, credibility and trustworthiness were investigated in this study. A model was proposed that subjects perceptions of the expert would mediate the effects of level of ability and expertise on solution adoption. Finally it was predicted that a task parameter, solution specificity, would influence the relationship between credibility and solution adoption.

Although several subjects were run at a time for each session, all analysis conducted used the individual as the unit of analysis. The number of subjects run per session ranged from one to seven while the mean number of subjects was approximately three. In order to determine whether any of the measures were influenced by the number of subjects run for each session a two-way (ability level, behavioral style) multivariate analysis of variance (MANOVA) with the number of subjects run per session as a covariate was conducted. This analysis determines the amount of variance accounted for by the covariate, number of subjects run, after the variance accounted for by the major independent variables has been partialled out of the dependent variables in the study. The overall effect for the covariate was
nonsignificant $F(4, 88) = 0.78, p > 0.30$. Separate univariate ANOVAs were performed on each of the dependent measures: credibility, trust, expertise and solution adoption. These also revealed that the number of subjects run per session did not covary significantly. Thus we can conclude that the number of subjects run per session did not significantly affect the results observed.

Success of Experimental Manipulation

**Expert behavioral style.** To assess the success of the expert behavioral style (effective/ineffective), manipulation, a pilot study was conducted in which subjects were asked to describe to what extent they were certain that they had observed a number of behaviors during the videotaped supervisor meeting (see Appendix K). Nine of the items represented effective behaviors which occurred in the effective behavioral style condition and nine other items represented ineffective behaviors which occurred in the ineffective behavioral style condition. Table 2 presents the mean values and standard deviations for the responses obtained.

Two one-way MANOVA were computed to determine the effects of experts behavioral style on subjects' recognition of specific effective and ineffective behaviors displayed by the expert. One MANOVA was computed on the set of nine ineffective behaviors while the other MANOVA was conducted on the set of nine effective behaviors. This was done in order to assess the effects of the manipulation on the individual behaviors as well as the separate linear combinations of the sets of effective and ineffective
Table 2

Mean Responses to Effective and Ineffective Behaviors as a Function of Effective and Ineffective Behavioral Styles

<table>
<thead>
<tr>
<th>Items</th>
<th>Effective Behavioral Style Condition</th>
<th>Ineffective Behavioral Style Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Effective Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Summarizes</td>
<td>5.94</td>
<td>1.85</td>
</tr>
<tr>
<td>2. Compliments Group</td>
<td>4.58</td>
<td>2.15</td>
</tr>
<tr>
<td>3. Diagnoses Problem</td>
<td>6.47</td>
<td>0.79</td>
</tr>
<tr>
<td>4. Validity of Others Arguments</td>
<td>6.53</td>
<td>0.62</td>
</tr>
<tr>
<td>5. Organizational Needs</td>
<td>6.47</td>
<td>0.79</td>
</tr>
<tr>
<td>6. Identifies Subgoals</td>
<td>6.12</td>
<td>0.93</td>
</tr>
<tr>
<td>7. Identifies Group Purpose</td>
<td>6.23</td>
<td>1.30</td>
</tr>
<tr>
<td>8. States Group Importance</td>
<td>6.06</td>
<td>1.51</td>
</tr>
<tr>
<td>9. Calls for Facts</td>
<td>5.29</td>
<td>1.57</td>
</tr>
<tr>
<td>Ineffective Behaviors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Recommendations without Reasons</td>
<td>1.62</td>
<td>1.04</td>
</tr>
<tr>
<td>2. Makes Fun of Others</td>
<td>1.46</td>
<td>0.96</td>
</tr>
<tr>
<td>3. Changes Mind Frequently</td>
<td>1.69</td>
<td>1.65</td>
</tr>
<tr>
<td>4. Rigidness/Inflexible</td>
<td>3.23</td>
<td>2.45</td>
</tr>
<tr>
<td>5. Overwhelmed by Task</td>
<td>2.31</td>
<td>2.06</td>
</tr>
<tr>
<td>6. Jumps to Conclusions</td>
<td>1.77</td>
<td>1.48</td>
</tr>
<tr>
<td>7. Needle Others</td>
<td>1.46</td>
<td>1.13</td>
</tr>
<tr>
<td>8. Task Unrelated Talking</td>
<td>1.15</td>
<td>0.38</td>
</tr>
<tr>
<td>9. Verbose</td>
<td>3.23</td>
<td>2.42</td>
</tr>
</tbody>
</table>

Note. n = 34
behaviors. Table 3 contains the findings for each of the MANOVAS. As is evident there was a significant overall effect for effective behaviors. Table 3

**Table 3**

Summary table of two separate MANOVAs for the effects of behavioral style manipulation on recognition of effective and ineffective behaviors.

<table>
<thead>
<tr>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Behaviors</td>
<td>6.80*</td>
</tr>
<tr>
<td>Ineffective Behaviors</td>
<td>12.48*</td>
</tr>
</tbody>
</table>

Note. For all analyses, df = 9, 24.
*p < 0.001.

behaviors $F(9, 24) = 6.80, p < 0.001$ and a significant overall effect for ineffective behaviors, $F(9, 24) = 12.48, p < 0.001$. In general, subjects in the effective behavioral style conditions recognized that the focal person displayed effective behaviors while subjects in the ineffective behavioral style condition recognized that the focal person displayed ineffective behaviors. Table 4 contains the results of the univariate analysis of variance (ANOVA) of the two sets of nine effective and nine ineffective behaviors. With two exceptions, subjects were significantly more certain that the expert had displayed effective behaviors in the effective behavioral style condition than were subjects in the ineffective behavioral style condition. Subjects in the effective behavioral style condition were also significantly more certain that the expert had not displayed ineffective behaviors than were subjects in the ineffective behavioral style condition. The two exceptions were the behaviors:
<table>
<thead>
<tr>
<th></th>
<th>DV</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Summarizes</td>
<td>1</td>
<td>18.38</td>
<td>4.23**</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>4.34</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Compliments Group</td>
<td>1</td>
<td>51.88</td>
<td>14.33*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diagnosis Problem</td>
<td>1</td>
<td>12.97</td>
<td>5.66**</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>2.29</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Validity of Others' Arguments</td>
<td>1</td>
<td>88.97</td>
<td>38.60*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Organizational Needs</td>
<td>1</td>
<td>47.06</td>
<td>30.12*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>1.56</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Identifies Subgoals</td>
<td>1</td>
<td>76.50</td>
<td>36.25*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>2.11</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Identifies Group Purpose</td>
<td>1</td>
<td>40.26</td>
<td>14.01*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>2.87</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>States Group Importance</td>
<td>1</td>
<td>67.76</td>
<td>25.21*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>2.69</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Calls for Facts</td>
<td>1</td>
<td>30.12</td>
<td>9.48**</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>32</td>
<td>3.18</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 continued

<table>
<thead>
<tr>
<th>DV</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ineffective Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Recommendations without</td>
<td>1</td>
<td>48.03</td>
<td>18.93*</td>
</tr>
<tr>
<td>Reasons</td>
<td>32</td>
<td>2.54</td>
<td></td>
</tr>
<tr>
<td>2. Makes Fun of Others</td>
<td>1</td>
<td>70.82</td>
<td>25.07*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>2.82</td>
<td></td>
</tr>
<tr>
<td>3. Changes Mind Frequently</td>
<td>1</td>
<td>88.46</td>
<td>31.65*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>2.80</td>
<td></td>
</tr>
<tr>
<td>4. Rigidness/Unflexible</td>
<td>1</td>
<td>58.48</td>
<td>16.74*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>3.49</td>
<td></td>
</tr>
<tr>
<td>5. Overwhelmed by Task</td>
<td>1</td>
<td>13.59</td>
<td>3.38</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>4.01</td>
<td></td>
</tr>
<tr>
<td>6. Jumps to Conclusions</td>
<td>1</td>
<td>62.19</td>
<td>22.69*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>2.74</td>
<td></td>
</tr>
<tr>
<td>7. Needles Others</td>
<td>1</td>
<td>117.86</td>
<td>75.95*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>1.55</td>
<td></td>
</tr>
<tr>
<td>8. Task Unrelated Talking</td>
<td>1</td>
<td>110.20</td>
<td>63.11*</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>1.78</td>
<td></td>
</tr>
<tr>
<td>9. Verbose</td>
<td>1</td>
<td>0.10</td>
<td>0.02</td>
</tr>
<tr>
<td>Error</td>
<td>32</td>
<td>4.66</td>
<td></td>
</tr>
</tbody>
</table>

*p < .001

**p < .05

Note. df = 9, 24
verbose and overwhelmed by the task. However, the means for both behaviors were in the predicted direction.

Two additional analyses were conducted to determine whether the manipulation of level of ability (high/low) influenced subjects' recognition of effective or ineffective behaviors in the videotapes. Separate one-way MANOVA's on level of ability and recognition of the set of effective or ineffective behaviors revealed nonsignificant overall effects, $F(9, 24) = 1.24$, $p > .30$, and $F(9, 24) = 1.00$, $p > .40$, respectively. Univariate ANOVAs computed for each of the individual behaviors also yielded nonsignificant results.

To summarize, the manipulation of behavioral style was successful. Subjects in the effective behavioral style conditions were certain that the expert had displayed effective behaviors and not ineffective ones. Subjects in the ineffective behavioral style condition were certain that the expert had displayed ineffective behaviors and not effective behaviors. Furthermore, there was no significant effect of the manipulated level of ability of the focal person on subjects' recognition of these behaviors. Thus, we can conclude that responses to this manipulation check were unaffected by the manipulation of level of ability.

**Level of ability.** The manipulation checks for level of ability consisted of two attitudinal measures rated on a seven point scale (see Appendix B). These statements measured the ability level of the expert focal person relative to the ability levels of the other supervisors, and the absolute level of ability of the expert focal person. Table 5 contains the mean values and standard deviations for
the two measures of ability level. A one-way MANOVA was computed to measure the effects of the level of ability manipulation on subjects' responses to the two scale items. There was a significant overall effect for the linear combination of the two manipulation checks across the two conditions of high and low ability, $F(2, 93) = 26.80$, $p < 0.001$. Table 6 contains the results of the univariate ANOVAs for each of the altitude statements.

As can be seen in Table 6, the manipulations of level of ability were successful. Subjects in the low ability condition disagreed with the statement that the expert focal person had greater ability relative to the other supervisors and that he had a high level of ability. Subjects in the high ability level agreed that the expert focal person had both more ability than the other supervisors and a high level of ability.

### TABLE 5

Mean Responses to the Relative and Absolute Levels of Ability as a Function of the Level of Ability Manipulation

<table>
<thead>
<tr>
<th>Items</th>
<th>Low Ability</th>
<th></th>
<th>High Ability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td></td>
<td>Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>Relative to other Supervisors</td>
<td>2.83 (1.64)</td>
<td></td>
<td>5.12 (1.75)</td>
<td></td>
</tr>
<tr>
<td>Absolute level of Ability</td>
<td>3.06 (1.43)</td>
<td></td>
<td>5.12 (1.66)</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 6

Univariate ANOVA Tests for Level of Ability on Two Attitudinal Measures of Relative and Absolute Ability.

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative to Other Supervisors</td>
<td>1</td>
<td>126.04</td>
<td>43.89*</td>
</tr>
<tr>
<td>Error</td>
<td>94</td>
<td>2.87</td>
<td></td>
</tr>
<tr>
<td>Absolute Level of Ability</td>
<td>1</td>
<td>102.09</td>
<td>42.45*</td>
</tr>
<tr>
<td>Error</td>
<td>94</td>
<td>2.40</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.001

Solution specificity. Subjects were read instructions which stated that the problem they were about to work on had either only one correct solution (high solution specificity) or many correct solutions (low solution specificity). Subjects next responded to a questionnaire which had the solution specificity manipulation check. They were asked to respond to a scale which measured to what extent they were certain that there was only one correct solution to the problem (Appendix E). The mean response (M) to this questionnaire item in the high solution specificity (M = 4.46, sd = 1.91) was midway between the scale anchors "neither certain nor uncertain", and "somewhat certain". The mean response in the low solution specificity condition (M = 2.14, sd = 1.32) was approximately at the anchor, "uncertain that there is one correct solution to the problem". A T-test performed on the data yielded a significant difference, T(94) = 6.89, p < 0.001. Although there were significant
differences between subjects' responses in the two conditions, with reference to the scale anchors we can only state that subjects in the low specificity condition were more uncertain that there was one correct solution to the problem than subjects in the high specificity condition.

Development of an Index for Solution Adoption

Subjects were asked to recommend a solution to the assembly line problem. In order to measure actual influence of the focal person over the subjects' recommendation a solution adoption index was created. Two raters independently coded subjects' solutions on a scale of 0 to 3. Zero indicated no similarity between the subjects' and the expert focal person's solution while 3 represented complete agreement between the two solutions. The independent ratings of the two raters were correlated producing an intrarater reliability coefficient, \( r = 0.94, p < 0.01 \). After making all ratings independently, the raters than reviewed their ratings and came to an overall rating for any instances where there was a disagreement in their independent ratings. Out of 96 solutions, there were 10 disagreements. Table 7 contains the number of solutions coded at each level of the solution adoption index.

Cognitive response coding. Following the video of the supervisors' work meeting, subjects responded to an open-ended question which asked them to list their thoughts which occurred to them while viewing the videotape concerning the focal person or his message. The number of responses generated by each subject varied
from zero to five. The mean number of responses was $M = 2.39$, $N = 96$. Responses were dummy coded into one of six categories depending upon whether it was message or communicator oriented, and positive, negative, or neutral. Two independent raters coded all responses. The interrater reliability was $r = 0.8244$, $p < 0.01$. There were 13 disagreements between the independent ratings. In the case of a disagreement, raters were asked to agree on one score for the response. All disagreements were resolved.

TABLE 7

Frequency of solutions coded at each level of the solution adoption index.

<table>
<thead>
<tr>
<th>Solution Adoption</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Similarity (0)</td>
<td>46</td>
</tr>
<tr>
<td>Recommended Solution Contains a Part of Focal Persons' Solution (1)</td>
<td>18</td>
</tr>
<tr>
<td>Recommended Solution Contains all of Focal Person's Solution combined with other solutions</td>
<td>21</td>
</tr>
<tr>
<td>Recommended Solution the same as Focal Person's solution</td>
<td>11</td>
</tr>
</tbody>
</table>

Based upon the methodology used by Chaiken and Eagly (1984), four indexes were constructed by counting up the number of responses generated by a subject which were categorized as message or communicator related and positive or negative.
Test of the Hypotheses

Three hypotheses were posited concerning the relationship between the focal person's level of ability and behavioral style and perceptions of credibility. It was hypothesized that a focal person with a high level of demonstrated task related ability would be perceived as more credible than a focal person with a demonstrated low level of ability (Hypothesis 1). It was also posited that a focal person who displayed an effective expert behavioral style would be perceived as more credible than a focal person who displayed an ineffective behavioral style (Hypothesis 2). Finally an interaction between level of ability and expert behavioral style was predicted (Hypothesis 3). Specifically, it was hypothesized that a focal person with a high level of ability and an effective expert behavioral style would be seen as significantly more credible than either a focal person with demonstrated high level of ability but ineffective expert behavioral style or demonstrated low ability and effective expert behavioral style and those with both demonstrated low levels of ability and ineffective expert behavioral styles. It was also acknowledged that due to the multi-dimensional nature of the credibility construct, impressions of expertise and trustworthiness would also be examined.

