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A STATISTICAL ANALYSIS OF RELATIONS BETWEEN
INTERPERSONAL PERCEPTION AND ADJUSTMENT
IN LEADERS

A Thesis
Presented to
the Faculty of the Department of Psychology
University of Omaha

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Stephen Alan Mourer
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S. A. M.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

The study of leadership and its relationship to other psychological dimensions has been and continues to be a lively research topic in the field of psychology. The study of leadership raises many important questions that, ultimately, can only be properly answered by controlled experimentation. Who will become a leader? Under what circumstances will he lead? What are the psychological dimensions most commonly related to leadership? What is leadership? Can we train leaders? These questions and many others serve as a continuous challenge to researchers in psychology as well as related disciplines.

The importance of leadership today was well described by Shartle:¹

Our business, industrial, governmental, educational, and other institutions place great trust in their executives and administrators. These persons are assumed to render effective leadership so that our institutions will thrive and give increasing strength to the society we live in. . . .

There is great concern in this country not only about our present situation, but also about our

¹Carroll L. Shartle, Executive Performance and Leadership (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1956), p. 1.

executive leadership for the future. Where are these executives coming from? How shall they be developed? What training should they receive? How shall we choose them? How shall we know who to promote? What is satisfactory? How can we remove the inefficient ones?

With Shartle's remarks as a background one need reflect only momentarily on historical, or more practically, regional and local leadership to be reminded of the great potential we have invested in the leaders of our communities and our nation. It becomes apparent that as society expands and becomes more complex, competent leadership becomes an important problem in the progress of our nation. In realization of this fact, science has directed itself toward the problem of leadership and is attempting to predict and control the phenomenon through scientific methodology.

I. THE PROBLEM

Statement of the problem. The purpose of this study was to ascertain if the responses of the leader to standardized stimuli vary systematically relative to selected psychological dimensions. More simply stated, is a leader's response on X dimension systematically related, or does it co-vary with his response on Y dimension? Therefore, this study involved the interrelation or lack of relation between the responses the leader makes on nine standardized psychological dimensions.

The relations to be studied are concomitant, not causal; that is, high X score is not caused by high Y score, but is seen as a phenomenon where X and Y accompany each other. Further, this does not rule out the ability to predict X from observing Y. If the two variables appear together with sufficient frequency and are consistently highly related, a better than chance prediction may be made by observing the presence of Y variable without becoming involved in causal relations.

This study, then, will attempt to measure the relation of leadership to interpersonal perception (perception of another) and adjustment (perception of self).

II. DEFINITIONS OF TERMS USED

This section will attempt to define the constructs that are uniquely defined or could lead to misunderstanding. The constructs that will be defined are leadership and empathy.

Leadership. There have been a number of competent definitions of leadership (Shartle,¹ Stodgill,² and Carter³),

¹Ibid., p. 106.

²Ralph M. Stodgill, "Leadership, Membership, and Organization," Psychological Bulletin, 1950, 47, pp. 1-14.

³Launor F. Carter, "On Defining Leadership," Group Relations at the Crossroads (New York: Harper and Brothers, 1953), pp. 262-265.

but at the present stage of research, leadership must necessarily be defined by the operations with which we measure it. The most frequently used methods for identifying and measuring leadership have been pointed out by Stodgill:¹

1. Observations where the leader emerges from the group.
2. The members of a group choosing or voting for a person in the group whom they would like to be leader.
3. The leader being nominated by a qualified observer.
4. Analysis of biographical and case history data.
5. The listing of traits considered essential to leadership.
6. The selection of individuals already occupying leadership positions.

The last method will be used in the present study.

Persons occupying leadership positions would be campus leaders, business executives, and so forth. Making the inference that these people are leaders is probably justified.

The considerable range within any one method of defining leadership still leaves room for differences in meaning. This may be due to the type of sample the

¹Ralph M. Stodgill, "Personal Factors Associated with Leadership: A Survey of the Literature," Journal of Psychology, 1948, 25, pp. 35-71.

experimenter decides to use. There would probably be differences between campus leaders and business executives, even though they both fulfill the general criterion of occupying leadership positions. Therefore, the definition of leadership must be further restricted to persons occupying leadership positions in business and industrial institutions.

Empathy (Insight, Ability to Judge). It seems essential to point out that the typical labels and definitions used to identify the interpersonal perception measures leave much to be desired. Unequivocal agreement is the exception rather than the rule. Therefore, a note on attempts to define empathy is in order.

Dymond¹ defined empathetic ability as:

The imaginative transposing of oneself into the thinking, feeling and acting of another so structuring the world as he does.

Travers,² defining the ability to judge, stated:

They all involve tasks where the selection of relevant cues is difficult and where the cues selected are rarely adequate for drawing a conclusion which is definitely true. When someone says, "I judge this to be," he invariably means, "I have

¹Rosalind E. Dymond, "A Scale for the Measurement of Empathetic Ability," Journal of Consulting Psychology, 1949, 13, p. 127.

²R. M. V. Travers, "A Study in Judging the Opinions of Groups," Archives of Psychology, 1941, No. 266, p. 8.

made use of all the cues I can find and conclude that the general indication is that such and such is the case."

Bender and Hastorf¹ defined ability to judge others:

Abstracting some vague generalization of the personality from the variety of observed situations and actions, or expressed thoughts and feelings of another. On the basis of such abstraction the observer makes predictions accurately or inaccurately about the person he perceives.

Taft² stated:

The main attributes of the ability to judge others seem to be in three areas, possessing appropriate judgmental norms, judging ability and motivation. (1) Where the judge is similar to the subject in the background he has the advantage of being able to use appropriate norms for making judgments. (2) The relevant judging ability seems to be a combination of general intelligence and social intelligence. (3) But most important is motivation. If the judge is motivated to make accurate judgments about the subject and he is free to be objective and if Number (1) and Number (2) are present, the judge has a good chance of being accurate.

A further distinction was made by Taft.³ He postulated a difference between mass empathy and empathy. Mass empathy is analytic and involves a judge making predictions

¹I. E. Bender and A. H. Hastorf, "The Perception of Persons: Forecasting Another Person's Responses on Three Personality Scales," Journal of Abnormal Social Psychology, 1950, 45, p. 556.

²Ronald Taft, "The Ability to Judge People," Psychological Bulletin, 1955, 52, No. 1, p. 20.

³Ibid.

about the mean responses of a large group of people. Empathy is nonanalytic, but the judge has some acquaintance with the subject and will respond on various test items. Mass empathy can be understood as predicting the generalized other, and empathy as predicting for a specific other. The latter definitions will be neither accepted nor rejected but merely used as guides in understanding the general meaning of empathy or ability to judge in this paper.¹

To be sure, the quoted definitions only reflect a few of the attempts at explaining the phenomena, but to devote further space to the problem would not benefit the situation. Although the definitions all seem to be generally similar, it seems best not to embrace any one definition. In the present study empathy will be defined by the tests that are utilized to measure it.²

¹Empathy and ability to judge will be used synonymously.

²See Section on Methods and Group Used.

CHAPTER II

REVIEW OF THE LITERATURE

This review will be concerned only with studies that have some bearing on the present study. Only studies that deal with the relation of leadership to interpersonal perception and adjustment will be included. For further information on leadership and related variables the reader is referred to Stodgill¹ and Jenkins.² For representative reviews of the trait situation-question the reader is referred to Bogardus,³ Gibb,⁴ and Gouldner.⁵

Fiedler⁶ in his study of leader attitudes and group effectiveness was able to predict group performance on the

¹Ralph M. Stodgill, "Personal Factors Associated with Leadership," Journal of Psychology, 1948, 25, pp. 35-71, A Survey of Literature.

