INITIATING STRUCTURE, CONSIDERATION, AND PARTICIPATIVE DECISION MAKING: DIMENSIONS OF LEADER BEHAVIOR

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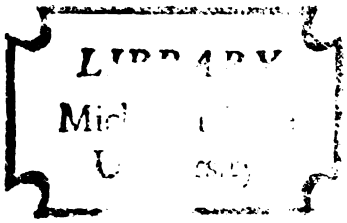

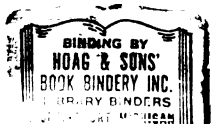

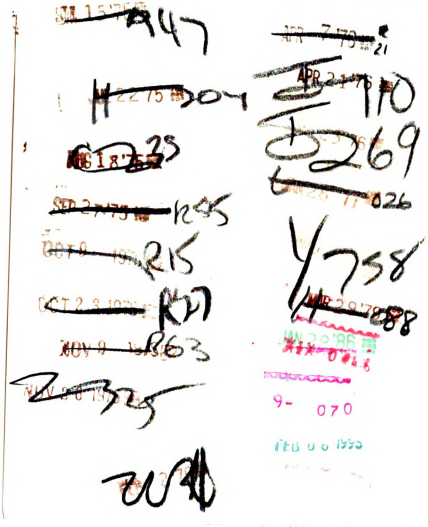

ABSTRACT

INITIATING STRUCTURE, CONSIDERATION, AND PARTICIPATIVE DECISION MAKING: DIMENSIONS OF LEADER BEHAVIOR

By

Raymond Howard Johnson

Two experiments were designed to test the hypothesis that the extent to which a leader allows and encourages participative decision making is a valid dimension of leader behavior and can be perceived as distinct from the Ohio State consideration and initiating structure dimensions of leader behavior.

In Experiment I, 52 male undergraduates volunteered to participate in the multidimensional scaling of 15 leader behavior statements representing the three a priori dimensions of participative decision making, consideration, and initiating structure. The results of the multidimensional scaling showed three relatively tight clusters of leader behaviors in two dimensions of the three-space INDSCAL solution; these distinct clusters corresponded to the three a priori groupings: consideration, participative decision making, and initiating structure. The actual dimensions

emerging from the INDSCAL three-space solution were interpreted as: (1) initiating structure, (2) task concern by subordinate, (3) personal subordinate-supervisor interaction.

In Experiment II, high-low levels of participative decision making, initiating structure, and consideration were experimentally manipulated in eight constructed supervisor descriptions. Seventy male undergraduates responded to each of these descriptions from the viewpoint of a subordinate. The results showed that each of the three leader behavior dimensions exerted highly significant, powerful, and positive main effects on subjects' satisfaction with the supervisor, motivation to work for the supervisor, and attitudes toward interpersonal style and task competence of the supervisor. Interactive effects of the supervisor dimensions and subject personality characteristics (Authoritarianism and Need for Independence) were occasionally significant, but always trivial in magnitude. In addition, the three dimensions were shown to have low, position correlations with each other.

Practical implications of a three-dimensional model of leadership behavior were discussed, and areas for future research were outlined.

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INITIATING STRUCTURE, CONSIDERATION, AND PARTICIPATIVE DECISION MAKING: DIMENSIONS OF LEADER BEHAVIOR

By

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To Candy and Grant

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I wish to thank the members of my thesis committee for their contributions to this thesis and to the quality of my graduate education. Jack Wakeley taught me the value of clear, direct writing. But more important, he has always been available and supportive whenever any problems arose. His unselfish concern for the personal and professional development of his students was the reason I came to Michigan State and found graduate education here a pleasant and productive experience. Frank Schmidt taught me the value of quantitative methods in psychology, and set an example of scholarly productivity. Larry Messé infected me with his enthusiasm for social psychology and the elegance of analysis of variance. Dave Wessel introduced me to the mysteries of multidimensional scaling.

A special thanks to Cindy Null for her help in writing computer programs, setting up multidimensional scaling analyses, and assisting in interpretation of the output. Her able and unselfish assistance was invaluable.

My wife, Candy, typed several drafts of this thesis without complaint, and tolerated the absurd number of hours

TABLE OF CONTENTS

APPENDIX Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Not long ago, a company president brought his young and impatient vice-president for finance to the university to discuss problems of management with faculty and graduate students. The president heads a company dedicated to the principles of participative decision making through which everyone in the organization has a say in matters related to his job.

The young vice-president soon confessed that he was confused about the role of leadership in a company-wide system of participative management. He was obviously torn between what he perceived to be two opposing ideas: (1) allowing and encouraging subordinates to actively participate in the decision-making process and (2) organizing, coordinating, and making sure decisions were made within time constraints. All too often, he admitted, decision making through active subordinate participation resulted in either no decisions being made at all, or decisions being made too late to be effective. And neither he nor his subordinates were happy with the situation.

In essence, the vice-president was asking: "How should I be a leader, if at all, in a company committed to the ideals of participative management?" What does leadership mean in the context of a participative management system, and how does leadership fit in with participative decision making by subordinates?

The answer to the young executive's problem is the thesis of this study. That is, there are three important and distinct dimensions of leader behavior:

1. Participative decision making: Behaviors by which the supervisor allows or encourages subordinates to have a say in matters related to their jobs. Behaviors by which the supervisor allows or encourages subordinates to influence decisions related to their jobs and the way in which they do their jobs.

2. Initiating structure: Behaviors by which the supervisor organizes and coordinates the activities of subordinates. Behaviors by which the supervisor defines his relation to his subordinates, and defines the role he expects each subordinate to assume.

3. Consideration: Behaviors by which the supervisor shows warmth and rapport toward subordinates. Behaviors by which the supervisor expresses a warm, positive attitude toward and personal concern for subordinates.

A related thesis is that supervisors who encourage subordinate participation in decision making and initiate structure and show consideration are the most effective when effectiveness is defined as having satisfied and motivated subordinates.

The next section reviews attempts to group leader behaviors into meaningful dimensions. All these attempts have in common the goal of reducing the complexity of what a leader does into simpler categories or dimensions for the purpose of concisely describing leadership behavior, and hopefully better understanding the phenomenon of leadership.

Dimensionalizing Leadership Behavior

Although the study of leadership is hardly new, only in the past two decades have researchers attempted to specify systematically and empirically the dimensions of leadership behavior.

The Ohio State Studies

The Ohio State studies mark the first serious attempt to study what underlies all the various behaviors that define leadership (Stogdill and Coons, 1957; Fleishman, Harris, and Burtt, 1955). Using leadership behaviors, rather than leadership traits, Hemphill and Coons (1957) developed the Leadership Behavior Description Questionnaire (LDBQ), the foundation of the Ohio State studies.

The Hemphill and Coons (1957) research began with 1790 specific items of leader behavior, written to reflect nine *a priori* conceptual dimensions:

1. Integration--acts which tend to increase cooperation among members or decrease competition among them.

2. Communication--acts which increase the understanding of and knowledge about what is going on in the group.

3. Production emphasis--acts which are oriented toward volume of work accomplished.

4. Representation--acts which speak for the group in interaction with outside agencies.

5. Fraternization--acts which tend to make the leader a part of the group.

6. Organization--acts which lead to differentiation of duties and which prescribe ways of doing things.

7. Evaluation--acts which have to do with distribution of rewards (or punishment).

8. Initiation--acts which lead to change in group activities.

9. Domination--acts which disregard the ideas or person of members of the group.

The communication dimension was later subdivided: communication up and communication down.

From the original 1790 behavioral items the researchers selected a total of 150 that best represented the ten *a priori* dimensions. These items were administered in Likert 5-point frequency scale form to 357 people "in a summer school population." Of the respondents, 205 described a leader of a group in which they were members or had recently been members; 152 described themselves as leaders.

A centroid factor analysis of the ten a priori dimension scores, separately for leaders and subordinates, yielded three factors:

1. Maintenance of membership character--"good fellow" behavior; behavior socially agreeable to group members. This dimension was more pronounced for subordinates' description of leaders than for leaders' self descriptions.

2. Objective goal attainment--behavior related to output of the group. Leaders, more than members, thought this dimension salient.

3. Group interaction facilitation--"Behavior which would enable group members to recognize their functions in the group, and to know what's going on"; "interaction facilitation."

Halpin and Winer (1957) administered a slightly revised form of the LBDQ (130 items) to 300 bomber crew members who described 52 air crew commanders. Eight a priori dimension scores were then correlated: (1) leadership quality, (2) domination, (3) organization, (4) production, (5) communication, (6) membership, (7) goal direction, (8) initiative. Behavioral items from the five least correlated keys (2, 3, 4, 6, 8) were submitted to an orthogonal factor analysis. Four interpretable factors emerged: consideration, initiating structure, production emphasis, and sensitivity.

Halpin and Winer give the following interpretation to the four factors:

1. Factor I: Consideration--(49.6% of LBDQ variance) "High positive loadings on this factor are associated with behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the air craft commander and his crew. High negative loadings appear on items of behavior which indicate that the airplane commander is authoritarian and impersonal with the members of his crew" (p. 42).

2. Factor II: Initiating Structure--(33.6%) The leader organizes and defines the relationship between himself and the members of the crew. He defines "the role he expects each member of the crew to assume, and endeavors to establish well-defined patterns of organization, channels of communication, and ways of getting jobs done" (pp. 42-43).

3. Factor III: Production Emphasis--(9.8%) ". . . measures a manner of motivating the crew to greater activity by emphasizing the mission or job to be done" (p. 43). Few "pure" items on this factor.

4. Factor IV: Sensitivity--(7.0%) ". . . measures the aircraft commander's sensitivity to and awareness of social interrelationships and pressures existing both inside and outside the crew . . . 'sizing up the situation'" (pp. 43-44).

Halpin and Winer were able to develop relatively independent, pure, and reliable 15-item measures of initiating structure and consideration. Statistically, the variance between leaders reliably exceeded the variance within leaders. When both short keys were cross-validated on a new sample of 29 air crew commanders rated by 201 crew members, initiating structure and consideration scales correlated +.52. In two other cross-validation samples of airmen, inter-scale correlations of +.45 and +.38 appeared, again indicating non-orthogonality of factor scores.

In summary then, the Ohio State studies reduced the complexity of leader behavior to two important dimensions: initiating structure and consideration. Further, these two dimensions tended to be positively correlated, rather than purely independent.

University of Michigan Studies

Concomitant with the Ohio State studies, the University of Michigan produced a substantial amount of research and theory on leadership. Katz, Macoby, and Morse (1950) developed the dimensions of "employee orientation" and "production orientation." The former resembles the Ohio State "consideration" dimension while the latter resembles the Ohio State "initiating structure" and "production emphasis" combined. Although employee orientation and production orientation were originally conceived as opposite ends of a single continuum, these concepts were later viewed as representing independent dimensions (Katz, Macoby, Gurin, and Floor, 1951).

Another typology of leadership behavior was developed by Katz and Kahn (1951). They theorized four behavior dimensions of leadership, summarized by Bowers and Seashore (1966, p. 243) as:

1. Differentiation of supervisory role. Behavior of a leader that reflects greater emphasis upon activities

of planning and performing specialized skilled tasks; spending a greater proportion of time in actual supervision, rather than performing the men's own tasks or absorption in impersonal paperwork.
Note: This dimension relates to the Ohio State concept of initiating structure and to Katz et al. (1951) idea of production orientation.

2. Closeness of supervision. Behavior that delegates authority, checks upon subordinates less frequently, provides more general, less frequent instructions about the work, makes greater allowance for individuals to perform in their own ways and at their own paces.
Note: Relates to both consideration and initiating structure, and to previous notions of employee- and production-orientation.

3. Employee orientation. Behavior that gives major emphasis to a supportive personal relationship, and that reflects a personal interest in subordinates; being more understanding, less punitive, easy to talk to, and willing to help groom employees for advancement.
Note: Relates directly to previous concepts of employee-orientation and consideration.

4. Group relationships. Behavior by the leader that results in group cohesiveness, pride by subordinates in their work group, feeling of membership in the group, and mutual help on the part of those subordinates.
Note: Relates to the Ohio State notions of interaction facilitation and social sensitivity.

Kahn (1958) theorized yet another set of four leader behavior dimensions summarized by Bowers and Seashore (1966, p. 244):

1. Providing direct need satisfaction. Behavior by a leader, not conditional upon behavior of the employee, which provides direct satisfaction of the employee's ego and affiliative needs.
Note: Relates to concepts of consideration and employee-orientation.

2. Structuring the path to goal attainment. Behaviors that cue subordinates toward filling personal needs through attaining organizational goals.
   Note: Relates to initiating structure.

3. Enabling goal achievement. Behavior that removes barriers to goal achievement, such as eliminating bottlenecks, or planning.
   Note: Relates to Ohio State production emphasis.

4. Modifying employee goals. Behavior that influences the actual personal goals of subordinates in organizationally useful directions.
   Note: Also relates to production emphasis.

From a broader social-psychological perspective, Cartwright and Zander (1968) conceived of leadership as acts which help the group achieve preferred outcomes, and which are termed group functions. Group maintenance functions are those behaviors that maintain pleasant interpersonal relations, resolve disputes, provide encouragement, give the minority a chance to be heard, stimulate self-direction, and increase member interdependence. These functions include both consideration and interaction facilitation. Goal achievement functions are those behaviors that initiate action, keep members' attention on the goal, develop a procedural plan, evaluate the quality of the work done, and make available expert information. These functions seem to include both initiating structure and production emphasis.

Taking a slightly different perspective, Mann (1965) proposed a typology of leadership skills, not behaviors.

Since one may argue for a rough correspondence between skills and behaviors requiring skills, Mann's three dimensions are appropriate to include in this discussion of leadership dimensions. Human relations skill is the ability to work with and through people. Technical skill is the ability to use knowledge, methods, techniques, and equipment necessary for the successful performance of specific tasks. Finally, administrative skill, as summarized by Bowers and Seashore (1966, p. 245), is "the ability to understand and act according to the objectives of the total organization, rather than only on the basis of the goals and needs of one's own immediate work group. It includes planning, organizing the work, assigning the right tasks to the right people, inspecting, following up, and coordinating the work."

Bowers and Seashore (1966) have reviewed and integrated all of the studies presented thus far in this paper. From their perspective, four leadership dimensions appeared repeatedly in the literature (p. 247):

1. Support. Behavior that enhances someone else's feeling of personal worth and importance.
2. Interaction facilitation. Behavior that encourages members of the group to develop close, mutually satisfying relationships.
3. Goal emphasis. Behavior that stimulates an enthusiasm for meeting the group's goal or achieving excellent performance.

4. Work facilitation. Behavior that helps to achieve goal attainment by such activities as scheduling, coordinating, planning, and by providing resources such as tools, materials, and technical knowledge.

Unlike previous research and theory, Bowers and Seashore do not limit the exercise of any of these four leadership functions to formal leaders; group members may also exercise these functions. As a result, two parallel sets of leadership dimensions are suggested: peer and supervisory. Table 1 shows the conceptual linkages among the studies reviewed by Bowers and Seashore.

Although Bowers and Seashore (1966) presented no new data to support their four dimensions of leadership behavior, some supportive evidence is available. Taylor (1971) tested the four-factor theory of leadership using smallest space analysis in three different industrial organizations: a petroleum refinery, an insurance company, and a plastics company. The results showed that, for the 13 supervisory and the 11 peer leadership variables, a 3-space solution provided a good fit between the variables plotted in Euclidean space and the actual distance between the variables (actual distance as measured by a correlation coefficient between two variables). Except for a few items, the items tended to cluster together according to the four a priori leadership dimensions. It should be noted that the four a priori dimensions were not orthogonal, a fact obvious from the

Table 1.--Correspondence of Leadership Concepts of Different Investigators.

<table>
<tr><th>Bowers and Seashore (1964)</th><th>Hemphill and Coons (1957)</th><th>Halpin and Winer (1957)</th><th>Katz et al. (1950)</th><th>Katz and Kahn (1951)</th><th>Kahn (1958)</th><th>Mann (1962)</th><th>Likert (1961)</th><th>Cartwright and Zander (1960)</th></tr>
<tr><td rowspan="2">Support</td><td rowspan="2">Maintenance of membership character</td><td rowspan="2">Consideration</td><td rowspan="2">Employee orientation</td><td>Employee orientation</td><td rowspan="2">Providing direct need satisfaction</td><td rowspan="2">Human relations skills</td><td rowspan="2">Principle of supportive relationships</td><td rowspan="3">Group maintenance functions</td></tr>
<tr><td>Closeness of supervision</td></tr>
<tr><td>Interaction facilitation</td><td>Group interaction facilitation behavior</td><td>Sensitivity</td><td></td><td>Group relationships</td><td></td><td>Group methods of supervision</td></tr>
<tr><td>Goal emphasis</td><td rowspan="2">Objective attainment behavior</td><td>Production emphasis</td><td rowspan="2">Production orientation</td><td rowspan="2"></td><td>Structuring path to goal attainment</td><td rowspan="2">Administrative skills</td><td>High-performance goals</td><td rowspan="2">Goal-achievement functions</td></tr>
<tr><td>Work facilitation</td><td>Initiating structure</td><td>Differentiation of supervisory role</td><td rowspan="2">Enabling goal achievement</td><td>Modifying employee goals</td><td rowspan="2">Technical knowledge, planning, scheduling</td></tr>
<tr><td></td><td></td><td>Closeness of supervision</td><td>Technical skills</td></tr>
</table>

Source: D. G. Bowers and S. E. Seashore, Predicting organizational effectiveness with a four factor theory of leadership, Administrative Science Quarterly, 1966, 11, p. 248. Used with permission of copyright holder, Administrative Science Quarterly.

3-space solution and the strong correlations among the variables making up the dimensions. In addition, one may argue that a 2-space solution may have provided an adequate fit, judging from the coefficients of alientation presented by Taylor (1971, p. 256, 261).

Other Approaches

Wofford (1967) developed six theoretical dimensions of managerial behavior:

1. Security and maintenance. Behaviors concerned with maintaining a neat environment, protecting and arranging the physical facilities, and assuring safety of the work situation.
2. Order and structure. Behaviors that are orderly, systematic, and well structured.
3. Personal interaction. Behaviors involving social interaction, supportiveness, and acceptance of support.
4. Achievement. Behaviors relating to goal setting, self-improvement, independent advancement in work, and innovation.
5. Personal enhancement. Behaviors which seek to gain status, power, recognition.
6. Group achievement. Behaviors associated with team action, group leadership, morale, group goals, and group advancement.

Factor analyzing 183 manager behavior items, written to reflect the six dimensional theory, Wofford (1970, 1971) found five orthogonal factors which explained a remarkable

100% of the variance. The five factor labels and their contributions to explainable variance follow:

1. Order and group achievement (40.5%)
2. Personal enhancement orientation (22.2%)
3. Personal interaction (17.2%)
4. Security and maintenance (11.3%)
5. Dynamic and achievement oriented (8.8%)

These labels are deceiving in that after inspecting the items loading on each of the factors, one puzzles over the origin of the labels, i.e., the Wofford theory (1967) or the structure of the data that was factor analyzed (Wofford, 1970). In fact, most of the items loading on a given factor have little face validity.

Three reasons explain the absence of clearly interpretable factors. First, a factor analysis of 183 items based on a sample size of 136 is capitalizing to a great extent on chance. Second, tetrachoric correlations were the basis of the factor analysis, despite the fact it is a poor estimate (unreliable) of the Pearson product correlation and that no mathematical basis exists for employing tetrachoric correlation in multivariate analyses (Nunnally, pp. 123-124). This inappropriate correlation may explain three other peculiar results in the Wofford factor analysis: (1) unusually high factor loadings; (2) the sum of the

squared factor loadings for a given item far exceeds its communality; (3) 100% of the variance was explained by five factors, unheard of in psychological research, since this event implies perfectly reliable items. Third, the theory (Wofford, 1967) and the items written to reflect it are conceptually murky.

This last series of research by Wofford (1967, 1970, 1971), because of serious conceptual and methodological limitations, will not be given further attention.

Fiedler (1967) presents a theory of leadership effectiveness that is indirectly related to the notion of leader behavior dimensions. Instead of discussing leader behavior, Fiedler's key concept is leadership style, defined as the underlying need-structure of the individual that motivates his behavior in various situations. The polar extremes of the leadership style dimension are: task oriented versus relationship oriented. Fiedler operationalized his concept of leadership through the Least-Preferred Co-Worker instrument (LPC), the details and measurement problems of which will not be presented here. For a summary see Graen, Orris, and Alvares (1971). The important points about the LPC are that: (1) it does not measure leader behavior directly; (2) it is not known exactly what is being measured; (3) presumably, it measures a single dimension of leader-ship, as opposed to the two relatively independent Ohio State

leadership behavior dimensions. Attempts to find behavioral correlates of LPC scores have yielded inconsistent results (Sample and Wilson, 1965; Fiedler, 1967, p. 53; Nealey and Blood, 1968; Yukl, 1970; Gruenfeld, Rance, & Weissenberg, 1969; Reilly, 1969). Thus, since Fiedler's model relates only indirectly to leadership behavior, this body of research will not be given further treatment here.

Although none of the studies reviewed in this section yielded a dimension of leader behavior that could be clearly labeled participative decision making, some conceptual evidence for its existence is available, and is presented in the following section.

Participative Decision Making As a Leader Behavior Dimension

Although the concept of participation in decision making has received considerable theoretical attention in recent years (Strauss, 1963; Lowin, 1968; Likert, 1961, 1967; Patchen, 1970), relatively little work has been done in clearly conceptualizing participative decision making as a dimension of leadership behavior. Newport (1962) noted the conceptual similarity of consideration and initiating structure to democratic and autocratic leadership, respectively. Reviewing the literature on leadership styles, Sales (1966) found employee orientation (high consideration) to be associated with democratic supervision. However,

others have argued for consideration and participative decision making (sometimes called Decision-Decentralization, Yukl, 1969) as separate, independent dimensions of leader behavior (Gomberg, 1966; McMurray, 1958; Schoenfeld, 1959; Stanton, 1962).

The first direct theoretical attempt to deal with participative decision making as a third distinct leader behavior dimension was made by Yukl (1971). His arguments follow.

The Theoretical Relation of Participative Decision Making to Consideration

The Ohio State consideration scale contains participative decision making items. But these items are only considerate when subordinates desire participation in decision making, since there are individual differences in preference for participation. Thus, when consideration is defined as "the degree to which the leader's behavior expresses a positive attitude towards subordinates" (Yukl, 1971, p. 417), participative decision making is conceptually distinct.

The Theoretical Relation of Participative Decision Making to Initiating Structure

If we define initiating structure as task oriented behavior: (1) concern for productivity, (2) making sure

necessary task decisions are made, and (3) behavior insuring that decisions and higher level organizational directives (training and supervision) are carried out, then we have no mention of who will actually make the decisions. "The task orientation of the leader does not appear to be very closely related to the amount of influence he will allow subordinates in the making of task or maintenance decisions" (Yukl, 1971, p. 417). Thus participative decision making is made conceptually distinct from initiating structure.

Lowin, Hrapchak, and Kavanagh (1969) offer the idea that the presence of participation in decision making is what contributes to the intercorrelation among consideration and initiating structure scales. These researchers examined the factor analysis of LBDQ items by Fleishman, Harris, and Burtt (1955), and noted several participative decision making items that were found in both initiating structure and consideration scales.

Participative decision making items grouped with consideration items:

1. He refuses to give in when people disagree with him.
2. He insists that everything be done his way.
3. He rejects suggestions for change.
4. He changes the duties of people under him without first talking it over with them.
5. He acts without consulting his foremen first.