Table 8 contains the mean values and standard deviations for impressions of expertise, trustworthiness and credibility across the conditions level of ability (high/low) and expert behavioral style (effective/ineffective). In order to test the hypotheses a level of
Table 8

Mean Responses and Standard Deviations for Perceptions of Expertise, Trustworthiness, and Credibility by Focal Person's Level of Ability and Expert Behavioral Style

<table>
<thead>
<tr>
<th>Expert Behavioral Style</th>
<th>Level of Ability</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expertise</td>
<td>High</td>
<td>Low</td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>Effective</td>
<td>5.87</td>
<td>1.12</td>
<td>5.12</td>
<td>1.15</td>
</tr>
<tr>
<td></td>
<td>Ineffective</td>
<td>4.50</td>
<td>1.79</td>
<td>2.95</td>
<td>1.40</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>5.18</td>
<td>1.63</td>
<td>4.04</td>
<td>1.66</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>Effective</td>
<td>5.91</td>
<td>1.14</td>
<td>5.16</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>Ineffective</td>
<td>3.87</td>
<td>1.85</td>
<td>3.29</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>4.89</td>
<td>1.84</td>
<td>4.23</td>
<td>1.56</td>
</tr>
<tr>
<td>Credibility</td>
<td>Effective</td>
<td>6.29</td>
<td>0.95</td>
<td>5.70</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>Ineffective</td>
<td>4.67</td>
<td>1.55</td>
<td>3.25</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>5.48</td>
<td>1.52</td>
<td>4.48</td>
<td>1.83</td>
</tr>
</tbody>
</table>
ability by expert behavioral style a two-way MANOVA was computed on subjects' perceptions of expertise, trustworthiness and credibility. Table 9 contains the summary data for the MANOVA.

As Table 9 indicates the linear combination of subjects' perceptions of the focal person's expertise, trustworthiness and credibility was significantly influenced by the level of ability and behavioral style. However, there was no significant interaction between level of ability and behavioral style for the linear combination of these three variables.

**TABLE 9**

**MANOVA summary table on subjects' perceptions of focal person's expertise, trustworthiness and credibility as a function of level of ability and expert behavioral style.**

<table>
<thead>
<tr>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Ability (A)</td>
<td>6.16*</td>
</tr>
<tr>
<td>Behavioral Style (B)</td>
<td>22.66*</td>
</tr>
<tr>
<td>A x B</td>
<td>1.64</td>
</tr>
</tbody>
</table>

Note. For all analysis, df = 3,90.
*p < 0.001

Table 10 contains the data gathered from univariate ANOVAs performed on the perceptual measures and the variables, level of ability and expert behavioral style. As predicted, there were significant main effects for both level of ability and expert behavioral style on perceptions of expertise, trustworthiness and credibility. There were modest effect sizes for the level of ability
Table 10

Univariate ANOVA Tests for Subjects' Perceptions of Focal Person's Expertise, Trustworthiness and Credibility as a Function of Experts' Level of Ability and Behavioral Style

<table>
<thead>
<tr>
<th>DV</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>W²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Ability (L)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>1</td>
<td>31.51</td>
<td>16.45*</td>
<td>0.162</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>1</td>
<td>10.67</td>
<td>5.43**</td>
<td>0.047</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credibility</td>
<td>1</td>
<td>24.0</td>
<td>13.65*</td>
<td>0.136</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expert Behavioral Style (B)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>1</td>
<td>75.26</td>
<td>39.29*</td>
<td>0.412</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>1</td>
<td>92.04</td>
<td>46.85*</td>
<td>0.493</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credibility</td>
<td>1</td>
<td>100.04</td>
<td>56.90*</td>
<td>0.600</td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L x B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>1</td>
<td>3.76</td>
<td>1.96</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>1</td>
<td>0.17</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credibility</td>
<td>1</td>
<td>4.17</td>
<td>2.31</td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>92</td>
<td>1.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.001

**p < 0.05
which accounted for approximately 16 percent of the variance in perceptions of expertise and approximately 13 percent of the variance in credibility. However, level of ability accounted for only a small percentage, less than 5 percent, in perceptions of trustworthiness. There were very robust effect sizes for expert behavioral style influencing subject's perceptions of the focal person. Behavioral style accounted for approximately 40 percent of the variance in expertise and 60 percent of the variance in credibility. Behavioral style also accounted for a large percentage of the variance in perceptions of trustworthiness, nearly 50 percent. However, contrary to the hypothesis there was no significant interaction between level of ability and expert behavioral style. Although the means presented in Table 8 are in the direction predicted.

In summary, there was substantial support provided for hypotheses 1 and 2. Level of ability and expert behavioral style were very influential in subject's perceptions of the focal persons expertise, trustworthiness and credibility. However, the hypothesized interaction between level of ability and expert behavioral style was not supported by the data.

Test of the model. A model was presented which stated that a focal person's level of ability and expert behavioral style would lead to subjects' perceptions of credibility. Credibility, in turn, would lead to solution adoption. It was hypothesized that perceptions of credibility would completely mediate the relationship between focal persons characteristics: level of ability and expert behavioral style, and solution adoption (Hypothesis 4). It was also
acknowledged that perceptions of expertise, trustworthiness and
credibility might be independent of one another and should be
examined separately in the analysis. However, correlations among the
three measures proved to be highly related. The mean correlation
among the three variables was $r = 0.71$, $p < 0.01$. Given the fact
that perceptions of expertise, trustworthiness, and credibility share
a great extent of common variance, it was decided to examine only
credibility.\(^1\) It was also hypothesized that solution specificity
would moderate the relationship between credibility and solution
adoption. That is, in conditions of high specificity there would be
a stronger relationship between credibility and solution adoption
than in conditions of high specificity.

To test the model, a hierarchical multiple regression was
computed. This technique allows for the calculation of the amount of
unique variance in the dependent variable by specific antecedent
variables. By entering antecedent variables into the equation at
different stages, in accordance with specified hypotheses, one can
determine recursive relationships among the various components of the
model (Cohen & Cohen, 1975). There were three primary stages to this
model. The first stage was to determine the amount of unique

\(^1\)Identical analysis performed on a composite of trust and expertise
yielded the same results as the single item measure of credibility.
Therefore, in the interest of parsimony, the analysis reported was
conducted on the single item measure.
variance in perceptions of credibility accounted for by perceptions of credibility. Correlations among all of the relevant variables were calculated and can be seen (see Appendix N).

Stage 1: Level of ability, behavioral style and credibility.
To measure the amount of unique variance accounted for by each of these variables a four step procedure was utilized. First, the variable level of ability was entered into the equation and the multiple regression coefficient (R^2) was calculated. Next, behavioral style was added to the equation and the R^2 was calculated for both variables. By subtracting the two R^2 it was possible to determine the semipartial regression coefficient (Sr^2 ) for Behavioral Style. This tells us the amount of unique variance in perceptions of credibility accounted for by behavioral style. To assess the unique variance accounted for by level of ability the order that the variables were entered was reversed and the Sr was computed. As is evident in Table 11, both independent variables account for significant amount of unique variance in subject's perceptions of the focal person's credibility.

Stage 2: Perceptions of credibility and solution adoption. The next stage of the analysis is to measure the impact of subject's perceptions of the focal persons credibility on solution adoption. This stage involved two steps. In the first step, level of ability and behavioral style were regressed against solution adoption and the R^2 was calculated. In the second step credibility was added to the equation, the R^2 was calculated and the amount of unique variance
TABLE 11
Hierarchical regression analysis for factors related to perceptions of credibility.

<table>
<thead>
<tr>
<th>Step</th>
<th>IV</th>
<th>Full Equation at Each Step</th>
<th>Change from Previous Step</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>R2</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unique Variance for Behavioral Style</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ability (A)</td>
<td>.11</td>
<td>11.61*</td>
<td>1,94</td>
</tr>
<tr>
<td>2. A, Behavioral Style (B)</td>
<td>.37</td>
<td>27.59*</td>
<td>2,93</td>
</tr>
<tr>
<td>Unique Variance for Ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. B</td>
<td>.26</td>
<td>33.45*</td>
<td>1,94</td>
</tr>
<tr>
<td>2. B,A</td>
<td>.37</td>
<td>27.59*</td>
<td>2,93</td>
</tr>
</tbody>
</table>

*p < 0.01

solution adoption as a function credibility was computed. Table 12 presents the results of this analysis.

As can be seen in Table 12, there was no significant increase in the amount of variance in solution adoption as a function of the focal person's credibility. Level of ability and behavioral style were also found not to be significantly related to solution adoption.

According to James & Brett (1984) to test for mediation, the intervening variable must first be found to significantly increase the amount of variance in the dependent variable. This is, obviously the most critical requirement for mediation. Therefore, the Hypothesis 4, that credibility served to completely mediate the relationship between level of ability, expert behavioral style and
solution adoption was not supported by the analysis.

**TABLE 12**

Hierarchical Regression Analysis for Factors Related to Solution Adoption.

<table>
<thead>
<tr>
<th>Step</th>
<th>IV</th>
<th>Full Equation After Each Step</th>
<th>Change from Previous Step</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>R</td>
<td>F</td>
</tr>
<tr>
<td>1.</td>
<td>Ability (A), Behavioral Style (B)</td>
<td>.02</td>
<td>1.01</td>
</tr>
<tr>
<td>2.</td>
<td>A, B, Credibility</td>
<td>.04</td>
<td>1.25</td>
</tr>
<tr>
<td>3.</td>
<td>A, B, C, C* Specificity</td>
<td>.08</td>
<td>1.97</td>
</tr>
</tbody>
</table>

* <0.05

Stage 3: Moderating effects of solution specificity on credibility and solution adoption. The last stage in the analysis of this model was to test for moderating effects of solution specificity on the relationship between credibility and solution adoption. Perhaps subjects would rely more heavily on their perceptions of a focal person's credibility in adopting a solution when they know that there is only one correct solution (high specificity). To test for a moderator effect, an interaction term between solution specificity and credibility was entered into the equation. As can be seen in Table 12, there was a significant increase in the unique variance of solution adoption accounted for by the interaction term. However, since the overall R was not significant we cannot conclude that
solution specificity had a moderating influence over the relationship between credibility and solution adoption.

**Subsequent analysis on the variables in the model.** What then is the relationship between perceptions of credibility and solution adoption? To answer this question, a series of chi-squares were performed to examine whether the proportions of subjects solution scored using the solution adoption index varied significantly as a function of perception of credibility.

Perceptions of credibility were partitioned into two categories (credible, not credible), based upon median splits. Subjects who agreed (5) to strongly agreed (7) that the focal person was credible were partitioned into one category while subjects who neither agreed nor disagreed (4) to strongly disagreed (1) were partitioned into the other category. The overall chi-square between the two levels of credibility and the four levels of solution adoption was computed. The chi square $\chi^2 = 2.65, p > .10$, was not significant. However, chi-squares computed at each level of solution adoption did yield some interesting results. Table 13 contains the proportions and chi-squares for credibility at each level of solution adoption. As is evident, there was no significant difference in the proportion of subjects who viewed the focal person as credible or not credible and either did not adopt his solution or adopted only a portion of it. However, there were significant differences in the proportion of subjects who viewed the focal person as credible or not when the solution was completely adopted or adopted and combined with another solution. This table also reveals that there was a large proportion
of subjects who perceived the focal person to be credible at all levels of solution adoption. In fact, mean values of credibility computed for each level of solution adoption, starting at no adoption to complete adoption were, \( M = 4.67, \ M_1 = 5.06, \ M_2 = 5.24, \) and \( M_3 = 5.64, \) respectively. Thus, while it seems that perceptions of credibility do not necessarily lead to solution adoption, of those subjects who completely adopted or combined solutions there was a significantly greater proportion who viewed the focal person to be credible than not credible. In fact, the proportion who perceived the focal person as not credible at these two levels of solution adoption actually responded at 4 on the scale, indicating that they neither agreed nor disagreed with the statement that the focal person was credible. Clearly, the data indicates that subjects did not adopt the focal person's solution when he lacked credibility. Credibility, then appears to be a necessary but not sufficient condition for solution adoption.

The results from the hierarchical regression indicate that solution specificity did not serve to moderate the relationship between credibility and solution adoption. However, they may have been due to the nonsignificant relationship between credibility and solution adoption. Therefore, did solution specificity have any effect on credibility and solution adoption? A multiple regression equation was computed, with credibility, solution specificity, and the interaction of credibility and solution specificity regressed against solution adoption. The multiple regression coefficient was significant, \( R = 0.092, \ F(3,92) = 3.14, \ p < 0.05. \) There were no
Table 13

Proportions and Chi-Squares for Credibility at Each Level of Solution Adoption

<table>
<thead>
<tr>
<th>Solution Adoption</th>
<th>Credible (&gt;5)</th>
<th>Not Credible (&lt;5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Similarity (N = 46)</td>
<td>.59</td>
<td>.41</td>
</tr>
<tr>
<td>Recommended Solution Contains a Part of Focal Person's Solution (N = 18)</td>
<td>.61</td>
<td>.39</td>
</tr>
<tr>
<td>Recommended Solution Contains All of Focal Person's Solution Combined with Other Solutions (N = 21)</td>
<td>.72</td>
<td>.28</td>
</tr>
<tr>
<td>Recommended Solution Same as Focal Person's Solution (N = 11)</td>
<td>.82</td>
<td>.18</td>
</tr>
</tbody>
</table>

*p < 0.05

significant main effects for credibility and solution specificity, but as predicted, there was a marginally significant beta weight for the interaction between credibility and solution specificity, \( t(92) = -1.85, p < 0.07 \). An examination of mean solution adoption index ratings partitioned by high and low specificity and medium splits for credibility (high/low) indicated that the interaction was in the direction predicted. Mean responses in the high specificity, high credibility condition were higher, \( M = 1.4 \), than were the mean responses for low specificity, high credibility, \( M = 0.81 \), high specificity, low credibility, \( M = 0.81 \). The overall relationship between the set of variables and solution adoption was significant but the effect size was weak.
Changes in perceptions of credibility as a function of solution adoptions. It would be interesting to determine whether subject's perception of the focal person changed as a result of the solution they adopted. For example, did subjects who initially viewed the focal person as credible change their perceptions when they failed to accept the focal person's solution? Subjects were asked to respond to a questionnaire containing the item measuring credibility immediately after viewing the videotaped supervisor's discussion. Their perceptions of the focal person's credibility was then reassessed after a solution had been adopted, approximately 20 minutes later. To determine whether there were any changes in subjects assessment of credibility from time one to time two, a one-way ANOVA was calculated with the difference in ratings from time one and time two as the dependent measure, and solution adoption as the independent measure. This procedure produces similar results as the mixed mode analysis of variance with one within and one between factor. However, the mix mode analysis of variance compares ratings from time one and time two with the average rating of time one and two combined. The ANOVA using the difference term provides more power to the test since it merely subtracts time one from time two. The ANOVA was non-significant, MS = 0.87, F(1,94) = 0.61, p > 0.10. A comparison of the mean differences in credibility from time one and time two across the four levels of solution adoption showed no significant differences for subjects with dissimilar solutions or solutions with partial similarity, M = 0.02 and M = 0.17, respectively. However, there were marginally significant changes for
subjects who combined the focal person's solution with another or accepted it totally, \( x = -0.38, t = 1.90, p > 0.08 \), and \( M = -0.27, t = 1.94, p > 0.09 \) respectively. That is, there was a slight increase in perceptions of credibility as a function of accepting the focal person's solution. Thus the data indicates that perceptions of credibility were relatively stable across the two time periods. Subjects who did not accept the focal persons solution also did not change their perceptions of credibility. It seems that for some subjects perceptions of credibility were relatively independent of solution adoption.