²W. O. Jenkins, "A Review of Leadership Studies with Particular Reference to Military Problems," Psychological Bulletin, 1947, 44, pp. 54-59.

³Emory S. Bogardus, "Leadership and Social Situations," Sociology and Social Research, 1931-32, 16, pp. 164-170.

⁴Cecil A. Gibb, "The Principles and Traits of Leadership," Journal of Abnormal and Social Psychology, 1947, 42, pp. 267-284.

⁵Alvin Gouldner, "Situations and Groups: The Situationist Critique," from Brown and Cohn, The Study of Leadership, 1958, p. 76.

⁶Fred E. Fiedler, Leader Attitudes and Group Effectiveness (University of Illinois Press, Final Report of ONR Project NR 170-106, N6-ori-07135), 1958, p. 22.

basis of interpersonal relations between the leader and his group. He found that in effective groups the leader was, first of all, acceptable to the group. Second, the leader in these groups was found to remain psychologically distant from his group, especially his key men. The leader tended not to become emotionally involved with his group members. When the successful leader was found not to be psychologically distant, he was consistently physically distant from his group. Physical distance was inferred when the leader did not endorse his key men on sociometric measures.

In summary, interpersonal relations were different in effective and ineffective groups; further, this difference seemed to be related to the amount of psychological or physical distance the leader maintained from his group.

In Mann's¹ review of the relationship between personality and performance in small groups he reported that of the studies reviewed the general trend was for the leader to show greater accuracy in predicting the opinions of other group members. Leaders were also found to have greater insight into others than non-leaders. The variables most highly related to leadership in a positive fashion were

¹Richard D. Mann, "A Review of the Relationship Between Personality and Performance in Small Groups," Psychological Bulletin, 1959, 56, pp. 241-271.

intelligence and adjustment. Dominance and masculinity yielded the next highest positive relations while conservatism was negatively related to leadership.

Chowdry and Newcomb¹ in their study of natural groups, that is, religious groups, medical fraternities, and so forth, found that the leaders were able to predict group opinion on relevant issues better than members of the group. There was no difference between leaders and non-leaders on irrelevant issues. They suggested that their results support the hypothesis that leaders are more sensitive to the group as a whole than non-leaders.

Norman and Ainsworth² in their study of the relationship among projection, empathy, reality, and adjustment, hypothesized that, operationally defined, insight into others or self and empathy are positively related to reality and negatively related to projection.

The Guilford-Martin Inventory of Factors was administered to seventy-four male college students. Two forms were used. First, the subject took the first form of the

¹Kamda Chowdry and Theodore M. Newcomb, "The Relative Abilities of Leaders and Non-Leaders to Estimate Opinions of Their Own Group," Journal of Abnormal and Social Psychology, 1952, 47, pp. 51-57.

²R. D. Norman and Patricia Ainsworth, "The Relationships Among Projection, Empathy, Reality, and Adjustment, Operationally Defined," Journal of Consulting Psychology, 1954, 18, pp. 53-58.

inventory himself; then two weeks later he filled out the second form of the inventory, but this time he was instructed to answer the questions as he believed most others his age would answer.

Projection was present if, on the first form, the subject denied he had a certain trait; on the second form, he felt others possessed the trait; and fifty-one per cent, a majority, of the seventy-four subjects said they did not have the trait on the first form. Empathy was present if the subject said others had a certain trait and fifty-one per cent of the sample agreed. Reality was present if, on the second form, the subject said others possessed a certain trait and a majority of the group also felt that others possessed the trait.

Norman and Ainsworth found that their hypothesis was generally upheld by the data. Empathy was positively related to reality. Projection was negatively related to empathy and reality. Adjustment, as defined by the Guilford-Martin Inventory of Factors, was more highly related to empathy and reality than to projection.

Brown and Shore¹ stated the hypothesis that
(a) predictive abstracting is a function of leadership and

¹C. B. Brown and Richard P. Shore, "Leadership and Predictive Abstracting," Journal of Applied Psychology, 1956, 40, pp. 112-116.

(b) a direct relation exists between an individual's predictive abstracting score and his echelon level in an industrial organization. They felt that predictive abstracting is a better word than "empathy," due to the clinical connotations surrounding empathy. If an individual is to predict the attitudes and opinions of other persons, it will depend largely on that individual's ability to abstract from the existing information the relevant cues related to the variable to be predicted. When the judge abstracts from the total situation, that information which will enable him to predict the responses of another Brown and Shore call this process predictive abstraction (PRAB).

Eighty-three employees of Wolverine Tube Company,¹ representing four echelons of business with the organization, were given an attitude questionnaire dealing with job satisfaction, economic issues, and social issues. Each group was then asked to predict the responses of the department managers as a group and the non-supervisors as a group. The PRAB score was the difference between the individual's prediction for the group on a certain item and the group's mean response value for that item. Responses were scored on a four-point scale: Strongly agree (4), Agree (3), Disagree (2), Strongly Disagree (1). The resulting data

¹Ibid.

generally upheld the hypothesis. The supervisory personnel made better predictions than the non-supervisory personnel. Although they did not find a direct relation between PRAB score and echelon level, the results were in the direction stated by the hypothesis.

Richardson and Hanawalt¹ compared the Bernreuter Inventory scales of 258 business men separated into groups of (1) office holders and (2) supervisors, and (3) non-office holders and (4) non-supervisors. Groups (1) and (2) perceived themselves to be less neurotic, less introverted, more dominant, more self-confident, and more self-sufficient than groups (3) and (4).

Bell and Hall² hypothesized that a person who is selected as a leader must be a person who is perceptive of the needs of the members of the group and must act in such a way as to generally satisfy those needs. In their study of the relation between leadership and empathy, they reported that leadership position as measured by peer rating in initially leaderless groups, and empathy as measured by the

¹H. M. Richardson and N. G. Hanawalt, "Leadership As Related to the Bernreuter Personality Measures:///Leadership Among Adult Men in Vocation and Social Activities," Journal of Applied Psychology, 1944, 28, pp. 308-317.

²G. B. Bell and Harry Hall, Jr., "The Relationship Between Leadership and Empathy," Journal of Abnormal and Social Psychology, 1954, 49, pp. 156-157.

Kerr Empathy Test were correlated $.25$ which was significant at the one per cent level.

In an exploratory study by Dymond¹ the combined results of high empathy and low empathy groups on the Wechsler, Rorschach, T.A.T., the California Ethnocentrism Test, and the subject's own self-analysis led to the conclusion that high empathy groups tended to be more outgoing and flexible in their relationships. High empathy groups were also better able to initiate and maintain satisfying emotional relations.

Taft's² review of the literature on ability to judge people found consistent positive relations between ability to judge personality traits of others and:

1. Age (children were better judges)
2. Intelligence and academic ability
3. Specialization in the physical sciences
4. Esthetic ability and dramatic interests
5. Insight into one's status with respect to one's peers on specific traits
6. Good emotional adjustment and integration (Analytic tests only)

¹Rosalind F. Dymond, "Personality and Empathy," Journal of Consulting Psychology, 1950, 14, pp. 343-350.

²Ronald Taft, "The Ability to Judge People," Psychological Bulletin, 1955, 52, No. 1, p. 20.

7. Social skill (only with tests of ability to predict subject's behavior)

Taft also concluded that social detachment was a necessary prerequisite for making accurate judgments of others.

Summary

This review indicates that leaders tend to remain emotionally or physically distant from the members of their groups, but at the same time they maintain a high degree of sensitivity to the group as a whole. High empathetic ability is related to good adjustment, and leaders are consistently found to be better adjusted and better judges of others than non-leaders.