6. He puts suggestions that are made by foremen under him into operation.

7. He gets the approval of his foremen on important matters before going ahead.

Participative decision making items grouped with the initiating structure items:

1. He rules with an iron hand.

2. He waits for his foremen to push new ideas before he does.

3. He lets others do their work the way they think best.

4. He decides in detail what shall be done and how it shall be done.

The notion of common participative decision making variance in both consideration and initiating structure scales is theoretically appealing in that allowing subordinates to participate in decision making "implies a concern for their opinions and for their desire to contribute (high consideration) and a relaxation of hierarchical control (low structure)" (Lowin, Hrapchak, & Kavanagh, 1969).

Although it is important to know that empirically and theoretically, leader behaviors can be grouped into meaningful dimensions such as participative decision making, consideration, and initiating structure, it is also important to know how these groupings of leader behaviors are related to one another. For example, if participative decision making and initiating structure in leaders are

perceived by subordinates as being negatively related, then it would be a difficult task for a leader to be perceived as high on both participative decision making and initiating structure. The next section reviews studies of the empirical relations among scales measuring consideration, participative decision making, and initiating structure in an attempt to better understand the nature of the dependencies among these leadership constructs.

Empirical Relations Among Participative Decision Making, Consideration, and Initiating Structure

The initiating structure and consideration dimensions of leader behavior emerged from orthogonal factor analyses of the LBDQ (Hemphill and Coons, 1957; Halpin and Winer, 1957), and thus were by definition uncorrelated dimensions. It should be noted, however, that scales derived from factor analysis are usually correlated. That is, only the items that load most heavily on a factor are retained for measurement of that factor. The typical scale score is simply the summation of responses to each of the scale items. Given that a factor is a linearly weighted combination of all items being factor analyzed, and that orthogonality refers to zero correlation between these weighted composites, it is easily seen why the actual scale scores tend to be correlated. The orthogonality is a

mathematically imposed constraint which may not be psychologically meaningful.

Fleishman (1969) concluded that when averaged across a variety of situations, the median correlation between consideration and initiating structure scales is zero. The argument is that non-zero correlations between these scales in the literature represent a sampling distribution whose true value is zero.

However, several researchers have questioned the orthogonality of consideration and initiating structure scales (Bales, 1958; Fiedler, 1964; Lowin, Hrapchak, and Kavanagh, 1969; Weissenberg and Kavanagh, 1972; Anderson, 1966; Bass, 1958; Fleishman and Harris, 1962; Fleishman and Peters, 1962; Halpin, 1954; Nealey and Blood, 1968; Oaklander and Fleishman, 1964; Parker, 1963; and Rambo, 1958).

Weissenberg and Kavanagh (1972) reviewed 72 studies employing the LBDQ or the Leader Opinion Questionnaire (LOQ) to assess the independence of the consideration and initiating structure scales. Fifty-one percent (37) of these studies reported significant positive relationships between consideration and initiating structure, 10% (7) significant negative relationships, and 39% (28) non-significant correlations. The mean correlation was .23 and the median was .36, clearly not zero as predicted by Fleishman (1969). Further analysis by type of instrument (LBDQ vs. LOQ) revealed

that the correlation between consideration and initiating structure was more frequently positive for LBDQ measures, while the relationship was more frequently non-significant for LOQ measures. The LOQ is a self-report measure of how managers think they should behave. Also, for the LBDQ, 64% (11) of studies involving first-line supervisors reported significant positive correlations between consideration and initiating structure, 11% (2) significant negative, and 23% (4) non-significant. As a summary statement, Weissenberg and Kavanagh (1972, p. 127) concluded:

> It appears that the independence of the dimensions is contingent mainly on the type of questionnaire used to measure the behavior. The high frequency of non-significant correlations for the LOQ indicates that managers think they should behave as if consideration and initiating structure are independent, however, descriptions by subordinates (LBDQ) indicate that their supervisors do not, in fact, behave in this manner, or at least, they are not perceived as behaving in this way.

The literature relating participative decision making to initiating structure and consideration is rather scarce. Measuring consideration and initiating structure by LBDQ and participative decision making by the Decision Procedure Questionnaire (form C), Heller and Yukl (1969) found a correlation of .24 ($p < .05$) between participative decision making and consideration in a sample of 67 second-line managers. Participative decision making was not significantly related to initiating structure.

Stogdill, Goode, and Day (1962, 1963, 1964) used a recent version of the LBDQ having consideration, initiating structure, and 10 other subscales to study a variety of samples. Participative decision making was measured by the "Tolerance for Member Freedom" subscale. The following correlations between participative decision making and consideration emerged: (a) .41 for subordinates of corporation presidents; (b) .42 for labor union subordinates; (c) .40 for community leaders; (d) .49 for ministers. Beer (1966) found a correlation between participative decision making and consideration of .50 for a sample of office supervisors rated by female subordinates. In none of these five samples was participative decision making significantly related to initiating structure.

In summary, empirical research supports the notion that initiating structure, participative decision making, and consideration are oblique (correlated) dimensions of leadership behavior. Specifically, (1) participative decision making and consideration probably correlate moderate positive; (2) participative decision making and initiating structure probably correlate low positive; (3) initiating structure and consideration probably correlate zero to low positive. The exact relationships are difficult to predict because the measures of initiating structure and consideration in previous research are confounded with participative decision

making variance. Clearly more research on the relation between participative decision making and both initiating structure and consideration is needed before firm conclusions can be drawn.

While reducing leader behaviors to a few dimensions or groups and examining the relations among these groups of behaviors are helpful steps in dealing with the complexity of leadership, the question remains: do these groups of leader behaviors exert any effects on subordinate attitudes and behavior? The following section answers this question by reviewing subordinate satisfaction and productivity correlates of participative decision making and supervisor initiating structure and consideration. As the evidence will show, the answer to the question of whether leader behaviors make a difference is complex.

Attitudinal and Behavioral Correlates of Leader Behavior

Satisfaction

Considerable research has been addressed to the question of the relation between leader behavior dimensions and subordinate satisfaction with the leader. Unless specified, all research cited in this section used self-report measures of satisfaction.

Several studies (Halpin, 1957; Halpin and Winer, 1957; Anderson, 1966; Yukl, 1969; Nealey and Blood, 1968; Graen, Dansereau, and Minami, 1972) reported a positive relation between consideration and satisfaction. Using indirect indices of satisfaction (turnover and grievance rate), Fleishman and Harris (1962) and Skinner (1969) found significant curvilinear relationships with their measure of consideration. In experimental lab studies (Day and Hamblin, 1964; Misumi and Shirakashi, 1966), low consideration (defined as punitive leadership) was found associated with low satisfaction. However, Lowin, Hrapchak, and Kavanagh (1969) reported no significant relation between two levels of consideration and satisfaction although the means were in the predicted direction.

The relationship between satisfaction and initiating structure is much less clear than with consideration. Halpin (1957) and Yukl (1969) reported significant positive relations between initiating structure and satisfaction. However, Vroom and Mann (1960) found a significant negative relation between pressure for production and satisfaction for delivery truck drivers; this relationship did not hold up for truck loaders. Similarly, Nealey and Blood (1968) found a significant positive relationship between initiating structure and satisfaction for first-level supervisors, but no significant relation for second-level supervisors.

Numerous studies found no relationship at all between initiating structure and satisfaction (Baumgartel, 1956; Halpin and Winer, 1957; Argyle, Gardner, and Cioffi, 1958--labor turnover and voluntary absenteeism; Misumi and Shirakashi, 1966; Lowin, Hrapchak, and Kavanagh, 1969; Anderson, 1966; Likert, 1961, pp. 16-18).

A few non-linear relationships between initiating structure and satisfaction have been found. Specifically, Fleishman and Harris (1962) and Skinner (1969) found a negative, curvilinear relationship between initiating structure and two indices of satisfaction: turnover and grievances. Likert (1955) reported an inverted U relation between pressure for production and subordinate satisfaction. Finally, Fleishman and Harris (1962) found an interaction of initiating structure and consideration, such that high considerate leaders could increase initiating structure with little accompanying increase in turnover and grievance.

The relationship between participative decision making and subordinate satisfaction has generally been positive (Baumgartel, 1956; Argyle, Gardner and Cioffi, 1958--voluntary absenteeism and labor turnover; Vroom, 1959; Bachman, Smith, and Slesinger, 1966; Yukl, 1969; and Tosi, 1970). Experimental studies also confirm this positive relationship (Coch and French, 1948--turnover; Shaw, 1955; Morse and Reimer, 1956--turnover and self-report; Solem, 1958; Maier and Hoffman, 1962).

There is some evidence that the positive relationship between participative decision making and satisfaction is moderated by other variables. For example, Vroom (1959) found a positive relation between participative decision making and satisfaction for subordinates with a high need for independence but not for those subordinates with a low need. However, Tosi (1970) failed to replicate the moderated relationship found by Vroom, and found only consistent positive relationships. Bass (1965, pp. 165-170) and French, Israel and As (1960) reported that subordinates' perceived participation in decision making did not result in more favorable attitudes toward the leader unless they also perceived participation in decision making as a legitimate part of their role.

Productivity

The relationship between consideration and productivity is far from clear. A positive relationship has been observed by some researchers (Katz, Maccoby, Gurin, and Floor, 1951; Argyle, Gardner, and Cioffi, 1958; Besco and Lawshe, 1959; Schacter, Willerman, Festinger, and Hyman, 1961; Kay, Meyer, and French, 1965). However, instances of no significant linear relations have also been reported (Bass, 1957; Nealey and Blood, 1968; Scott, 1968). In an experimental laboratory study, Lowin, Hrapchak, and Kavanagh

(1969) found a positive relation for objectively manipulated consideration but not for subordinate ratings of consideration. A negative relation occurred between consideration and performance for aircraft commanders (Halpin and Winer, 1957), and for foremen of production departments, but not for non-production departments (Fleishman, Harris, and Burtt, 1955). It should be noted that in these last two studies, performance was measured by superiors' ratings of effectiveness, and not by objective output of the leader's group.

The relationship of initiating structure to productivity is a little clearer than that between consideration and productivity. Generally, initiating structure is positively related to productivity (Fleishman, Harris, and Burtt, 1955; Likert, 1955; Halpin and Winer, 1957; Maier and Maier, 1957; Besco and Lawshe, 1959; Anderson, 1966; Nealey and Blood, 1968). Some have found no relationship (Argyle, Gardner, and Cioffi, 1958; Bass, 1957; Halpin, 1957; Rambo, 1958; and Lowin, Hrapchak, and Kavanagh, 1969), but none have reported a negative relationship.

Several instances of interactive effects of initiating structure and consideration on productivity have been found. When Israeli foremen were described by superiors on a Hebrew translation of the Supervisory Behavior Description, foremen high on both consideration and initiating

structure received the highest proficiency ratings from their superiors (Fleishman and Simmons, 1970). Similarly, superiors gave highest effectiveness ratings to aircraft commanders who were described by subordinates as high on both consideration and initiating structure. Hemphill (1957) found that high consideration-high initiating structure department chairmen received highest faculty ratings of how well the department was administered. Personal production norms (task motivation) was highest for workers whose leader encouraged proficiency and "went to bat" for workers (Patchen, 1962). Finally, in an experimental lab study, Misumi and Shirakashi (1966) found that their most productive groups had leaders high on both consideration and initiating structure.

Dawson, Messé, and Phillips (1972) experimentally manipulated teacher behavior in the college classroom situation. Main effects for consideration and initiating structure were found. Students under high consideration treatment handed in more annotated bibliographies than those in the low consideration groups; the same direction of effect appeared for initiating structure. Subjects under high consideration also performed better on class exams, and participated in more psychological experiments to earn research credits. The interaction effect to emerge involved research credits such that subjects in the low consideration-

high initiating structure condition earned a disproportionately low number of research credits.

A considerable amount of evidence suggests that participative decision making tends to be positively related to group performance (Bachman, Smith, and Slesinger, 1966; Coch and French, 1948; Fleishman, 1965; French, 1950; French, Kay, and Meyer, 1966; Lawrence and Smith, 1955; Likert, 1961; Mann and Dent, 1954; McCurdy and Eber, 1953; Meltzer, 1956; and Vroom, 1959). It should be noted, however, that Argyle, Gardner, and Cioffi (1958) found a positive relation between participative decision making and performance only for those departments without piece rates. There have also been studies showing no relationship (Tosi, 1970; French, Israel and As, 1960; and McCurdy and Lambert, 1952) or a negative relation (Shaw, 1955; Morse and Reimer, 1956). As a general summary, research findings suggest that: (1) the relationship of consideration to productivity is unclear; (2) initiating structure is positively related to productivity; (3) initiating structure and consideration interact to yield greatest productivity under the high initiating structure-high consideration combination; (4) participative decision making is positively related to productivity.

In talking about the attitudinal and behavioral effects of leader behavior, we are assuming that the leader

behaviors are perceived by subordinates. This assumption raises the methodological issue of whether individual or group perceptions of leader behavior are most appropriate. The next section addresses this issue and finds the methodological and empirical evidence in favor of using individual perceptions of leader behavior in the present study.

Individual Versus Group Perceptions of Leader Behavior

Most, if not all, research on leadership behavior has used group perceptions to describe the leader. Typically a leader's subordinates complete the LBDQ, and then the leader's level of initiating structure and consideration is defined as the average response of his subordinates on these scales. Although some will argue that average initiating structure and consideration scores are the most stable indicators of the leader's behavior, these scores may accurately reflect the perceptions of no individual subordinate. Halpin and Winer (1957, p. 49) examined the ratio of variance in initiating structure and consideration scales between air crews to within air crews, finding reliably greater variance between leaders than within (29 air crew commanders were described by 201 crew members). However, Dawson (1972, unpublished dissertation) studied the

leadership of 88 auto industry foremen using the LBDQ, and found that variance in his measures of initiating structure and consideration within foremen work groups was actually larger than the variance between foremen work groups. The essential point is that much useful information is lost when individual perceptions of leadership behavior are collapsed into aggregate scores; differences in perception are treated as irritating error variance. Individual perceptions rule the individual's world; he acts and feels on the basis of his own perceptions, not those of a mythical average group member (with whom he has not even a passing acquaintance).

Graen, Dansereau, and Minami (1972) point out another issue involved in individual versus group perception of leader behavior. First, should leadership behavior be viewed as an average style or a set of particular leader-member relationships? If leadership behavior is viewed as an average style, then averaging subordinate perceptions is the most valid and reliable way to measure it. If, however, leader behavior is viewed as a set of unique dyadic relationships, then averaging individual subordinate perceptions would not be valid, and would in fact result in loss of valuable information.

In his recent paper on individualizing organizations, Lawler (1972) reaffirms the vital role of individual

differences in organizational psychology as a specific application of Cronbach's (1957) treatment of the two disciplines of psychology in which the differences between experimental and correlational psychology are discussed. Lawler makes the point that organizational theorists searching for universality "often ended up treating individual differences in how people react to organization practices as error variance."

A methodological issue, related to the issue of using individual or group perceptions of leader behavior, is whether one should use multidimensional scaling or factor analysis in studying the perception of leader behaviors. The following section highlights the similarities and differences in these two approaches, and points out how much useful information about individual differences in perceptions of leader behaviors can be obtained through the INDSCAL method of multidimensional scaling.

Multidimensional Scaling Versus Factor Analysis in Studying Perception of Leader Behaviors

The purpose of this section is to show how recent developments in multidimensional scaling (MDS) can contribute to the study of leadership in ways not possible with factor analysis.

As with factor analysis, the goal of MDS in general is to discover the underlying pattern or structure in a matrix of empirical data. Unlike factor analysis, MDS attempts to represent this structure in a more visible manner, i.e., as a geometric model. "The objects under study (whether these be stimuli, persons, or nations) are represented by points in the spatial model in such a way that the significant features of the data about these objects are revealed in the geometric relations among the points (Shepard, 1972, p. 1)."

Multidimensional scaling starts with a set of inter-related entities, in this study leadership behaviors. For each pair of entities, a measure of proximity (association, similarity) is the basic input datum for MDS. Commonly used measures of proximity are ratings of similarity; in the case of leadership behaviors, a rating of likelihood of co-occurrence is more appropriate. Basically, MDS provides a geometric configuration of the entities in which the inter-point distances correspond to the empirical input values of psychological relatedness. The success, or goodness-of-fit, of the geometric representation is defined as the degree of monotonic relationship between the measures of similarity and the interpoint distances in geometric space, described later as lack of "stress."

Unlike unidimensional scaling, MDS permits points to position in two- or higher-space if necessary to capture

the complexity of the data. While factor analysis typically yields high-dimensional factor space, MDS usually yields solutions in two- or three-dimension space.

One kind of MDS procedure is INDSCAL (individual differences scaling). The INDSCAL model has in common with other MDS procedures the assumption that different individuals perceive the stimuli in terms of a common set of assumptions. However, these dimensions are differentially important or salient in the perception of different individuals. In the extreme case of zero importance or salience, a given dimension does not affect the person's perception at all, which is the same as saying that he does not perceive that dimension.

The model underlying INDSCAL is a modified Euclidean distance for each subject. For the i^{th} subject, the distance equation is:

$$d_{jk}^{(i)} = \left[\sum_{t=1}^{r} w_{it} \, (w_{jt} - x_{kt})^2\right]^{1/2}$$

where,

$d_{jk}^{(i)}$ = the distance between stimuli j and k for subject i

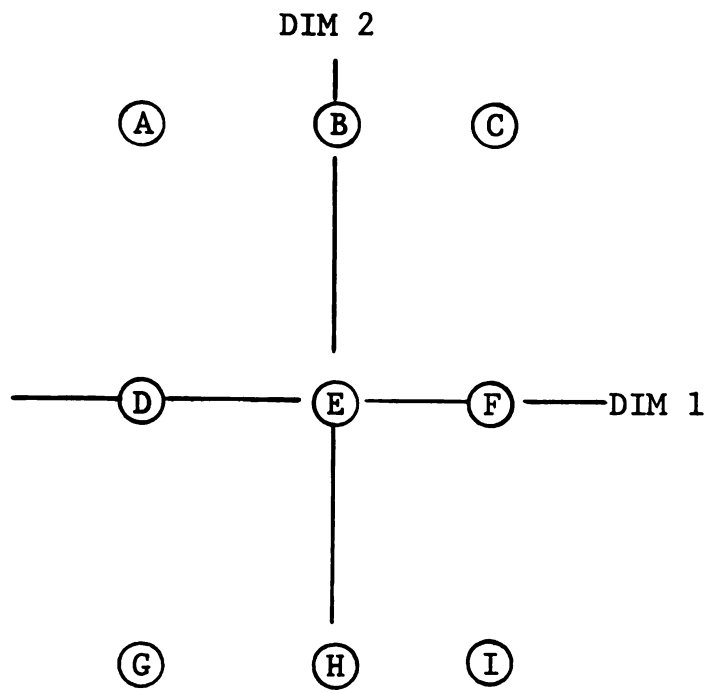
w_{it} = weighting given the t^{th} dimension (t = 1 to r dimensions) by subject i

$(w_{jt} - w_{kt})^2$ = the squared difference between stimuli j and k on the t^{th} dimension

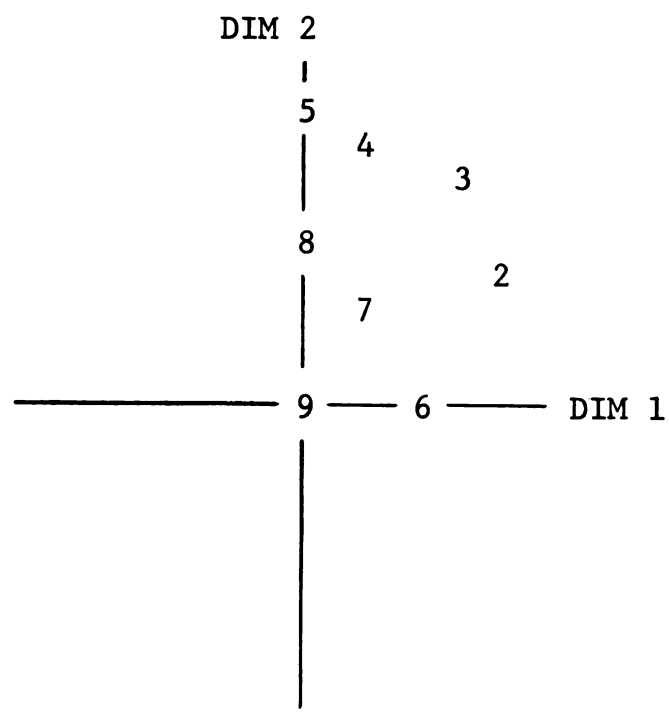
According to Carroll (1972), the major purpose of the INDSCAL program is to determine both the stimulus coordinates and the subject weights that maximally explain the total variance in all subjects' data. Using an iterative least squares procedure, the program determines the orientation of the axes that maximizes the goodness-of-fit criterion. The resulting orientation usually results in dimensions which are directly interpretable without further rotation.

Graphically, INDSCAL produces the information illustrated in Figure 1. Note that for subject 2, dimension 1 is most important; he can discriminate among stimuli to a greater extent with dimension 1 than 2. The exact opposite dimension saliency occurs for subject 4.

Carroll (1972) notes several useful properties in the subject map shown in Figure 1. Besides providing information about the relative saliency of each dimension for a given subject, the subject map gives an idea of the variance in a subject's judgments that is explained by the dimensions. Specifically, the dimensions are normalized so that the sum of squares of projections for all subjects on each dimension is unity. Thus, by squaring the two projections for a given subject, we have an index of the communality of that subject with all other subjects in the analysis, i.e., how much of the particular subject's variance is explained by the group-based dimensions.



"GROUP"
STIMULUS
SPACE



SUBJECT
SPACE

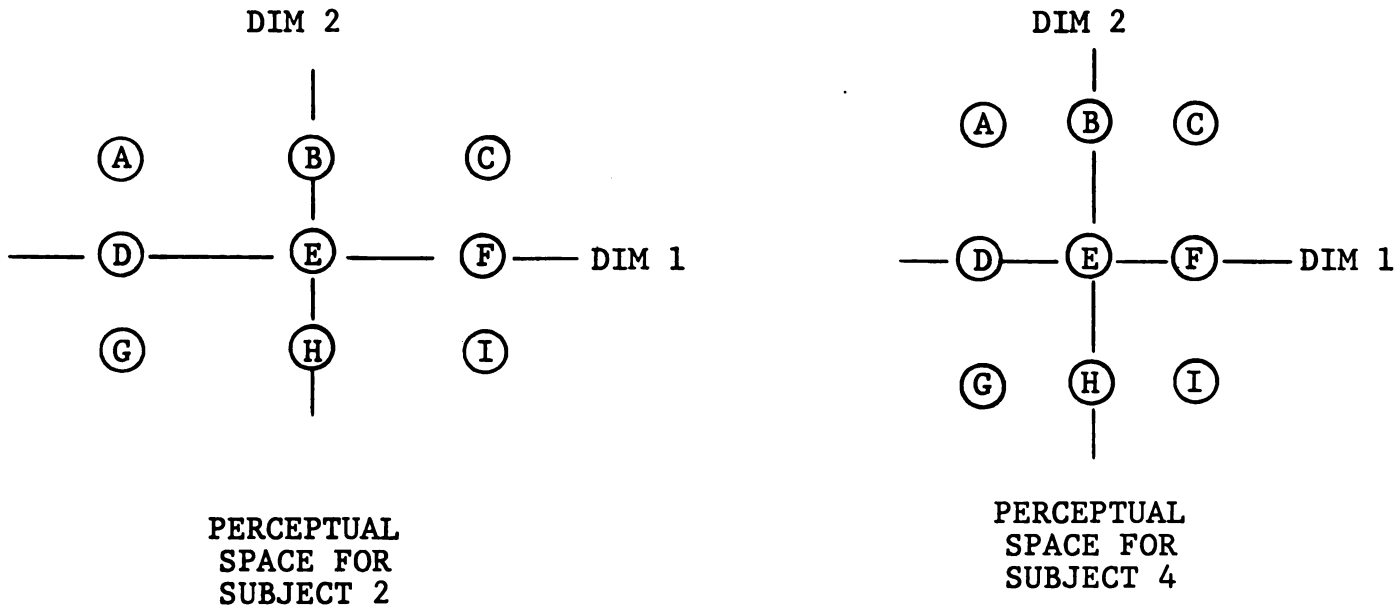


Figure 1.--Hypothetical Example Illustrating INDSCAL Model. Weights from subject space (upper right) are applied to dimensions of "group" stimulus space (upper left) to produce individual perceptual spaces for subjects such as 2 (lower left) and 4 (lower right).