Cognitive Responses

It was suggested that the number of types of cognitive responses generated by subjects after viewing the videotape might be related to their perceptions of the focal person's credibility, expertise, or trustworthiness. Correlations computed between the overall number of responses generated by observers and their perceptions of focal person's level of credibility, expertise, and trustworthiness were nonsignificant. Also the number of message or communicator responses generated were not significantly related to the subjects' perceptions of the focal person.

The number of negative responses generated by the subject concerning the focal person or his message was significantly related to subjects' perceptions of the focal person's credibility, trustworthiness, and expertise, \( r = -0.58, p < 0.01; r = -0.63, p < 0.01 \); and \( r = -0.54, p < 0.01 \), respectively. The number of
positive responses generated by the subjects were also significantly related to their perceptions of the focal persons credibility, trustworthiness, and expertise, $r = .47, p < 0.01$; $r = .51, p < 0.01$; $r = .43, p < 0.01$; respectively. Thus, the more credible, trustworthy, and expert the focal person was perceived, the greater the number of positive responses and fewer negative responses generated by subjects. The number of positive or negative responses generated by subjects was related to their perceptions of the focal person.
The discussion is divided into several sections. First, the hypotheses will be addressed with respect to the findings presented in the results section. Next, limitations of the study and suggestions for future research will be presented. Finally, suggestions for practical research will be given and final comments will be presented.

The Hypotheses

This study has investigated the proposition that an expert's demonstrated level of ability and behavioral style will influence perceptions of credibility, trustworthiness and expertise. Results indicated that both level of ability and behavioral style significantly influenced subjects perceptions. Experts with a high level of demonstrated ability were perceived to be significantly more credible, trustworthy and expert than experts with demonstrated levels of low ability. Furthermore, level of ability accounted for a modest amount of the variance in perceptions of both credibility and expertise. Level of ability did not have as powerful an influence on trust. A person with a recognized high level of ability is not necessarily perceived to be more trustworthy than an individual with
a lower level of ability.

The expert's behavioral style also exerted a significant and powerful influence over subjects' perceptions of the focal person. Subjects viewed the focal person who displayed the effective behavioral style as more credible, trustworthy and expert than did subjects who viewed the focal person who displayed an ineffective behavioral style. What is particularly noteworthy is that behavioral cues exerted a very powerful influence over subjects' perceptions of the focal person.

In the Corrigan et al. (1980) review article on social influence processes in counseling it was stated that individuals are influenced by evidential, reputational and behavioral cues. It was also noted that one issue that needs to be addressed is the relative strength of these cues on individuals' perceptions. This study examined a reputational cue, that is demonstrated level of ability and behavioral cues, specifically, expert behavioral style. While both cues significantly influenced individuals' perceptions, behavioral cues accounted for as much as three times the amount of variance in perceptions than did reputational cues. Reputational cues are based upon individuals' past performance. In many cases the intended target of influence may not be the primary source of this information, as was the case in this study. In contrast, behavioral cues are immediate and they are a product of the individuals' own observations. These factors may explain the observed differences in effect sizes. Furthermore, there is substantial support in the literature that the immediacy of information and the distance form
the original source are important determinants of credibility and acceptance (Ilgen, Fisher, & Taylor, 1979).

A second issue is the degree to which expert behavioral style and level of ability independently influence individuals' perceptions. The hypothesized interaction between these two variables was not supported. There are several possible explanations for this result.

One possibility is that the lack of a significant interaction is an artifact of the manipulations. Were the manipulations truly independent or did our manipulation of ability affect the manipulation of behavioral style? If such were the case than the main effects would themselves be interactions. However, we would also suspect that the manipulation of level of ability would be significantly related to subjects' recognition of experts effective or ineffective behaviors, the manipulation check for behavioral style. As the results indicated, this was not the case. Therefore, we can conclude that our manipulations were experimentally independent of one another. The lack of a significant interaction is not an artifact of the manipulations.

Attempting to interpret nonsignificant results is always tenuous at best, however, we would offer some possible explanations concerning these findings. Currently, the literature on credibility and perception formation has been focusing on the way people use information to form impressions about others. One view is that people form generalized global impressions of others. The information gathered interacts, that is, information from different
cues, i.e. reputational or behavioral, influences the cognitive processing, i.e. attention, encoding, retrieval of other information from other sources. For example, Mitchell, Larson, and Green (1977) in a study examining situational variables, group performance and leader behavior ratings using the Leader Behavior Description Questionnaire (LBDQ), suggested that group performance information given prior to the observation of behavior sensitizes observers to attend to certain behaviors which systematically influenced their ratings. Likewise, Rush, Thomas and Lord (1977) drew similar conclusions in their study on implicit leadership theory. Why then, was there no significant interaction in this study?

Recently, Lord, Binnings, Rush and Thomas (1977) in a study examining leader prototypic behaviors, group performance and leader behavior ratings, found a significant main effect for leader prototypic behaviors and leader behavior ratings, but no interaction between leader behaviors and group performance cues. They suggest that their results differ from previous findings because of the degree of ambiguity of the leader behaviors. The more ambiguous the leader behaviors, i.e. they are nonprototypic, or different from the behaviors on the questionnaire, the greater reliance observers will place on performance cues in making observations. Therefore, when leader behaviors are salient, subjects use behavioral and performance information independently in their ratings of behavior. The results of the present study are consistent with the latter interpretation. The expert behavioral style manipulation consisted of a number of expert prototypic behaviors displayed by the focal person. Results
from the pilot study of this variable indicate that these behaviors were very salient. Perhaps, under these circumstances reputational and behavioral cues are used independently in deriving perceptions of credibility, trust and expertise.

The hypothesis that subjects' perceptions of the credibility of the expert focal person would completely mediate the relationship between focal person's level of ability and behavioral style was not supported by the data. In fact, perceptions of credibility seemed to be causally unrelated to solution adoption. In light of the literature on communication credibility and attitude change which has found consistent significant relationships between these two variables the findings of the present study are puzzling. However, three possible explanations are offered.

One possibility is that the measure of credibility is unstable, unreliable or operationally different from measures used in other studies. Corrigan et al. (1980) warns against using single item measures of unknown reliability. However, two factors suggest that this is not a plausible reason for these findings in this study. First, the scale item used in this study came from a previous study (Klaus & Bass, 1981), where in fact credibility was found to have mediating properties. Second, and most importantly, analysis examining changes in subjects' perceptions of the focal persons' credibility as a result of the solution they adopted, yielded no significant changes. Thus, their perceptions of credibility seem to be somewhat stable.
One factor which remains particularly salient is that nearly half of the subjects run totally rejected the focal person's solution. Compare this to slightly more than one tenth of the subjects who totally accepted the focal person's solution. Why did this happen? One reason may be that in the measuring solution adoption subjects responded to an open-ended question which stated "I would recommend . . ." Their choice of a solution was not restricted in any way. Furthermore, choosing a solution dissimilar to the focal person was legitimizied by the instructions they received. Subjects were told that they could " . . . recommend any solution they felt would be best" (see Appendix 0 for types of solutions recommended). In most studies examining credibility and attitude change, subjects' responses are restricted to a specific set of attitudes: They often respond to the same attitude scales after receiving the credibility induction (Eagly & Himmelfarb, 1978). Thus, they are not entirely free to express their own views. It is possible that the lack of findings supporting a causal relationship between credibility and solution adoption may be due to the fact that subjects' responses to the solution adoption measure were not restricted to the solutions proposed by the videotaped supervisors.

Finally, it is possible that the reason why there was no causal relationship found may be due to the quality of the solution advocated by the focal person. The two solutions advocated by the videotaped supervisors were chosen based upon pilot work which ascertained the desirability of recommending 15 possible solutions to the assembly problem. The average ratings of these two solutions
were found to be approximately midpoint on the scale, neither recommend or not recommend. Thus, one might say the focal person's solution was mediocre. These solutions were chosen in order to guard against confounding influence as a result of a high quality solution with influence due to characteristics of the focal person. The fact that approximately fifty percent of the subjects totally rejected the expert's solution suggests that subjects were able to generate solutions that were more attractive to them.

The results suggest, however, that focal person credibility was important for solution adoption. Of those subjects who totally adopted or combined the focal person's solution with another, there was a significantly greater proportion of subjects who viewed the focal person as credible, than those who did not. Yet the fact that many subjects viewed the focal person as credible even though they later rejected the solution or only accepted part of it suggests that even the perceived credibility of the focal person may not be enough to overcome the mediocrity of a solution particularly when there are other solutions which are more attractive.

It was also found that subjects perceptions of the credibility of the focal person did not change as a result of solution rejection. This is particularly surprising given that among those subjects who rejected the solution there were more who found him credible than not credible. Although the differences were not significant. These findings suggest that subjects' evaluations of the quality of the solution were not influenced by the credibility of the focal person or that the quality of the solution did not influence the subjects'
perception of the focal person's credibility. These explanations are speculative in nature and there is no evidence which supports them but they do provide a logical interpretation of the findings.

The last hypothesis stated that there would be a stronger relationship between credibility and solution adoption under conditions of high solution specificity than under low specificity. The results of the multiple regression did provide some tentative support for this hypothesis. One might speculate that a subject who is more certain that there is only one correct solution to a problem may also perceive that there are fewer attractive alternative solutions and therefore, depend more heavily on the opinions presented by the credible focal person. However, since subjects' perceptions concerning alternative solutions was not measured this will remain at present merely speculation.

With regards to the model, solution specificity/credibility interaction did not account for a significant amount of the unique variance in solution adoption to support the contention that it served as a moderator. This may have been due to the modest manipulation of solution specificity, as well as the tenuous relationship between perceptions of credibility and solution adoption found in this study.

Status of the Model

Overall the results from the tests of the proposed model were disappointing. In particular there seemed to be only a weak linkage between credibility and solution adoption. As was previously
mentioned, in an attempt to control for possible confounding effects of solution quality and characteristics of the focal person, probably one of the most important variables, the solution itself may have been underemphasized. While the findings do not support the model, neither do they discount the importance of the variables in understanding solution adoption. What the findings do suggest is that other variables may exist which will aid in defining the influence process. For example, solution quality may serve two functions. It may be an important variable in determining perceptions of credibility, while at the same time it serves to moderate the relationship between credibility and solution adoption.

In a discussion of model testing, James, Muliak and Brett (1982) point out that the most common explanations for why models fail to be substantiated by the data is because certain important variables may have been omitted. However, this was not the case in this study. Characteristics of the solution were controlled in order to protect the integrity of the independent variables. Future tests of this model should perhaps included characteristics of the solution as a model parameter.

Cognitive Responses

It was found that the number of positive or negative cognitive responses generated by a subject were significantly related to their perceptions of the focal person. The literature on cognitive responses has generally treated this variable as an antecedent of subjects' perceptions or opinion change (Chaiken & Eagly, 1984).
However, it would be difficult to speculate what is the causality of these variables. Perhaps as persuasion theorists suggest an individual's perception of a focal person may be based upon the number of negative or positive thoughts which occur to them as they are exposed to the focal person's communication. However, cognitive categorization theorists might suggest that the thoughts generated may be in response to categorizing the individual as credible. The thoughts represent behaviors characteristic of membership in that category. Thus, while cognitive responses were clearly related to perceptions of credibility, trustworthiness and expertise their causal relationship is unclear.

Limitations and Suggestions for Future Research

While some of the limitations of this study have already been acknowledged, we will summarize some of the most important. This study has examined observations of group processes and not interaction. Thus, caution should be exercised in generalizing these results to the small group process literature. In fact one might speculate what would have happened had subjects actually interacted with the expert focal person. Would they have been as likely to reject his solution in his presence? Subjects neither interacted with the focal person nor with each other. This study attempted to control for effects due to others' responses to the focal person. However, respondent effects in interacting groups may be a very important source of information in forming perceptions of credibility. This is a topic for future research.
Another limitation of this study is its generalizability to the female population. Subjects in the study were all males and they viewed videotapes of male supervisors. While there have been no sex differences in credibility reported in the literature this does not say that there are no differences between male and female perceptions of credibility on solution adoption.

One issue which all research should address is its external or environmental validity. It should be acknowledged that this was a laboratory study conducted on a sample of college students. There are several reasons why we should be very cautious in generalizing the results to other settings. One factor is the accountability of subjects' responses. Subjects were neither accountable to the focal person, they would not experience any social undesirability in rejecting his solution, nor would they be held accountable to the organization. They were only required to "live" with their solution for about ten minutes. However, in an organizational setting, accountability would have been a major factor influencing any relationship between credibility and the actual adoption of a solution. Another factor is the lack of prior history of the fictitious supervisors. The subjects had quite obviously never seen these supervisors before. Thus, their sources of information about the supervisors were quite deliberately limited. However, in an organizational setting most individuals have a prior history. Past experience with the individual would be very important determinant of immediate perceptions of credibility. Furthermore, with numerous sources of information, reliance on observations of behavior may be
Another limit to the external and environmental validity of the study is the length of time subjects were exposed to the focal person. While this time period is quite typical of most laboratory studies in this area, it would be unwise to generalize these results to situations where there is longterm interaction.

This study suggests numerous possibilities for future research. One variable that should receive greater attention is quality of the solution adopted. Most studies in this area have either attempted to control for solution quality or treated it as a dependent variable. However, as the present results suggest, understanding subjects' reactions to the solution should help increase our knowledge of the adoption process. Perhaps a decision-making perspective where subjects' expectancies that a solution will be successful or lead to certain desired outcomes may help us to gain a better understanding of the relationship between an advocator's credibility and the adoption of his solution.

Another line of research would be to focus on behavioral areas. The behavioral style manipulation in this study consisted of a composite of technical-process behaviors and socioemotional behaviors. No attempt was made to examine these two categories of behaviors independently. It would be interesting to examine to what extent technical process, or socioemotional behaviors influence perceptions of expertise, trustworthiness and credibility. This study examined a behavioral style. There is no claim that this is the only behavioral style or even the most optimal style. Future
research on behavioral styles of experts may yield meaningful results.

Research could also be focused on characteristics of the expert or influence target. In particular, differences in the perceptions of male and female experts by male and female observers. Are these gender differences with regard to the appropriateness of a behavioral style for expert males versus females? Do male or female observers differ on what they view as an appropriate behavioral style for an expert?

Finally, field research on expert behaviors is needed. We know very little about the various experts found in organizations, i.e. consultants, scientists, staff specialists, among others. Are there behavioral differences between these experts which would effect other's perceptions of their credibility as some of the laboratory research suggests?