CHAPTER III

METHODS AND GROUP USED

This section will describe methods of measurement and the sample used in the study.

The problem was to assemble a group of standardized tests to measure the perceptual orientation of a recognized leader towards others and towards himself. Individuals occupying leadership positions do not have time to take extensive batteries of tests. Therefore, economy of administration time was one of the prime objectives in choosing the tests.

The tests that were used to measure the leader's perception of others were the following: the Responsibility, Authority, Delegation Scales, the Kerr Empathy Test, and the Personal Perception Scale. The tests will be described in that order.

R.A.D. Scales¹

The R.A.D. Scales were developed by Ralph M. Stodgill at Ohio State University.² They were designed to measure

¹See Appendix E.

²Ralph M. Stodgill and Carroll L. Shartle, "Methods in Study of Administrative Leadership," Research Monograph Number 80, Bureau of Business Research, the O.S.U., pp. 33-41.

different degrees of perceived responsibility, authority, and delegation on the part of administrators and supervisory personnel. The items are of such a general nature as to be applicable to any organization.

The test has six scales. Two scales describe different degrees of responsibility; two scales describe different degrees of authority; and two scales describe different degrees of authority delegated to assistants. Each scale has eight statements. Of the eight statements on each scale the testee marks the most descriptive (XX) and the second most descriptive statement (X) relative to his own perceived position within the organization. Each statement has a scale value ranging from one to eight. Since there are two scales for each characteristic, a score is obtained by computing the sum of the four items checked in the two scales and dividing the sum by four. The entire test, generally, can be taken in five or six minutes.

The test-retest reliability for the R.A.D. Scales for thirty-two naval district command staff officers was .62 for the responsibility scale, .55 for the authority scale, and .73 for the delegation¹ scale.

The members of the leader's group (juniors) were asked to fill out an R.A.D. scale for themselves so that

¹Ibid., p. 37.

a R.A.D. score could be obtained for each available¹ member of the leader's group. Then the leader (senior) filled out a R.A.D. scale for each junior. Using the test in this manner a different score could be obtained to contrast the senior's perception of the junior and the junior's perception of himself. The score was derived by subtracting the junior's score from the senior's score, summing the squares of these differences, then taking the square root of the total. A low score would indicate accurate perception.

Kerr² Empathy Test

The Empathy Test³ (see Appendix) developed by Kerr and Speroff is designed to measure empathetic ability. The test contains three sections made up of items pertaining to music, magazines, and annoying experiences. The testee is asked to rank different types of music, magazines, and annoying experiences not as he or she would rank them, but as the average person would rank them. For example, the testee is asked to rank fifteen magazines in the magazine section in the order of least to most paid circulation. A

¹In some cases it was not feasible for the superior to include his entire staff, due to group size.

²W. Kerr, The Empathy Test. (Chicago, Illinois: Psychometric Affiliates, 1947).

³See Appendix E.

score is obtained by subtracting the value the testee assigns a certain item from the actual normative item value. Then all the differences for each item in all three sections are summed and subtracted from two hundred.

It was felt that the economy of administration and the reliability and validity reports of the Kerr test rendered it a valuable addition to the present battery.¹

While the R.A.D. scales are measuring the leader's responses or predictions about a specific individual that is known to the leader, in the Kerr test the leader is responding to a generalized other (average American). The Kerr Empathy Test, then, is attempting to measure how closely the leader can anticipate the mean responses of an unfamiliar group.

Personal Perception² Scale

The Personal Perception Scale is a modification by Fiedler³ of Osgood's⁴ Semantic Differential. The testee

¹Kerr, op. cit., p. 3.

²See Appendix E.

³Fred E. Fiedler, "Leader Attitudes and Group Effectiveness" (Final Report of ONR Project NR 170-106, N6-ori-07135, University of Illinois Press, Urbana).

⁴Charles E. Osgood, "The Nature and Measurement of Meaning," Psychological Bulletin, 1952, 49, pp. 197-238.

is given a certain idea or concept. In this case the idea was "With whom do you work best, and with whom do you work least well?" With the concept in mind the testee is given a sheet (for each concept) of polar adjectives to describe the concept. A sample item follows:

Bold x x x x x x x x Timid
 1 2 3 4 5 6

In this case, the testee feels the person he is describing is quite timid. The continuum from very bold to very timid is such that the testee may designate the degree of boldness or timidity he perceives in the person he is describing. Each space is given a scale value from one to six. Twenty-three adjectives and opposites are included on each scale.

By using two sheets of adjectives and instructing the leader to describe the person with whom he can work best and the person with whom he works least well, a score that Fiedler¹ calls an Assumed Similarity Score (ASo) can be derived. Does the leader perceive a large or small difference between the least and most preferred co-worker? The score is derived by subtracting the indicated value for the bold-timid least preferred continuum from the bold-timid most preferred continuum. For example, the testee

¹Fiedler, op. cit., supra.

checks the space with a scale value of five (quite timid) for the person with whom he works best and the space with a scale value of two for the person with whom he works poorly. Subtracting these scale values results in a difference of three. This process is repeated for all twenty-three polar adjectives. Then each difference is squared and the squared differences are summed. The final step is to extract the square root of this sum.

A low numerical score would indicate that the leader perceives many similarities between his most preferred and least preferred co-workers. A large score indicates that the leader perceives a large difference between the least and most preferred co-workers.

The split-half reliability of the ASo measure was .68 using bomber crews (N=562).

Fiedler¹ interpreted the ASo score as measuring a basic attitude toward others which he described as psychological distance. The low ASo person (high numerical score or little similarity between opposites) is seen as:

Independent of others, less concerned with their feelings and willing to reject a person with whom he cannot accomplish an assigned task. He tends to evaluate the personality of others by their ability to perform a job.

A person with high ASo: "tends to be concerned about his

¹Fiedler, op. cit., p. 22.

interpersonal relations and feels the need for the support and approval of his associates."¹

The R.A.D. Scales, the Kerr Empathy Test, and the Personal Perception Scale are all methods which measure how the leader perceives others. The R.A.D. scales, the Kerr test, and the Personal Perception Scale represent measures of how the leader relates to a specific other, to a generalized other, and to least and most preferred co-worker.

Intra-Personal Perception (Adjustment)

The test used to measure how the leader perceives himself was the Gordon Personal Profile.² This test measures four independent personality characteristics: ascendancy, responsibility, emotional stability, and sociability. These are defined by Gordon³ as follows:

ASCENDANCY

Those individuals who adopt an active role in group situations, who are self-assured and assertive in relationships with others, and who tend to make independent decisions, make high scores on this scale. Those who play a passive role in the group, who would rather observe than participate, who generally lack self-confidence, who prefer to have others take the lead, and who tend to be overly dependent on others for advice, normally make low scores on this scale.

¹Ibid.

²Leonard V. Gordon, "Gordon Personal Profile," United States Naval Personnel Research Unit, San Diego, California (New York: World Book Company, 1935).

³Ibid.

RESPONSIBILITY

Those individuals who take responsibilities seriously, who are able to stick to any job and get it done, who are persevering and determined, score high on this scale. Individuals who are unable to stick to tasks that do not interest them, and in the extreme, who tend to be flighty or irresponsible, usually make low scores on this scale.

EMOTIONAL STABILITY

High scores on this scale characterize individuals who are well-balanced, emotionally stable, and relatively free from anxiety and nervous tension. Low scores are associated with excessive anxiety, tension, hypersensitivity, and nervousness. Large negative scores may indicate the traditional "neurotic."

SOCIABILITY

High scores are made by individuals who like to be with and work with people, who are gregarious and sociable. Low scores reflect a lack of gregariousness, restriction in social contacts, and in the extreme, an avoidance of social relationships.