Source: J. D. Carroll, Individual differences and multidimensional scaling. In R. N. Shepard, A. K. Romney, and S. B. Nerlove (Eds.), Multidimensional scaling: theory and applications in the behavioral sciences, Volume 1, Theory (New York: Seminar Press, 1972). Used by permission of copyright holder, Seminar Press, Inc.

Another useful property of the subject map is that all subject coordinates should appear in the positive orthant of the space, since a negative salience is conceptually nonsense. If such a negative salience appears, it indicates that a systematic violation of the INDSCAL model has occurred for that subject, and his data should not be trusted.

Another methodological issue in leadership research dealing with the problem of causality is discussed in the following section. The discussion of causality indicates the need for more experimental, manipulative research to more adequately determine whether changes in the behavior of the leader cause changes in subordinate attitudes and behavior, or vice versa.

The Problem of Causality in Leadership Research

A recurring deficiency in much leadership research is that leadership behaviors have rarely been experimentally manipulated along specified dimensions. The typical approach to the study of leadership behavior has involved correlational data from a field setting. Statements of causality based on such data are inappropriate and often misleading. Lowin and Craig (1968) indicated that in leadership research in the field, the direction of causality may in fact be opposite that assumed by the investigator. For example, it

was widely assumed that leadership behaviors bore a causal relationship to subordinate performance. Yet in a realistic laboratory setting, Lowin and Craig found that changes in subordinate performance caused changes in leadership behaviors.

The writer is aware of only two studies that experimentally manipulated leadership behavior along the Ohio State dimensions of consideration and initiating structure (Dawson, Messé, and Phillips, 1972; Lowin, Hrapchak, and Kavanagh, 1969). This scarcity of experimental research may be due to a general lack of research environments that would permit such manipulations. In addition, creating experimental conditions of leadership behavior that are not confounded is often a Herculean task not readily undertaken. None of the previously published research has investigated the effects of initiating structure, consideration, and participative decision making simultaneously on subordinate satisfaction and motivation. Thus, little, if anything, is really known about the interactive effects of these three important leadership behaviors.

The interested reader is referred to Weick (1965) for a detailed exposition of the validity of laboratory experimentation in organizational psychology, and to Cronbach (1958) for methodological distinctions between those researchers who manipulate and those who correlate. In the

area of leadership, it is apparent that an interplay of research in both the laboratory and field settings will yield the most useful and generalizable knowledge.

CHAPTER II

THE RESEARCH PROBLEM AND HYPOTHESES

Numerous leadership behavior dimensions have been proposed in a variety of empirical studies and theoretical orientations. However, the two dimensions that most frequently recur in these studies are initiating structure and consideration. Further, these two dimensions from previous research may have in common a third dimension, participative decision making defined as the degree to which a leader allows and encourages his subordinates to participate in making decisions related to their jobs. From this orientation, and from the previous review of the literature, come the following hypotheses:

> Hypothesis 1: Participative decision making, defined as the degree to which a leader allows or encourages his subordinates to participate in making decisions related to their jobs, is a valid third dimension of leadership behavior, as perceived by subordinates.

If participative decision making, consideration, and initiating structure are perceived as being relatively distinct dimensions of leadership behavior, i.e., hypothesis 1 is confirmed, then these dimensions can be experimentally

manipulated, and the following hypotheses stemming from the review of the behavioral and attitudinal correlates of leadership may be tested:

Hypothesis 2: Participation, initiating structure, and consideration are all perceived as being positively, but low to moderately, correlated dimensions of leadership behavior.

Hypothesis 3: Subordinate perceptions of participation, consideration, and initiating structure are related in the following manner:

$$r_{P,C} \geq r_{P,IS} > r_{IS,C}$$

Hypothesis 4: Subordinate's perception of supervisor behaviors encouraging subordinate participation is positively related to:

(a) subordinate satisfaction with the supervisor.
(b) subordinate motivation to work for the supervisor.
(c) subordinate's attitude toward the task competence of the supervisor.
(d) subordinate's attitude toward the interpersonal style of the supervisor.

Hypothesis 5: Subordinate's perception of initiating structure behaviors in his supervisor is:

(a) negatively related to subordinate's satisfaction with supervisor.
(b) positively related to subordinate's self-reported motivation to work under his supervisor.
(c) negatively related to subordinate's attitude toward the interpersonal style of the supervisor.
(d) negatively related to subordinate's attitude toward the task competence of the supervisor.

Hypothesis 6: Subordinate's perception of consideration behaviors in his supervisor is positively related to:

(a) subordinate's satisfaction with his supervisor.
(b) subordinate's motivation to work for his supervisor.
(c) subordinate's attitude toward the supervisor's interpersonal style.
(d) subordinate's attitude toward the supervisor's task competence.

A set of two studies was designed to test these hypotheses. In Study 1, the subjects' task was multidimensional scaling of leader behaviors to determine whether subordinates perceive three distinct dimensions in leader behaviors. The results of this study provided a test of hypothesis 1. In Study 2, subjects rated experimentally manipulated supervisor descriptions varying in the extent to which they showed participative decision making, consideration, and initiating structure. The design of Study 2 permitted the testing of hypotheses 2-6.

In addition to hypotheses 4, 5, and 6 above, the experimental design in Study 2 permitted an exploratory analysis of possible interactions among the three leadership behavior dimensions and subordinate personality characteristics (Authoritarianism and Need for Independence).

CHAPTER III

EXPERIMENT I: MULTIDIMENSIONAL SCALING OF LEADERSHIP BEHAVIORS

This study was concerned with the testing of Hypothesis 1: Participative decision making, defined as the degree to which a leader allows or encourages his subordinates to participate in making decisions related to their jobs, is a valid third dimension of leadership behavior, as perceived by subordinates. The general plan of the study was to use INDSCAL in the multidimensional scaling of 15 leader behavior statements, selected to represent leader participative decision making, consideration, and initiating structure dimensions.

Method

Subjects

Fifty-two male undergraduate students in introductory psychology volunteered to participate in the experiment for extra credit toward their final class grades.

Stimulus Materials

Leader behavior stimulus statements for the multidimensional scaling were selected to represent conceptual definitions of the three major leadership behavior dimensions of interest:

1. Participative decision making: Behaviors by which the supervisor allows or encourages subordinates to have a say in matters related to their jobs. Behaviors by which the supervisor allows or encourages subordinates to influence decisions related to their jobs and the way in which they do their jobs.

2. Initiating structure: Behaviors by which the supervisor organizes and coordinates the activities of subordinates. Behaviors by which the supervisor defines his relation to his subordinates, and defines the role he expects each subordinate to assume.

3. Consideration: Behaviors by which the supervisor shows warmth and rapport toward subordinates. Behaviors by which the supervisor expresses a warm, positive attitude toward and personal concern for subordinates.

With these dimension definitions in mind, the experimenter searched through leader behavior items reported by Fleishman, Harris, and Burtt (1955), Dawson (1972), Lowin, Hrapchak, and Craig (1968), and Stogdill (1963), selecting 13 items that seemed to fit the definition for participation, 12 for consideration, and 11 for initiating structure.

Since the subject's task in multidimensional scaling is to judge the likelihood of co-occurrence of 105 pairs of

leader behavior statements using 15 stimuli, the initial set of 36 items had to be reduced. Toward this end, five graduate student judges were asked to sort independently the 36 leader behavior items into three groups: participation, consideration, and initiating structure, using the dimension definitions given above. If a statement did not fit any of the three definitions, it was put in a fourth group--other.

Five items related to each dimension of leadership behavior were selected under the criterion that 4 out of 5 of the judges agree in their sorting of each item in a dimension.

Table 2 presents the final set of 15 leader behavior items selected for use in multidimensional scaling. These items were punched on computer cards so that computer generated printouts could be obtained. The printouts (see Appendix A for specimen) were designed to have the following characteristics:

1. Each contained $\frac{n\ (n-1)}{2} = \frac{15\ (14)}{2} = 105$ pairs of leader behavior stimuli.
2. A different random order of presentation of pairs was generated for each subject.
3. A 9-point likelihood of co-occurrence scale appeared to the right of each pair.
4. Half the printouts had the same order of statements within each pair; half had the reverse order of statements within each pair.

Table 2.--Leader Behavior Items Selected for Multi-dimensional Scaling.

Consideration

1. He is friendly and easily approached.
2. He expresses appreciation when I do a good job.
3. If I am a new member, he helps me make adjustments to the group.
4. He makes me feel at ease when talking with him.
5. He looks out for my personal welfare.

Participative Decision Making

6. He allows me to modify the procedures required in my job.
7. He has me share in decision making.
8. He assigns a task, then lets me handle it.
9. He allows me influence equal to his own in decisions which affect my job.
10. He lets me do my work the way I think best.

Initiating Structure

11. He lets me know what is expected of me.
12. He schedules the work I have to do.
13. He makes sure that I and other group members understand his part in the group.
14. He maintains definite standards of performance for me.
15. He sees to it that I have the material I need to work with.

Procedure

Because of the tediousness of the subjects' rating tasks, especially the multidimensional scaling, experiment I was conducted in two one-hour sessions. In the first session, subjects completed the multidimensional scaling of the leader behavior stimuli and two personality measures: Need for Independence Scale, and the F-Scale Measure of Authoritarianism (Vroom, 1960). Alpha estimates of internal consistency reliability for the Independence and Authoritarianism scales, based on the subjects in experiment I, were .43 and .80, respectively. These personality measures are presented in Appendix B.

The session began when a sample pair of leader behaviors was placed on the chalkboard with its corresponding 9-point likelihood of co-occurrence scale. The experimenter then read these instructions:

> I want you to think of a hypothetical male supervisor in industry. Now look at your printout where you will see pairs of behaviors. If a hypothetical male supervisor does the first behavior, how likely is it that he will do the second? If you think it is very likely, you would circle the 9. If you think it is very unlikely, you would circle the 1. If you think they are unrelated, you would circle the 5. That is, if he

were just as likely as not to do the second behavior, the pair would be rated 5.

Subjects were told that none of the pairs were identical, and so they were to rate each pair independently, starting with the first pair and going straight through to the end without looking back to see how they rated similar pairs.

At session 2, using 5-point Likert scales, subjects rated each of the fifteen leader behaviors on (1) consideration, (2) participative decision making, (3) initiating structure, and (4) the degree to which they would be satisfied with that behavior in their supervisor. This rating task is presented in Appendix C. It should be noted that each rating dimension was defined, and that a different, random order of leader behaviors was used for each rating dimension, although all subjects received the same random order within a dimension. For each subject, the order of presentation of rating dimensions was randomized.

The major purpose of this Likert rating task was to gather data to help interpret the dimensions resulting from the multidimensional scaling. Toward this end, the subjects also rated each of the fifteen leader behaviors on seven semantic differential scales:

1. weak-strong
2. good-bad
3. active-passive
4. don't prefer-prefer
5. important-unimportant
6. successful-unsuccessful
7. cruel-kind

These semantic differential scales were selected because they were representative, though not exhaustive of, the possible dimensions which subjects might use in perceiving leadership behaviors.

The order of semantic differential scales was randomly determined, and was the same for all leader behaviors. Four of the seven scales above are reversed to minimize response set. A different random order of presentation of the 15 leader behaviors was used for each subject. The slightly modified semantic differential rating instructions (Osgood, Suci, & Tannenbaum, 1957) and leader behavior items and actual rating scales appear in Appendix D.

Results and Discussion

Before going further, an important assumption underlying all multidimensional scaling techniques, including INDSCAL, is symmetry. This assumption requires that the distance from stimulus A to stimulus B be the same as the distance from B to A. When symmetry is violated, the exact distances between stimuli in Euclidean space is difficult

to determine since Euclidean geometry is also based on the assumption of symmetry.

In a pilot study, it was determined that subjects had great difficulty understanding the more methodologically sound intersection approach to giving instructions, in which neither the first nor the second behavior in each pair is the specified anchor. Since the problem of asymmetry may arise using other than the intersection method, i.e., $P(B_1/B_2) \neq P(B_2/B_1)$ where B_1 = behavior 1 and B_2 = behavior 2, two male pilot subjects each performed the multidimensional scaling task twice, once rating $P(B_1/B_2)$ and once rating $P(B_2/B_1)$, to check on the problem of asymmetry of ratings. For each subject, the correlation between his two sets of ratings was .67 and .62, indicating no substantial asymmetry problem with the non-intersection method of giving instructions.

As an additional, intuitive check on the problem of asymmetry, the 105 pairs of leader behavior statements were examined in both the A/B and B/A orders. No glaring asymmetries were apparent.

Table 3 presents the correlations between the computed scores in Euclidean space and the original proximity data for subjects. These correlations show the degree of fit of the three- and four-dimensional INDSCAL solutions for each subject, i.e., the degree to which the solutions

Table 3.--Correlations between Computed Scores and Original Data for Subjects.

Subject Number	Three-Dimension Solution	Four-Dimension Solution	Subject Number	Three-Dimension Solution	Four-Dimension Solution
1	.60	.62	27	.21	.23
2	.67	.67	28	.52	.54
3	.60	.63	29	.68	.74
4	.77	.79	30	.71	.76
5	.65	.66	31	.60	.63
6	.72	.75	32	.54	.57
7	.70	.72	33	.85	.84
8	.51	.56	34	.67	.71
9	.71	.70	35	.58	.64
10	.53	.56	36	.51	.56
11	.57	.59	37	.56	.59
12	.46	.45	38	.74	.75
13	.37	.34	39	.80	.82
14	.71	.72	40	.75	.74
15	.76	.83	41	.47	.50
16	.65	.69	42	.62	.64
17	.74	.75	43	.56	.59
18	.37	.39	44	.63	.64
19	.81	.83	45	.63	.67
20	.57	.62	46	.56	.59
21	.44	.46	47	.81	.83
22	.68	.71	48	.74	.76
23	.81	.82	49	.39	.41
24	.52	.52	50	.60	.63
25	.62	.62	51	.66	.71
26	.69	.72	52	.73	.77
Average subject correlation coefficient				.62	.65
Mean squared correlation coefficient				.40	.43

adequately describe each subject's perceptual world. The differences between correlations for both three- and four-dimensional solutions indicates that adding a fourth dimension does very little to improve the fit of the model. The average correlation coefficients are .62 for the three-dimensional solution and .65 for the four-dimensional solution. However, these coefficients are comparable to the degree of fit found in other applications of multidimensional scaling in industrial-organizational psychology (Davison and Jones, 1973; Hamstra, 1973). These data-model fits are relatively poor compared with INDSCAL solutions using auditory and visual stimuli (Wessel and Null, 1973). Because the fit of the three-space INDSCAL solution to the data was already relatively poor compared with INDSCAL solutions using auditory and visual stimuli (Wessel and Null, 1973), no two-space solution was computed. Such a reduction in dimensions would have only reduced the accuracy of the data-model fit.

Note in Table 3 that subjects 13, 18, 27, and 49 all have very low correlations (below .40) in the three-dimensional solution which do not tend to improve much when the fourth dimension is added. Two reasons may explain this relative lack of fit: (1) these subjects may have responded in a relatively random manner; (2) they may have been using dimensions other than those used by the majority

of the subjects. Fortunately, few of the 52 subjects showed such poor lack of fit between raw proximity data and distances in Euclidean space.

The locations of the 15 leader behavior stimuli in the three-space solution are presented in Figures 2, 3, and 4. From inspection of these figures, we can answer two major questions. Are the three a priori clusters of leader behaviors distinct enough from one another to justify their experimental manipulation in Experiment II? What is the meaning of the perceptual dimensions that emerged from INDSCAL?

In response to the first question regarding the relative distinctiveness of the a priori clusters, Figure 2 shows the leader behavior stimuli plotted in the first two INDSCAL dimensions of the three-space solution. It is clear that there is both intracluster and intercluster variation, highlighted by the lines drawn around the three a priori groups of leader behaviors: consideration (numbers 1-5), participative decision making (numbers 6-10), and initiating structure (numbers 11-15). Note that with the possible exception of item 15, the three clusters are quite distinct from one another, even though there is some intracluster variation for the most part along dimension 2.

In Figure 3, the leader behaviors are displayed along INDSCAL dimensions 1 and 3. Here the distinctiveness of the clusters is less clear, especially in regard to the

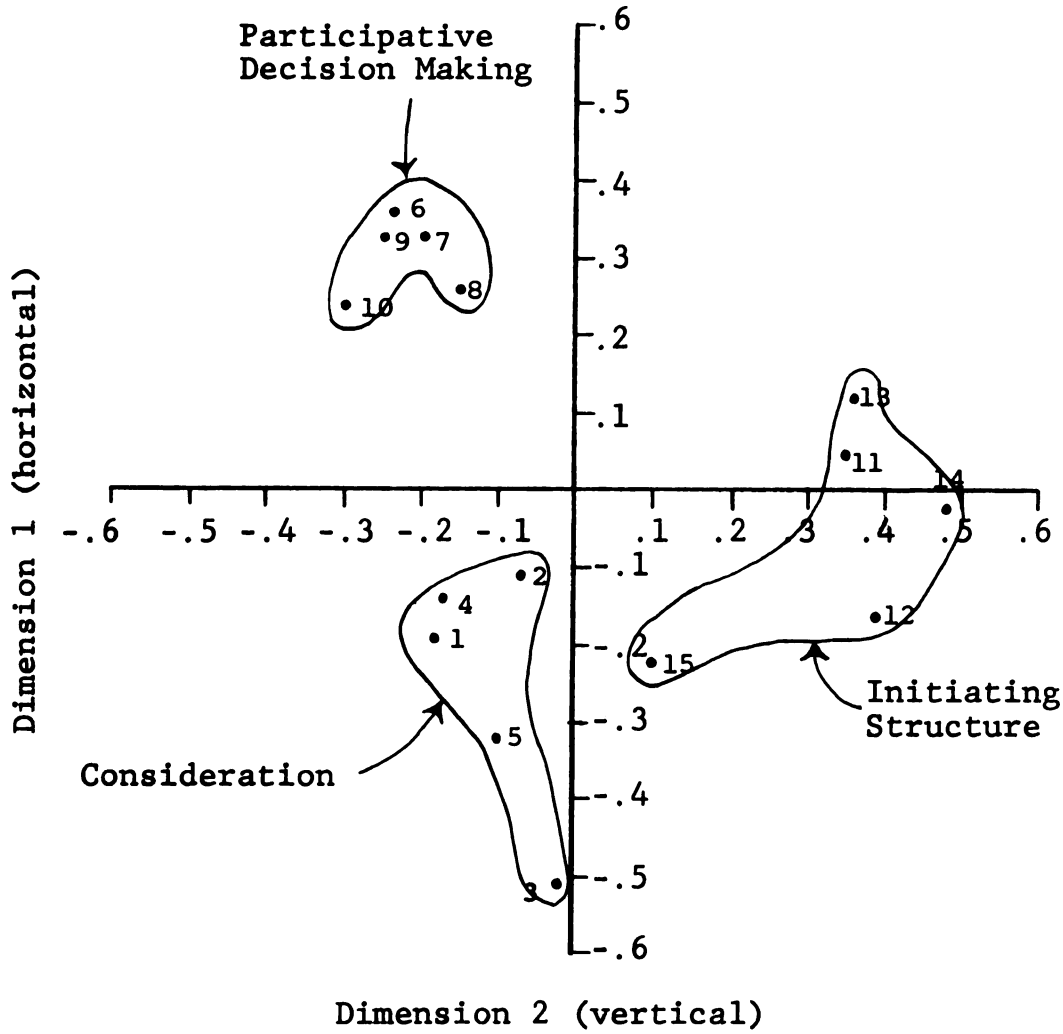


Figure 2.--Leader Behavior Stimuli Coordinates in Dimensions 1 and 2 from Three-Space INDSCAL Solution.

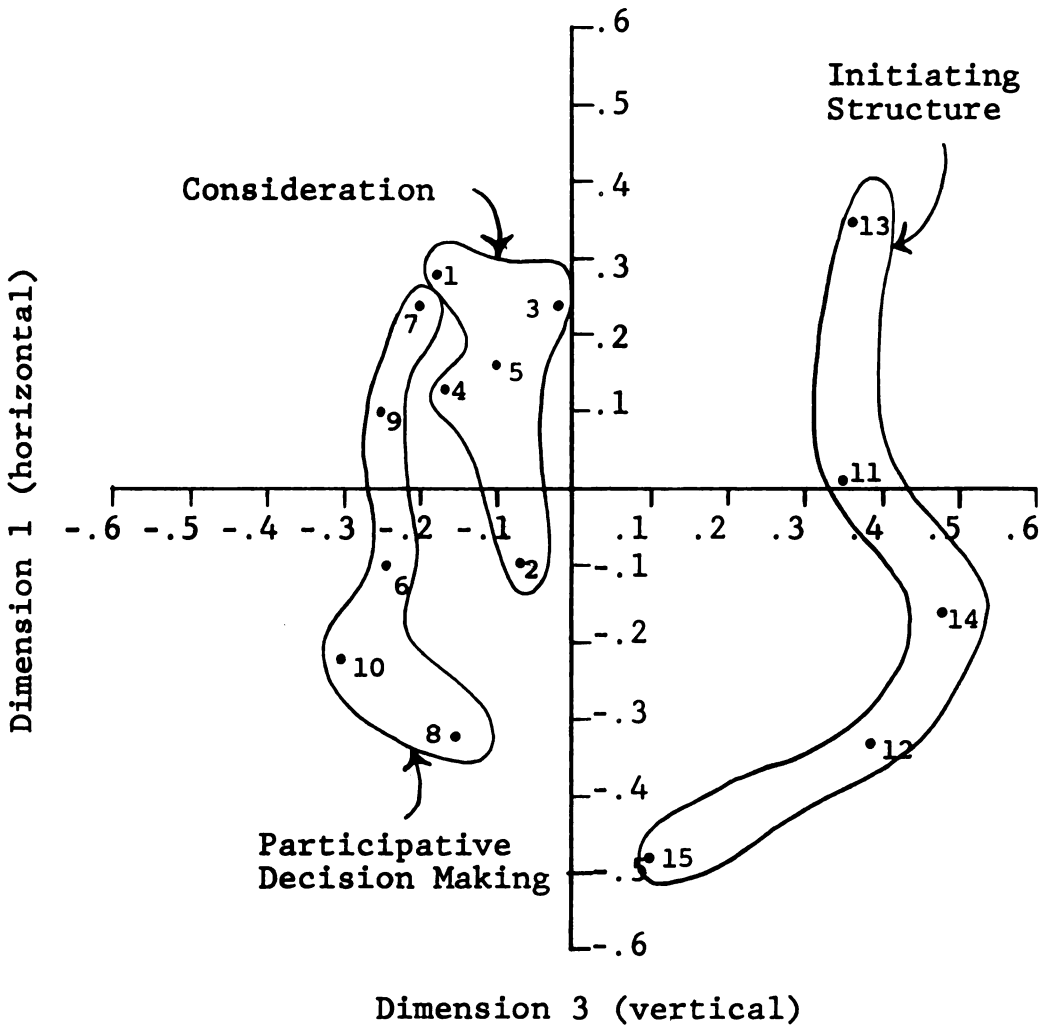


Figure 3.-- Leader Behavior Stimuli Coordinates in Dimensions 1 and 3 from Three-Space INDSCAL Solution.