Practical Implications

The temptation to state that this study has uncovered the behavioral profile of an effective expert is great but would be unwise. Prototypic expert behaviors are undoubtedly situationally specific. Thus, the behaviors examined do not serve as some generic prescription for credibility. Nor would we say that if trained to display these behaviors an individual would be perceived to be credible. However, the issue of credibility is of major concern to most specialists and professionals. Although we can't state what specific behaviors one should display this study does suggest that
behaviors serve as a very important cue in determining expert perceptions.

Based upon the relative strengths of the level of ability and expert behavioral style, the research suggests that an expert's credibility may to a large extent depend upon the behaviors they display. An expert who displays ineffective behaviors may not be viewed as credible regardless of their level of ability, while an "expert" with low levels of ability but effective behaviors may appear very credible, at least for the short term.

Another important implication is what the types of behaviors are considered effective or ineffective. The results suggest that an effective style should consist of both technical processes and socioemotional behaviors. Not only did subjects identify socioemotional behaviors as being prototypic of effective and ineffective experts, they also found that these behaviors were particularly salient. Thus experts who ignore the consequences of negative socioemotional behaviors, or simply lack positive ones may run the risk of appearing less credible. It is possible that experts who are empathetic and supportive, as well as technically proficient are more trustworthy and therefore more credible than the cold, impersonal technical specialist. The effectiveness of an expert may require careful self monitoring of their behaviors and its effects on others.
Final Comments

Although there has been substantial research on group member expertise in task oriented group, little research has been conducted on the process in which group members form perceptions of expertise and credibility and whether these impressions lead to actual influence. The results of this study have shown that subjects' level of demonstrated ability and expert behavioral style will influence subjects' observations of expertise, trustworthiness and credibility. However, it was found in this study, that the perception that someone is highly credible did not necessarily lead to solution adoption but among those who did adopt the expert solution most viewed him as credible. Subjects may have adopted solutions for other reasons not examined in the study. This study represents an important step in furthering our understanding of a complex process. Further research is warranted.
REFERENCES


APPENDIX A

Pre-Training Materials
PRE-TRAINING MATERIALS

You will be viewing a meeting of three first level supervisors which has been convened in order to discuss an industrial problem and to propose a possible solution. Each of the men are somewhat familiar with the problem. These men have met previously and know one another slightly. On the following page is the problem they will be addressing. Please read the problem carefully and answering the question, wait for the experimenter to give you instructions. Please do not turn the page.
ASSEMBLY PROBLEM

The problem stems from the following situation. Seven men, working in a circle, assemble a carburetor. The casting enters the circle at one point, and each person adds his pieces and pushes the unit to the next worker, who adds his elements. When the unit leaves the circle, it is a completed carburetor. This work arrangement for the subassembly station is diagramed in the figure.

The assembly work is simple and requires a minimum of training for each step. The aptitude requirement is primarily good finger dexterity. The materials for each assembly position are located in bins which are kept supplied by material handlers. Thus, each worker has his essential material at his elbow. The job has been analyzed by time-and-motion experts so that the positions are of equal difficulty. Pay is based on hourly rates.

There are four such subassembly stations in this company, each supervised by a foreman. The total factory production is dependent upon receiving the required number of carburetors from these four stations. The factory needs 300 parts per day from the four stations combined to maintain regular operations. The production is now so low that the factory production as a whole had to slow down. The daily production of the four stations at present is 85, 80, 60, and 50 units. The lowest-producing station had previously produced 60 units, but recently, the foreman of that station had expressed his dissatisfaction with production by reprimanding the group. Following the reprimand, production fell to fifty units per day.
In observing the stations in operation, you have noticed that the work tends to pile up at one or two positions, where the workers seem somewhat slower than the rest of the group. The pileups are especially apparent in the two low-production stations, although they occur at different positions in the two stations. Despite continuous use of the best personnel selection procedures for a number of years, fairly substantial differences still exist between the best and the poorest workers in each station. Thus, even though the jobs are equally difficult, material accumulates at the position of the least-able worker in the station. Foremen on nonproduction jobs are not willing to accept slow workers as transfers.

State briefly what you think the problem is with this company's assembly lines.
WORK HISTORY PROFILES

The following pages contain the work history profiles of the three supervisors you will see in the training film. The information that is presented is similar to the type of information found in many employee's personnel folders at the company. Please look at the T.V. monitor. Each of the supervisors will be presented to you. It is important that you are able to associate the names with the face of each of the supervisors.
Bob

Age: 26

Time with company: 2½ years

Time in position: 8 months

Title: First Level Supervisor

Functional title: Assembly Line Supervisor

Present position: Bob is a supervisor for the transmission division of the production department. He has been in this position for eight months. Bob supervises two foremen and 16 assembly line workers. Since Bob is new to the position there is no current assessment of his performance.

Past work experience: Bob has worked in production for one year prior to receiving his new position. Before then he worked in the product development department. During the year prior to his transfer, Bob worked in the starter motors division.

(Low Ability)

Bob most recently served on an advisory committee. The purpose of the committee was to determine ways to improve the public image of the company. Several of Bob's suggestions were put into practice; however, rather than boost company image, the image has actually declined as a direct result of Bob's suggestions.
Bob

Age: 26

Time with company: 2½ years

Time in position: 8 months

Title: First Level Supervisor

Functional title: Assembly Line Supervisor

Present position: Bob is a supervisor for the transmission division of the production department. He has been in this position for eight months. Bob supervises two foremen and 16 assembly line workers. Since Bob is new to the position there is no current assessment of his performance.

Past work experience: Bob has worked in production for one year prior to receiving his new position. Before then he worked in the product development department. During the year prior to his promotion, Bob was a foreman on one of the assembly stations in the carbureator division for 6 months before he was promoted to his present position. During that period he handled numerous assembly line problems.

Bob most recently served on an advisory committee. The purpose of the committee was to suggest ways to improve company productivity and morale. Several of Bob's suggestions were put into practice and have resulted in significant improvements in both productivity and morale.
Jim

Age: 26
Time with company: 2 yrs.
Time in present position: 6 months
Title: First Level Supervisor
Functional title: Assembly Line Supervisor

Present position: Jim presently works in the production department, starter motors division. He has held this position for 6 months. Jim supervises two foremen and 14 assembly line workers. Since Jim is new to this position there is no current assessment of his performance.

Past work experience: Jim came to this company 2 years ago. He had previously held management jobs in business. Jim worked for 6 months in the customer service division before transferring to accounting. Six months ago he transferred to production in order to gain some experience in manufacturing.

Jim's most recent project was a report concerning customer satisfaction with the company's services. Jim assisted several other managers on the project. Although, some recommendations were made concerning improving customer service, the report is still under review. There has been no information about how the report was received.
Steve

Age: 25
Time with company: 1½ years
Time in present position: 1 year
Title: First Level Supervisor
Functional title: Assembly Line Supervisor

Present position: Steve presently works in the production department, accelerator division. He has held this position for 1 year. Steve supervises three foremen and approximately 12 assembly line workers. Steve has had one performance assessment which was satisfactory.

Past work experience: Steve is part of a management trainee program. This program rotates trainees to various departments in the organization. Length of time in the department varies from 6 months to one year. Previously, Steve spent a year in the marketing department. His next rotation should be occurring soon.

Steve along with several marketing managers recently helped complete a market survey. The survey focused on how to increase the company's control over several market segments. Plans are currently under way to implement some of the suggestions made by the managers and Steve. However, we do not know whether the suggestions will be successful.
APPENDIX B

Pre-Training Materials Evaluation
This questionnaire has been designed in order to assess the clarity of the pre-training materials. Please answer the following questions by writing in the blank space next to the statement the number which best describes the extent to which you agree or disagree with that statement. For example, if you rate the statement as a 7, this means that you completely agree with the statement. If you rate the statement a 1, this means you completely disagree with that statement. The numbers represent the following:

1 = Completely disagree
2 = Very much disagree
3 = Moderately disagree
4 = Neither agree nor disagree
5 = Moderately agree
6 = Very much agree
7 = Completely agree
ASSEMBLY PROBLEM

1. _______ The instructions concerning the assembly problem are very clear.
2. _______ I had no problem understanding the problem with the assembly stations.
3. _______ The diagram of the assembly statement was clear and understandable.
4. _______ I believe that I can adequately remember the details of the case presented in the Assembly Problem.

WORKER PROFILES

1. _______ The layout of the work histories of the supervisors is well organized and easy to follow.
2. _______ I would detect major differences between the work histories of the three supervisors.
3. _______ Based upon the information presented in the work history profiles, Bob seems to have greater ability for handling this situation than Steve or Jim.
4. _______ Based upon the information presented in the work history profiles, Jim seems to have greater ability than Steve or Bob.
5. _______ Bob has a great degree of demonstrated ability for handling this situation.
6. _______ Jim has a great degree of demonstrated ability for handling this situation.
7. _______ Steve has a great degree of demonstrated ability for handling this situation.
8. _______ Based upon the information presented in the work history profiles, Steve seems to have greater ability for handling this situation than Bob or Jim.

1= Completely disagree
2= Very much disagree
3= Moderately disagree
4= Neither agree nor disagree
5= Moderately agree
6= Very much agree
7= Completely agree
APPENDIX C

Film Assessment Form
Subject # __________

FILM ASSESSMENT FORM

We would now like you to take a few minutes to assess the content of the film you have just viewed.

(DO NOT TURN THE PAGE UNTIL INSTRUCTED TO DO SO)
List below any thoughts which occurred to you concerning either Jim or his conversation about the solution he advocated. Try to list only those thoughts which crossed your mind while you were viewing the film.

1

2

3

4

5

6


(DO NOT TURN THE PAGE UNTIL INSTRUCTED TO DO SO)
List below any thoughts which occurred to you concerning either Bob or his conversation about the solution he advocated. Try to list only those thoughts which crossed your mind while you were viewing the film.

1

2

3

4

5

6

(Do not turn the page until instructed to do so)
Please answer the following questions by writing in the blank space beside each statement the number which best describes the extent to which you agree or disagree with that statement. The numbers represent the following:

1 = Completely Disagree
2 = Very Much Disagree
3 = Moderately Disagree
4 = Neither Agree or Disagree
5 = Moderately Agree
6 = Very Much Agree
7 = Completely Agree

Production Quality

1 _____ I was always able to hear clearly what was being said during the videotape.
2 _____ I was able to distinguish between the voices of the three supervisors at all times.
3 _____ The color of the film was adequate.
4 _____ A sharp focus was maintained at all times.
5 _____ The set was visually appealing.
6 _____ The videotape looks very much like what I would imagine a meeting would be like.
7 _____ Overall I found the production quality to be excellent.

The Content

8 _____ I was able to follow the discussion and understand what was being said.
9 _____ I was able to identify the supervisors by name. For example: Who was Bob, Steve and Jim.
10 _____ I remember the points and solutions that were recommended by Bob, Steve, and Jim.

The Supervisors

11 _____ Bob’s physical appearance was acceptable as a first level supervisor.
12 _____ Jim is trustworthy (congenial, fair, kind, and just in his dealings with others).
13 Bob is a credible (worthy, highly valued) source of information.
14 Steve is dynamic (forceful, energetic and not hesitant or timid in interacting with others).
15 Jim's physical appearance was acceptable as a first level supervisor.
16 Bob is dynamic (forceful, energetic and not hesitant or timid in interacting with others).
17 Steve is trustworthy (congenial, fair, kind, and just in his dealings with others).
18 Jim is expert (knowledgeable, and experienced).
19 Bob is trustworthy (congenial, fair, kind, and just in his dealings with others).
20 Jim is a credible (worthy, highly valued) source of information.
21 I was very aware of how the other group members responded to Bob.
22 I found that I concentrated more of my attention on Bob than on Steve or Jim.
23 Steve is a credible (worthy, highly valued) source of information.
24 Bob is an expert (knowledgeable, and experienced).
25 Bob's nonverbal behavior, seating position, gestures and facial expressions were very revealing.
26 Steve is an expert (knowledgeable, experienced).
27 I found that I concentrated more of my attention on Jim than on Steve or Bob.
28 Steve's nonverbal behavior, seating position, gestures and facial expressions were very revealing.
29 I found that I concentrated more of my attention on Steve than on Jim or Bob.
30 I was very aware of how the other group members responded to Steve.

SCALE
1 = Completely Disagree  5 = Moderately Agree
2 = Very Much Disagree   6 = Very Much Agree
3 = Moderately Disagree   7 = Completely Agree
4 = Neither Agree Nor Disagree
Based on what you observed in the videotape, if you were to choose one of the supervisors to be the group leader, which one would you choose? (Choose only one by placing a check by their name).

___ Jim
___ Steve
___ Bob
APPENDIX D

Assembly Problem
Subject #____________

ASSEMBLY LINE PROBLEM

Now, imagine that you are a consultant. You have been called in by the company to make a recommendation on how to make their assembly lines as productive as possible. You may reread the case study if you want. You are free to recommend any solution you feel will be best. After you have made your recommendation we will ask you to share it with the other subjects currently participating in the experiment. We will also reveal to you the one correct solution to the problem. First, complete the memory check questionnaire on the following page before rereading the case study.

(High Specificity)

(Do not turn the page until instructed to do so)
Subject #__________

ASSEMBLY LINE PROBLEM

Now, imagine that you are a consultant. You have been called in by the company to make a recommendation on how to make their assembly lines as productive as possible. You may reread the case study if you want. You are free to recommend any solution you feel will be best. After you have made your recommendation we will ask you to share it with the other subjects currently participating in the experiment. We will also reveal to you some of the many possible solutions to the problem. First, complete the memory check questionnaire on the following page before rereading the case study.

(Low Specificity)
ASSEMBLY PROBLEM

You have been called in as a consultant to a company manufacturing automobiles. Their problem stems from the following situation. Seven men, working in a circle, assemble a carburetor. The casting enters the circle at one point, and each person adds his pieces and pushes the unit to the next worker, who adds his elements. When the unit leaves the circle, it is a completed carburetor. This work arrangement for the subassembly station is diagrammed in the figure.

The assembly work is simple and requires a minimum of training for each step. The aptitude requirement is primarily good finger dexterity. The materials for each assembly position are located in bins which are kept supplied by material handlers. Thus, each worker has his essential material at his elbow. The job has been analyzed by time-and-motion experts so that the positions are of equal difficulty. Pay is based on hourly rates.

There are four such subassembly stations in this company, each supervised by a foreman. The total factory production is dependent upon receiving the required number of carburetors from
these four stations. The factory needs 300 parts per day from the four stations combined to maintain regular operations. The production is now so low that the factory production as a whole had to slow down. The daily production of the four stations at present is 85, 80, 60, and 50 units. The lowest-producing station had previously produced 60 units, but shortly before you were called in for consultation, the foreman of that station had expressed his dissatisfaction with production by reprimanding the group. Following the reprimand, production fell to 50 units per day.