The test, which utilizes the forced choice approach, consists of eighteen sets of four statements. Each statement represents one of the four factors which were discovered by factor analysis. Each set of statements includes two statements of equally low preference and two statements that are equally complementary. The testee marks the statement which is most like himself and the statement that is least like himself. Administration time runs from ten to fifteen minutes, and the profile can be quickly hand scored.

The test's construction and reported validities and reliabilities¹ made it valuable as a measure of how the leader perceived himself.

The Group Used

The sample was twenty-one individuals who occupy leadership positions in Omaha and Council Bluffs business and industry. They represent such positions as bank presidents, city manager, supervisor of nurses of surgical operations, administrators, and so forth. Additional characteristics of the sample were as follows:

1. The groups of juniors ranged in size from three to fourteen.
2. Among the leaders there were six women and fifteen men.
3. The experimenter had no control over who or how many people were included in the group.
4. Participation was voluntary.
5. Total testing time was probably an hour and a half on the part of the leader.

This section was concerned with the tests that were used and the type of sample utilized. The following section will deal with the results of the study.

¹Gordon, op. cit., pp. 12-13.

CHAPTER IV

RESULTS

This section will report the methods used to analyze the data and the results of that analysis. Measures of central tendency and variability will be followed by a correlational analysis. A short review of the symbols used to represent the tests and the nature of scores obtained will be included before reporting the results proper.

Accuracy of Predicted Responsibility, Authority, and Delegation (R.A.D. Scales)

The R.A.D. Scales as used in the present study yielded a difference score which reflected the leader's accuracy in perceiving his group. A low numerical score indicated greater accuracy. Each scale will be designated by the capital letter R, A, or D with a lower case subscript p . Accuracy of predicted responsibility is symbolized by R_p , accuracy of predicted authority A_p , and accuracy of predicted delegation D_p .

The Kerr Empathy Test

On the Kerr Test a high score indicated high empathy; low score indicated low empathy. The test had a range of scores from 0-200.

Personal Perception Scale (P.P.S.)

A high personal perception score (P.P.S.) indicated low ASo, that is, the leader saw large differences between least and most preferred co-worker. Low P.P.S. indicated high ASo, relatively little similarity between least and most preferred co-worker. Scores may range from 0-24.

Gordon Personal Profile (AREST)

A high score on each scale indicated better adjustment. A low score indicated poorer adjustment or perception of self. The profile factors will be abbreviated by using the first letter of each factor to designate that particular scale: A = Ascendancy, R = Responsibility, E = Emotional Stability, S = Sociability, T = Total Adjustment. Scores may range from 1-32.

Measures of Central Tendency and Variability

At the beginning of the study it was decided not to correct for the size of the leader's group when computing the predictive accuracy scores on the R.A.D. scales. By doing this the effect of the size of the leader's group on accuracy scores could be obtained.¹ In order that the raw scores may be judged in regard to leader accuracy or inaccuracy, the maximum predicted accuracy score as well as the

¹See Appendix D.

actual predicted accuracy score for each group appears in Table I. As the leader's group becomes larger the maximum predicted accuracy score increases. For example, in Group I the maximum predicted accuracy score was 20.09; this means that if the leader of Group I had obtained this score, he would have been completely inaccurate in estimating the responses of his group. In this case, the leader's R_p score is 4.09. A_p is 5.09 and D_p is 3.60. The leader of Group I, then, was a fairly accurate predictor of his group's responses. It is apparent after comparing the actual predicted accuracy scores with the maximum predicted accuracy scores that the leaders were generally accurate in anticipating the responses of their group on the R.A.D. scales.

Table II gives the means and standard deviations for the Kerr Test, P.P.S., and the AREST Scales of the Gordon Personal Profile.

Table II should be read as follows: the mean ascendancy score A on the Gordon Personal Profile is 22.31 with a standard deviation of 3.04. The percentile rank corresponding to this mean is 73, meaning that the leaders as a group scored higher than seventy-three per cent of the population used to standardize the test. The number of leader scores was nineteen for the Gordon Scales and twenty-one for all other measures.

TABLE I
 MAXIMUM DIFFERENCE SCORE FOR EACH GROUP

Group	R_p	A_p	D_p	Maximum Difference	N
1.	4.09	5.09	3.60	20.09	14
2.	5.35	5.69	5.44	20.09	14
3.	1.05	.71	2.09	14.69	6
4.	.969	3.12	2.88	13.41	5
5.	3.39	2.70	2.48	14.69	7
6.	1.17	1.83	1.49	13.41	5
7.	1.09	.965	1.64	12.00	4
8.	1.78	1.58	.90	12.00	4
9.	.790	.559	.00	15.87	7
10.	1.68	2.44	3.85	18.79	10
11.	2.14	1.82	4.19	13.41	5
12.	2.70	3.02	3.25	19.89	11
13.	4.44	2.21	2.13	13.41	5
14.	.75	.935	.83	13.41	5
15.	2.75	2.58	2.20	12.00	4
16.	1.56	1.27	3.05	12.00	4
17.	.435	1.83	1.51	12.00	4
18.	.194	1.39	2.37	13.41	5
19.	1.64	1.37	3.64	12.00	4
20.	.079	.75	3.15	10.39	3
21.	2.19	2.34	2.265	12.00	4

TABLE II
 MEANS AND STANDARD DEVIATIONS AND PERCENTILE NORMS
 OF LEADERS' RESPONSES ON THE GORDON PERSONAL
 PROFILE (AREST), KERR EMPATHY TEST, AND
 PERSONAL PERCEPTION SCALE

	Mean	Standard Deviation	Percentile	Number
A	22.31 (22)	3.04	73 (High)	19
R	23.63 (24)	3.69	81 (High)	19
E	19.31 (19)	6.44	43 (Aver.)	19
S	20.68 (21)	4.66	49 (Aver.)	19
T	29.31 (30)	3.84	70 (High)	19
Kerr	79.05 (79)	16.58	55	21
P.P.S.	13.30	3.20	None	21

The Gordon means were relatively similar with the E Scale at 19.31 the lowest and total adjustment T at 29.31 the highest. Variability was generally small, but the E Scale showed almost twice the variability of the other scales. The percentile ranks corresponding to the means of A, R, and T scales were high while the E and S scales were average.

The Kerr test had a mean of 79.05 and a standard deviation of 16.58. Average empathetic ability was indicated by a percentile rank of 55.

The leaders' mean P.P.S. was 13.30 with a standard deviation of 3.20.

Relations between the Variables

Scatter diagrams were plotted and the relations between variables were found to be linear, making it possible to use the Pearson product moment correlation coefficient as an index of relation.

It became apparent that the size of the leaders' group did have an effect on the magnitude of the R_p , A_p , D_p scores.¹ For this reason part correlations² were computed each time the R_p , A_p , or D_p score was correlated with any of

¹See Appendix D.

²J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Company, Inc., 1936).

the other variables. This was done to obtain a better picture of the relation between the predicted accuracy scores and all other variables. The function of the part correlation was to hold constant the effect of X variable on Y variable so the true correlation between Y and Z variables might be obtained. In this case the effect of the size of the group (X variable) on the R_p , A_p , D_p scores (Y variables) was held constant so the correlation between R_p , A_p , D_p scores (Y variables) and all other variables (Z variables) could be computed.

Table III shows the intercorrelations of the leaders' scores. The correlations will be discussed in the same order that they appear on the matrix. Table III should read R_p score is correlated .796 with A_p score. Only those correlations that are significant at the five per cent level or nearly significant at this level will be discussed in the text. It must be kept in mind that the R_p , A_p , D_p scores are predictive accuracy scores and represent how well the leader anticipates or predicts the responses of the members of his group.