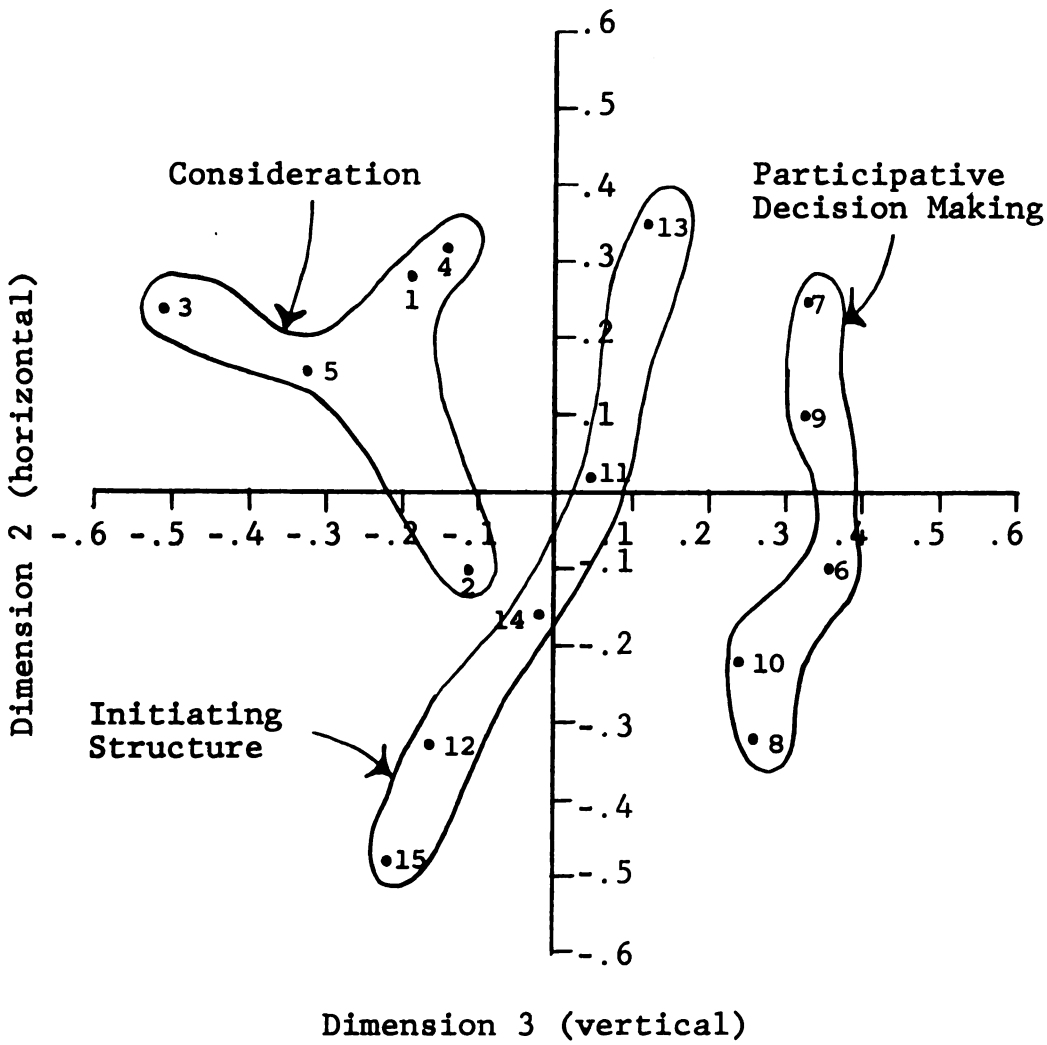


Figure 4.--Leader Behavior Stimuli Coordinates in Dimensions 2 and 3 from Three-Space INDSCAL Solution.

participative decision making and consideration clusters. In addition, the large amount of intracluster variation is attributable to dimension 3, and to a lesser extent to dimension 1.

Figure 4 displays the leader behaviors along INDSCAL dimensions 2 and 3. Again, the distinctiveness of the a priori clusters is less apparent, and a large portion of the intracluster variation appears to be due to dimension 3.

In summary, the distinctiveness of the a priori clusters in three-space is obscured by a large amount of intracluster variation along dimension 3, and to a lesser extent along dimension 2. The argument for the distinctiveness of the a priori clusters is most strong in reference to INDSCAL dimensions 1 and 2 shown in Figure 2.

Since the a priori clusters are most distinct in two rather than three dimensions, indicating some degree of correlation among the clusters, another analysis was performed to determine the feasibility of independently manipulating the consideration, participative decision making, and initiating structure leader behavior clusters. In this analysis, only the consideration, participative decision making, and initiating structure ratings given to the a priori groups of leader behavior items were examined. Specifically, a 3 x 3 repeated measures design was used with type of item and type of rating as the respective factors. The dependent

variable was amount of rating given to each of the three groups of items.

Table 4 presents the results of the item by rating analysis of variance, the critically important part of which is the expected, significant ($p < .0005$), and relatively powerful ($\eta^2 = .19$) interaction. Intuitively, one would expect the amount of rating given to an a priori group of items to depend on the type of rating dimension being used.

Table 5 presents the interaction cell means, and highlights some of the dependencies existing among the consideration, participative decision making, and initiating structure groups of leader behavior items. Our primary concerns were two: (1) whether items designated a priori as consideration items would be rated as showing more consideration than the a priori participative decision making items, i.e., whether consideration and participative decision making a priori groups were independently manipulable; and (2) whether participative decision making items would be rated as showing more participation than consideration items. Conceptually, concern (1) above was most important in that consideration and participative decision making a priori groups of leader behavior items might both be perceived as showing high consideration. However, a simple-effects analysis (Kirk, 1968, p. 267) indicated the consideration

Table 4.--Two-Way Analysis of Variance of Type of Item and Type of Rating on Amount of Rating.

Source	df	MS	F	p	η^2
Between	51				
Within					
Item	2	116.64	5.64	.005	.024
Item x Subjects	102	20.68			
Rating	2	94.44	9.45	<.0005	.019
Rating x Subjects	102	9.99			
Rating x Item	4	471.82	40.13	<.0005	.194
Rating x Item x Subjects	204	11.76			

SS_{TOTAL} = 9748.95

Table 5.--Mean Amount of Rating as a Joint Function of Type of Item and Type of Rating.

Type of Item	Type of Rating[a]		
	Consideration	Participative Decision Making	Initiating Structure
Consideration	21.36 [a]	17.64 [a]	16.73
Partipative Decision Making	19.94 [a]	21.36 [a]	16.35
Initiating Structure	16.65	15.35	20.52

[a]Significantly different, $p < .05$.

[b]Mean rating is based on summation across five Likert scales. Thus, instead of having values ranging between 1 and 5, the transformed means above can range 5 to 25.

ratings given to consideration and participation *a priori* groups of items to be significantly different ($t = 2.12$, $df = 1/459$, $p < .05$), as were the mean ratings of participation given to consideration and participation items.

How do the previous results and discussion bear on Hypothesis 1?: Participation, defined as the degree to which a leader allows or encourages his subordinates to participate in making decisions related to their jobs, is a valid third dimension of leadership behavior, as perceived by subordinates.

Based on the fairly good clusterings observed in the multidimensional scaling and the analysis of variance evidence that the three dimensions were approximately independently manipulable, hypothesis 1 is reasonably well supported. It is important to note that leader behavior dimensions do not have to be orthogonal to one another in order to be considered valid. Rather, the primary purpose of the multidimensional scaling analysis was to show that the leader behaviors would be perceived as belonging to three separate and distinct clusters, defined *a priori* as consideration, participative decision making, and initiating structure.

Therefore, it was decided to attempt the experimental manipulation of each of the consideration, participative decision making, and initiating structure *a priori* clusters in experiment II.

In response to our second question regarding the meaning of the three orthogonal dimensions produced by INDSCAL, analytical and intuitive approaches to interpreting the dimensions were used.

The analytic interpretation was based on a technique and computer program called PROFIT, developed by Chang and Carroll. Tables 6 and 7 represent criteria generated by PROFIT for trying to interpret or give meaning to the three-dimensional INDSCAL solution in which the three a priori clusters are located. As mentioned earlier in the introduction, INDSCAL is supposed to provide directly interpretable dimensions without rotation of the axes. Table 6, the first of the two criteria for finding suitable labels for the INDSCAL dimensions, shows the maximum correlation between the property (rating scale) and the projections on the fitted vector. As a brief explanation, consider the mean rating on the weak-strong property given to all 15 stimuli. The stimuli are rank ordered on the weak-strong dimension. This vector of rank orders is positioned in three-space to maximize the correlation between its rank values and the projections of the 15 stimuli in the three-space on it. A low correlation indicates a rather poor job of describing the stimulus points in three-space. Also, one may consider this a necessary but not sufficient criterion for deriving labels for the INDSCAL dimensions since it

Table 6.--The Maximum Correlation Between the Property and the Projections on the Fitted Vector.

	Rho	Property
1	.37	weak-strong
2	.51	bad-good
3	.66	passive-active
4	.64	don't prefer-prefer
5	.41	unimportant-important
6	.41	unsuccessful-successful
7	.94	cruel-kind
8	.92	participation
9	.89	initiating structure
10	.78	satisfaction
11	.89	consideration

Table 7.--Direction Cosines of Fitted Vectors in Normalized Space.

Vector	Dimensions		
	1	2	3
1. weak-strong	.70	-.67	.25
2. bad-good	-.89	-.46	.07
3. passive-active	.23	-.68	.70
4. don't prefer-prefer	-.98	-.10	.16
5. unimportant-important	-.99	-.05	-.01
6. unsuccessful-successful	-.96	-.24	-.13
7. cruel-kind	-.85	-.46	.26
8. participation	-.84	.54	-.01
9. initiating structure	.98	.19	.07
10. satisfaction	-.95	.22	.23
11. consideration	-.91	-.30	.28

evaluates only the fit of the property vector to the stimuli in the three-space, independent of the relation of the property vector to the INDSCAL dimensions.

It appears in Table 6 that properties 7, 8, 9, 10, and 11 are good possible candidates for labeling our three dimensions, according to the first PROFIT criterion.

Table 7 shows the relation of the fitted property vectors to the INDSCAL dimensions. The ideal is to find values of the cosine equal to $\pm$ 1.00 which indicates an angle of 0° between the property-vector and the INDSCAL dimension, a perfect geometrical alignment between the property vector and the dimension.

Of the properties surviving the first criterion in Table 6, initiating structure seems to best explain the first INDSCAL dimension; however, the other four properties are also reasonably well aligned with dimension 1. The second and third dimensions are uninterpretable using the remaining properties; none of the property vectors seem to align with either dimension 2 or 3.

Although the analytic approach to interpretation was rather unsuccessful, an intuitive interpretation of the INDSCAL dimensions is possible, based on visual inspection of the intra- and intercluster variation that appears in Figures 2, 3, and 4.

Looking back at Figure 2 and the content of the leader behavior items in Table 2, there is some justification for labeling INDSCAL dimension 1 initiating structure. The a priori initiating structure cluster differs markedly from the a priori consideration and participative decision making clusters on this dimension. These latter two clusters, as one would expect, are positioned at approximately the same low end of the dimension.

Examination of the intracluster variation in Figure 2 also supports the initiating structure interpretation of dimension 1. Within the initiating structure cluster, item 14 (He maintains definite standards of performance for me) clearly implies more initiating structure, as originally defined, than does item 15 (He sees to it that I have the material I need to work with). In the consideration a priori cluster, item 3 (If I am a new member, he helps me make adjustments to the group) implies more initiating structure than item 1 (He is friendly and easily approached). Inspection of the participative decision making a priori cluster offers similar support. Item 8 (He assigns a task, then lets me handle it) implies more initiating structure than item 10 (He lets me do my work the way I think best).

From inspection of the intra- and intercluster variation along INDSCAL dimension 2 in Figure 2, a reasonable interpretation is that dimension 2 deals with the amount of

task concern by subordinates. To elaborate, note the positioning of the a priori clusters along this dimension. At the upper end of the dimension is the participative decision making cluster, all the items of which directly imply involvement by the subordinate in work related decision making. Understandably enough, there is little variability within this cluster along dimension 2.

In the middle of dimension 2 is the a priori initiating structure cluster. In these items, there is a task concern component, but the emphasis is task concern by the leader, not the subordinate. Within this cluster, it seems reasonable that item 13 (He makes sure that I and other group members understand his part in the group) has a higher scale value on dimension 2 than does item 15 (He sees to it that I have the material I need to work with), since the subordinate sees this as a supervisory task concern.

As expected, the a priori consideration cluster has the lowest values in INDSCAL dimension 2, since the content of this cluster has very little to do with the task concern of either the supervisor or subordinate. As with the other clusters, the intracluster variability shows a pattern consistent with the task concern by subordinate interpretation of dimension 2. Item 2 (He expresses appreciation when I do a good job) expresses a contingency on subordinate task

concern, and accordingly, is given a higher scale value than item 3 (If I am a new member, he helps me make adjustments to the group) which has absolutely no task concern content.

Figure 3 illustrates the intra- and intercluster variability along INDSCAL dimension 3. It appears that the intracluster variability along dimension 3 is much greater than the intercluster variability. The patterning of the leader behaviors suggests that dimension 3 measures the degree of subordinate contact or involvement with the supervisor. Since each of the a priori clusters calls for interaction between subordinate and supervisor, it makes sense that the clusters differ very little from one another on dimension 3.

The large within cluster variation along dimension 3 provides strong support for the subordinate-supervisor interaction interpretation. Consider the initiating structure a priori cluster. Item 13 (He makes sure that I and other group members understand his part in the group) definitely implies more subordinate-supervisor interaction than item 15 (He sees to it that I have the material I need to work with), and appropriately, item 13 is scaled much higher than item 15 on dimension 3.

Similarly, within the a priori consideration cluster, the interaction pattern holds. Item 1 (He is friendly and easily approached), the behavior with the highest scale

value in the cluster, seems to tap an interaction component moreso than item 2 (He expresses appreciation when I do a good job) which clearly specifies a contingency of when interaction will occur.

In the participative decision making a priori cluster, additional support for the interaction interpretation is found. For example, item 7 (He has me share in decision making), the behavior with the highest scale value in the cluster, directly connotes a dynamic interaction pattern between subordinate and supervisor in the process of thrashing out a decision acceptable to both parties. Contrast item 7 above with item 8 (He assigns a task, then lets me handle it), which has the lowest scale value in the cluster. Item 8 seems to be dealing with delegation rather than participative decision making, and thus does not require much personal interaction between subordinate and superior.

In summary, although the analytic method of interpreting the INDSCAL dimensions was little help, the intuitive approach yielded three rather consistent interpretations of the dimensions used by subordinates in perceiving leader behavior: (1) degree of supervisor initiating structure; (2) amount of task concern by subordinate; (3) degree of personal interaction between subordinate and supervisor.

Related to the meaning of the INDSCAL dimensions is the question of the relative saliencies or weights given the dimensions by subordinates as they perceive supervisory behavior. Figures 5, 6, and 7 present the saliencies of each of the three INDSCAL dimensions for each subject in the study.

Figure 5 indicates that, on the average, subjects place greater perceptual weight on the initiating structure dimension 1 than on the task concern by subordinate dimension 2. Similarly, in Figure 7, the average saliency for the initiating structure dimension 1 appears to be greater than that given the subordinate-supervisor interaction dimension 3. Figure 8 shows that the subjects placed about equal weight on dimensions 2 and 3.

The overwhelming importance placed on the initiating structure dimension by subordinates in their perception of leader behavior is reasonable, considering the context of the study. The subject's task was to scale the leader behaviors of a "hypothetical male supervisor in industry." Given the implied organizational context of those behaviors and the formal organizational role expectations associated with supervisors in industry, it is no surprise that initiating structure emerged as the strongest perceptual dimension used by subjects. Indeed, for many subjects, leadership may well be synonymous with initiating structure.

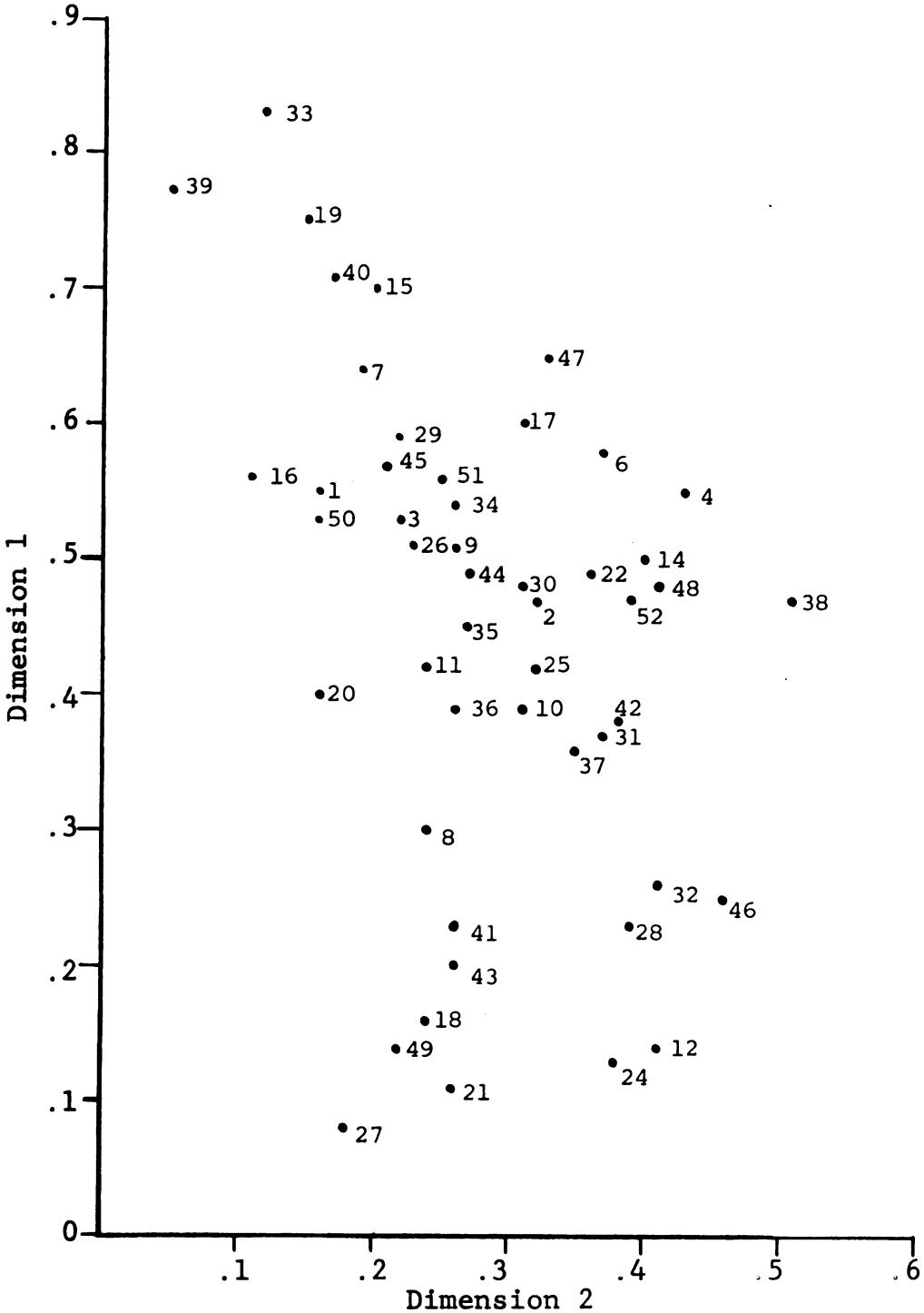


Figure 5.--INDSCAL Subject Coordinates for Dimensions 1 and 2 from Three-Space INDSCAL Solution.

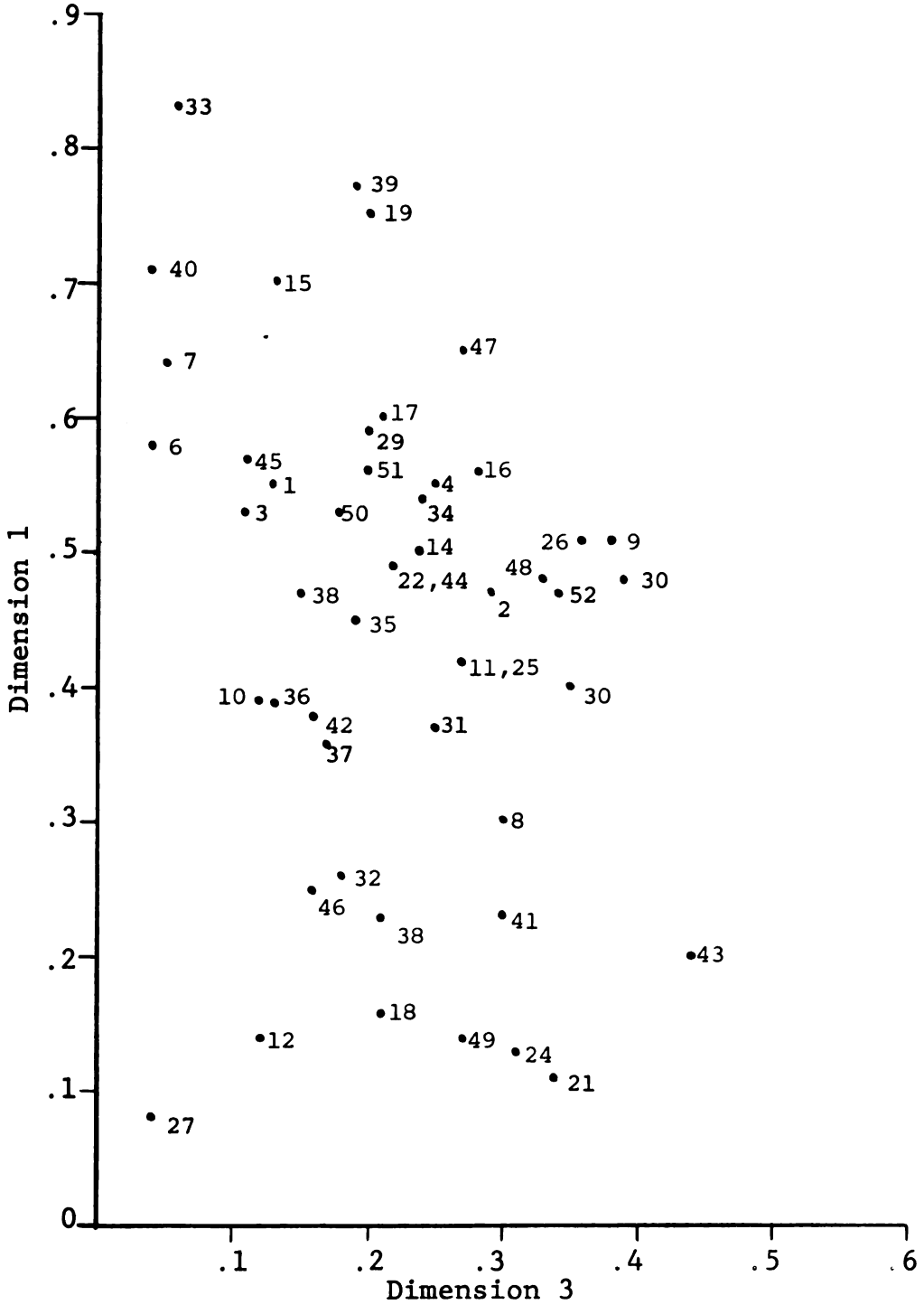


Figure 6.--INDSCAL Subject Coordinates for Dimensions 1 and 3 from Three-Space INDSCAL Solution.