In observing the stations in operation, you have noticed that the work tends to pile up at one or two positions, where the workers seem somewhat slower than the rest of the group. The pileups are especially apparent in the two low-production stations, although they occur in different positions in the two stations. Despite continuous use of the best personnel selection procedures for a number of years, fairly substantial differences still exist between the best and the poorest workers in each station. Thus, even though the jobs are equally difficult, material accumulates at the position of the least-able worker in the station. Foremen on nonproduction jobs are not willing to accept slow workers as transfers.

The company management has asked for your recommendation on how to make the stations as productive as possible.
Subject #________

Please write down what solution you would recommend to the company in the space provided below.

"I would recommend that the company..."
APPENDIX E

Memory Check
A QUICK MEMORY CHECK

Do you remember what you thought the problem was with the assembly lines when you first read this case study? Write briefly what you thought the problem was in the space provided below.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Please answer the following questions by writing in the blank space next to the statement the number which best describes the extent to which you feel certain that the statement is correct. The numbers represent the following:

1 = Very Uncertain
2 = Uncertain
3 = Somewhat Uncertain
4 = Neither Certain Nor Uncertain
5 = Somewhat Certain
6 = Certain
7 = Very Certain

The Assembly Stations combined must produce 300 units a day.

Slow downs on assembly lines occur at only two of the four stations.

There is probably only one correct solution to the problem.

No solution will completely solve this problem.

Steve works in the accelerator division.

Jim works in the starter motors division.

Bob works in the transmission division.
APPENDIX F

Post-Training Questionnaire
POST-TRAINING QUESTIONNAIRE

Please answer the following questions by writing in the blank space beside each statement the number which best describes the extent to which you agree or disagree with that statement. The numbers represent the following:

1 = Completely Disagree
2 = Very Much Disagree
3 = Moderately Disagree
4 = Neither Agree or Disagree
5 = Moderately Agree
6 = Very Much Agree
7 = Completely Agree

1 ____ Bob is a credible (worthy, highly valued) source of information.

2 ____ Steve is a credible (worthy, highly valued) source of information.

3 ____ Jim is a credible (worthy, highly valued) source of information.
BACKGROUND DATA

Age ______

Major _____________________

Please circle the correct alternative.

Sex: male/female

College Level: Fr. Soph. Jun. Sen. Other, please specify ______

______________________________________________________________

Are you employed? Part-time Full-time Unemployed Other, please specify __________________________________________

Have you ever been employed full-time? yes  no
APPENDIX G

Scripts
### Prototypic Behaviors Imbedded In The Scripts
#### Segment I: Requirements & Group: Group Purpose

<table>
<thead>
<tr>
<th>Ineffective</th>
<th>Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve: Introduction</td>
<td>Steve: Introduction</td>
</tr>
<tr>
<td>Bob: <em>Lets task details overwhelm him</em></td>
<td>Bob: <em>Indicates group purpose</em></td>
</tr>
<tr>
<td>Steve: <em>Indicates group purpose</em></td>
<td>Steve &amp; Jim: <em>Task unrelated</em></td>
</tr>
<tr>
<td>Bob &amp; Jim: <em>Task unrelated talk</em></td>
<td>Bob &amp; Jim: <em>Identifies group subgoals</em></td>
</tr>
<tr>
<td>Steve &amp; Jim: <em>Identifies group subgoals</em></td>
<td>Bob: <em>Stresses importance of problem and group</em></td>
</tr>
<tr>
<td>Bob: <em>needles group members</em></td>
<td></td>
</tr>
</tbody>
</table>

#### Segment II: Analysis of the Problem

<table>
<thead>
<tr>
<th>Ineffective</th>
<th>Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob: <em>Jumps to conclusions</em></td>
<td>Bob: Calls for factual information*</td>
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<tr>
<td>Steve: <em>Calls for factual information</em></td>
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<tr>
<td>Jim &amp; Steve: <em>Task unrelated talk</em></td>
<td>Jim &amp; Steve: <em>Task unrelated talk</em></td>
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<tr>
<td>Bob: <em>verbose analysis of problem</em></td>
<td>Bob: <em>Diagnosis problem</em></td>
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<tr>
<td>Steve: <em>Summarizes Bobs analysis</em></td>
<td>Steve: <em>Summarizes</em></td>
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<tr>
<td>Bob: <em>needles Jim &amp; Steve</em></td>
<td>Bob: <em>Compliments Group</em></td>
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Segment III Presentation of Solution

<table>
<thead>
<tr>
<th>Ineffective</th>
<th>Effective</th>
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<td>Jim: Introduces Piece Rate</td>
<td>Jim: Introduces Piece Rate</td>
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<tr>
<td>Bob: Makes fun of Jim*</td>
<td>Bob: Recognizes validity of</td>
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<td></td>
<td>solution but disagrees*</td>
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<tr>
<td>Bob: Introduces Employee</td>
<td>Bob: Introduces Employee</td>
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<td>recognition without</td>
<td>recognition: Reviews</td>
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<td>justification *</td>
<td>Solution*</td>
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<td>Steve &amp; Jim: Question; Answer</td>
<td>Jim &amp; Steve: Question; Answer</td>
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<tr>
<td>Steve: Questions Bob</td>
<td>Steve: Questions Bob</td>
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<tr>
<td>Bob: Changes Mind*</td>
<td>Bob: Summarizes aspect of</td>
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<td>problem &amp; solution*</td>
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<tr>
<td>Bob: Insists on having his</td>
<td>Bob: Recognizes validity of</td>
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<td>own way*</td>
<td>Jim's solution but disagrees*</td>
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<tr>
<td>Steve: Calls for vote</td>
<td>Steve: Calls for vote</td>
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*Focal Person prototypic behaviors
Script
Effective Technical Expert
Segment 1 - Requirements of Group

Steve: Well, I guess we all know why we are here. The boss wants us to come to some resolution about these low production rates. But, frankly I thought he was a bit vague about what exactly we are supposed to do. Have either of you got any ideas?

Bob: I think we had better decide on exactly what we hope to accomplish. He will expect us to come up with a solution to this problem. And, he will want a report the he can present to his superiors. (Effective)

Jim: Yeah, you can't forget the guys upstairs. Anything we decide upon here will have to meet their approval.

Steve: Jim, did you finally install that outdoor sprinkler system in your yard?

Jim: Yeah, it took me an entire week. I dug up so much of the yard I don't think there's any grass left to water. (General laughter)

Steve: What made you decide to do it yourself? Why didn't you just get it installed like I did?

Jim: Well, it looked like it would be an easy job. And by the time I found out that it was more work than I wanted to do, it was too late to call in a lawn service to do it. My next big project is going to be an automatic garage door opener.
Steve: Well, it will pay off this summer, when you won't have to go out and water the lawn.

Jim: Unfortunately, there is no such thing as an automatic mower. (Steve & Bob smile)

Steve: I'm wondering what we should include in this report. If we want to convince the top boss it seems to me that we're going to have to show them that what we came up with is going to save them money.

Jim: That's usually the bottom line.

Bob: We need to determine what should be our goals that we will include in our report, 1) present our solution and justification; 2) prepare a cost analysis section which would contain the costs of the program compared with the projected savings, and 3) present a procedure to analyze the effectiveness of the program. (Effective)

Steve: Procedure? What did you have in mind?

Bob: An evaluation of the program a few weeks after its implementation and then 6 months or a year later to determine its short-term and long-term effects. We should probably want to take some measure of the productivity rates. I also think that it would be a good idea to find out how the employees are reacting towards the program. You know whether they like it or whether they think that it's working. (Effective)
Jim: I don't know about this evaluation process. It seems like it might be just a waste of time. I'd say let's just implement the program and let it go at that.

Steve: That's certainly how some companies do it. What upper management want is immediate results. I think that some evaluation may be justified, maybe soon after the program is implemented.

Jim: That sounds reasonable to me. We could do a short term evaluation just to prove that it's really working. But I don't understand the purpose of a long term evaluation.

Bob: The reason why I suggested a long term evaluation is that sometimes what you find is that immediately after a program's implemented there will be some improvement. But, after a while it declines to where it was before the solution was implemented. (Effective)

Jim: So maybe what's happening is that initially everyone gets excited about it, but after the excitement cools down it's back to normal.

Bob: That could be one reason. That's why we would need several follow-ups and find out the workers reactions towards the program.

Jim: So let's see if I can summarize where we stand so far. It's been suggested that we need to come up with a report about the solution we recommend that the boss can present to upper management.
Steve: We've agreed that we had better convince them that whatever we decide upon is going to save them money. Perhaps include a cost analysis.

Jim: Also, we'll suggest some evaluation procedures for the program. I wonder if there is anything else?

Steve: I think that's pretty complete. I'm just wondering why the boss thought we could handle this?

Bob: It's a big assignment alright. But the boss wouldn't have given it to us if he thought we couldn't handle it. I think he's got a lot of confidence in us.

Segment II: Analysis of the Problem

Bob: I think that we had better focus on the problem. What we ought to do first is find out what we actually know about the situation. What are the facts? (Effective)

Steve: Well, like I said productivity rates are low, below the quotas set.

Bob: Well, actually, at only two of the four assembly line stations. The production is twenty to thirty units below that of the other two stations. It seems that only one or two of the workers are unable to keep up with the others.

Jim: I don't see how we could make that job any easier than it already is. It's about as routine and repetitive a job as you could find.
Steve: Are you kidding? I've had some pretty repetitive jobs before. This one's nothing in comparison.

Jim: Oh yeah? Like what?

Steve: I used to be a letter sorter for a mail order catalogue business. Customers would mail in their orders and I would put them into four piles depending on whether they checked on the envelope, credit card, check, money order or cash. I didn't even get to open them unless they didn't indicate the form of payment. In those cases, I got to open the letter to see what was inside and then sort them into the right piles.

Jim: How did you ever end up with a job like that?

Steve: Well, I was going to school and this job paid minimum wage and you could set your own times. It was about the only one I could find that would fit into my schedule. Which was pretty tight at the time when you consider all of the classes I was taking.

Jim: That's quite a coincidence because I made money in college working with mail too. I used to address envelopes for a mass mailing service. We got paid only 2 cents an envelope. But, its amazing how many envelopes you can address when you put your mind to it.

Steve: It's funny when you think about the jobs you took in college just to get by. Jobs I wouldn't even look at now much less work in. Even for extra work or moonlighting.
Jim: Yeah, of course I had a lot of different jobs. One time, I worked for a fast food chain. We made hamburgers all day long. I got so sick of them I couldn't eat a hamburger for months after I quit.

Steve: I worked for a lawn service, mowing lawns, weeding beds, picking up garbage. That job wasn't too bad. At least you were outside a lot. But, it was a hard way to get a tan. How about you, Bob, did you have any jobs while you were in college?

Bob: Oh yes, you know the usual assortment. But you can put up with a repetitive job when you know it's just temporary.

Jim: I certainly couldn't see making a career out of making hamburgers. You know, another thing I heard is that one of the foreman at a low producing station reprimanded his workers and that their production rate decreased even more afterwords.

Steve: I heard that was Dick Rielly. He's a real hot head. It's just the kind of thing he'd do.

Jim: Yeah, Dick's from the old school. "If you can't teach them, beat it into them."

(General chuckles between Jim and Steve. Bob smiles.)

Do you remember the time he got called upstairs for bawling out Joe Daniels right in front of a bunch of ladies taking a factory tour.
Steve: Well, knowing Joe Daniels, I'd say he probably deserved to get bawled out. I mean you've got to give Dick some credit. He lets you know exactly where you stand with him. And if he thinks you're nothing but dog meat he'll tell you. But his workers know his style and seem to accept it pretty good naturedly.

Jim: Tact is not in his vocabulary. But he's really the exception. Most of the foremen get along really well with their subordinates.

Steve: Yeah, I really haven't heard any complaints about supervision.

Jim: So as I see it we've eliminated lack of job skills, poor job design and bad supervision as possible causes of the problem. About the only thing we've agreed on so far is that the job is repetitive and that the slowdown seems to involve one or two workers at two stations.

Bob: My diagnosis of the problem is that it stems from the nature of the job. It is repetitive and perhaps boring. What we need to look at is what is the incentive for working as hard on the next guy on the assembly line. I think that any solution we suggest is going to have to directly address this issue. (Effective)

Jim: Well, if we're talking about incentives, it sounds like its going to cost us. Of course its like they say, "You've got to spend a little money to make a little money."
Bob: Well, Jim, I think there may be other ways to provide incentives without giving people money. But, I think we're on the right track. It seems to me that we are really making some progress. (Effective)

Segment III – Presentation of Solution

Jim: It seems to me that what we need to do is pay these workers for what they produce. We have got them on an hourly wage scale. So what's the incentive for working harder than the next guy when everyone's getting paid the same. In the past, the company has handled situations like this by putting workers on a piece-rate system.

Steve: So what you're saying is that we should base their salary on the number of parts they produce rather than the number of hours they work.

Jim: Exactly.

Bob: I think you're right, Jim, we need to look at what's the incentive for working as hard as the next person on the next assembly line. However, there are other ways to give people incentives to work harder without paying them more. (Effective)

Steve: Such as?

Bob: Such as recognizing people when they've done a good job. An employee recognition program will recognize employees who have maintained quotas or made significant improvements as well as encourage healthy competition amongst the stations.
Steve: How would this be accomplished?

Bob: By posting productivity charts for each station that will have the number of assembled parts for each worker as well as the total number of units produced by the station. What many companies find is that this recognition is reward enough for workers. They congratulate one another and feel a sense of pride and accomplishment for doing a good job. I think that this solution will meet the organizations needs that we've identified. It will increase productivity and create favorable reactions from the employees. (Effective)

Steve: I've heard of employee recognitions programs like this. But I wonder if they aren't just disruptive. You spend too much time rewarding people instead of working, or its just so much lip service. You tell people you are going to recognize them and every once in a while you put up a production chart.

Bob: This program will require a serious commitment from both foremen and employees. We will need to post production charts frequently and insure that everyone has an opportunity to see them. As far as being disruptive, this could be done during the twenty minute morning break so that no time would be taken up from actual work hours. (Effective)

Steve: I have some questions about the piece-rate system. First of all, I haven't heard that employees were dissatisfied with their wages, have you? Secondly, if we change the compensation system for these workers won't we also have to recommend changes for other workers in other assembly lines.
Jim: Well, no I haven't heard that anyone was dissatisfied with their pay. But you know how it is, everyone would like to make more money than they are now. As far as changing other assembly line workers compensation systems, I don't think that will be necessary. I don't think that changing these four stations will effect any of the other stations.

Steve: Well, let's see where we are now. We've decided that we are going to produce a report which outlines our recommended solution and justification.

Jim: And that it should include a post analysis and an evaluation study of the adopted program.

Steve: And it looks like we have two possible solutions. Should we vote on it? How do you want to decide?

Bob: I think voting on it would be fair.

Jim: Me too. I would just like to say that I think that a piece-rate system is a much fairer way to compensate people than an hourly wage scale. With piece-rate those people who work hardest will be paid for their efforts. That's a great incentive.

Bob: Well, I agree with Jim in that we need to provide employees incentives for working hard. However, there is no evidence to suggest that employees are dissatisfied with their salaries. An employee recognition program will best meet the needs of the organization. I think it's clearly a superior alternative. (Effective)
Script

Ineffective Technical Expert

Segment I - Requirements of the Group.