The R_p score is closely related to the A_p and D_p scores, the Kerr test, P.P.S., and the A, E, S scales on the Gordon personal profile. R_p 's correlation with A_p and E scale are significant beyond the one per cent level. R_p 's correlation with D_p and S scale is significant beyond the five per cent level.

TABLE III
INTERCORRELATION OF EXPERIMENTAL VARIABLES

	R _p	A _p	D _p	Kerr	P.P.S.	A	R	E	S	T
R _p		***.796	*.506	.380	-.216	-.404	.176	** .595	*-.531	.009
A _p			** .632	.413	-.394	-.331	.367	.434	-.261	.262
D _p				.028	-.013	-.274	.186	.264	-.168	.045
Kerr					-.156	-.025	.067	.063	-.100	-.069
PPS						-.117	.336	.081	.048	.200
A							*-.512	**-.665	** .709	.078
R								** .639	-.185	** .763
E									*-.548	*.472
S										.326
T										

**Significance for one per cent level. *Significance for five per cent level.

R_p is positively related to A_p and D_p scores, the Kerr test, and the E scale on the Gordon. This means that greater predictive accuracy on the responsibility scale is related to greater predictive accuracy on the authority and delegation scales; and the more accurate the leader becomes in predicting the responses of his group on the responsibility scale, the lower he tends to score on the Kerr test and emotional stability scale.

R_p is negatively related to the P.P.S. and the A and S scales on the Gordon. This means that greater predictive accuracy is linked with the leader's perception of large differences between his least and most preferred co-worker. Small R_p scores also go with high ascendancy and sociability scores.

A_p is closely related to the D_p scores, the Kerr test, P.P.S., and the AREST scales on the Gordon Personal Profile. A_p 's correlation with the D_p score is significant at the one per cent level.

A_p is positively related to the D_p score, Kerr test, and the R, E, T scales of the Gordon Personal Profile. This means that greater accuracy on the authority scale is related to greater accuracy on the delegation scale. More accurate authority predictions also tend to be related to lower scores on the Kerr test and the responsibility, emotional stability, and total adjustment scales of the Gordon Personal Profile.

A_p is negatively related to the P.P.S. and the A, S scales of the Gordon. This means that greater predictive accuracy is linked with the leader's perception of large differences between his least and most preferred co-worker. Greater accuracy is also related to high ascendancy and sociability scores.

D_p is somewhat related to the A and E scales on the Gordon Personal Profile. The relation with the emotional stability scale is positive, and the relation with the ascendancy scale is negative.

The P.P.S. is somewhat positively related to the responsibility and total adjustment scales on the Gordon. This means that higher P.P.S. is related to higher responsibility and total adjustment scores.

The A scale is highly related to the R, E, and S scales of the Gordon Personal Profile. The correlations with the E and S scales are significant at the one per cent level, while the correlation with the R scale is significant at the five per cent level.

A is negatively related to the R and E scales, meaning that high ascendancy scores are accompanied by low responsibility and emotional stability scores. A is positively related to the S scale, meaning that if the leader had a high ascendancy score, he also had a high sociability score.

R scale has a high positive relation with the E and T scales, meaning that when the leader had a low responsibility score, he also tended to score low on the emotional stability and total adjustment scales. These correlations were significant at the one per cent level.

The E scale is closely related to the S and T scales. E's negative correlation with the S scale is significant beyond the five per cent level. This means when the leader scored low on emotional stability, he tended to score high on the sociability. The positive relation between emotional stability and total adjustment means that if the leader scored low on emotional stability, he also tended to score low on the total adjustment scale. The S scale is also somewhat related to total adjustment in a positive fashion. This means that a high sociability score is generally related to a high total adjustment score.

This section reported the results of the statistical analysis. The following section will be devoted to a discussion of those findings.

CHAPTER V

DISCUSSION

This section is concerned with the salient relations that were found between leaders' responses on the various test scales. Possible interpretations of these relations will be considered.

In discussing the results of the study, it must be kept in mind that any inferences that are made concerning the present data must necessarily be somewhat restricted. Therefore, when the text refers to the leaders not becoming emotionally involved with their groups, it is referring to the leaders' performance in this particular situation. A valid generalization can only be made after exhaustive experimentation has yielded consistent results. Although the present study does not afford this kind of evidence, the results must stand until proved invalid or modified by further research.

The significant intercorrelations of the leaders' accuracy scores on the responsibility, authority, and delegation scales are not surprising in that each scale makes very similar demands of the leader. If the leader can anticipate the responses of his group on the responsibility scale, it is quite probable that he can also anticipate responses on the authority and delegation scales.

A very interesting but not highly significant set of relations were those between the Kerr Empathy test and the R_p , A_p , and D_p scores. A high predicted accuracy score (low numerical score) was related to a low Kerr score. If the R_p , A_p , and D_p scores and the Kerr test are all measures of empathetic ability, we would expect greater predicted accuracy to be related to a high Kerr score.

Hall and Bell¹ in their study of the relationship between two tests of empathy found that the Kerr test and the Dymond Empathy test² were correlated .02. The Dymond test is similar to the R_p , A_p , and D_p scores in that the leader predicts for a specific other. The differences between judging a specific other and a generalized other and the possibility of different processes being involved has been pointed out by Taft.³ The relationship between the Kerr test and the R_p , A_p , D_p scores is not high enough to demand interpretation, but it is suggestive.

¹H. E. Hall, Jr., and G. B. Bell, "The Relationship between two Tests of Empathy," Dymond and Kerr's Paper read at Psychological Association, Cleveland, September, 1953.

²Rosalind E. Dymond, "A Scale for the Measurement of Empathetic Ability," Journal of Consulting Psychology, 1949, 13, pp. 127-133.

³Ronald Taft, "The Ability to Judge People," Psychology Bulletin, 1955, 52, pp. 1-24.

Possibly the leader need not become emotionally involved with his group in order to predict accurately the groups' responses to job-relevant situations. This could explain the modest relationship found between the predicted accuracy scores on the responsibility and authority scales and the Personal Perception Scale.

Greater predicted accuracy scores on the R.A.D. scales were closely related to high ascendancy and sociability scores. Possibly the leader who was highly sociable and aggressive was performing a secondary but necessary part of his job. His job demanded that he be outgoing and sociable in his relations with others in order to maintain the leader position. Due to these demands he may have developed the ability to understand the attitudes of his group. The leader, then, did not bring this ability to the leadership position but developed the ability because the position demanded it.

The more accuracy the leader shows in predicting the responses of his group the lower he tends to score on the emotional stability scale. If the leader sees himself as nervous and unstable, he may become very sensitive to his own behavior. This increased sensitivity may tend to make the leader more cognizant of the behavior of others. Although we have no evidence that this awareness of others automatically produces such insight, the generally high accuracy of the leaders would suggest this as a possibility.

The extremely high correlations between the emotional stability scale and the R_p score suggest that the emotional stability scale may act as a predictor variable for the R_p score. When the leader has a relatively low emotional stability score, he tends to be accurate in anticipating the responses of his group. Thus, we may predict beyond chance that if the leader scores low on the emotional stability scale, he will generally be accurate in predicting the responses of his group members. If, after repeating the study many times, this relation was consistently found to be present, it would be possible to eliminate the R_p score and obtain the same information from the emotional stability score.

It is interesting to note that emotional stability is positively related to responsibility and negatively related to the ascendancy and sociability scales. All of these relations are high enough to conclude that when the leader scored low on the emotional stability scale, he scored low on responsibility and high on the sociability and ascendancy scales.