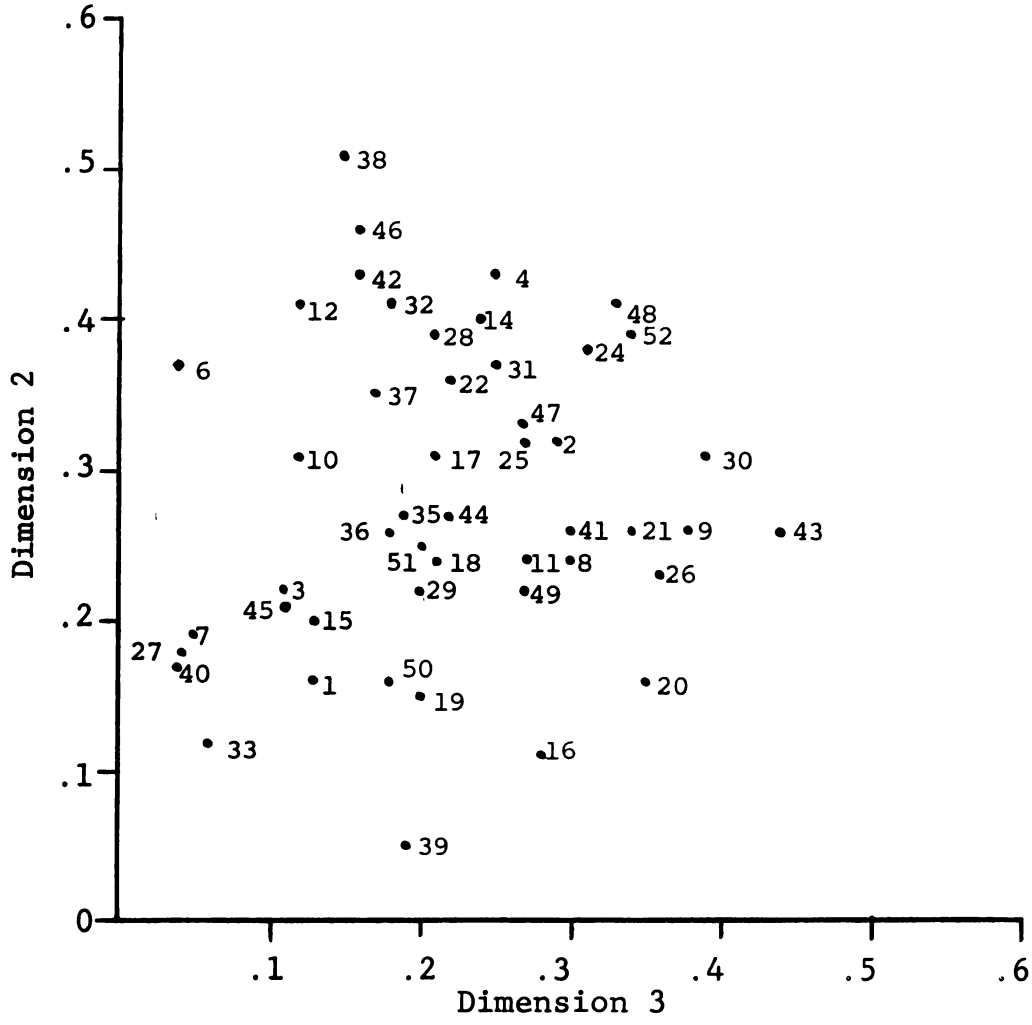


Figure 7.--INDSCAL Subject Coordinates for Dimensions 2 and 3 from Three-Space INDSCAL Solution.

CHAPTER IV

EXPERIMENT II: EXPERIMENTAL MANIPULATION OF LEADER INITIATING STRUCTURE, CONSIDERATION, AND PARTICIPATIVE DECISION MAKING

Experiment II was designed to test hypotheses 2-6. Given the approximate independence of leader behavior clusters found in experiment I, the general aim of this study was to experimentally manipulate in descriptions of supervisors the three aspects of supervisor behavior: participative decision making, initiating structure, and consideration.

Method

Subjects

Seventy-two male undergraduates enrolled in introductory psychology volunteered to participate for extra credit points toward their final course grade. All subjects were recruited one term after experiment I, and none of experiment II subjects had participated in experiment I.

Design

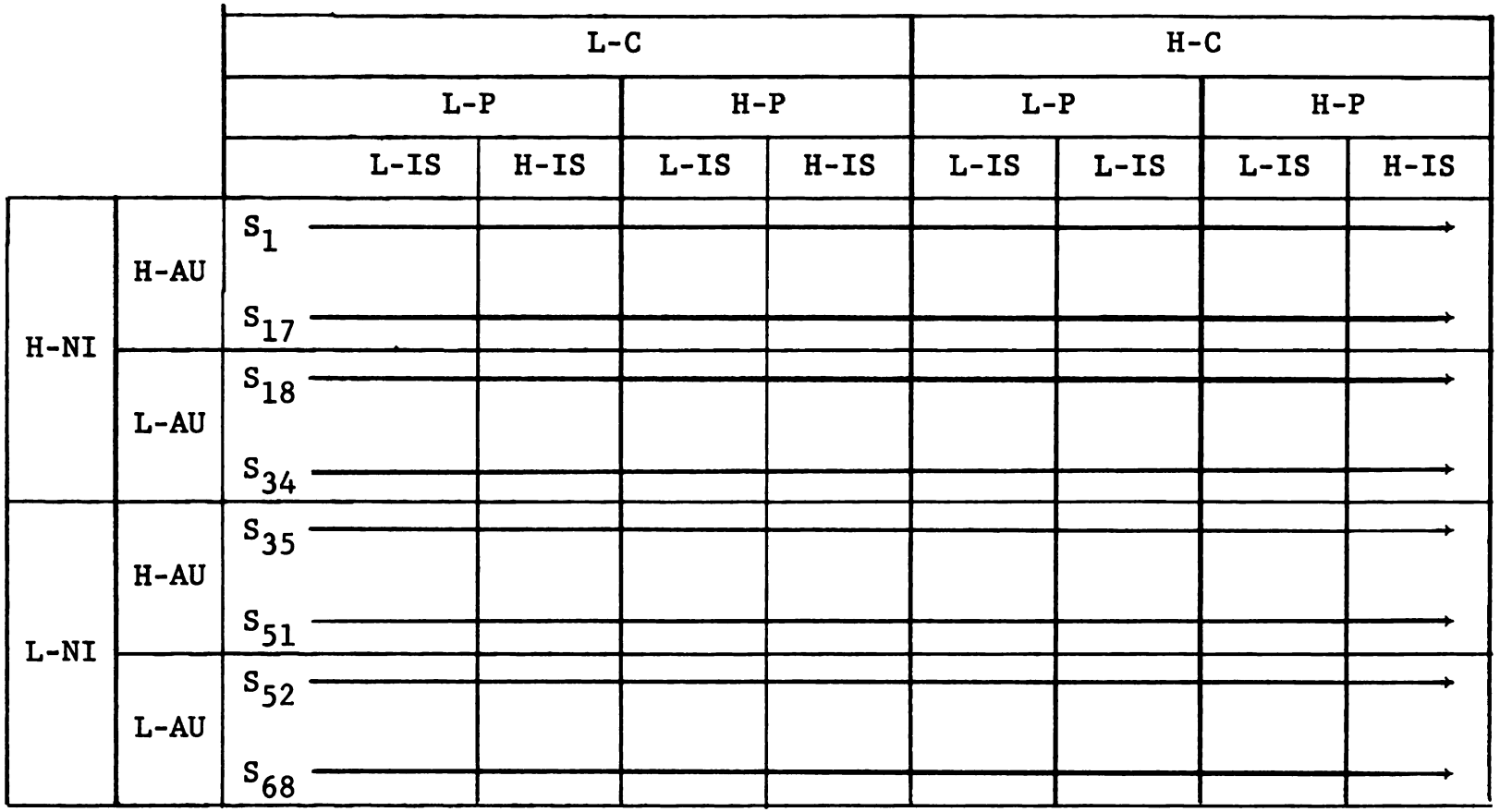
A 2 x 2 x 2 x 2 x 2 design was used to test the effects of high-low subject Need for Independence, high-low subject Authoritarianism, high-low supervisor participative decision making, high-low supervisor initiating structure, and high-low supervisor consideration factors on subject attitudes toward supervisor and subject work motivation. Specifically, Need for Independence and Authoritarianism were subject classification factors, while supervisor consideration, participative decision making, and initiating structure were repeated factors. Figure 8 illustrates the design.

A 2 x 2 x 2 design, all repeated measures, was used to determine whether the intended leadership treatment manipulations were operating. This design was run three times, once for each rating dimension (discussed later under procedure section).

Stimulus Materials

Based on the findings of experiment I, eight descriptions of supervisors were constructed to vary from low to high along the consideration, participative decision making, and initiating structure dimensions.

In order to construct these descriptions, the 15 original leader behavior items had to be reflected. Table 8



Abbreviations: H = High, L = Low, AU = Authoritarianism, NI = subject Need for Independence, C = supervisor Consideration, P = supervisor Participation, IS = supervisor Initiating Structure.

Figure 8.--Graphic Display of Five-Factor Design.

Table 8.--Original and Reflected Leader Behaviors Used in Constructing Supervisor Descriptions.

Consideration
He is friendly and easily approached.
He is not friendly or easily approached.
He expresses appreciation when I do a good job.
He expresses no appreciation when I do a good job.
If I am a new member, he helps me make adjustments to the group.
If I am a new member, he does little to help me make adjustments to the group.
He makes me feel at ease when talking with him.
He makes me feel uneasy when talking with him.
He looks out for my personal welfare.
He is not concerned with my personal welfare.
Participative Decision Making
He allows me to modify the procedures required in my job.
He does not allow me to modify the procedures required in my job.
He has me share in making decisions.
He does not have me share in decision making.
He assigns a task, then lets me handle it.
He assigns a task, but does not allow me to handle it.
He allows me influence equal to his own in decisions which affect my job.
He does not allow me influence equal to his own in decisions which affect my job.
He lets me do my work the way I think best.
He does not let me do my work the way I think best.
Initiating Structure
He lets me know what is expected of me.
He does not let me know what is expected of me.
He schedules the work I have to do.
He does not schedule the work I have to do.
He makes sure that I and other group members understand his part in the group.
He does not make sure that I and other group members understand his part in the group.
He maintains definite standards of performance for me.
He maintains no definite standards of performance for me.
He sees to it that I have the material I need to work with.
He does not see to it that I have the material I need to work with.

presents the original and reflected leader behavior items used in constructing the eight supervisor descriptions.

It was decided that in order to maintain maximum comparability with experiment I that the leader descriptions should be constructed using simply a series of behavioral descriptive statements rather than trying to embed those statements in prose or a script. Using a series of statements to make up the descriptions made it possible to control for a number of possible order effects which would have otherwise gone uncontrolled. The resulting eight supervisor descriptions used are presented in Appendix E.

In constructing the supervisor descriptions, the items belonging to a given dimension were always blocked together in groups of five, since there were five items per dimension.

To control for order effects within each supervisor description, the dimension blocks of items were completely counter-balanced in the following manner:

Order 1	C	P	IS
Order 2	P	IS	C
Order 3	IS	C	P
Order 4	IS	P	C
Order 5	P	C	IS
Order 6	C	IS	P

C = block of 5 consideration items
P = block of 5 participative decision making items
IS = block of 5 initiating structure items

With each of the above blocks, the order of leader behaviors was random. A different random order of presentation of the eight descriptions was used for each subject.

Procedure

Data were collected from subjects who participated in groups ranging in size from 22 to 29, although their rating tasks were done independently of one another.

Each subject was given a packet containing eight supervisor descriptions, numbered consecutively 1 to 8. In addition, subjects received a supervisor description rating packet corresponding to the supervisor descriptions.

The investigator oriented the subjects by explaining that the purpose of the study was to measure how people feel about certain kinds of supervision by having them judge supervisor descriptions against a series of scales. In making these judgments, subjects were asked to respond in terms of how they felt about each supervisor.

Each supervisor description was rated on the following scales:

How satisfied do you think you would be working for this supervisor?

not at all ____: ____: ____: ____: ____: ____: ____: very satisfied

How motivated do you think you would be to work for this supervisor?

not at all ____: ____: ____: ____: ____: ____: ____: very motivated

In addition, each supervisor description was rated on 22 semantic differential scales shown in Table 9. Previous research by Johnson, Siegel, and Wakeley (1972) showed task competence and interpersonal style to be reliable and distinguishable dimensions of interpersonal evaluation for a very similar college population. Alpha estimates of interpersonal style and task competence scales, based on the subjects in experiment II, were .89 and .94, respectively. Task and style scales were alternated on the rating form, and about half of the 22 scales were reflected to minimize response set.

A slightly modified version of Osgood, Suci, and Tannenbaum's (1957) instructions for the semantic differential scales was used, and appears in Appendix F.

When the subjects had completed rating the eight descriptions, their rating packets were collected. Subjects then completed two personality measures described in Experiment I (see page 49).

When subjects had completed the personality measures, they were asked to rate each of the eight supervisor descriptions on consideration, initiating structure, and participative decision making. The exact instructions to the subjects are presented in Appendix G.

It is important to note subjects rated all eight descriptions on the first dimension, then rated all eight

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Table 9.--Semantic Differential Scales Making Up Supervisor Task Competence and Interpersonal Style Dimensions.[a]

Task Competence	Interpersonal Style
Bad-Good	Unselfish-Selfish
Negative-Positive	Unfriendly-Friendly
Unsuccessful-Successful	Cruel-Kind
Worthless-Valuable	Unfair-Fair
Foolish-Wise	Dissonant-Harmonious
Boring-Interesting	Egotistic-Altruistic
Incomplete-Complete	Ungrateful-Grateful
Imperfect-Perfect	Dissenting-Assenting
Inferior-Superior	Disapproving-Approving
Harmful-Beneficial	Quarrelsome-Congenial
Unintelligent-Intelligent	Merciless-Merciful

[a]All are seven-point scales. A low score indicates unfavorable attitude; a high score indicates a favorable attitude. Dimension scores are obtained by simple unit summation of individual scale responses.

on the second, and finally, rated all eight on the third dimension. The order in which the rating dimensions were used was completely counterbalanced. The major purpose of this rating task was to determine if the three leadership behavior dimensions were manipulated in the supervisor description as intended, i.e., independently of one another.

Results

Testing the Experimental Treatment Induction

Since there was a concern that it might be difficult to manipulate participative decision making, consideration, and initiating structure independently in the constructed supervisor descriptions, it was necessary to demonstrate that such independent treatment manipulations had in fact been made. The question of the independent manipulation of consideration and participative decision making is especially important. Tables 10, 11, and 12 show the results of analyses of variance for the effects of initiating structure, participative decision making, and consideration treatments on post experimental ratings of initiating structure, participative decision making, and consideration, respectively.

In Table 10, looking at the probability values, it appears at first glance that the goal of independently

Table 10.--Three-Way Analysis of Variance for Initiating Structure Ratings.

Source	df	MS	F	p	η^2
Between	69				
Within					
C	1	9.26	12.17	.001	.007
C x Subjects	69	.76			
P	1	23.21	14.49	<.0005	.016
P x Subjects	69	1.60			
IS	1	910.35	392.83	<.0005	.643
IS x Subjects	69	2.32			
C x P	1	2.32	6.28	.02	.002
C x P x Subjects	69	.37			
C x IS	1	.03	.07	.79	
C x IS x Subjects	69	.41			
P x IS	1	1.21	3.96	.05	.001
P x IS x Subjects	69	.30			
C x P x IS	1	.71	2.19	.14	
C x P x IS x Subjects	69	.33			

Abbreviations: C = consideration, P = participative decision making, IS = initiating structure.

manipulating the initiating structure factor in the supervisor descriptions was not achieved. In the ideal case, the main effect for the initiating structure treatment on ratings of initiating structure should be significant, and all other main effects and interactions should be non-significant. However, the p values for the C, P, C x P, and P x IS treatments and treatment combinations are all "significant" at the .05 level of confidence. Does this indicate a hopeless confounding of treatment manipulations? Probably not, and a number of arguments will show why not.

First, note that the intended manipulation of the initiating structure factor explains 64 percent of the variance in initiating structure ratings, compared to the less than 2 percent explained by the participative decision making factor, and the less than 1 percent of the variance explained by each of the remaining "significant" treatments and treatment interactions. Thus, it is clear that the intended initiating structure manipulation was overwhelmingly present compared to unintended manipulations which were significant, but trivial in magnitude. See Vaughan and Corbalis (1969), Hays (1972, pp. 683-684), Winer (1971, pp. 113-119), and Kirk (1968, pp. 134-135) for further details on various ways of estimating strength of association, and the logic behind it.

Second, the repeated measures design used to test for the experimental manipulations is known to be generally more powerful than a non-repeated measures design which includes between subject variance in the error term. That is, repeated measures designs are more likely to detect very small effects (Winer, 1971, p. 266).

Third, with 70 observations per cell, the likelihood of detecting small effects is larger than with fewer subjects per cell. Cohen (1969, p. 4) summarizes the notion of hypothesis testing:

> The power of a statistical test depends upon three parameters: the significance criterion, the reliability of the sample results, and the "effect size," that is the degree to which the phenomenon exists.

Fourth, the method of obtaining the post-experimental ratings of participative decision making, initiating structure, and consideration may have capitalized on method variance against the more ideal goal of finding completely independent manipulations of the treatment variables. It is recalled that the subjects rated each of the eight supervisor descriptions on a single dimension before going to the second and third dimensions.

Finally, on a more conceptual and less statistical level, one might argue that some dependence among the concepts of participative decision making, initiating structure, and consideration is to be expected. In fact, this is explicitly expressed in hypotheses 2 and 3. Stated another

way, these variables can be related, but are still unique and important. In fact, as we examine Tables 13 and 14, we will find additional statistical evidence that suggests similarities among consideration, participative decision making, and initiating structure, but also enough differences to justify their approximately independent experimental manipulation.

Table 11 shows results similar to Table 10 in that four statistically significant, but unintended, manipulations occurred. However, the intended manipulation of the participative decision making factor explained 77 percent of the variance in participative decision making ratings, while the unintended manipulations each explained less than 1 percent of the variance. It is enlightening to note that the unintended two and three-way interactions each explained .1 percent of the variance, yet were significant at the .02 and .004 levels, respectively.

Table 12 presents the three-way analysis of variance for post-experimental consideration ratings. The intended manipulation, consideration, produced significant and powerful effects on the ratings of consideration, explaining 78 percent of the variance. On the other hand, the unintended manipulation of participative decision making, and initiating structure, significant at $p < .0005$, explained 2 and .5 percent of the variance, respectively. The unintended

Table 11.--Three-Way Analysis of Variance for Participative Decision Making Ratings.

Source	df	MS	F	p	η^2
Between	69				
Within					
C	1	11.14	28.24	<.0005	.007
C x Subjects	69	.39			
P	1	1221.30	751.92	<.0005	.769
P x Subjects	69	1.62			
IS	1	13.52	13.16	.001	.008
IS x Subjects	69	1.03			
C x P	1	1.72	6.18	.02	.001
C x P x Subjects	69				
C x IS	1	.40	1.59	.21	
C x IS x Subjects	69	.54			
P x IS	1	.94	1.76	.19	
P x IS x Subjects	69	.54			
C x P x IS	1	2.19	8.78	.004	.001
C x P x IS x Subjects	69	.25			

Abbreviations: C = consideration, P = participative decision making, IS = initiating structure.

Table 12.--Three-Way Analysis of Variance for Consideration Ratings.

Source	df	MS	F	p	η^2
Between	69				
Within					
C	1	1218.35	707.03	<.0005	.775
C x Subjects	69	1.72			
P	1	33.03	47.26	<.0005	.021
P x Subjects	69	.70			
IS	1	8.26	22.79	<.0005	.005
IS x Subjects	69	.36			
C x P	1	.18	.50	.48	
C x P x Subjects	69	.36			
C x IS	1	2.58	7.36	.008	.002
C x IS x Subjects	69	.35			
P x IS	1	.11	.50	.48	
P x IS x Subjects	69	.23			
C x P x IS	1	1.21	2.60	.11	
C x P x IS x Subjects	69	.46			

Abbreviations: C = consideration, P = participative decision making, IS = initiating structure.

two-way interaction, though significant at p = .008, only explained .2 percent of the variance.

Table 13 shows the mean post-experimental ratings for the manipulations of consideration, participative decision making and initiating structure; these means correspond to the main effects from the analyses of variance reported in Tables 10, 11, and 12. Note that the intended mean differences are clearly five or six times as large as the unintended mean differences, and all the mean differences are in the direction one would expect if the constructs of consideration, participative decision making, and initiating structure are all slightly, but positively related. That is to say, for example, a high participation leader also tends to be perceived as slightly high on consideration and slightly high on initiating structure.

In summary, then, the evidence indicates that the intended high-low manipulations of participative decision-making, consideration, and initiating structure were adequately and approximately independently induced. Unintended manipulations, normally indicative of failure to independently manipulate the key leadership behavior dimensions, were shown to be trivial in magnitude and in comparison to the intended manipulations.

Table 13.--Mean Post-Experimental Ratings of Consideration, Participative Decision Making, and Initiating Structure for High-Low Manipulations of Consideration, Participative Decision Making, and Initiating Structure Factors.

Type of Treatment Manipulation	Type of Post-Experimental Rating[a]		
	Consideration	Participative Decision Making	Initiating Structure
Consideration			
Low	1.42 b	2.71	2.74
High	4.38	3.00	3.00
Participative Decision Making			
Low	2.66	1.38 b	2.66
High	3.14	4.33	3.07
Initiating Structure			
Low	2.78	2.70	1.59 b
High	3.02	3.01	4.14

[a]Rating was done with a 5-point Likert scale: 1 = very little, 2 = little, 3 = some, 4 = much, 5 = very much.

[b]Largest differences intended here.

Abbreviations: C = consideration, P = participative decision making, IS = initiating structure

Relations Among the Dependent Variables

Table 14 presents the correlations among the key dependent variables in this study: (1) subordinate satisfaction with the supervisor; (2) subordinate motivation to work for the supervisor; (3) subordinate attitude toward the supervisor's task competence; and (4) subordinate attitude toward the interpersonal style of the supervisor. These correlations represent a pooling of subject ratings across the eight descriptions.

It is clear that a considerable amount of dependency exists among the dependent measures, evidenced by correlations ranging from .51 to .84. Just how much of this dependency is due to method variance cannot be determined in the present study.

Although multivariate analysis of variance (MANOVA) would be ideal for controlling alpha level with such multiple, correlated dependent variables (Hummel and Sligo, 1971), and theoretically, at least, can be applied to repeated measures designs (Finn, 1969), the Michigan State University version of the program (Finn, 1970) is not equipped to handle repeated measures designs. The M.S.U. version definitely cannot handle MANOVA with 5-factor designs in which there are three repeated factors and two are nested (Schmidt, 1973). Therefore, only univariate analyses were run, and the results were interpreted cautiously.