Steve: Well, I guess we all know why we are here. The boss wants us to come to some resolution about these slow production rates. But, frankly I though he was a bit vague about exactly what we are supposed to do. Have any of you got any ideas.

Bob: Don't ask me. I got the same memo that you did. There are just too many things that could go wrong on a work-site. I wouldn't know where to begin. (Ineffective)

Jim: I think we'd better first decide on exactly what we hope to accomplish.

Steve: I'm sure he'll probably want us to come up with a report that he can present to his superiors.

Jim: Yeah, you can't forget the guys upstairs. Anything we decide on will have to meet their approval. Bob, did you ever finish installing that outdoor sprinkler system in your yard?

Bob: Yeah, it took me an entire week. I dug up so much of the yard I don't think there is any grass left to water. (Ineffective)

(General Laughter)

Jim: What made you decide to do it yourself? Why didn't you just get it installed like I did?
Bob: Well, it looked like it would be an easy job. And by the time I found out that it was more work than I wanted to do, it was too late to call in a lawn service. My next big project is going to be an automatic garage door opener.

Steve: Well, it will all pay off this summer, when you won't have to go out and water the lawn.

Jim: Unfortunately for you Bob there is no such thing as an automatic lawnmower. (Steve and Bob smile)

Bob: Well, I don't know about a lawnmower. But, this garage door opener should be a real convenience. Finally, I won't have to get out of the car in the rain to open the garage. It's such a simple package to install . . .

Steve: Perhaps we'd better get back to the problem we're faced with. I'm wondering what we should include in this report. If we want to convince top management it seems to me that we're going to have to show them that what we come up with is going to save them money.

Jim: That's usually the bottom line. Of course we'll want to outline the solution and our justification.

Bob: Do a cost analysis. That should convince them.

Steve: What you mean is that we should determine the cost of the program and compare it to the projected savings.

Bob: Exactly, just what I said.

Jim: I think that we'd better come up with some procedure to analyze the effectiveness of the program.

Bob: Procedure? What did you have in mind?
Jim: An evaluation of the program a few weeks after its implementation and then six and twelve months later.

Bob: You mean to determine long term and short term effects.

Steve: Yes, we will probably want to take some measures of productivity rates. I also think it would be a good idea to find out whether employee's like the program whether they think its working.

Bob: All this talk of evaluation is just typical of you guys. We haven't even discussed what we're going to do and already you're evaluating it. I think it may be just a waste of time. I'd say implement the program and let it go at that. (Ineffective)

Steve: That's certainly how some companies do it. What upper management wants is immediate results. I think that some evaluation may be justified. Maybe soon after the program is implemented.

Bob: Well, if it will make you happy we could do a short term evaluation just to prove that its really working. (Ineffective)

Jim: The reason I suggested a long term evaluation is that sometimes what you find is that immediately after a program has been implemented there will be some improvement. But, after a while it declines to where it was before the solution' was implemented.
Steve: So, let's see if I can summarize where we stand so far. It's been suggested that we need to come up with a report about the solution we recommend that the boss can present to upper management.

Jim: We've agreed that whatever solution we decide upon we had better convince them that it will save them money. Perhaps include a cost analysis.

Steve: Also we'll suggest some evaluation procedures for the program. Anything else?

Jim: I think that's pretty complete. I'm just wondering why the boss thought we could handle this.

Bob: I don't know about the low production rates, but if I ever need to get something evaluated, I'll certainly come to you two. (Bob laughs) (Ineffective)

Segment II - Analysis of Problem

Bob: Finally, let's get moving. What we have here is a basic lack of motivation. (Ineffective)

Steve: You may be right, Bob, but what I think we need to do is find out what the facts are first. Like I said before, productivity rates are low, below the quotas set.
Jim: Well actually, at two of the four assembly line stations the production is twenty to thirty units below that of the other two stations. It seems that only one or two of the workers are unable to keep up with the others. I don't see how we could make the job any easier than it already is. Its about as routine and repetitive a job as you could find.

Steve: Are you kidding? I've had some pretty repetitive jobs before. This one's nothing in comparison.

Jim: Oh yeah! Like what?

Steve: In college I worked as a letter sorter for a mail order catalogues business. Customers mail in their orders and I would sort it into four piles depending on whether they checked on the envelope credit card, check, money order or cash. I didn't even get to open the letters up.

Jim: How did you end up with a job like that?

Steve: Well, I was going to school and this job paid minimum wage and you could set your own times. It was about the only one I could find that would fit into my schedule.

Jim: That's quite a coincidence because I made money in college working with mail too. I used to address envelopes for a mass mailing service. We got paid 2 cents an envelope. But, it's amazing how many envelopes you can address when you put your mind to it.

Steve: It's funny when you think about the jobs you took in college just to get by. How about you, Bob, did you have any jobs while you were in college?
Bob: Oh yes, you know, the usual assortment. But you can put up with a repetitive job when you know its just temporary. Something to do to make ends meet. I think its quite a different story when you're talking about an eight hour a day job which may very well end up being your career. You know, another thing I heard is that one of the foremen at a low-producing station reprimanded his workers and that their production rate decreased even more afterwards.

Steve: I heard that was Dick Rielly. He's a real hothead. It's just the kind of thing he'd do.

Jim: Yeah, Dick's from the old school. "If you can't teach them, beat it into them."

(General chuckles between Jim and Steve. Bob smiles.)

Do you remember the time he got called upstairs for bawling out Joe Daniels right in front of a bunch of ladies taking a factory tour?

Steve: Well, knowing Joe Daniels, I'd say he probably deserved to get bawled out. It mean you've got to give Dick some credit. He lets you know exactly where you stand with him. And if he thinks you're nothing but dog meat he'll tell you. But his workers know his style and seem to accept it pretty good naturedly.

Jim: Tact is not in his vocabulary. But he's really the exception. Most of the foremen get along really well with their subordinates.
Steve: Yeah, I really haven't heard any complaints about supervision.

Jim: So, as I see it, about the only thing we've agreed upon so far is that the job is repetitive and that the slowdown seems to involve one or two workers at two of the stations.

Bob: It's like I've said from the very beginning the problem is a lack of motivation. It's probably a dull task and you do it hour after hour, day after day. What have you to look forward to, another 40 years of the same thing. I know I couldn't do it. And then on top of all this your boss shouts at you. That would make you pretty frustrated. Having to do something this repetitive and boring is bad enough without someone reprimanding you for not working harder.

Bob: I mean some people doing the same thing day after day, just can't take it. Of course, some people do have a lot of tolerance for boring and repetitive tasks. What we need to do is think about what would make someone stay with a job like this and put in an eight hour day working up to production standards. What's going to keep that employee working day after day, hour after hour working as hard as they can. (Ineffective)

Steve: So essentially, what you're saying is that the job is repetitive and boring and that we should focus on what incentives are there to work harder?

Bob: That's exactly what I've been saying all along.
Jim: Well, if we're talking about incentives, it sounds like it's going to cost us. But as they say "You've got to spend a little money to make a little money."

Bob: Well, it's about time you guys got on the right track instead of wasting so much time talking about evaluation. (Ineffective)

Segment III - Presentations of Solutions

Jim: It seems to me that what we need to do is pay these workers for what they produce. We have got them on an hourly wage scale. So what is the incentive for working harder than the next guy when everyone is being paid the same? In the past, the company has handled situations like this by putting workers on a piece-rate system.

Steve: So what you are saying is that we should base their salary on the number of parts they produce rather than the number of hours they work.

Jim: Exactly.

Bob: Jim, the reason you think that's a good idea is because you love money so much (Bob laughs). There are other ways to get people to work harder without paying them more. (Ineffective)

Steve: Such as.
Bob: An employee recognition program where you post production charts that contain the individual employees number of assembled parts and the number of completed units for the entire station is clearly the best way to provide incentives and promote productivity.

Steve: How would this program accomplish this?

Bob: I think its rather self-explanatory. (Ineffective)

Steve: I've heard of employee recognition programs like this. But I wonder if they aren't just disruptive. You spend too much time rewarding people instead of working, or its just so much lip service. You tell people you are going to recognize them and every once in a while you put up a production chart.

Bob: Well, its true sometimes they can be disruptive and I suppose it can be seen as just lip service. Maybe an employee recognition program isn't the best idea. So what are you suggesting? Just go with piece-rate? (Ineffective)

Steve: I wasn't suggesting anything, I was just asking. I have some questions about the piece-rate system too. First of all, I haven't heard that employees were dissatisfied with their wages, have you? Secondly, if we change the compensation system to piece rate we won't we also have to recommend changes for other workers in other assembly lines?
Jim: Well, no, I haven't heard that anyone was dissatisfied with their pay. But you know how it is, everyone would like to make more money than they are now. As far as changing other assembly line workers compensation systems and I don't think that changing these four stations will effect any other stations.

Bob: I think I've changed my mind again. I do think an employee recognition system would be best. To answer Steve's question, this program will require a serious commitment from both foreman and employees.

Steve: It looks like we have two possible solutions. Should we vote on it? How do you want to decide?

Jim: I think voting on it would be fair. I would just like to say that a piece-rate system is a much more fair way to compensate people than an hourly wage scale. With piece-rate those people who work the hardest will be paid for their efforts. That's a great incentive.

Bob: Well, I would just like to say that there is no way I would agree to adopting a piece-rate system. There is no evidence that employees are dissatisfied with their salaries. An employee recognition program is clearly a superior alternative. (Ineffective)
APPENDIX H

Experiments Scripts
Experimenter Script

This is study #QK-1. To insure that everyone receives the same instructions, I will read them to you. In this study, you will be participating in several segments of an actual future training program. Your role will be to evaluate the materials presented to you as well as to participate in the program much like the actual supervisors for whom this program is designed. Throughout the study we will ask you to respond to the materials you will have been given. At this point in the development of the training program, we are most interested in the content of the program rather than, say, how nice the materials look. These stylistic changes will occur later. Your responses to the materials and participation is very valuable, and will be used in making modifications at a later point in time.

This study is divided into three actions: pre-training, training, and post-training. During the pre-training period, you will be familiarized with an industrial problem which has occurred at an automobile assembly plant. You will be asked to read a short case study about the problem. Next, you will be introduced to three supervisors, who have been asked to recommend a solution to the problem. You will then complete a short questionnaire which will assess your reactions to the pre-training materials.
During the training session, you will view a videotape of the supervisors at a work meeting which was convened to determine a solution to the problem. Following the videotape, you will be given the Film Assessment Questionnaire and asked to assess several features of the videotape. You will next be given the case study and asked to recommend a solution to the industrial problem.

Finally, during the post-training session, some of your overall reactions will be assessed. This experiment will last no more than fifty minutes. Please work on your own and do not talk to any of the other subjects. We are interested in your own comments.

Because several of the questionnaires will be timed, always wait until the experimenter has given permission before answering the questionnaires. The experimenter will read all instructions for all of the questionnaires. Are there any questions?

If there is any reason why you need to leave the experiment early, for example, you find the experiment to be painful or it makes you anxious (which won't happen), you may do so and receive full credit. All of your answers will be kept strictly confidential.

**Pre-Training**

Being passed out to you are the pre-training materials. At the top right-hand corner is your subject number. Remember this number because you will be asked to record it at the top of all the materials given to you. Please read the assembly problem case study carefully, and then answer the question at the end of the third page. Then wait until the experimenter tells you to turn the page.
Work History Profiles

Turn the Page.

The following pages contain the work history profiles of three supervisors at the automobile assembly plant. Please look at the TV monitor. Each supervisor will be introduced to you. It is important that you are able to recognize each of the supervisors by name. So the Supervisors will appear on the screen and their profiles will be read to you. (Collect Pre-training materials)

Pre-Training Materials Questionnaire

Now we would like you to assess the pre-training materials you have been presented. This should take you approximately five minutes. Please write your subject number in the space provided at the top of the page. The experimenter will collect the questionnaire one you have finished. This questionnaire has been designed in order to assess the clarity of the pre-training materials. Please answer the following questions by writing in the blank space next to the statement the number which best describes the extent to which you agree or disagree with that statement. For example, if you rate the statement as a 7, this means that you completely agree with the statement. If you rate the statement a 1, this means you completely disagree with that statement.

You may begin now.
Training

Now you will view a videotape of the three supervisors you have been introduced to. Their boss has asked them to meet to determine a solution to the assembly problem. These supervisors have met each other in the past and know each other. You will see three segments of the videotaped discussion. Please pay close attention to the discussion. When the film is over, you will be given a questionnaire concerning what you have viewed.

(Pass out Film Assessment Form)

Being passed out to you is the Film Assessment Form. Please wait until the experimenter has read the instructions to you before turning the page. We would now like you to take a few minutes to assess the content of the film you have just viewed. First, write your subject number at the top of the page. You may turn the page now.

List below any thoughts which occurred to you concerning either Jim or his conversation about the solution he advocated. Try to list only those thoughts which crossed your mind while you were viewing the film. You can begin now.

(Time them: 1 minute)
All right, time is up. Just complete whatever you are now writing.

Turn the page.

List below any thoughts which occurred to you concerning either Bob or his conversation about the solution he advocated. Try to list only those thoughts which crossed your mind while you were viewing the film. You can begin now.

(Time them: 1 minute)

All right, time is up. Just complete whatever you are now writing.

Now turn the page.

Please answer the rest of the questionnaire by writing in the blank space beside each statement the number which best describes the extent to which you agree or disagree with that statement. You can read the scale on your own, and then rate each statement until you are finished. Go ahead and start. (Collect film assessment forms.)

(Pass out the Assembly Line Problem)
Now, imagine that you are a consultant. You have been called in by the company to make a recommendation on how to make their assembly lines as productive as possible. You may reread the case study if you want. It is the same case study that you read earlier in the experiment. You are free to recommend any solution you feel will be best. After you have make your recommendation, we will ask you to share it with the other subjects currently participating in the experiment.

(High Solution specificity)

We will also reveal to you the one correct solution to the problem.

(Low Solution Specificity)

We will also reveal to you some of the many possible solutions to the problem.

First, however, complete this memory check questionnaire being passed out to you. So, just fill this out.

(Pass out Memory Check Questionnaire and collect when finished)
Now write down what you feel would be the best solution to the problem. A space is provided on the last page for you to write your answer. You may begin now.

(Collect Assembly Line Problem)

Now complete this short Post-Training Questionnaire and the attached Background Data Survey. You may begin now.

(Collect materials)

DEBRIEFING
APPENDIX I

Pilot Study and Materials
Pilot Study

A pilot study was conducted to determine behaviors characteristic of effective and ineffective technical experts and to select two solutions for the Assembly Problem Task of equal desirability. The information obtained was used in determining the manipulations of expert behavioral style and the contents of the videotaped group discussions.

Method

Subjects

Sixty-two subjects from a small accredited four year college voluntarily participated in the study. Subjects were enrolled in introductory anthropology and sociology classes and received extra credit for participating. Subjects were randomly assigned to effective and ineffective expert conditions. Background characteristics of the subjects is included in Table 14 (see Appendix J).

Task and Questionnaire

Subjects were given the Assembly Problem Task (Maier, 1950) to review and answer. Two questionnaires were administered (Included in
this Appendix). The Assembly Problem Questionnaire consisted of 15 possible solutions to the Assembly Problem. These solutions were obtained from Hoffman's (1979) research and consisted of the most frequently suggested solutions to the task. Subjects were asked to indicate the extent to which they would recommend the solution of the company.