It may be pointed out that the impressive intercorrelations of the Gordon scales may be a mere artifact of the test itself; that is, the scales do not represent independent factors and are naturally intercorrelated. To a certain

extent this criticism is true. Gordon¹ pointed out that a relation probably does exist between the ascendancy, sociability, responsibility, and emotional scales. However, those relations are not nearly as significant as the relations found in the present study.² Guilford³ pointed out that much of the criticism of inventory intercorrelations stems from confusing the factor itself with the obtained score on that factor. He stated that "Factors and their corresponding scores are logically and operationally distinct variables." Therefore, it seems safe to conclude that the significant intercorrelations obtained in this study are due, at least in part, to actual similarities of the leaders' responses.

The interpretations given in this section are only suggestions and they are not meant to be final. The relations underlying the discussion did appear in the present study, but they must be verified through further research.

¹L. V. Gordon, Gordon Personal Profile: Manual (Yonkers-on-Hudson, New York: World Book Company, 1953).

²See Appendix C for Comparison of the natural correlations and obtained correlations of Gordon Factors.

³J. P. Guilford, "When not to Factor Analyze," Psychological Bulletin, 1952, 49, p. 30.

CHAPTER VI

SUMMARY AND CONCLUSIONS

I. SUMMARY

At the beginning of this report, it was indicated that the purpose of the present study was to determine whether or not the leaders' responses on measures of interpersonal perception and adjustment were systematically related.

From the results, it seems reasonable to conclude that a number of the leaders' responses were significantly related. The most significant relations were those indicating that greater accuracy of R.A.D. prediction by the leaders was accompanied by generally low emotional stability and responsibility scores and high sociability and ascendancy scores. There was very little variability in the accuracy of the leaders' responses on the R.A.D. scales.

It was mentioned earlier that the R.A.D. accuracy score might be interpreted as an empathy score. Although the correlation with the Kerr Empathy Test does not support such a claim, it does seem that the predictions of the leaders on the R.A.D. scales must involve some kind of an empathetic process.

Possibly the leaders' jobs make demands of them that are similar. If the leadership jobs are similar in their demands, the person occupying a leadership position may adopt similar behavior patterns in order to maintain the leadership position. Perhaps the leaders are influenced by the demands of the situation and must develop, rather than possess, certain reaction patterns that are appropriate. Further investigation in this area would seem to be warranted.

II. RECOMMENDATIONS FOR FURTHER RESEARCH

Probably one of the main functions of a research paper is to stimulate new research. Three suggestions may be made as a result of this report:

First, a study could be designed to assess individuals before and after they assume the leadership role. This would necessitate including large groups of potential leaders, such as university students. By comparing their responses before and after they became leaders, it might be determined what effect the leadership role had upon variables, such as personality, intelligence, and interpersonal perception.

Second, it would be interesting to measure the leaders' judging ability on job-related situations, possibly an attitude or personality questionnaire. If the leaders'

predictive accuracy on a job-related scale and a non-related scale were measured, it would be possible to find out if the leaders were equally accurate on non-related material.

Third, the present study was concerned with the leaders' responses; but the leaders' groups, aside from filling out the R.A.D. scale, were not used. One member of the group as well as the leader might be used. It would be interesting to determine how the members' responses compared to the leaders' responses using similar procedures.

III. CONCLUSIONS

The purpose of this study was to determine whether or not responses of recognized leaders on measures of interpersonal perception and adjustment were systematically related. Twenty-one individuals occupying leadership positions in business and industry were given tests that purported to measure how the leader perceived others and how he perceived himself. Means, standard deviations, Pearson product moment correlation coefficients, and part correlations were used to analyze the data. Twelve of the correlations were significant beyond the five per cent level.

From the results, it was concluded that when the leader was accurate in predicting the responses of his group members on the R.A.D. scale, he scored low on the

emotional stability and responsibility scales and high on the sociability and ascendancy scales of the Gordon Personal Profile. The emotional stability scale appeared as the best predictor variable. Possible interpretations of the results and recommendations for further research were discussed.

B I B L I O G R A P H Y

BIBLIOGRAPHY

- Bell, G. B., and Harry Hall, Jr. "The Relationships between Leadership and Empathy," Journal of Abnormal and Social Psychology, 1954, 49, pp. 156-157.
- Bender, I. E., and A. H. Hastorf. "The Perception of Persons: Forecasting Another Person's Responses on Three Personality Scales," Journal of Abnormal and Social Psychology, 1950, 45, pp. 556-561.
- Bogardus, Emory S. "Leadership and Social Situations," Sociology and Social Research, 1931, 16, pp. 164-170.
- Brown, C. G., and Richard P. Shore. "Leadership and Predictive Abstracting," Journal of Applied Psychology, 1944, 28, pp. 308-317.
- Carter, Launor F. "On Defining Leadership," Group Relations at the Cross Roads. New York: Harper & Brothers, 1953.
- Chowdry, Kamda, and Theodore M. Newcomb. "The Relative Abilities of Leaders and Non-leaders to Estimate Opinions of Their Own Ground," Journal of Abnormal and Social Psychology, 1952, 47, pp. 51-57.
- Cronbach, L. J. "Processes Affecting Scores on Understanding Others and Summed Similarity," Psychological Bulletin, 1955, 52, pp. 177-193.
- _____, and Paul Meehl. "Construct Validity in Psychological Tests," Psychological Bulletin, 1955, 52, pp. 1-23.
- Du Mas, F. M. "The Coefficient of Profile Similarity," Journal of Clinical Psychology, 1949, 5, pp. 123-131.
- Dymond, Rosalind F. "Personality and Empathy," Journal of Consulting Psychology, 1950, 14, pp. 343-350.
- _____. "A Scale for the Measurement of Empathetic Ability," Journal of Consulting Psychology, 1949, 13, pp. 122-133.
- Falk, J. L. "Issues Distinguishing Idiographic from Nomothetic Approaches to Personality Theory," Psychology Review, 1956, 63, pp. 53-62.

- Fiedler, Fred E. Leader Attitudes and Group Effectiveness. Urbana, Illinois: University of Illinois Press, 1958.
- Gibb, Cecil A. "The Principles and Traits of Leadership," Journal of Abnormal and Social Psychology, 1947, 42, pp. 267-284.
- Gordon, L. V. Gordon Personal Profile: Manual. Yonkers-on-Hudson, New York: World Book Company, 1953.
- Gouldner, Alvin. "Situations and Groups: The Situationist," from Brown and Cohn, The Study of Leadership, 198, p. 76.
- Guilford, J. P. "When Not to Factor Analyze," Psychological Bulletin, 1952, 49, p. 30.
- _____. Psychometric Methods. New York: McGraw-Hill Book Company, Inc., 1936.
- Hall, H. E., Jr., and G. B. Bell. "The Relationship between Two Tests of Empathy: Dymond and Kerr's Paper read at American Psychological Association, Cleveland, September, 1953.
- Jenkins, W. O. "A Review of Leadership Studies with Particular Reference to Military Problems," Psychology Bulletin, 44, pp. 54-59.
- Kerr, W. The Empathy Test. Chicago: Psychometric Affiliates, 1947.
- Mann, Richard D. "A Review of the Relationship between Personality and Performance in Small Groups," Psychological Bulletin, 1959, 56, pp. 241-271.
- Norman, R. D., and Patricia Ainsworth. "The Relationship among Projection, Empathy, Reality, and Adjustment, Operationally Defined," Journal of Consulting Psychology, 1954, 18, pp. 53-58.
- Osgood, Charles E. "The Nature and Measurement of Meaning," Psychological Bulletin, 1952, 49, pp. 197-238.
- Richardson, H. M., and V. G. Hanawalt. "Leadership as Related to the Bernreuter Personality Measures:///Leadership among Adult Men in Vocational and Social Activities," Journal of Applied Psychology, 1944, 28, pp. 308-317.