Table 14:--Correlations Among Dependent Variables.

	Satis-faction	Moti-vation	Task Compe-tence	Inter-personal Style
Satisfaction	1.0			
Motivation	.84	1.0		
Task Competence	.75	.67	1.0	
Interpersonal Style	.60	.51	.73	1.0

Subject Classification Factors in Five-Way Analysis of Variance Design

Vroom (1960, p. 29) reported a correlation of only -.11 between his Authoritarianism and Need for Independence measures (.02 when age, education, and occupation level were partialled from the relationship). To reaffirm this, these two measures were correlated in the present study, yielding a non-significant Pearson coefficient of .22.

Since these two subject personality variables were not significantly correlated, both subject factors were included in the design simultaneously. The 70 subjects were divided into four groups of 17 each, representing the four combinations of high and low Authoritarianism and high and low Need for Independence. Two subjects were randomly discarded to maintain equal cell frequencies and the elegance of an orthogonal design.

The means for the high and low split on Authoritarianism were 79.7 and 65.7, respectively. The overall mean Authoritarianism score was 72.7, range 54-89, and standard deviation 9.1.

The high-low split on Need for Independence produced means of 52.8 and 45.0, respectively. The overall mean Need for Independence score was 48.9, with a standard deviation of 4.9, and a range of 40-61.

Five-Way Analysis of Variance for the Subordinate Satisfaction with Supervisor Measure

Table 15 presents the five-way analysis of variance for subordinate ratings of satisfaction with the supervisor. The supervisor's consideration, participative decision making, and initiating structure factors are all significantly and meaningfully related to subordinate satisfaction explaining 23.9, 22.5, and 10.4 percent of the variance, respectively. Together, these three main effects explain a sizable 56.8 percent of the variance. Table 19 (see page 108) shows the means corresponding to these main effects. Contrary to expectation, high initiating structure is associated with greater subordinate satisfaction than low initiating structure. As expected, high levels of both consideration and participation are associated with greater subordinate satisfaction than low levels.

Two interactions were significant, but trivial in explanatory power. The three-way interaction of authoritarianism, consideration, and initiating structure explained a relatively unimportant .4 percent of the variance; the two-way interaction of participative decision making and initiating structure did no better, explaining only .3 percent of the variance. Both interactions together explain an unimpressive .7 percent of the variance.

Table 15.--Five-Way Analysis of Variance for Satisfaction.

Source	df	MS	F	p	η^2
Between					
NI	1	5.16	1.37	.24	
AU	1	4.41	1.17	.28	
NI x AU	1	2.52	.67	.42	
Subjects w. groups	64	3.75			
Within					
C	1	566.22	292.59	<.0005	.239
NI x C	1	.66	.34	.56	
AU x C	1	.05	.02	.88	
NI x AU x C	1	.09	.05	.83	
C x Subjects w. groups	64				
P	1	534.05	167.13	<.0005	.225
NI x P	1	.97	.30	.58	
AU x P	1	.09	.03	.87	
NI x AU x P	1	1.77	.55	.46	
P x Subjects w. groups	64	3.20			
IS	1	247.59	143.14	<.0005	.104
NI x IS	1	5.97	3.45	.07	
AU x IS	1	.31	.18	.67	
NI x AU x IS	1	2.79	1.62	.21	
IS x Subjects w. groups	64	1.73			
C x P	1	.22	.15	.70	
NI x C x P	1	.53	.36	.55	
AU x C x P	1	3.72	2.54	.12	
NI x AU x C x P	1	.66	.45	.50	
C x P x Subjects w. groups	64	1.46			
C x IS	1	1.77	1.45	.23	
NI x C x IS	1	2.80	2.29	.13	
AU x C x IS	1	9.27	7.62	.008	.004
NI x AU x C x IS	1	.22	.18	.67	
C x IS x Subjects w. groups	64	1.22			

Table 15.--Continued.

Source	df	MS	F	p	η^2
P x IS	1	7.30	7.77	.007	.003
NI x P x IS	1	1.34	1.43	.24	
AU x P x IS	1	.66	.71	.40	
NI x AU x P x IS	1	.02	.02	.90	
P x IS x Subjects w. groups	64	.94			
C x P x IS	1	.97	1.16	.28	
NI x C x P x IS	1	1.34	1.60	.21	
AU x C x P x IS	1	1.15	1.37	.25	
NI x AU x C x P x IS	1	1.77	2.11	.15	
C x P x IS x Subjects w. groups	64	.84			

Abbreviations: NI = need for independence
AU = authoritarianism
C = consideration
P = participative decision making
IS = initiating structure

Five-Way Analysis of Variance for Subordinate Motivation to Work for Supervisor Measure

As with the satisfaction dependent variable, the consideration, participative decision making, and initiating structure factors all produced very significant and powerful main effects, explaining 19.1, 22.2, and 9.8 percent of the subordinate motivation variance for a total of 51.1 percent. These results are presented in Table 16. In contrast are the two significant, but extremely feeble, interactions. Together, the two-way interaction of participative decision making and initiating structure and the four-way interaction of authoritarianism, consideration, participative decision making, and initiating structure add to our understanding of only .5 percent of the criterion variance.

Table 19 (see page 108) shows the mean ratings of subordinate motivation corresponding to the main effects of consideration, participative decision making, and initiating structure. For all three dimensions, high levels are associated with greater subordinate motivation than low levels.

Table 16.--Five-Way Analysis of Variance for Motivation.

Source	df	MS	F	p	η^2
Between					
NI	1	2.00	.59	.44	
AU	1	5.16	1.52	.22	
NI x AU	1	10.90	3.21	.08	
Subjects w. groups	64	3.40			
Within					
C	1	428.84	186.56	<.0005	.191
NI x C	1	.41	.18	.67	
AU x C	1	.66	.29	.59	
NI x AU x C	1	.09	.04	.84	
C x Subjects w. groups	64	2.30			
P	1	498.97	142.06	<.0005	.222
NI x P	1	3.09	.88	.35	
AU x P	1	.22	.06	.80	
NI x AU x P	1	.05	.01	.91	
P x Subjects w. groups	64	3.51			
IS	1	221.34	133.01	<.0005	.098
NI x IS	1	3.72	2.24	.14	
AU x IS	1	.22	.13	.72	
NI x AU x IS	1	1.34	.80	.37	
IS x Subjects w. groups	64	1.66			
C x P	1	.41	.29	.59	
NI x C x P	1	4.78	3.34	.07	
AU x C x P	1	2.80	1.95	.17	
NI x AU x C x P	1	.05	.03	.86	
C x P x Subjects w. groups	64	1.43			
C x IS	1	4.06	2.38	.13	
NI x C x IS	1	2.25	1.32	.25	
AU x C x IS	1	1.34	.79	.38	
NI x AU x C x IS	1	.97	.57	.45	
C x IS x Subjects w. groups	64	1.70			

Table 16.--Continued.

Source	df	MS	F	p	η^2
P x IS	1	5.97	5.52	.02	.003
NI x P x IS	1	.15	.14	.71	
AU x P x IS	1	1.15	1.06	.31	
NI x AU x P x IS	1	1.15	1.06	.31	
P x IS x Subjects w. groups	64	1.08			
C x P x IS	1	5.97	5.45	.02	
NI x C x P x IS	1	.05	.04	.83	
AU x C x P x IS	1	4.78	4.36	.04	.002
NI x AU x C x P x IS	1	1.15	1.05	.31	
C x P x IS x Subjects w. groups	64	1.10			

Abbreviations: NI = need for independence
AU = authoritarianism
C = consideration
P = participative decision making
IS = initiating structure

Five-Way Analysis of Variance for Subordinate Attitude Toward Supervisor's Task Competence

The results for the analysis of variance of task competence attitudes are presented in Table 17. The consideration, participative decision making, and initiating structure main effects are all highly significant ($p < .0005$), and explain 21.4, 9.6, and 14.3 percent of the criterion variance. Combined, these main effects contribute to our understanding of 45.3 percent of the variance in attitudes toward supervisor's task competence. As with previous dependent variables, several interactions were significant but trivial in magnitude. The consideration by initiating structure interaction explained only .3 percent of the variance; the participative decision making by initiating structure interaction explained .7 percent of the variance; the consideration by participative decision making by initiating structure interaction explained .2 percent of the variance; and the five-way interaction of need for independence, authoritarianism, consideration, participative decision making, and initiating structure explained .3 percent of the variance. These four interactions combined contribute to our understanding of only 1.5 percent of the criterion variance.

The means corresponding to the main effects of consideration, participative decision making, and initiating

Table 17.--Five-Way Analysis of Variance for Task Competence.

Source	df	MS	F	p	η^2
Between					
NI	1	60.22	.22	.64	
AU	1	98.09	.36	.55	
NI x AU	1	506.66	1.85	.18	
Subjects w. groups	64	273.87			
Within					
C	1	33125.05	147.33	<.0005	.214
NI x C	1	7.30	.03	.86	
AU x C	1	1.34	.01	.94	
NI x AU x C	1	.97	.00	.95	
C x Subjects w. groups	64	224.83			
P	1	14795.16	55.28	<.0005	.096
NI x P	1	84.97	.32	.58	
AU x P	1	15.22	.06	.81	
NI x AU x P	1	177.80	.66	.42	
P x Subjects w. groups	64	267.62			
IS	1	22121.25	129.25	<.0005	.143
NI x IS	1	23.47	.14	.71	
AU x IS	1	45.31	.26	.61	
NI x AU x IS	1	.97	.01	.94	
IS x Subjects w. groups	64	171.15			
C x P	1	52.50	.67	.42	
NI x C x P	1	45.31	.58	.45	
AU x C x P	1	272.47	3.49	.07	
NI x AU x C x P	1	48.84	.62	.43	
C x P x Subjects w. groups	64	78.11			
C x IS	1	578.53	6.28	.02	.003
NI x C x IS	1	18.02	.20	.66	
AU x C x IS	1	113.97	1.24	.27	
NI x AU x C x IS	1	182.40	1.98	.16	
C x IS x Subjects w. groups	64	92.12			

Table 17.--Continued.

Source	df	MS	F	p	η^2
P x IS	1	1064.56	15.58	<.0005	.007
NI x P x IS	1	6.40	.09	.76	
AU x P x IS	1	4.06	.06	.81	
NI x AU x P x IS	1	3.40	.05	.82	
P x IS x Subjects w. groups	64	68.30			
C x P x IS	1	289.72	3.92	.05	.002
NI x C x P x IS	1	258.50	3.50	.07	
AU x C x P x IS	1	31.55	.43	.52	
NI x AU x C x P x IS	1	465.09	6.29	.02	.003
C x P x IS x Subjects w. groups	64	73.96			

Abbreviations: NI = need for independence
IS = initiating structure
AU = authoritarianism
P = participative decision making
C = consideration

structure are presented in Table 19 (see page 108). High levels of all three leader behavior dimensions are associated with more positive attitudes toward the supervisor's task competence.

Five-Way Analysis of Variance for Subordinate Attitude Toward Supervisor's Interpersonal Style

The results of the analysis of variance for the last dependent variable, interpersonal style, are displayed in Table 18. As with the other three dependent variables, strong and significant main effects emerged for consideration, participative decision making and initiating structure, explaining 54.6, 15.8, and 3.1 percent of the criterion variance. It should be noted that the initiating structure factor exerted the least influence on the evaluation of the supervisor's interpersonal style. All three main effects together contribute to our understanding of a rather substantial 73.5 percent of the criterion variance.

The four significant interactions were all quite trivial in magnitude, and when combined, explained only 1 percent of the interpersonal style variance. The consideration by participative decision making, participative decision making by initiating structure, and consideration by participative decision making by initiating structure interactions each explained only .2 percent of the variance

Table 18.--Five-Way Analysis of Variance for Interpersonal Style.

Source	df	MS	F	p	η^2
Between					
NI	1	1.77	.01	.90	
AU	1	3.72	.03	.86	
NI x AU	1	.53	.00	.95	
Subjects w. groups	64	123.13			
Within					
C	1	85225.15	579.55	<.0005	.546
NI x C	1	18.02	.12	.73	
AU x C	1	8.75	.06	.81	
NI x AU x C	1	.02	.00	.99	
C x Subjects w. groups	64	147.05			
P	1	24718.55	358.34	<.0005	.158
NI x P	1	.31	.00	.95	
AU x P	1	171.00	2.48	.12	
NI x AU x P	1	8.75	.13	.72	
P x Subjects w. groups	64	68.98			
IS	1	4830.22	58.22	<.0005	.031
NI x IS	1	137.00	1.65	.20	
AU x IS	1	53.75	.65	.42	
NI x AU x IS	1	.31	.00	.95	
IS x Subjects w. groups	64	82.96			
C x P	1	286.81	6.46	.01	.002
NI x C x P	1	9.27	.21	.65	
AU x C x P	1	37.59	.85	.36	
NI x AU x C x P	1	153.53	3.46	.07	
C x P x Subjects w. groups	64	44.42			
C x IS	1	30.59	.86	.36	
NI x C x IS	1	46.47	1.31	.26	
AU x C x IS	1	5.97	.17	.68	
NI x AU x C x IS	1	21.84	.62	.43	
C x IS x Subjects w. groups	64	35.38			

Table 18.--Continued.

Source	df	MS	F	p	η^2
P x IS	1	269.65	6.62	.01	.002
NI x P x IS	1	50.05	1.23	.27	
AU x P x IS	1	61.56	1.51	.22	
NI x AU x P x IS	1	56.30	1.38	.24	
P x IS x Subjects w. groups	64	40.71			
C x P x IS	1	360.75	5.40	.02	.002
NI x C x P x IS	1	6.40	.10	.76	
AU x C x P x IS	1	8.75	.13	.72	
NI x AU x C x P x IS	1	546.00	8.18	.01	.004
C x P x IS x Subjects w. groups	64	66.77			

Abbreviations: NI = need for independence
AU = authoritarianism
IS = initiating structure
P = participative decision making
C = consideration

while the five-way interaction of need for independence, authoritarianism, consideration, participative decision making, and initiating structure did little better, explaining only .4 percent of the variance.

Table 19 shows the mean ratings of supervisor's interpersonal style corresponding to the main effects of consideration, participative decision making, and initiating structure. Note that high levels of each leader behavior dimension are associated with favorable attitudes toward interpersonal style.

Summary of the Magnitudes of the Main Effects of Consideration, Participative Decision Making, and Initiating Structure on All Dependent Variables

Table 20 presents the eta squared coefficients for the main effects of consideration, participative decision making, and initiating structure on all the dependent variables. Over all the dependent variables, consideration seems to have the greatest impact. Participation is the second most potent dimension, while initiating structure is the least potent.

Further note that consideration and participative decision making explain about twice as much variance in subordinate satisfaction and motivation as does initiating structure. Initiating structure produces its greatest effect on subordinates' ratings of the supervisor's task

Table 19.--Summary of Means Corresponding to the Main Effects of Supervisor Consideration, Participative Decision Making, and Initiating Structure on Four Dependent Variables.

Main Effect	Dependent Variable			
	Satisfaction[a]	Motivation[a]	Task Competence[b]	Interpersonal Style[b]
Consideration				
Low	2.81	2.93	35.0	31.1
High	4.85	4.71	50.6	56.1
Participative Decision Making				
Low	2.83	2.86	37.6	36.8
High	4.82	4.78	48.0	50.3
Initiating Structure				
Low	3.15	3.18	36.4	40.6
High	4.50	4.46	49.1	46.6

[a]Ratings were made on a 7-point semantic differential scale where a score of 7 means a large amount.

[b]Rating was composed of a unit summation of a subject's responses to 11 seven-point semantic scales. A high score indicates a favorable attitude.

Table 20.--Eta Squared Coefficients for the Main Effects of Supervisor Consideration, Participative Decision Making, and Initiating Structure on Four Dependent Variables.

Main Effect	Dependent Variable			
	Satis-faction	Moti-vation	Task Compe-tence	Inter-personal Style
Consideration	.24	.19	.21	.55
Participative Decision Making	.22	.22	.10	.16
Initiating Structure	.10	.10	.14	.03

$$^{a}\text{Eta squared} = \frac{SS_{TREATMENT}}{SS_{TOTAL}}$$

competence and its weakest effect on ratings of the supervisor's interpersonal style.

The impact of participation is about the same for satisfaction, motivation, and interpersonal style, but is lowest for task competence while the consideration factor is about equally powerful for satisfaction, motivation, and task competence, but much greater for interpersonal style.

Participative Decision Making by Initiating Structure Interaction Effects

In the preceding sections, all the significant interaction effects for each of the dependent variables were shown to be trivial in magnitude.

Because the dependent variables are correlated, the repeated measures design is especially powerful at detecting very small differences, and since the supervisor dimensions were not manipulated completely independently of one another, there is considerable danger of finding "significant," but interpretable, unreliable, and weak interactions. For these reasons, most of the "significant" interactions that emerged were not further explored with simple-effects analyses on the interaction cell means. The participative decision making by initiating structure interaction effect was also trivial in magnitude, but it appeared in all four dependent variables, and hence deserves some additional attention.

Although not presented in tabular form, the interaction effects of supervisor's participative decision making and initiating structure on subordinate ratings of satisfaction, motivation, task competence, and interpersonal style were examined. On all four dependent variables, the pattern of the interaction was the same. Specifically, subjects gave the highest ratings to the supervisor description that showed high initiating structure and high participative decision making, and these ratings were higher than would be predicted from a knowledge of the main effects. Since the participative decision making and initiating structure main effects were both highly significant for all the dependent variables, there is little point to examining this interaction with simple effects analyses. All such analyses would be "significant," perhaps one slightly more statistically significant than the other.

Intercorrelations Among Participative Decision Making, Consideration, and Initiating Structure

The purpose of this section of experiment II is to test hypotheses 2 and 3 regarding the nature of the interrelations among participative decision making, consideration, and initiating structure. To test these hypotheses, the ratings of participative decision making, consideration, and initiating structure were pooled across all eight

descriptions, and then intercorrelated. Consideration ratings correlated .24 with participative decision making; consideration correlated .31 with initiating structure; and participative decision making correlated .26 with initiating structure. These correlations were all significant at $p < .05$, and none of the correlations differed significantly from one another. Note that the low magnitudes of the correlations match the small positive dependencies observed in the analysis of variance testing the experimental manipulations. That is, for example, when supervisor's level of participative decision making was intentionally manipulated, the perceived levels of initiating structure and consideration were also unintentionally manipulated in a similar but minor way. As a result, the high participative decision making supervisor was also seen as being slightly high on consideration and and slightly high on initiating structure.

Discussion

> Hypothesis 2: Participation, initiating structure, and consideration are all perceived as being positively, but low to moderately, correlated dimensions of leadership behavior.

The analysis of variance showing the approximately, but not completely, independent manipulations of supervisor

consideration, participative decision making, and initiating structure, lends strong support to this hypothesis, as do the significant but low positive correlations among the dimensions.

Hypothesis 3: Subordinate perceptions of participation, consideration, and initiating structure are related in the following manner:

$$r_{P,C} \geq r_{P,IS} > r_{IS,C}$$

The correlations among the dimensions do not support hypothesis 3. All three dimensions are about equally related in the present study. It is not immediately apparent why this hypothesis was not supported, nor in retrospection, why it should be supported. The rationale for the hypothesis was originally a hunch based on previous research that used measures of consideration, participative decision making and initiating structure that were conceptually sloppy and often confounded with variance excluded from the definitions of these dimensions used in the present study.

Hypothesis 4: Subordinate's perception of supervisor behaviors encouraging subordinate participation is positively related to:

(a) subordinate satisfaction with the supervisor.

(b) subordinate motivation to work for the supervisor.

(c) subordinate's attitude toward the task competence of the supervisor.

(d) subordinate's attitude toward the interpersonal style of the supervisor.

The consistently significant and strong main effects support all parts of hypothesis 4. That is, having a supervisor who actively allows or encourages his subordinates to participate in decision-making in matters related to their jobs tends to be related to increased subordinate general satisfaction with the supervisor as well as increased motivation to work for that supervisor. Specific subordinate attitudes toward the supervisor's task competence and interpersonal style tend to be more favorable when the supervisor tends to be high on the degree to which he encourages subordinate participation than when he is low. This set of findings is consistent with the bulk of the research reported on the effects of participative decision making.

Hypothesis 5: Subordinate's perception of initiating structure behaviors in his supervisor is:

(a) negatively related to subordinate's satisfaction with supervisor.

(b) positively related to subordinate's self-reported motivation to work under his supervisor.

(c) negatively related to subordinate's attitude toward the interpersonal style of the supervisor.

(d) negatively related to subordinate's attitude toward the task competence of the supervisor.

The strong and consistently significant main effects for the initiating structure manipulation on all dependent variables support only hypothesis 15 (b), and suggest the opposite of hypothesis 15 (a), (c), and (d).

When the hypotheses for initiating structure were originally conceived in the light of very inconsistent previous research findings, initiating structure was thought of as a negative attribute of supervisors because it seemed to represent a threat to the subordinate's perceived freedom (Brehm, 1966). Given the assumption that most people don't want to have their freedom restricted, it seemed plausible that supervisors high on initiating structure would have subordinates who were dissatisfied in general with their supervisor, and who would also express their dissatisfaction in more specific negative attitudes toward the supervisor's task competence and interpersonal style, if not in their motivation to work (which could be based on fear).

One plausible reason Fleishman and Harris (1962) and Skinner (1969) found negative and curvilinear relationships between initiating structure and two indices of satisfaction (turnover and grievances) is that their measures of initiating structure appear to be confounded with or included a large portion of autocratic or "arbitrary" variance. For example, consider the following items on the initiating structure scales used by both Fleishman and Harris (1962) and Skinner (1969):

1. He rules with an iron hand.
2. He asks for sacrifices from his foremen for the good of the entire department.
3. He insists that his foremen follow standard ways of doing things in every detail.
4. He "needles" foremen under him for greater effort.
5. He decides in detail what shall be done and how it shall be done.

Psychologically, it is no great surprise that subordinates would be unhappy with this kind of supervisor because it largely represents something far beyond the concept of initiating structure as defined in the present study. It's one thing to organize, coordinate, and set mutual expectations, and quite another thing to be brutal, arbitrary, and autocratic. The former kind of initiating structure can serve useful psychological functions for subordinates, while the latter may incur psychological costs subordinates are unwilling to pay.

To carry the analysis of the positive functions of initiating structure a bit further, consider this set of leadership behaviors as communicative acts within the context of information theory. Gardner (1962) states that a communicative act yields information only if it reduces a condition of ignorance or uncertainty. Thus, prior uncertainty is a necessary prerequisite for information. Furthermore, the amount of information provided by a communicative act is determined by the amount of ambiguity or uncertainty in the situation.

Weick (1969) relates the twin notions of information and uncertainty to the social psychology of organizing. He states that the major purpose of organizing is the removal of equivocality from information and structuring processes to make this removal possible.

The important point behind these references to information theory concepts is that when initiating structure is conceived of as a means of reducing uncertainty for subordinates by letting them know what is expected of them and the ways in which the work is organized and coordinated, then the initiating structure activities of the supervisor are perceived in a favorable light. Of course, this entire analysis is predicated on the reasonable assumption that people in general, and people in organizations in particular, find uncertainty an unpleasant psychological state.