The Expert Behaviors Questionnaire consisted of 55 technical and socioemotional behaviors. There were 11 socioemotional behaviors considered to be effective and eight ineffective socioemotional behaviors. There were 12 technical behaviors considered to be ineffective and 24 effective technical behaviors. All behaviors were obtained from previously published research on task oriented group processes (Hoffman, 1979), functional and socioemotional group member behaviors (Lord, 1977) and interpersonal communication (Klaus & Bass, 1981). There were two forms of the questionnaire. In the effective expert conditions, subjects rated behaviors based on the extent to which the behavior fit their image of an effective expert. In the ineffective technical expert condition, subjects rated behaviors based upon the extent to which it fit their image of an ineffective expert.

Procedure

There were two conditions in this study. Subjects were randomly assigned to either the ineffective technical expert condition or to the effective technical expert condition. Subjects were escorted into a large classroom and seated at separate desks. The
experimenter passed out the Assembly Problem Task and Questionnaire. After 15 minutes, the questionnaires were collected and the experimenter passed out the Expert Behaviors Questionnaire. Subjects were given 20 minutes to complete the questionnaire. All subjects were debriefed.

Results

Results of the Assembly Problem Questionnaire yielded two solutions rated about equal in desirability: piece-rate salary system, mean = 3.6, and employee recognition, mean = 3.8 (see Table 15, Appendix J).

The Expert Behaviors Questionnaire yielded 20 behaviors considered to be highly characteristic of effective technical experts and 12 behaviors considered to be characteristic of ineffective technical experts (see Table 5, Appendix J).
To insure that everyone receives the same instructions, I will read them to you. You will be participating in a study which will be examining peoples impressions of experts in task oriented groups. The two questionnaires you will be completing will be used to develope materials for a future study.

The first questionnaire consists of a series of possible solutions to a real/industrial problem. You will be asked to read a short case study which outlines the problem and than rate a number of possible solutions on the extent to which you would recommend them. This case study and questionnaire should take approximately 15 minutes to complete.

The second questionnaire you will be given is intended to measure what behaviors fit your image of an effective/ineffective technical expert. You will have ten minutes to complete the questionnaire.

Your responses to these questionnaires are of immense importance to this study. We appreciate your cooperation. The background data attached to the first questionnaire is being used to tell
us some general characteristics of the students being assessed at Franklin University. All Answers will be kept strictly confidential. Are there any questions?

(Pass out Assembly Problem and read the instructions)

I am going to pass out the Assembly Problem case study and questionnaire. Please answer the background data sheet first, then read the case study. This should take you about 10 minutes. Then read the instructions to the Assembly Problem questionnaire, and answer the questionnaire items.

(collect the first questionnaire in about 20 minutes)

Now I am going to pass out the Expert Behaviors Questionnaire. I will read the instructions to you. (see instructions on the questionnaire)

(Collect the questionnaire in 15 minutes)

Debriefing
ASSEMBLY PROBLEM INSTRUCTIONS

Please complete the attached sheet containing background data questions. This information will be used to tell us about some general characteristics about students at Franklin University. Next, read the case study and answer the questions in the Assembly Problem Questionnaire.
BACKGROUND DATA

Age ________
Major ______________________

Please circle the correct alternative.

Sex: male/female

College Level: Fr. Soph. Jun. Sen. Other, please specify ________


Are you employed? Part-time Full-time Unemployed Other, please specify ______________________________

Have you ever been employed full-time? yes no
ASSEMBLY PROBLEM

You have been called in as a consultant to a company manufacturing automobiles. Their problem stems from the following situation. Seven men, working in a circle, assemble a carburetor. The casting enters the circle at one point, and each person adds his pieces and pushes the unit to the next worker, who adds his elements. When the unit leaves the circle, it is a completed carburetor. This work arrangement for the subassembly station is diagrammed in the figure.

The assembly work is simple and requires a minimum of training for each step. The aptitude requirement is primarily good finger dexterity. The materials for each assembly position are located in bins which are kept supplied by material handlers. Thus, each worker has his essential material at his elbow. The job has been analyzed by time-and-motion experts so that the positions are of equal difficulty. Pay is based on hourly rates.

There are four such subassembly stations in this company, each supervised by a foreman. The total factory production is dependent upon receiving the required number of carburetors from
these four stations. The factory needs 300 parts per day from the four stations combined to maintain regular operations. The production is now so low that the factory production as a whole had to slow down. The daily production of the four stations at present is 85, 80, 60, and 50 units. The lowest-producing station had previously produced 60 units, but shortly before you were called in for consultation, the foreman of that station had expressed his dissatisfaction with production by reprimanding the group. Following the reprimand, production fell to 50 units per day.

In observing the stations in operation, you have noticed that the work tends to pile up at one or two positions, where the workers seem somewhat slower than the rest of the group. The pileups are especially apparent in the two low-production stations, although they occur in different positions in the two stations. Despite continuous use of the best personnel selection procedures for a number of years, fairly substantial differences still exist between the best and the poorest workers in each station. Thus, even though the jobs are equally difficult, material accumulates at the position of the least-able worker in the station. Foremen on nonproduction jobs are not willing to accept slow workers as transfers.

The company management has asked for your recommendation on how to make the stations as productive as possible.

**State briefly, what you think the problem is with this company's assembly lines.**
EXPERT BEHAVIORS QUESTIONNAIRE

In many work groups, one individual is designated a technical expert. This is someone who has special knowledge or abilities which are relevant to the group task and are needed by the group to determine a correct solution to the task. On the following pages are a series of possible behaviors that a technical expert might perform. Rate the following behaviors based on whether they fit your image of an effective technical expert. If you rate the behavior a 1, this means that it does not fit your image of an effective technical expert at all. If you rate the behavior a 7, this means that it fits your image of an effective technical expert extremely well. A space is provided at the end of the questionnaire for you to write any other behaviors you feel are representative of an effective technical expert.
<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does Not Fit at All</td>
<td>Fits Poorly</td>
<td>Fits Somewhat</td>
<td>Neither Fits</td>
<td>Fits Poorly</td>
<td>Fits Well</td>
<td>Fits Extremely Well</td>
</tr>
<tr>
<td>1. Diagnoses or interprets the situation or problem.</td>
<td>2. Identifies sub-problems and specific needs.</td>
<td>3. Drifts from topic to topic during the course of a conversation.</td>
<td>4. Asks for clarification of other members' comments concerning the problem.</td>
<td>5. Resolves or smooths over any differences of opinion between group members.</td>
<td>6. Takes a lot of words to say something which can be expressed in a few words.</td>
<td>7. Gives detailed answers to questions about the problem or solution.</td>
</tr>
</tbody>
</table>
1. Does Not Fit at All
2. Fits Poorly
3. Fits Somewhat
4. Neither Fits nor Poorly
5. Fits Not
6. Fits Well
7. Fits Extremely

Behaviors

An effective expert . . .

18. Stresses the importance of the problem faced and thereby the importance of the group.

19. If he/she disagrees with another group member's argument, he/she is careful to criticize the argument and not the group member.

20. Indicates aspects of the problem that his/her solution will overcome.

21. Expresses confusion about the problem.

22. Demonstrates to others how to approach the problem (gives examples or visual demonstrations).

23. Insists on having his/her own way.

24. Suggests a general strategy for implementing the solution.

25. Provides material resources necessary to complete the task.

26. Makes recommendations without explaining the reasons behind them.

27. Lets details of the task overwhelm him/her.

28. Assigns roles to the various group members. For example, who should take notes, who should remind the group when time is running short.

28. Compliments the group as a whole on the progress they are making.

29. Levels with others when he/she disagrees with their viewpoint.

30. Describes the task or problem.

31. Summarizes key aspects of the problem.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Does Not Fit at All</td>
<td>Fits Poorly</td>
<td>Somewhat Fits</td>
<td>Neither Fits or Poorly</td>
<td>Somewhat Not Fits Well</td>
<td>Fits Well</td>
<td>Extremely Well</td>
</tr>
</tbody>
</table>

**Behaviors**

1. An effective expert...

2. Recognizes the skills or experience of other group members.

3. Lets other group members finish their point before he/she comments.

4. Suggests several wrong solutions.

5. Identifies useful criteria for determining whether the solution will meet the needs of the organization.

6. Reviews possible solutions and compares them with the organizational realities.

7. Makes fun of another group member.

8. Examines the consequences of various actions or solutions to the problem.

9. Recognizes the validity of other group members positions although he/she may disagree with it.

10. Is frank and says what he/she really thinks.

11. Justifies the value of his/her solution to the problem.

12. Attempts to gain agreement about his/her solution from the other group members.

13. Spends a lot of time talking about things not related to the task.

14. Apologizes for any behavior which may have offended another group member; for example, interrupting someone.

15. Tells the other group members that he/she is nervous.

16. Needle the other group members.

17. Listens intently, maintains eye contact, while other group members are speaking.

18. Expresses anxiety about the group's performance.
Behaviors

An effective expert...

49. Reviews the possible solutions or courses of action in terms of their agreement with the basic principles of the organization.

50. Frequently changes his/her mind about the solution he/she advocates.

51. Expresses anxiety about the group's performance.

52. Indicates the purpose of the group and what they should accomplish.

53. Repeatedly puts forth his/her solution of the problem to the group.

54. Tells someone they are doing poorly.

55. Is generally courteous to other group members; for example, smiles, shakes hands.

List any other behaviors you think an effective technical expert should have.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
In many work groups, one individual is designated a technical expert. This is someone who has special knowledge or abilities which are relevant to the group task and are needed by the group to determine a correct solution to the task. On the following pages are a series of possible behaviors that a technical expert might perform. Rate the following behaviors based on whether they fit your image of an ineffective technical expert. If you rate the behavior a 1, this means that it does not fit your image of an ineffective technical expert at all. If you rate the behavior a 7, this means that it fits your image of an ineffective technical expert extremely well. A space is provided at the end of the questionnaire for you to write any other behaviors you feel are representative of an ineffective technical expert.
An ineffective expert . . .

1. Diagnoses or interprets the situation or problem.
2. Identifies sub-problems and specific needs.
3. Drifts from topic to topic during the course of a conversation.
4. Asks for clarification of other member's comments concerning the problem.
5. Resolves or smoothes over any differences of opinion between group members.
6. Takes a lot of words to say something which can be expressed in a few words.
7. Gives detailed answers to questions about the problem or solution.
8. Jumps to conclusions before information is presented.
9. Tends to run off at the mouth.
10. Calls for factual information related to the problem.
11. Identifies the various subgoals that will need to be met before the problem is solved.
12. Is very firm and never wavers from his/her position on the group task.
13. Compliments other group members on their task performance.
14. Suggests that the group adopt his/her solution.
15. Proposes a possible solution to the task.
16. Interrupts with his/her own comments before others can finish a statement.
17. Requests that the group take action on the problem. For example, "Let's get started".
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>4</th>
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<tr>
<td>Behaviors</td>
<td></td>
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<tr>
<td>An ineffective expert . . . . .</td>
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<tr>
<td>18. Stresses the importance of the problem faced and thereby the importance of the group.</td>
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<tr>
<td>19. If he/she disagrees with another group member's argument, he/she is careful to criticize the argument and not the group member.</td>
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<tr>
<td>20. Indicates aspects of the problem that his/her solution will overcome.</td>
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<tr>
<td>21. Expresses confusion about the problem.</td>
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<tr>
<td>22. Demonstrates to others how to approach the problem (gives examples or visual demonstrations).</td>
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<tr>
<td>23. Insists on having his/her own way.</td>
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<tr>
<td>24. Suggests a general strategy for implementing the solution.</td>
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<tr>
<td>25. Provides material resources necessary to complete the task.</td>
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<tr>
<td>26. Makes recommendations without explaining the reasons behind them.</td>
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<tr>
<td>27. Lets details of the task overwhelm him/her.</td>
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<td></td>
</tr>
<tr>
<td>28. Assigns roles to the various group members. For example, who should take notes, who should remind the group when time is running short.</td>
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</tr>
<tr>
<td>29. Compliments the group as a whole on the progress they are making.</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Levels with others when he/she disagrees with their viewpoint.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Summarizes key aspects of the problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Does Not Fit
2. Fits Poorly
3. Fits Somewhat
4. Neither Fits nor Fits Poorly
5. Fits Somewhat
6. Fits Well
7. Fits Extremely

Behaviors

An ineffective expert . . . .

32. Recognizes the skills or experience of other group members.

33. Lets other group members finish their point before he/she comments.

34. Suggests several wrong solutions.

35. Identifies useful criteria for determining whether the solution will meet the needs of the organization.

36. Reviews possible solutions and compares them with the organizational realities.

37. Makes fun of another group member.

38. Examines the consequences of various actions or solutions to the problem.

39. Recognizes the validity of other group members positions although he/she may disagree with it.

40. Is frank and says what he/she really thinks.

41. Justifies the value of his/her solution to the problem.

42. Attempts to gain agreement about his/her solution from the other group members.

43. Spends a lot of time talking about things not related to the task.

44. Apologizes for any behavior which may have offended another group member; for example, interrupting someone.

45. Tells the other group members that he/she is nervous.

46. Needles the other group members.

47. Listens intently, maintains eye contact, while other group members are speaking.

48. Expresses anxiety about the group's performance.
An ineffective expert... 

49. Reviews the possible solutions or courses of action in terms of their agreement with the basic principles of the organization.

50. Frequently changes his/her mind about the solution he/she advocates.

51. Expresses anxiety about the group's performance.

52. Indicates the purpose of the group and what they should accomplish.

53. Repeatedly puts forth his/her solution of the problem to the group.

54. Tells someone they are doing poorly.

55. Is generally courteous to other group members; for example, smiles, shakes hands.

List any other behaviors you think an ineffective technical expert should have.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
ASSEMBLY PROBLEM QUESTIONNAIRE

Below is a list of possible solutions to the Assembly Problem. Using the scale provided, rate the solutions based on the degree to which you would be willing to recommend each solution to the organization you are consulting for. Consider each solution separately. Your ratings should reflect how desirable the particular solution is and not how desirable this solution is when compared to other solutions.