Shartle, Carroll L. Executive Performance and Leadership. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1956.

Stodgill, Ralph M., and Carroll L. Shartle. "Methods in the Study of Administrative Leadership," Research Monograph Number 80. Bureau of Business Research, The O. S. U.

_____. "Leadership, Membership, and Organization," Psychological Bulletin, 1950, 47, pp. 1-14.

_____. "Personal Factors Associated with Leadership: A Survey of the Literature," Journal of Psychology, 1948, 25, pp. 35-71.

Taft, Ronald. "The Ability to Judge People," Psychology Bulletin, 1955, 52, pp. 1-24.

Travers, R. M. V. "A Study in Judging the Opinions of Groups," Archives of Psychology, 1941, No. 266.

Walker, Helen, and Joseph Lev. Elementary Statistical Methods. New York: Henry Holt and Company.

A P P E N D I X E S

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APPENDIX A

	Responsibility	Authority	Delegation	Kerr Empathy	Personal Perception Scale	Ascendancy	Responsibility	Emotional Stability	Sociality	Total Adjustment	Group Size
1.	4.09	5.09	3.60	79	9.01	193	28	28	17	32	14
2.	5.35	5.69	5.44	93	8.60	253	27	19	20	32	14
3.	1.05	.71	2.09	63	10.53	264	7	9	17	17	6
4.	.969	3.12	2.88	81	9.798	---	--	--	--	--	5
5.	3.39	2.70	2.48	85	11.18	220	21	21	18	27	7
6.	1.17	1.83	1.49	102	14.38	253	27	18	22	30	5
7.	1.09	.965	1.64	73	14.66	231	27	22	20	32	4
8.	1.78	1.58	.90	84	15.59	202	32	22	18	32	4
9.	.790	.559	.00	64	14.789	286	20	14	30	32	7
10.	1.68	2.44	3.85	65	22.27	22	28	24	18	32	10
11.	2.14	1.82	4.19	81	14.07	193	30	28	19	32	5
12.	2.70	3.02	3.25	104	18.94	193	25	14	16	23	11
13.	4.44	2.21	2.13	101	12.53	184	20	25	14	24	5
14.	.75	.935	.83	66	9.49	---	--	--	--	--	5
15.	2.75	2.58	2.20	90	13.67	231	24	23	22	30	4
16.	1.56	1.27	3.05	29	17.86	202	28	25	19	30	4
17.	.435	1.83	1.61	85	14.53	253	22	10	31	31	4
18.	.194	1.39	2.37	75	9.89	22	20	7	24	25	5
19.	1.64	1.37	3.64	90	13.30	286	19	16	25	30	4
20.	.079	.75	3.15	73	14.00	202	20	17	27	28	3
21.	2.19	2.34	2.215	77	9.21	202	24	26	16	28	4

Leaders' Raw Scores for Each Variable

APPENDIX B

Formulas Used in Statistical Analysis

$$1. \text{ Mean} = \frac{\sum X}{N}$$

$$2. \text{ Standard Deviation}^1 = \sqrt{\frac{\sum X^2}{N} - M^2}$$

$$3. \text{ Part Correlation}^2 = r(1.3)_2 = \frac{r_{1.2} - r_{1.3} r_{2.3}}{\sqrt{1 - r_{1.3}^2}}$$

$$4. \text{ Pearson Product-Moment Correlation Coefficient}^3 = \frac{N \cdot \sum XY - \sum X \cdot \sum Y}{\sqrt{N \cdot \sum X^2 - (\sum X)^2} \sqrt{N \cdot \sum Y^2 - (\sum Y)^2}}$$

5. Distance or Differences Score for scoring R.A.D.

$$\text{Scales and Personal Perception Scale}^4 = D = \sqrt{\sum D^2}$$

6. Maximum Difference Score for R.A.D. scales =

$$N = \text{Group Size} \sqrt{N \cdot 6^2}$$

¹J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Company, Inc., 1936), p. 45.

²Ibid., p. 404.

³Helen Walker and Joseph Lev, Elementary Statistical Methods (New York: Henry Holt and Company), p. 143.

⁴Fred Fiedler, Leader Attitudes and Group Effectiveness (Urbana, Illinois: University of Illinois Press, 1958).

APPENDIX C

Intercorrelations of Gordon's Factors ARES from
Gordon's revised form (a) and the present study (b)

	A	R	E
(a) R	.11	-	-
E	.11	.46	-
S	.43	-.16	-.25

	A	R	E
(b) R	-.512	-	-
E	-.665	.639	-
S	.709	-.185	-.548

APPENDIX D

Mean, Standard Deviation, and Correlations of
N (group size) with other variables.

	R	A	D	Kerr	PPS	A	R	E	S	T
N	.635	.788	.515	.110	-.05	-.066	.195	.106	-.307	.081

Mean	S.D.	N
6.19	3.19	21

APPENDIX E

EXAMPLES OF TESTS USED

1 _____	4 _____	R _____
2 _____	5 _____	A _____
3 _____	6 _____	D _____

THE RAD SCALES

Ralph M. Stogdill
 Bureau of Business Research
 The Ohio State University

Name _____

Position _____ Date _____

Directions: Below are six separate scales. Two of these scales describe different degrees of responsibility. Two describe different degrees of authority, and two describe different degrees of authority delegated to assistants.

For each scale please check only two items, as follows: Double Check (XX) the single statement which most accurately describes your status and practices in carrying out your duties, and check (X) the next most descriptive statement.

Double Check (XX) = Most descriptive statement

Check (X) = Next most descriptive statement

SCALE 1

- () 1. I am responsible for the formulation and adoption of long range plans and policies.
- () 2. I am responsible for making decisions which define operating policies.
- () 3. My superior gives me a general idea of what he wants done. It is my job to decide how it shall be done and to see that it gets done.
- () 4. It is my responsibility to supervise the work performed by my assistants and subordinates.
- () 5. The operations of my unit are planned by my superiors. It is my responsibility to see that the plan is executed.
- () 6. It is my responsibility to carry out direct orders which I receive from my superior officers.
- () 7. My responsibilities and duties are assigned daily in the form of specific tasks.
- () 8. My superior approved each task I complete before I am permitted to undertake another.

(Check only two items in Scale 1)

SCALE 2

- () 1. I have complete authority for establishing policies and goals of a general scope and establishing the lines of organizational authority and responsibility for the attainment of these goals.
- () 2. I am authorized to make all decisions necessary for the implementation of long range plans.
- () 3. In the main I can make and carry out all decisions which fall within the realm of established policy without consulting my superior or obtaining his approval.
- () 4. I have complete authority on routine matters but refer the majority of unusual items to my superior for approval.
- () 5. All questions of policy must be referred to my superior for his decision.
- () 6. I frequently refer questions to my superior before taking any action.
- () 7. I seldom make decisions or take action without approval from my superior.
- () 8. My work procedures are fully outlined and allow little freedom in making decisions.

SCALE 3

- () 1. My assistants have been granted authority to fulfill their duties in any manner they deem advisable.
- () 2. My assistants have full authority, except that I retain the right to approve or disapprove of decisions affecting policy making.
- () 3. My assistants have been authorized to make decisions on problems as they arise, but must keep me informed on matters of importance.
- () 4. My assistants have authority to handle all routine matters in day to day operations.
- () 5. My assistants may act in most routine matters.
- () 6. Many of the responsibilities of my office cannot be entrusted to assistants.
- () 7. My assistants have no actual authority to take action, but make recommendations regarding specific action to me.
- () 8. I dictate detailed orders to my subordinates which they must carry out exactly as I specify, consulting me frequently if they are in doubt.