The information theory explanation of the positive effects of leader initiating structure is compatible with the instrumentality theory explanation offered by House (1971). His major point is that in certain situations where there is role ambiguity and/or the task is very complex, leader initiating structure exerts positive attitudinal and motivational effects because such leader behavior reduces subordinate role ambiguity which is usually associated with low path goal instrumentality. In other words, by initiating structure in an ambiguous situation, the leader helps to

clarify the path to the subordinate's desired outcomes or pay-offs.

Hypothesis 6: Subordinate's perception of consideration behaviors in his supervisor is:

(a) positively related to subordinate's satisfaction with his supervisor.

(b) positively related to subordinate's motivation to work for his supervisor.

(c) positively related to subordinate's attitude toward the supervisor's interpersonal style.

(d) positively related to subordinate's attitude toward the supervisor's task competence.

The strongly significant main effects of supervisor consideration on all four of the dependent variables support the above hypotheses. When subordinates perceive supervisors as being considerate in their behaviors, subordinates tend to be generally satisfied with the supervisor, motivated to work for the supervisor, and have positive attitudes toward the supervisor's interpersonal style and task competence.

In the contexts of hypotheses 4, 5, and 6, it is appropriate to comment on the patterning of main effects on the dependent variables. Consistent with previous literature reviewed earlier, consideration and participative decision making exert a greater influence on subordinate satisfaction and motivation than initiating structure, although the effects of initiating structure were in a direction opposite that predicted by previous research.

It is also gratifying to see (Table 16, page 99) some experimental evidence for the construct validity for the task competence and interpersonal style dimensions of interpersonal evaluation. For example, the consideration factor is the supervisor dimension conceptually closest to interpersonal style (Johnson, Siegel, and Wakeley, 1972) and explained twice as much interpersonal style variance as task competence variance. Similarly, the initiating structure factor is closest conceptually to task competence, and not surprisingly explains about four times more task competence variance than interpersonal style variance. Participative decision making which can be viewed as conceptually similar to both interpersonal style and task competence, produced effects of about equal magnitude on these two dependent variables.

Beyond the testing of hypotheses, a number of other interesting and unexpected findings have emerged and should be further discussed. First, in terms of the magnitude of the main effects of the manipulated consideration, participative decision making, and initiating structure dimensions, we seem to have an additive, main class model of leadership. That is, at least in terms of the attitudinal and motivational dependent variables studied, the main effects dominated while the observed interactions were always quite trivial by comparison. In general, the explanatory power

of the significant interactions was disappointing. Even the consistently significant interaction of initiating structure and participative decision making on all the dependent variables was interesting but trivial.

In relation to this finding of trivial interactive effects, it should be noted that in previous research findings interactions between consideration and initiating structure (Fleishman and Harris, 1962) reported no index of the strength of the effect (or even the F values for that matter). The studies of the interactive effects of participation and personality on subordinate attitudes by Vroom (1960) and Tosi (1970) were expressed as differences between correlations, and are not readily comparable to an n^2 for a significant interaction in an analysis of variance design. One suspects that a re-analysis of the Vroom (1960) study would be enlightening and disappointing.

Of course, a number of reasons may explain why more and stronger interactive effects of the supervisor dimensions and subordinate personality characteristics did not emerge. One reason that the previously observed interaction of initiating structure and consideration on subordinate satisfaction (Fleishman and Harris, 1962; Skinner, 1969) did not emerge is that initiating structure was defined quite differently in their study. Specifically, initiating structure was defined to include autocratic, arbitrary

variance which is so obviously distasteful and psychologically costly to subordinates. Hence, with our new definition of initiating structure, one would not expect level of consideration to help compensate for the undesirable effects of autocratic initiating structure since this undesirable variance in initiating structure was not present.

Another reason, this one for the lack of meaningful interactions between personality characteristics (Need for Independence and Authoritarianism) and the supervisor behavior dimensions, especially participative decision making, may be that there was relatively little variability in the personality characteristics for the college population studied. Vroom (1960) did not report cut-off scores for the Authoritarianism and Need for Independence measures he used. Thus it is not possible to directly compare results, a problem noted by Tosi (1970) in his attempted replication of the Vroom study. It is likely, however, that the college subjects used in the present study were much more homogeneous in their level of Need for Independence and Authoritarianism than Vroom's sample, so that median splits on each of these personality characteristics may not have produced meaningful high and low groups. All of the subjects in the present study may possibly be comparable to high Need for Independence and low Authoritarianism respondents in Vroom's (1960) sample.

CHAPTER V

SUMMARY, CONCLUSIONS, PRACTICAL IMPLICATIONS, AND AREAS FOR FUTURE RESEARCH

Summary

1. Subjects perceived supervisor behaviors belonging to three relatively distinct groups: participative decision making, consideration, and initiating structure.

2. These three groups of supervisor behaviors showed low positive correlations with one another.

3. The three groups of supervisor behaviors can be manipulated approximately independently of one another.

4. The INDSCAL dimensions used by subjects in perceiving supervisory behaviors, and which explained variation within and between the *a priori* clusters in three-space, were: (a) initiating structure, (b) task concern by subordinate, and (c) subordinate-supervisor interaction.

5. Supervisor participative decision making, consideration, and initiating structure each exerted powerful main effects on subordinate attitudes and motivation.

6. Unexpectedly, a high level of initiating structure in the supervisor was associated with positive subordinate attitudes.

7. Interactive effects among supervisor behavior dimensions and subordinate personality variables were trivial in magnitude, though sometimes statistically significant.

Conclusions

On the basis of the findings of the present study, it is concluded that subordinates like and are most motivated to work for supervisors who (1) allow or encourage subordinates to participate in decisions related to their jobs; (2) show a warm, positive attitude toward and concern for subordinates; and (3) organize, coordinate, and set mutual expectations.

Going back to the troubled young vice-president mentioned in the introduction, the answer to his question about how leadership fits in with a participative management system is clear: Don't think about participative decision making, initiating structure, and consideration as opposing dimensions. Rather, think of them as mutually reinforcing

aspects of leadership behavior. From this perspective, it is easy to see how supervisors can organize, coordinate, and set mutual expectations for participative decision making by subordinates while showing a positive, warm attitude toward them.

In making the above conclusions, a few statements of caution are in order. First, the subjects in the present study did not actually experience the supervisor's behaviors; they only read descriptions, and responded as if he were their supervisor. While some have praised such role-taking methodology in psychological research (Schultz, 1969; Kelman, 1967) as an alternative to pure deception, others have condemned it (Miller, 1969; Aronson and Carlsmith, 1968). The controversy is far from being resolved; however, it is fair to say that the role-taking methodology used in the present study may limit generalization of its findings beyond statements of abstract preferences of subjects.

Second, and implicit in the above tentative conclusions, is the assumption that other important employee behaviors such as quantity and quality of productivity, turnover, and absenteeism are related to employee satisfaction and motivation. As Brayfield and Crockett (1955) point out in their classic review of the literature, the assumed link between employee attitudes and employee performance is at best a very tenuous one. Locke (1969, 1970) and Lawler

(1970) have both commented at length on the theoretically complex relations existing among satisfaction-motivation concepts, and job performance. Therefore, tests of the effects of supervisor consideration, participative decision making and initiating structure on other employee performance and satisfaction variables are needed, preferably in a field situation.

Practical Implications

Given the limitations of the present study, and the need for extension of the study to include other dependent variables in a field setting, the implications for training of supervisors are clear. Because the leadership dimensions are expressed in terms of usually concrete behaviors, training programs could be devised in which supervisors are first assessed as to where they fall in each of the three dimensions, then efforts directed toward moving them toward more optimal regions of the leadership behavior cube, shown in Figure 9.

One might conceive of the training program as an extension of the Blake and Mouton (1969) managerial grid to three dimensions.

The Scanlon Plan (Lesieur, 1958) is a company wide system of participative management, complete with organizational structures to encourage and maintain participative

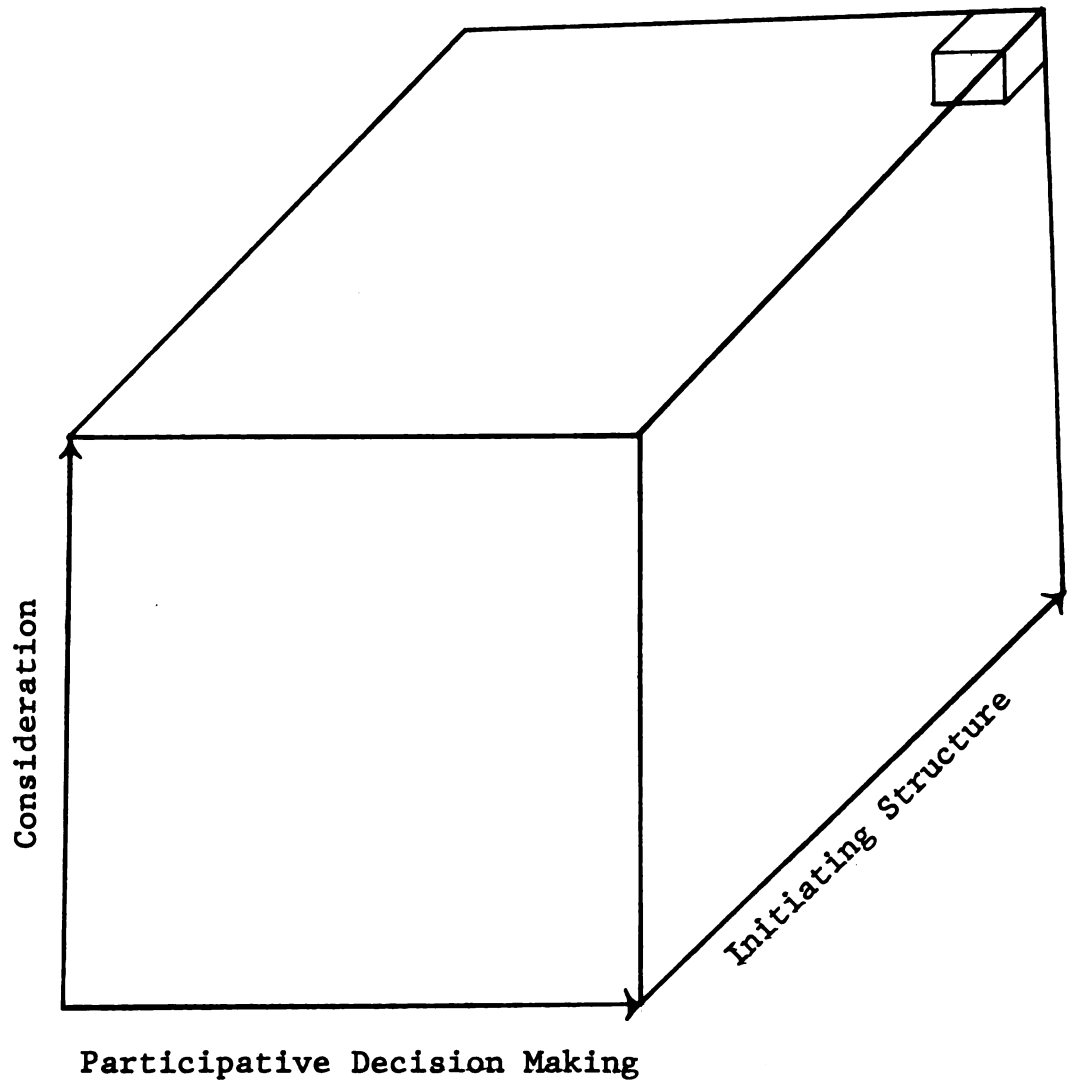

Figure 9.--Johnson Leadership Behavior Cube.

decision making throughout the organization. However, when encouraging participative decision making is viewed as a supervisory function, participative decision making in the Scanlon Plan becomes much more dynamic, and complements the organizational structures for participative decision making.

Therefore, a managerial supervisory training program using the three-dimensional leadership cube shown above may be a helpful tool for preparing companies which are planning to adopt the Scanlon Plan. For companies with the Scanlon Plan already installed, the three-dimensional leadership cube training could serve as a useful refresher course.

Areas for Future Research

While the practical implications of a three-dimensional model of leadership behavior are fascinating, future research is needed to verify and extend the findings of the present study in other settings. For example, though it is clear in the present study that being high on consideration, participative decision making, and initiating structure is the optimal set of leadership behaviors for maximizing subordinate satisfaction and motivation, other combinations may be more optimal in certain organizational contexts. Thus, we need to examine further the situations in which the supervisor functions. Is the optimal

combination of leader behavior dimensions the same for female supervisors? Do sex of supervisor and sex of subordinate interact to affect optimal leadership behavior combinations? How do consideration, initiating structure, and participative decision making depend on the degree of group favorableness, á la Fiedler's (1967) method of measuring the situation, in affecting subordinate attitudes and behavior? When the subordinate's job is routine, repetitive, and/or unpleasant, what then are the effects of supervisor participative decision making, initiating structure, and consideration behaviors on subordinate's attitudes, motivation, and performance? How effective are the three leadership dimensions in organizations having different technologies? Are different leadership styles needed in different levels of a formal organization?

Perhaps the optimal combination of leader behavior dimensions is different for different indices of supervisor effectiveness such as quality and quantity of productivity, turnover, absenteeism, etc.

Another research problem is whether the consideration, initiating structure, and participative decision making leader behaviors are relatively independent in actual supervisors in industry, and not simply in the cognitive maps of perceivers. To what degree can these classes of behaviors be changed? Are consideration, initiating structure, and

participative decision making behaviors manifestations of a relatively permanent and unchanging, underlying motivational structure as Fiedler (1967) suggests?

Viewing leadership behavior as the result of a dynamic interaction between supervisor and subordinate, it is possible that subordinate attitudes and behavior may in fact cause supervisor behaviors (Lowin and Craig, 1968).

How do participative decision making, initiating structure, and consideration interact and change over time in the development of a dyadic relationship between supervisor and subordinate? Thus, to further examine the causal relations among supervisor consideration, participative decision making, and initiating structure, and subordinate attitudes and behavior, future cross-lagged panel analysis in the field situation may provide us with useful answers to these questions.

Future research should be directed toward further investigating the degree to which supervisor consideration, participative decision making, and initiating structure is related to subordinate's overall job satisfaction, of which satisfaction with supervision is only a part.

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APPENDIX A

SPECIMEN SUBJECT PRINTOUT SHOWING MULTIDIMENSIONAL SCALING TASK GIVEN SUBJECTS IN EXPERIMENT I

CO-OCCURENCE OF LEADERSHIP BEHAVIORS

NAME--
STUDENT NUMBER--

	VERY UNLIKELY								VERY LIKELY
HE SEES TO IT THAT I HAVE THE MATERIAL I NEED TO WORK WITH. HE ALLOWS ME INFLUENCE EQUAL TO HIS OWN IN DECISIONS WHICH AFFECT MY JOB.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE ASSIGNS A TASK, THEN LETS ME HANDLE IT.	1	2	3	4	5	6	7	8	9
HE IS FRIENDLY TO ME AND EASILY APPROACHED. HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB.	1	2	3	4	5	6	7	8	9
HE SCHEDULES THE WORK I HAVE TO DO. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
HE MAKES ME FEEL AT EASE WHEN TALKING WITH HIM. HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB.	1	2	3	4	5	6	7	8	9
HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME. HE ALLOWS ME TO MODIFY THE PROCEDURES REQUIRED IN MY JOB.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE SCHEDULES THE WORK I HAVE TO DO.	1	2	3	4	5	6	7	8	9
HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB. HE LOOKS OUT FOR MY PERSONAL WELFARE.	1	2	3	4	5	6	7	8	9
HE LETS ME KNOW WHAT IS EXPECTED OF ME. HE LOOKS OUT FOR MY PERSONAL WELFARE.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE LETS ME DO MY WORK THE WAY I THINK BEST.	1	2	3	4	5	6	7	8	9
HE SEES TO IT THAT I HAVE THE MATERIAL I NEED TO WORK WITH. HE SCHEDULES THE WORK I HAVE TO DO.	1	2	3	4	5	6	7	8	9
HE IS FRIENDLY TO ME AND EASILY APPROACHED. HE ASSIGNS A TASK, THEN LETS ME HANDLE IT.	1	2	3	4	5	6	7	8	9

	VERY UNLIKELY								VERY LIKELY
HE MAKES ME FEEL AT EASE WHEN TALKING WITH HIM. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
HE MAKES ME FEEL AT EASE WHEN TALKING WITH HIM. HE LETS ME DO MY WORK THE WAY I THINK BEST.	1	2	3	4	5	6	7	8	9
HE LOOKS OUT FOR MY PERSONAL WELFARE. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
HE SEES TO IT THAT I HAVE THE MATERIAL I NEED TO WORK WITH. HE LETS ME KNOW WHAT IS EXPECTED OF ME.	1	2	3	4	5	6	7	8	9
HE IS FRIENDLY TO ME AND EASILY APPROACHED. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
IF I AM A NEW MEMBER, HE HELPS ME MAKE ADJUSTMENTS TO THE GROUP. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
HE ALLOWS ME TO MODIFY THE PROCEDURES REQUIRED IN MY JOB. HE MAKES SURE THAT I AND OTHER GROUP MEMBERS UNDERSTAND HIS PART IN THE GROUP.	1	2	3	4	5	6	7	8	9
HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB. HE LETS ME KNOW WHAT IS EXPECTED OF ME.	1	2	3	4	5	6	7	8	9
HE LETS ME KNOW WHAT IS EXPECTED OF ME. HE SCHEDULES THE WORK I HAVE TO DO.	1	2	3	4	5	6	7	8	9
HE ALLOWS ME INFLUENCE EQUAL TO HIS OWN IN DECISIONS WHICH AFFECT MY JOB. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
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	VERY UNLIKELY								VERY LIKELY
HE LOOKS OUT FOR MY PERSONAL WELFARE. HE LETS ME DO MY WORK THE WAY I THINK BEST.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE LOOKS OUT FOR MY PERSONAL WELFARE.	1	2	3	4	5	6	7	8	9
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HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME. HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB.	1	2	3	4	5	6	7	8	9
HE SEES TO IT THAT I HAVE THE MATERIAL I NEED TO WORK WITH. HE ASSIGNS A TASK, THEN LETS ME HANDLE IT.	1	2	3	4	5	6	7	8	9
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	VERY UNLIKELY								VERY LIKELY
HE LETS ME KNOW WHAT IS EXPECTED OF ME. HE ASSIGNS A TASK, THEN LETS ME HANDLE IT.	1	2	3	4	5	6	7	8	9
HE SCHEDULES THE WORK I HAVE TO DO. HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB.	1	2	3	4	5	6	7	8	9
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HE LETS ME KNOW WHAT IS EXPECTED OF ME. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
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HE SEES TO IT THAT I HAVE THE MATERIAL I NEED TO WORK WITH. HE IS FRIENDLY TO ME AND EASILY APPROACHED.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
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HE SEES TO IT THAT I HAVE THE MATERIAL/I NEED TO WORK WITH. HE MAKES ME FEEL AT EASE WHEN TALKING WITH HIM.	1	2	3	4	5	6	7	8	9
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	VERY UNLIKELY								VERY LIKELY
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HE LOOKS OUT FOR MY PERSONAL WELFARE. IF I AM A NEW MEMBER, HE HELPS ME MAKE ADJUSTMENTS TO THE GROUP.	1	2	3	4	5	6	7	8	9
IF I AM A NEW MEMBER, HE HELPS ME MAKE ADJUSTMENTS TO THE GROUP. HE IS FRIENDLY TO ME AND EASILY APPROACHED.	1	2	3	4	5	6	7	8	9
HE HAS ME SHARE IN MAKING DECISIONS. HE IS FRIENDLY TO ME AND EASILY APPROACHED.	1	2	3	4	5	6	7	8	9
IF I AM A NEW MEMBER, HE HELPS ME MAKE ADJUSTMENTS TO THE GROUP. HE ASSIGNS A TASK, THEN LETS ME HANDLE IT.	1	2	3	4	5	6	7	8	9
HE ASSIGNS A TASK, THEN LETS ME HANDLE IT. HE SCHEDULES THE WORK I HAVE TO DO.	1	2	3	4	5	6	7	8	9
HE ASSIGNS A TASK, THEN LETS ME HANDLE IT. HE EXPRESSES APPRECIATION WHEN I DO A GOOD JOB.	1	2	3	4	5	6	7	8	9
HE MAKES SURE THAT I AND OTHER GROUP MEMBERS UNDERSTAND HIS PART IN THE GROUP. HE MAINTAINS DEFINITE STANDARDS OF PERFORMANCE FOR ME.	1	2	3	4	5	6	7	8	9
IF I AM A NEW MEMBER, HE HELPS ME MAKE ADJUSTMENTS TO THE GROUP. HE MAKES ME FEEL AT EASE WHEN TALKING WITH HIM.	1	2	3	4	5	6	7	8	9

APPENDIX B

NEED FOR INDEPENDENCE (OPINION QUESTIONNAIRE I) AND THE F-SCALE MEASURE OF AUTHORITARIANISM (OPINION QUESTIONNAIRE II) USED IN EXPERIMENT I AND II

OPINION QUESTIONNAIRE I

Instructions: Answer each of the following questions by checking one of the alternatives to the right of the question that best describes your true beliefs or feelings.

It is important to the conduct of this experiment that you respond to all the questions in a frank and honest manner.

Your responses will be kept confidential. Your name and student number are required only for the purposes of (1) ensuring that you receive full experimental credit; and (2) matching up of data for statistical analyses.

Your Name: _____

Student Number: _____

Sex: _____Male _____Female

1. How important is it for you to feel that you can run your life without depending upon people who are older and more experienced than you?
   - ____ Not at all
   - ____ Slightly
   - ____ Somewhat
   - ____ Very
   - ____ Extremely

2. How often do you find that you can carry out other people's suggestions without changing them any?
   - ____ Rarely
   - ____ Sometimes
   - ____ Often
   - ____ Very often
   - ____ Almost always

3. How much humility do you think you should show to those whom you respect and admire?
   - ____ None at all
   - ____ A little
   - ____ Some
   - ____ Quite a bit
   - ____ Very much

4. How much respect do you think should be shown to a judge even outside his court-room?
   - ____ None at all
   - ____ Some
   - ____ Quite a bit
   - ____ Very much
   - ____ Extremely much

5. How much do you usually want the person who is in charge of a group you are in to tell you what to do?
   - ____ Not at all
   - ____ A little
   - ____ Somewhat
   - ____ Quite a bit
   - ____ Very much

6. When you have a problem how much do you like to think it through yourself without help from others?
   - ____ Not at all
   - ____ Somewhat
   - ____ Quite a bit
   - ____ Very much
   - ____ Extremely much

7. How much respect do you think people should show to policemen?
   - ____ None at all
   - ____ Some
   - ____ Quite a bit
   - ____ Very much
   - ____ Extremely much

8. How hard do you find it to disagree with others even in your own thinking?
   - ____ Not at all
   - ____ Slightly
   - ____ Somewhat
   - ____ Quite
   - ____ Very

9. How much do you think that the leaders of organizations to which you belong have the right to expect certain things from you to which you should conform?