For example, if you give the solution a rating of 5, this means that you would strongly recommend this solution. A rating of 1 would indicate that you would strongly not recommend this solution. Continue rating all of the solutions until you are finished. A blank space is provided if you feel an alternative solution not suggested would be best. As in many problems there may be more than one good or bad solution. Do not hesitate to rate solutions the same if you feel they are about equal.
<table>
<thead>
<tr>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have the fast workers help the slower workers.</td>
</tr>
<tr>
<td>2. Make the jobs easier for the slower workers.</td>
</tr>
<tr>
<td>3. Rotate the group so that each member of the group will have an opportunity to work at each station of the assembly line.</td>
</tr>
<tr>
<td>4. Combine the groups by position so that instead of each team building an entire carburetor, each team will build only one part of a carburetor.</td>
</tr>
<tr>
<td>5. Use a conveyor belt to speed up transfer of parts from one station to the next.</td>
</tr>
<tr>
<td>6. Fire the slower workers, and replace them with faster workers.</td>
</tr>
<tr>
<td>7. Change the wage scale to piece-rate (a worker is paid based on the number of parts assembled) instead of an hourly wage.</td>
</tr>
<tr>
<td>8. Offer bonuses to the teams that meet the quota for carburetors.</td>
</tr>
<tr>
<td>9. Have the foremen use positive motivation; for example, give the workers a pep-talk.</td>
</tr>
<tr>
<td>10. Train slower workers to improve their abilities.</td>
</tr>
<tr>
<td>11. Transfer foreman from the faster teams to the slower teams and then transfer the foreman from the slower teams to the faster ones.</td>
</tr>
<tr>
<td>12. Transfer slower workers to another area (nonproduction) and replace them with faster workers.</td>
</tr>
<tr>
<td>13. Put the slowest worker on the first station and the fastest worker on the last station.</td>
</tr>
<tr>
<td>14. Put the slowest worker on the last station and the fastest worker on the first station.</td>
</tr>
<tr>
<td>15. Encourage competition among the teams. For example, offer them incentives or recognition for the best team.</td>
</tr>
</tbody>
</table>
Would you recommend any other solution not included in the questionnaire? Please list any additional solutions below.

________________________________________

________________________________________

Of all the solutions that you highly recommended, which solution would be best for solving this organization's problem?

________________________________________

________________________________________
APPENDIX J

Pilot Study Data
## Background Data of Pilot Subjects

<table>
<thead>
<tr>
<th></th>
<th>MEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27.0</td>
</tr>
<tr>
<td>College level</td>
<td>2.3</td>
</tr>
</tbody>
</table>

### SEX FREQUENCIES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>M</td>
<td>27</td>
</tr>
<tr>
<td>F</td>
<td>35</td>
</tr>
</tbody>
</table>

### Major

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>33</td>
</tr>
<tr>
<td>Humanities</td>
<td>--</td>
</tr>
<tr>
<td>Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Nursing</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>6</td>
</tr>
</tbody>
</table>

### Employment Status

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Part time</td>
<td>8</td>
</tr>
<tr>
<td>Full time</td>
<td>47</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
</tr>
</tbody>
</table>
### Table 15
**Mean Ratings on Extent to Which a Solution Would be Recommended**

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Positive Motivation: A pep-talk</td>
<td>4.3 0.96</td>
</tr>
<tr>
<td>Train Slower Workers</td>
<td>4.2 0.81</td>
</tr>
<tr>
<td>Offer Bonuses</td>
<td>4.0 1.13</td>
</tr>
<tr>
<td>Rotate Positions</td>
<td>4.0 1.00</td>
</tr>
<tr>
<td>Employee Recognition</td>
<td>3.8 1.30</td>
</tr>
<tr>
<td>Change to Piece Rate</td>
<td>3.6 1.20</td>
</tr>
</tbody>
</table>

*Solutions with ratings of 3.5 or above on a 5 point scale*

### Table 16
**Frequency of Nominations for Best Solution**

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Nominations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change to piece rate</td>
<td>9 15%</td>
</tr>
<tr>
<td>Train slower workers</td>
<td>9 15%</td>
</tr>
<tr>
<td>Rotate Positions</td>
<td>9 15%</td>
</tr>
<tr>
<td>Combine Workers by function rather than product</td>
<td>6 10%</td>
</tr>
<tr>
<td>Use Positive Motivation</td>
<td>4  7%</td>
</tr>
<tr>
<td>Novel or Combined Solution</td>
<td>19 22%</td>
</tr>
</tbody>
</table>
Table 17
Expert Behaviors Questionnaire Items Group by Prototypicality

<table>
<thead>
<tr>
<th>Item</th>
<th>Prototypicality Rating</th>
<th>Effective</th>
<th>Ineffective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td>Prototypically Effective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Listens intently, maintains eye contact</td>
<td></td>
<td>6.3 1.1</td>
<td>2.0 1.5</td>
</tr>
<tr>
<td>2. Summarizes key aspects of problem*</td>
<td></td>
<td>6.2 1.1</td>
<td>2.0 1.6</td>
</tr>
<tr>
<td>3. Describes the task or problem</td>
<td></td>
<td>6.2 1.0</td>
<td>2.2 1.6</td>
</tr>
<tr>
<td>4. Diagnosis, Interprets situation or problem*</td>
<td></td>
<td>6.2 1.5</td>
<td>1.5 1.1</td>
</tr>
<tr>
<td>5. Recognizes skills of experience of others</td>
<td></td>
<td>6.2 0.8</td>
<td>2.1 1.5</td>
</tr>
<tr>
<td>6. Identifies subgoals that must be met*</td>
<td></td>
<td>6.1 1.4</td>
<td>2.4 1.8</td>
</tr>
<tr>
<td>7. Examines consequences of actions</td>
<td></td>
<td>6.1 1.3</td>
<td>2.2 1.6</td>
</tr>
<tr>
<td>8. Identifies subproblems and needs*</td>
<td></td>
<td>6.1 1.5</td>
<td>2.2 1.7</td>
</tr>
<tr>
<td>9. Demonstrates (visual) problem approach</td>
<td></td>
<td>6.0 1.3</td>
<td>2.0 1.5</td>
</tr>
<tr>
<td>10. Indicates group purpose*</td>
<td></td>
<td>6.0 0.9</td>
<td>2.7 1.5</td>
</tr>
<tr>
<td>11. Stresses importance of problem and group*</td>
<td></td>
<td>6.0 0.9</td>
<td>2.2 1.8</td>
</tr>
<tr>
<td>12. Proposes solution</td>
<td></td>
<td>6.0 1.2</td>
<td>2.4 1.5</td>
</tr>
<tr>
<td>13. Identifies criteria to meet org. needs</td>
<td></td>
<td>5.9 1.3</td>
<td>2.2 1.3</td>
</tr>
<tr>
<td>14. Compares solution with org. principles</td>
<td></td>
<td>5.9 1.1</td>
<td>2.2 1.3</td>
</tr>
<tr>
<td>15. Criticizes argument, not person</td>
<td></td>
<td>5.9 1.3</td>
<td>2.9 2.1</td>
</tr>
<tr>
<td>16. Calls for factual information*</td>
<td></td>
<td>5.9 1.2</td>
<td>2.4 1.5</td>
</tr>
<tr>
<td>17. Compliments group*</td>
<td></td>
<td>5.8 1.2</td>
<td>2.4 1.5</td>
</tr>
<tr>
<td>18. Recognizes Validity of solution but disagrees*</td>
<td></td>
<td>5.8 1.1</td>
<td>2.0 1.4</td>
</tr>
<tr>
<td>19. Indicates aspect of problem that will be overcome</td>
<td></td>
<td>5.8 1.4</td>
<td>2.8 1.7</td>
</tr>
<tr>
<td>20. Courteous, smiles, shakes hand</td>
<td></td>
<td>5.7 1.1</td>
<td>2.6 1.6</td>
</tr>
<tr>
<td>Prototypically Ineffective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Jumps to conclusions</td>
<td></td>
<td>1.8 1.4</td>
<td>6.0 1.8</td>
</tr>
<tr>
<td>2. Task unrelated talking*</td>
<td></td>
<td>1.9 1.3</td>
<td>6.0 1.7</td>
</tr>
<tr>
<td>3. NEEDLES group members*</td>
<td></td>
<td>1.3 1.0</td>
<td>5.8 1.6</td>
</tr>
<tr>
<td>4. Makes fun of group members*</td>
<td></td>
<td>1.2 1.0</td>
<td>5.7 1.8</td>
</tr>
<tr>
<td>5. Lets tasks details overwhelm him/her*</td>
<td></td>
<td>1.9 1.0</td>
<td>5.7 1.4</td>
</tr>
<tr>
<td>6. Runs off at the mouth</td>
<td></td>
<td>1.8 1.1</td>
<td>5.5 1.8</td>
</tr>
<tr>
<td>7. Verbose</td>
<td></td>
<td>2.6 1.4</td>
<td>5.5 1.8</td>
</tr>
<tr>
<td>8. Drifts from topic to topic</td>
<td></td>
<td>2.1 1.0</td>
<td>5.5 1.8</td>
</tr>
<tr>
<td>9. Interprets others</td>
<td></td>
<td>2.1 1.2</td>
<td>5.5 1.8</td>
</tr>
<tr>
<td>10. Frequently changes mind or opinion*</td>
<td></td>
<td>2.3 1.1</td>
<td>5.4 2.0</td>
</tr>
<tr>
<td>11. Insists on having own way*</td>
<td></td>
<td>2.1 1.4</td>
<td>5.4 2.0</td>
</tr>
<tr>
<td>12. Makes recommendations without justification*</td>
<td></td>
<td>2.5 1.5</td>
<td>5.2 1.5</td>
</tr>
</tbody>
</table>

*Prototypic Behaviors used in scripts
APPENDIX K

Manipulation Check for Behavioral Style
INTERPERSONAL BEHAVIORS QUESTIONNAIRE
(Bob)

Listed on the next two pages are twenty-six behaviors. Indicate whether you believe that each behavior did or did not occur during the videotape. If you rate the behavior as 1, this means that you feel that it definitely did not occur during the videotape. If you rate the behavior as 7, this means that you feel that the behavior definitely did occur during the videotape. A space is provided after each behavior for you to put the number you feel fits best. Please go on until you complete every question.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Definitely did not occur</td>
<td>Probably did not occur</td>
<td>May not have occurred</td>
<td>Uncertain whether it occurred</td>
<td>May have occurred</td>
<td>Probably did occur</td>
<td>Definitely did occur</td>
</tr>
</tbody>
</table>

**Behaviors**

1. Summarizes key aspects of the problem.
2. Compliments the group as a whole on the progress they are making.
3. Drifts from topic to topic during the course of the conversation.
4. Diagnoses or interprets the situation or problem.
5. Makes recommendations without explaining the reasons behind them.
6. Is generally courteous to other group members; for example, smiles, shakes hands.
7. Makes fun of another group member.
8. Recognizes the validity of other group members' positions although he/she may disagree with it.
9. Tells someone they are doing poorly.
10. Identifies sub-problems and specific needs.
11. Frequently changes his/her mind about the solution he/she advocates.
12. Reviews the possible solutions or courses of action in terms of their agreement with the basic principles of the organization.
13. Insists on having his/her own way.
14. Identifies the various subgoals that will need to be met before the problem is solved.
15. Lets details of the task overwhelm him/her.
16. Indicates the purpose of the group and what they should accomplish.
17. Interrupts with his/her own comments before others can finish a statement.
18. Demonstrates to others how to approach the problem (gives examples or visual demonstrations).
19. Jumps to conclusions before information is presented.
20. Recognizes the skills or experiences of other group members.
<table>
<thead>
<tr>
<th></th>
<th>1 Definitely did not occur</th>
<th>2 Probably did not occur</th>
<th>3 May not have occurred</th>
<th>4 Uncertain whether it occurred</th>
<th>5 May have occurred</th>
<th>6 Probably did occur</th>
<th>7 Definitely did occur</th>
</tr>
</thead>
</table>

Behaviors

21. Needles the other group members.

22. Stresses the importance of the problem faced and thereby the importance of the group.

23. Calls for factual information related to the problem.

24. Spends a lot of time talking about things not related to the task.

25. Assigns roles to the various group members. For example, who should take notes, who should remind the group when time is running short.

26. Takes a lot of words to say something which can be expressed in a few words.
APPENDIX L

Training Materials for Solution Adoption
Coding Instructions for Assembly Problem Solution

The assembly problem solution will be coded depending on the extent to which it resembles the solution advocated by one of the supervisors, Bob. His solution contained the following elements.

- An employee recognition system.
- Post production charts for individual team members and the entire team.
- Reward worker's productivity by recognizing those who meet quotas or make significant improvements.
- Encourage competition between the teams.

If the subject recommends Bob's entire solution, code this response as a 2. For example: "I would go with Bob's solution" or "A worker recognition program would be best".

If the subject recommends a part of Bob's solution or recommends a combination of Bob's solution and some other solution, code this as a 1. For example: "I would go with a piece rate system. Also encourage competition between the teams".

If the subject recommends a totally different solution, code this as a 0. For example: "Adopt a piece rate system" or "An employee rotation program would be best."
APPENDIX M

Training Materials for Cognitive Responses
Coding instructions for Cognitive Responses to Bob or his Solution

Cognitive responses will be coded based upon two dimensions: orientation and valence. Orientation refers to whether the subject of the responses is directed towards the communicator or the message. If the response is directed towards the communicator, code the response as a C. This would include comments about Bob's character as well as his behaviors in the meeting. For example:

"I think that Bob did not support his arguments very well" or "Bob seems to be very considerate of others".

If the response is directed towards the message, code this as an M. This would include comments about his solution or any ideas mentioned in the meeting. For example:

"Bob said that motivation was a major problem" or I like the idea of offering moral support to employees"

Valence will be coded as either positive (+), negative (-) or neutral (0) based upon the evaluative component of the response. For example:

"Employee recognition systems never work" (M-)
"Bob is a bit naive" (C-)
"His arguments seem reasonable" (M+)
"He argues his points well" (C+)
"He mentioned that employees are not dissatisfied with their pay" (M0)
"He ignored Steve's comments" (C0)

In some cases there may be multiple responses in one line. Always circle the response you are coding.
APPENDIX N

Correlations Table
<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Solution Adoption</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. Level of Ability</td>
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<tr>
<td>3. Behavioral Style</td>
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<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Credibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>0.19</td>
<td>0.29*</td>
<td>0.59*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Trustworthiness</td>
<td>0.22**</td>
<td>0.19</td>
<td>0.57*</td>
<td>0.72*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Expertise</td>
<td>0.21**</td>
<td>0.33*</td>
<td>0.51*</td>
<td>0.76*</td>
<td>0.64*</td>
<td></td>
<td></td>
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<tr>
<td>7. Solution Specificity</td>
<td>0.14</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.03</td>
<td>-0.07</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>8. Credibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>0.28*</td>
<td>0.26*</td>
<td>0.58</td>
<td>0.76</td>
<td>0.64*</td>
<td>0.76*</td>
<td>0.09</td>
</tr>
</tbody>
</table>

*p = 0.05
APPENDIX O

Types of Solutions Recommended
<table>
<thead>
<tr>
<th>Solution Type</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work Recognition Program</td>
<td>32</td>
</tr>
<tr>
<td>2. Piece-Rate Salary System</td>
<td>27</td>
</tr>
<tr>
<td>3. Offer Cash Bonuses</td>
<td>26</td>
</tr>
<tr>
<td>4. Rotate Workers Around Assembly Stations</td>
<td>19</td>
</tr>
<tr>
<td>5. Place Slowest Worker on First or Last Station</td>
<td>8</td>
</tr>
<tr>
<td>6. Fire or Transfer Slow Workers</td>
<td>3</td>
</tr>
<tr>
<td>7. Use Conveyer Belt</td>
<td>1</td>
</tr>
<tr>
<td>8. Other</td>
<td>27</td>
</tr>
<tr>
<td>Combined Solutions</td>
<td>47</td>
</tr>
</tbody>
</table>

Note. In cases where the subject recommended more than one solution, each solution recommended was counted.