____ Not at all
____ A little
____ Somewhat
____ Quite a bit
____ Very much

10. How much do you feel that you are not as good in most things as people who are older and more experienced than you?

____ Not at all
____ A little
____ Somewhat
____ Quite a bit
____ Very much

11. In school how much do you dislike teachers who have forceful and dominant personalities?

____ Not at all
____ A little
____ Somewhat
____ Quite a bit
____ Very much

12. If you have thought about something and come to a conclusion, how hard is it for someone else to change your mind?

____ Not at all
____ A little
____ Somewhat
____ Very
____ Extremely

13. How much do you feel that officers of the law should tell people what to do rather than ask them?

____ Not at all
____ A little
____ Somewhat
____ Quite a bit
____ Very much

14. In school, under which of these conditions would you feel most comfortable?

____ If I were left completely alone to seek out whatever I wanted
____ If I were given suggestions from teachers as to what might be the best to study
____ If I were given some suggestions and some assignments to complete
____ If I were instructed, given assignments, and tested occasionally
____ If I were given daily instructions, daily assignments, and frequent tests

15. How much do you dislike being told to do something by a superior that is contrary to your wishes?

____ Almost always
____ Very often
____ Often
____ Sometimes
____ Rarely

OPINION QUESTIONNAIRE 2

Instructions: Answer each of the following questions by checking one of the alternatives to the right of the question that best describes your true feelings or beliefs.

It is important to the conduct of this experiment that you respond to all the questions in a frank and honest manner.

Your responses will be kept confidential. Your name and student number are required only for the purposes of (1) ensuring that you receive full experimental credit; and (2) matching up of data for statistical analyses.

Your Name: _____

Student Number: _____

Sex: _____Male _____Female

1. Obedience and respect for authority are the most important virtues children should learn.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

3. If people would talk less and work more, everybody would be better off.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

4. Science has its place, but there are many important things that can never possibly be understood by the human mind.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

5. Every person should have complete faith in some supernatural power whose decisions he obeys without question.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

6. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

8. No sane, normal, decent person could ever think of hurting a close friend or relative.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

9. An insult to our honor should always be punished.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

10. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

11. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feeble-minded people.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

12. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

13. Nowadays more and more people are prying into matters that should remain personal and private.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

14. Some people are born with an urge to jump from high places.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

15. People can be divided into two distinct classes: the weak and the strong.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

16. Someday it will probably be shown that astrology can explain a lot of things.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

17. No weakness or difficulty can hold us back if we have enough will power.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

18. Most people don't realize how much our lives are controlled by plots hatched in high places.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

19. Human nature being what it is, there will always be war and conflict.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

20. Familiarity breeds contempt.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

21. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.

____ Strongly agree
____ Agree
____ I can't make up my mind
____ Disagree
____ Strongly disagree

22. **The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.**

_____ Strongly agree
_____ Agree
_____ I can't make up my mind
_____ Disagree
_____ Strongly disagree

APPENDIX C

INSTRUCTIONS AND RATING DIMENSIONS FOR LIKERT SCALES IN EXPERIMENT I

Instructions: You are asked to rate each of the following leadership behaviors on the extent to which they show participation. By participation we mean: behaviors by which the supervisor allows or encourages subordinates to have a say in matters related to their jobs. Behaviors by which the supervisor allows or encourages subordinates to influence decisions related to their jobs and the way in which they do their jobs.

Circle one of the alternatives to the right of the statement that best represents how much participation is shown in the statement.

	very much	much	some	little	very little
He assigns a task, then lets me handle it.	A	B	C	D	E
He emphasizes that I meet deadlines.	A	B	C	D	E
He lets me know what is expected of me.	A	B	C	D	E
If I am a new member, he helps me make adjustments to the group.	A	B	C	D	E
He schedules the work I have to do.	A	B	C	D	E
He maintains definite standards of performance for me.	A	B	C	D	E
He knows what work I am responsible for.	A	B	C	D	E
He allows me influence equal to his own in decisions which affect my job.	A	B	C	D	E
He sees to it that my work is coordinated with that of other members.	A	B	C	D	E
He encourages me to make decisions on my own.	A	B	C	D	E
He makes sure that I and other group members understand his part in the group.	A	B	C	D	E
He helps me with my personal problems.	A	B	C	D	E
He is friendly to me and easily approached.	A	B	C	D	E
He allows me a high degree of initiative.	A	B	C	D	E

	very much	much	some	little	very little
He encourages me to set my own performance goals.	A	B	C	D	E
He allows me to modify the procedures required in my job.	A	B	C	D	E
He criticizes a specific act rather than me as a person.	A	B	C	D	E
He puts suggestions made by me into operation.	A	B	C	D	E
He criticizes poor work I do.	A	B	C	D	E
He expresses appreciation when I do a good job.	A	B	C	D	E
He does personal favors for me.	A	B	C	D	E
He does little things that make it pleasant for me to be a member of the group.	A	B	C	D	E
He has me share in making decisions.	A	B	C	D	E
He looks out for my personal welfare.	A	B	C	D	E
He sees to it that I have the material I need to work with.	A	B	C	D	E
He asks for my opinion before making decisions which affect my job.	A	B	C	D	E
He lets me do my work the way I think best	A	B	C	D	E
He treats me as his equal.	A	B	C	D	E
He makes me feel at ease when talking with him.	A	B	C	D	E
He makes his attitudes clear to me.	A	B	C	D	E

Instructions: You are asked to rate each of the following leadership behaviors on the extent to which you would be satisfied with that leadership behavior in your male supervisor.

Circle one of the alternatives to the right of the statement that best represents how satisfied you would be with that leadership behavior in your supervisor.

	extremely	very	somewhat	slightly	not at all
He is friendly to me and easily approached.	A	B	C	D	E
He treats me as his equal.	A	B	C	D	E
He sees to it that my work is coordinated with that of other members.	A	B	C	D	E
He schedules the work I have to do.	A	B	C	D	E
He maintains definite standards of performance for me.	A	B	C	D	E
He sees to it that I have the material I need to work with.	A	B	C	D	E
He knows what work I am responsible for.	A	B	C	D	E
He allows me influence equal to his own in decisions which affect my job.	A	B	C	D	E
He has me share in making decisions.	A	B	C	D	E
He assigns a task, then lets me handle it.	A	B	C	D	E
He makes me feel at ease when talking with him.	A	B	C	D	E
He makes his attitudes clear to me.	A	B	C	D	E
He looks out for my personal welfare.	A	B	C	D	E
He does little things that make it pleasant for me to be a member of the group.	A	B	C	D	E
He makes sure that I and other group members understand his part in the group.	A	B	C	D	E
He helps me with my personal problems.	A	B	C	D	E

	extremely	very	somewhat	slightly	not at all
He expresses appreciation when I do a good job.	A	B	C	D	E
He does personal favors for me.	A	B	C	D	E
He allows me to modify the procedures required in my job.	A	B	C	D	E
He criticizes a specific act rather than me as a person.	A	B	C	D	E
He puts suggestions made by me into operation.	A	B	C	D	E
He asks for my opinion before making decisions which affect my job.	A	B	C	D	E
He lets me do my work the way I think best.	A	B	C	D	E
He allows me a high degree of initiative.	A	B	C	D	E
He encourages me to make decisions on my own.	A	B	C	D	E
He encourages me to set my own performance goals.	A	B	C	D	E
He lets me know what is expected of me.	A	B	C	D	E
If I am a new member, he helps me make adjustments to the group.	A	B	C	D	E
He emphasizes that I meet deadlines.	A	B	C	D	E
He criticizes poor work I do.	A	B	C	D	E

Instructions: You are asked to rate each of the following leadership behaviors on the extent to which they show initiating structure. By initiating structure we mean: behaviors by which the supervisor organizes and coordinates the activities of subordinates. Behaviors by which the supervisor defines his relation to his subordinates, and defines the role he expects each subordinate to assume.

Circle one of the alternatives to the right of the statement that best represents how much initiating structure is shown in the statement.

	very much	much	some	little	very little
He has me share in making decisions.	A	B	C	D	E
He assigns a task, then lets me handle it.	A	B	C	D	E
He encourages me to make decisions on my own.	A	B	C	D	E
He encourages me to set my own performance goals.	A	B	C	D	E
He does little things that make it pleasant for me to be a member of the group.	A	B	C	D	E
He makes sure that I and other group members understand his part in the group.	A	B	C	D	E
He helps me with my personal problems.	A	B	C	D	E
He criticizes poor work I do.	A	B	C	D	E
He lets me know what is expected of me.	A	B	C	D	E
If I am a new member, he helps me make adjustments to the group.	A	B	C	D	E
He allows me to modify the procedures required in my job.	A	B	C	D	E
He criticizes a specific act rather than me as a person.	A	B	C	D	E
He puts suggestions made by me into operation.	A	B	C	D	E
He asks for my opinion before making decisions which affect my job.	A	B	C	D	E

	very much	much	some	little	very little
He lets me do my work the way I think best.	A	B	C	D	E
He allows me a high degree of initiative.	A	B	C	D	E
He knows what work I am responsible for.	A	B	C	D	E
He allows me influence equal to his own in decisions which affect my job.	A	B	C	D	E
He is friendly to me and easily approached.	A	B	C	D	E
He treats me as his equal.	A	B	C	D	E
He looks out for my personal welfare.	A	B	C	D	E
He sees to it that I have the material I need to work with.	A	B	C	D	E
He makes me feel at ease when talking with him.	A	B	C	D	E
He makes his attitudes clear to me.	A	B	C	D	E
He expresses appreciation when I do a good job.	A	B	C	D	E
He does personal favors for me.	A	B	C	D	E
He schedules the work I have to do.	A	B	C	D	E
He maintains definite standards of performance for me.	A	B	C	D	E
He emphasizes that I meet deadlines.	A	B	C	D	E
He sees to it that my work is coordinated with that of other members.	A	B	C	D	E

Instructions: You are asked to rate each of the following leadership behaviors on the extent to which they show consideration. By consideration we mean: behaviors by which the supervisor shows warmth and rapport toward subordinates. Behaviors by which the supervisor expresses a warm, positive attitude toward and personal concern for subordinates.

Circle one of the alternatives to the right of the statement that best represents how much consideration is shown in the statement.

	very much	much	some	little	very little
He criticizes poor work I do.	A	B	C	D	E
He knows what work I am responsible for.	A	B	C	D	E
He allows me influence equal to his own on decisions which affect my job.	A	B	C	D	E
He is friendly to me and easily approached.	A	B	C	D	E
He allows me a high degree of initiative.	A	B	C	D	E
He encourages me to set my own performance goals.	A	B	C	D	E
He does little things that make it pleasant for me to be a member of the group.	A	B	C	D	E
He has me share in making decisions.	A	B	C	D	E
He puts suggestions made by me into operation.	A	B	C	D	E
He asks for my opinions before making decisions which affect my job.	A	B	C	D	E
He lets me do my work the way I think best.	A	B	C	D	E
He allows me to modify the procedures required in my job.	A	B	C	D	E
He criticizes a specific act rather than me as a person.	A	B	C	D	E
He sees to it that my work is coordinated with that of other members.	A	B	C	D	E

	very much	much	some	little	very little
He lets me know what is expected of me.	A	B	C	D	E
If I am a new member, he helps me make adjustments to the group.	A	B	C	D	E
He schedules the work I have to do.	A	B	C	D	E
He maintains definite standards of performance for me.	A	B	C	D	E
He expresses appreciation when I do a good job.	A	B	C	D	E
He does personal favors for me.	A	B	C	D	E
He treats me as his equal.	A	B	C	D	E
He looks out for my personal welfare.	A	B	C	D	E
He sees to it that I have the material I need to work with.	A	B	C	D	E
He encourages me to make decisions on my own.	A	B	C	D	E
He makes sure that I and other group members understand his part in the group.	A	B	C	D	E
He helps me with my personal problems.	A	B	C	D	E
He assigns a task, then lets me handle it.	A	B	C	D	E
He emphasizes that I meet deadlines.	A	B	C	D	E
He makes me feel at ease when talking to him.	A	B	C	D	E
He makes his attitudes clear to me.	A	B	C	D	E

APPENDIX D

EXAMPLE AND INSTRUCTIONS TO SUBJECTS FOR USING SEMANTIC DIFFERENTIAL SCALES FOR RATING LEADER BEHAVIOR ITEMS IN EXPERIMENT I

INSTRUCTIONS

The purpose of this study is to measure the meanings of certain leadership behaviors to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these leadership behaviors mean to you.

On each page, you will find a different leadership behavior to be judged, and beneath it a set of scales. You are to rate the leadership behavior on each of these scales in order.

Here is how you are to use the rating scales:

If you feel that the leadership behavior is very closely related to one end of the scale, you should place your check-mark as follows:

fair _X_ : ___: ___: ___: ___: ___: ___: unfair

or

fair ___: ___: ___: ___: ___: ___: _X_ : unfair

If you feel that the leadership behavior is quite closely related to one or the other end of the scale, you should place your check-mark as follows:

strong ___: _X_ : ___: ___: ___: ___: ___: weak

or

strong ___: ___: ___: ___: ___: _X_ : ___: weak

If the leadership behavior seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active ___: ___: _X_ : ___: ___: ___: ___: passive

or

active ___: ___: ___: ___: _X_ : ___: ___: passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the leadership behavior you are judging.

If you consider the leadership behavior to be neutral on the scale, both sides of the scale equally associated with the leadership behavior, or

if the scale is completely irrelevant, unrelated to the leadership behavior, then you should place your check-mark in the middle space:

safe ___: ___: ___: _X_: ___: ___: ___: dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

this not this

_X_: ___: ___: ___: ___: ___X___:

(2) Be sure you check every scale for every leadership behavior--do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so do not look back and forth through the leadership behaviors. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment. Work at a fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the leadership behaviors, that we want. On the other hand, please do not be careless, because we want your true impressions.

If I am a new member, he helps me make adjustments to the group.

weak ___: ___: ___: ___: ___: ___: ___: strong

good ___: ___: ___: ___: ___: ___: ___: bad

active ___: ___: ___: ___: ___: ___: ___: passive

don't prefer ___: ___: ___: ___: ___: ___: ___: prefer

important ___: ___: ___: ___: ___: ___: ___: unimportant

successful ___: ___: ___: ___: ___: ___: ___: unsuccessful

cruel ___: ___: ___: ___: ___: ___: ___: kind

APPENDIX E

EIGHT SUPERVISOR DESCRIPTIONS USED IN EXPERIMENT II, MANIPULATED TO SHOW LOW-HIGH COMBINATIONS OF CONSIDERATION, PARTICIPATIVE DECISION MAKING, AND INITIATING STRUCTURE

Example of Supervisor Description Showing High Consideration, Low Participation, and Low Initiating Structure

SUPERVISOR DESCRIPTION I

He is friendly and easily approached.
He expresses appreciation when I do a good job.
If I am a new member, he helps me make adjustments to the group.
He makes me feel at ease when talking with him.
He looks out for my personal welfare.
He does not allow me to modify the procedures required in my job.
He does not have me share in decision making.
He assigns a task, but does not allow me to handle it.
He does not allow me influence equal to his own in decisions which affect my job.
He does not let me do my work the way I think best.
He does not let me know what is expected of me.
He does not schedule the work I have to do.
He does not make sure that I and other group members understand his part in the group.
He maintains no definite standards of performance for me.
He does not see to it that I have the material I need to work with.

Example of Supervisor Description Showing Low Consideration, High Participation, and High Initiating Structure

SUPERVISOR DESCRIPTION 2

He sees to it that I have the material I need to work with.
He lets me know what is expected of me.
He schedules the work I have to do.
He makes sure that I and other group members understand his part in the group.
He maintains definite standards of performance for me.
If I am a new member, he does little to help me make adjustments to the group.
He is not friendly or easily approached.
He is not concerned with my personal welfare.
He expresses no appreciation when I do a good job.
He makes me feel uneasy when talking with him.
He assigns a task, then lets me handle it.
He allows me to modify the procedures required in my job.
He allows me influence equal to his own in decisions which affect my job.
He lets me do my work the way I think best.
He has me share in making decisions.

Example of Supervisor Description Showing Low Consideration, High Participation, and Low Initiating Structure

SUPERVISOR DESCRIPTION 3

He expresses no appreciation when I do a good job.
If I am a new member, he does little to help me make adjustments to the group.
He is not friendly or easily approached.
He is not concerned with my personal welfare.
He makes me feel uneasy when talking with him.
He maintains no definite standards of performance for me.
He does not see to it that I have the material I need to work with.
He does not schedule the work I have to do.
He does not make sure that I and other group members understand his part in the group.
He does not let me know what is expected of me.
He allows me to modify the procedures required on my job.
He lets me do my work the way I think best.
He allows me influence equal to his own in decisions which affect my job.
He has me share in making decisions.
He assigns a task, then lets me handle it.

Example of Supervisor Description Showing High Consideration, High Participation, and High Initiating Structure

SUPERVISOR DESCRIPTION 4

He schedules the work I have to do.
He sees to it that I have the material I need to work with.
He makes sure that I and other group members understand his part in the group.
He maintains definite standards of performance for me.
He lets me know what is expected of me.
He lets me do my work the way I think best.
He allows me influence equal to his own in decisions which affect my job.
He allows me to modify the procedures required in my job.
He assigns a task, then lets me handle it.
He has me share in making decisions.
If I am a new member, he helps me make adjustments to the group.
He makes me feel at ease when talking with him.
He looks out for my personal welfare.
He is friendly and easily approached.
He expresses appreciation when I do a good job.

Example of Supervisor Description Showing High Consideration, Low Participation, and High Initiating Structure

SUPERVISOR DESCRIPTION 5

He does not allow me to modify the procedures required in my job.
He assigns a task, but does not allow me to handle it.
He does not allow me influence equal to his own in decisions which affect my job.
He does not have me share in decision making.
He does not let me do my work the way I think best.
He schedules the work I have to do.
He lets me know what is expected of me.
He makes sure that I and other group members understand his part in the group.
He sees to it that I have the materials I need to work with.
He maintains definite standards of performance for me.
He makes me feel at ease when talking with him.
He is friendly and easily approached.
He looks out for my personal welfare.
If I am a new member, he helps me make adjustments to the group.
He expresses appreciation when I do a good job.

Example of Supervisor Description Showing Low Consideration, Low Participation, and Low Initiating Structure

SUPERVISOR DESCRIPTION 6

He maintains no definite standards of performance for me.
He does not schedule the work I have to do.
He does not see to it that I have the material I need to work with.
He does not make sure that I and other group members understand his part in the group.
He does not let me know what is expected of me.
He does not let me do my work the way I think best.
He does not allow me to modify the procedures required in my job.
He assigns a task, but does not allow me to handle it.
He does not allow me influence equal to his own in decisions which affect my job.
He does not have me share in decision making.
He expresses no appreciation when I do a good job.
He is not friendly or easily approached.
He is not concerned with my personal welfare.
If I am a new member, he does little to help me make adjustments to the group.
He makes me feel uneasy when talking with him.

Example of Supervisor Description Showing Low Consideration, Low Participation, and High Initiating Structure

SUPERVISOR DESCRIPTION 7

He does not let me do my work the way I think best.
He does not have me share in decision making.
He assigns a task, but does not allow me to handle it.
He does not allow me to modify the procedures required in my job.
He does not allow me influence equal to his own in decisions which affect my job.
He is not concerned with my personal welfare.
He makes me feel uneasy when talking with him.
He is not friendly or easily approached.
If I am a new member, he does little to help me make adjustments to the group.
He expresses no appreciation when I do a good job.
He lets me know what is expected of me.
He makes sure that I and other group members understand his part in the group.
He schedules the work I have to do.
He maintains definite standards of performance for me.
He sees to it that I have the material I need to work with.

Example of Supervisor Description Showing High Consideration, High Participation, and Low Initiating Structure

SUPERVISOR DESCRIPTION 8

He does not let me know what is expected of me.
He does not schedule the work I have to do.
He does not make sure that I and other group members understand his part in the group.
He does not see to it that I have the material I need to work with.
He maintains no definite standards of performance for me.
He is friendly and easily approached.
If I am a new member, he helps me make adjustments to the group.
He makes me feel at ease when talking with him.
He expresses appreciation when I do a good job.
He looks out for my personal welfare.
He allows me to modify the procedures required in my job.
He allows me influence equal to his own in decisions which affect my job.
He assigns a task, then lets me handle it.
He lets me do my work the way I think best.
He has me share in making decisions.

APPENDIX F

INSTRUCTIONS TO SUBJECTS FOR SEMANTIC DIFFERENTIAL RATINGS OF SUPERVISOR DESCRIPTIONS IN EXPERIMENT II

On each page, you will find a different supervisor description to be judged, and beneath it a set of scales. You are to rate the supervisor on each of these scales in order.

Here is how you are to rate the scales:
If you feel that the supervisor is very closely related to one end of the scale, you should place your check-mark as follows:

fair _X_: ___: ___: ___: ___: ___: ___: unfair

or

fair ___: ___: ___: ___: ___: ___: _X_: unfair

If you feel that the supervisor is quite closely related to one or the other end of the scale, you should place your check-mark as follows:

strong ___: _X_: ___: ___: ___: ___: ___: weak

or

strong ___: ___: ___: ___: ___: _X_: ___: weak

If the supervisor seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active ___: ___: _X_: ___: ___: ___: ___: passive

or

active ___: ___: ___: ___: _X_: ___: ___: passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the supervisor you are judging.

If you consider the supervisor to be neutral on the scale, both sides of the scale equally associated with the supervisor, or if the scale is completely irrelevant, unrelated to the supervisor, then you should place your check-mark in the middle space:

safe ___: ___: ___: _X_: ___: ___: ___: dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

this not this
_X_: ___: ___: ___: ___: ___X___:

(2) Be sure you check every scale for every supervisor description--do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've rated the same supervisor description. This will not be the case, so do not look back and forth through the supervisor descriptions. Do not try to remember how you checked similar supervisors earlier in the test. Make each rating of a supervisor a separate and independent judgment. Work at a fairly high speed through this test. Do not worry or puzzle over individual scales. It is your first impressions, the immediate "feelings" about the supervisor, that we want. On the other hand, please do not be careless, because we want your true impressions.

APPENDIX G

INSTRUCTIONS AND SCALES FOR POST-EXPERIMENTAL LIKERT RATING TASK TO TEST EXPERIMENTAL MANIPULATIONS IN EXPERIMENT II

You are asked to rate each of the eight supervisors described in your packet on three dimensions. Specifically, we want you to rate each supervisor on consideration, initiating structure, and participation.

By consideration we mean: behaviors by which the supervisor shows warmth and rapport toward subordinates. Behaviors by which the supervisor expresses a warm, positive attitude toward and personal concern for subordinates.

By initiating structure we mean: behaviors by which the supervisor organizes and coordinates the activities of subordinates. Behaviors by which the supervisor defines his relation to his subordinates, and defines the role he expects each subordinate to assume.

By participation we mean: behaviors by which the supervisor allows or encourages subordinates to have a say in matters related to their jobs. Behaviors by which the supervisor allows or encourages subordinates to influence decisions related to their jobs and the way in which they do their jobs.

Proceed through the rating task on the following pages. Feel free to refer to your supervisor description packet.

SUPERVISOR DESCRIPTION 1

Initiating structure defined: behaviors by which the supervisor organizes and coordinates the activities of subordinates. Behaviors by which the supervisor defines his relation to his subordinates, and defines the role he expects each subordinate to assume.

To what extent does SUPERVISOR 1 show initiating structure? (Circle one).

very little	little	some	much	very much

SUPERVISOR DESCRIPTION 1

Participation defined: behaviors by which the supervisor allows or encourages subordinates to have a say in matters related to their jobs. Behaviors by which the supervisor allows or encourages subordinates to influence decisions related to their jobs and the way in which they do their jobs.

To what extent does SUPERVISOR 1 show participation? (Circle one).

very little	little	some	much	very much

SUPERVISOR DESCRIPTION 1

Consideration defined: behaviors by which the supervisor shows warmth and rapport toward subordinates. Behaviors by which the supervisor expresses a warm, positive attitude toward and personal concern for subordinates.

To what extent does SUPERVISOR 1 show consideration? (Circle one).

very little	little	some	much	very much