(Check only two items in each scale)

SCALE 4

- () 1. I am responsible for decisions relative to changes in long term policy.
- () 2. I am responsible for making decisions relative to methods for effecting major changes in operations.
- () 3. My superior always informs me as to the tasks to be performed and I am solely responsible for deciding how to fulfill these tasks and supervising their performance.
- () 4. It is my responsibility to supervise the carrying out of orders which I receive from my superior.
- () 5. I am responsible for making decisions relative to routine operations.
- () 6. I execute direct orders given by my superiors.
- () 7. I have only my own routine tasks to account for.
- () 8. I am not responsible for making decisions.

SCALE 5

- () 1. I have complete authority for formulating policies of general nature and scope and for establishing lines of the entire organizational authority and responsibility.
- () 2. I am authorized to make decisions which put all major plans and policies into action.
- () 3. I refer only matters of an exceptional nature to my superior for approval. I settle most problems myself.
- () 4. In situations not covered by instructions I decide whether action is to be taken and what action is to be taken.
- () 5. I have no authority to act in matters where policy is not clearly defined.
- () 6. I have authority to make decisions only as they are related to my own routine tasks.
- () 7. I make decisions only when given explicit authority.
- () 8. I follow a work schedule laid out for me by my superiors and have little authority to make changes.

(Check only two items in each scale)

SCALE 6

- () 1. I make decisions only when consulted in unusual circumstances, authorizing my assistants to exercise a high degree of authority and responsibility in making decisions.
- () 2. I have delegated full authority to my assistants, other than the rights to prescribe policy and pass upon broad procedures.
- () 3. I give my assistants a general idea of what I want done. It is their responsibility to decide how it shall be done and to see that it gets done.
- () 4. I have delegated to my assistants authority to make all routine daily decisions.
- () 5. I make most decisions coming within my scope of authority, although my assistants assume considerable responsibility for making decisions in routine matters where policies and procedures are well established.
- () 6. I supervise my assistants fairly closely in their exercise of authority.
- () 7. I make all important decisions coming within my scope of authority. My assistants are responsible for making decisions only in minor matters.
- () 8. I have not found it advisable to delegate authority to my assistants.

(Check only two items in Scale 6)

PERSONAL PERCEPTION SCALE

People differ in the ways they think about themselves and about those with whom they work. This may be important in working with others. Please give your immediate, first reaction to the items on the Scales shown.

On each sheet are pairs of words which are opposite in meaning, such as Talkative and Quiet. You are asked to describe several of the people with whom you have worked by placing a check in one of the six spaces on the line between the two words.

Each space represents how well the adjective fits the person you are describing, as if it were written:

TALKATIVE	.	.	|	.	.	QUIET
very	quite	more	more	quite	very	
talka-	talka-	talka-	quiet	quiet	quiet	
tive	tive	tive	than			
		than	talk-			
		quiet	tive			

FOR EXAMPLE --

If you ordinarily think of the person you are describing as being quite talkative, you would put a check in the second space from the word talkative, like this:

TALKATIVE	.	X	.	|	.	.	QUIET
-----------	---	---	---	--	---	---	-------

Or, if you ordinarily think of this person as being more quiet than talkative, you would put your check on the quiet side of the middle:

TALKATIVE	.	.	|	X	.	.	QUIET
-----------	---	---	--	---	---	---	-------

Look at the words at both ends of the line before you put in your check mark. Please remember that there are no "right" or "wrong" answers. Work rapidly; your first answer is likely to be the best. Please do not omit any items and mark each item only once.

Please keep in mind the person(s) you are describing for each scale.

PERSONAL
PERCEPTION
SCALE

Your Name _____
Date _____

Scale below is to be marked for (read the material following the circled number):

- 1 The person with whom you can work BEST. He may be someone you work with now, or someone you knew in the past. He does not have to be the person you like best, but should be the person with whom you could best get a job done. Describe this person AS HE APPEARS TO YOU.

2. The person with whom you can work LEAST WELL. He may be someone you know now, or someone you knew in the past. He should be the person with whom you would have most difficulty getting a job done.

Cooperative	. . . | . . .	Uncooperative
Quitting	. . . | . . .	Persistent
Stable	. . . | . . .	Unstable
Confident	. . . | . . .	Unsure
Shy	. . . | . . .	Sociable
Upset	. . . | . . .	Calm
Bold	. . . | . . .	Timid
Ungrateful	. . . | . . .	Grateful
Energetic	. . . | . . .	Tired
Impatient	. . . | . . .	Patient
Softhearted	. . . | . . .	Hardhearted
Thoughtless	. . . | . . .	Thoughtful
Frank	. . . | . . .	Reserved
Meek	. . . | . . .	Forceful
Careless	. . . | . . .	Careful
Easygoing	. . . | . . .	Quick-tempered
Practical	. . . | . . .	Impractical
Boastful	. . . | . . .	Modest
Intelligent	. . . | . . .	Unintelligent
Gloomy	. . . | . . .	Cheerful
Responsible	. . . | . . .	Undependable
Unrealistic	. . . | . . .	Realistic
Efficient	. . . | . . .	Inefficient

GORDON PERSONAL PROFILE

by Leonard V. Gordon

U. S. NAVAL PERSONNEL RESEARCH UNIT, SAN DIEGO, CALIFORNIA

Name _____ Age _____ Sex _____

Highest school grade reached: 8 9 10 11 12 F S J S Degree(s) _____
HIGH SCHOOL COLLEGE

For students: School _____ Class _____

For adults: Occupation _____ Marital status _____

	A	R	E	S	T
99					
95					
90					
75					
50					
25					
10					
5					
1					
%-ILE SCALE					

Directions

In this booklet are a number of descriptions of personal characteristics of people. These descriptions are grouped in sets of four. You are to examine each set and find the one description that is *most like you*. Then make a solid black mark between the pair of dotted lines beside the statement, in the column headed *M (most)*. Next examine the other three statements in the set and find the one description that is *least like you*; then make solid black mark between the pair of dotted lines beside that statement, in the column headed *L (least)*.

Here is a sample set:

	M	L
has an excellent appetite
gets sick very often
follows a well-balanced diet
doesn't get enough exercise

Suppose that you have examined the four descriptive statements in the sample and have decided that, although several of the statements apply to you to some degree, "doesn't get enough exercise" is *more like you* than any of the others. You would place a mark beside that statement in the column headed *M (most)*, as shown in the sample above.

You would then examine the other three statements to decide which one is *least like you*. Suppose that "gets sick very often" is *less like you* than the others. You would place a mark beside the statement in the column headed *L (least)*, as shown in the sample above.

For every set you should have *one* and only one mark in the *M (most)* column, and *one* and only one mark in the *L (least)* column.

In some cases it may be difficult to decide which statements you should mark. Make the best decisions you can. Remember, this is not a test; there are no right or wrong answers. You should mark those statements which most nearly apply to you. Be sure to mark *one* statement as being *most like you*, and *one* statement as being *least like you*. Mark every set. Turn the booklet over and begin.

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Mark your answers in column **A** →

a good mixer socially

lacking in self-confidence

thorough in any work undertaken

tends to be somewhat emotional

not interested in being with other people

free from anxieties or tensions

quite an unreliable person

takes the lead in group discussion

acts somewhat jumpy and nervous

a strong influence on others

does not like social gatherings

a very persistent and steady worker

finds it easy to make new acquaintances

cannot stick to the same task for long

easily managed by other people

maintains self-control even when frustrated

able to make important decisions without help

does not mix easily with new people

inclined to be tense or high-strung

sees a job through despite difficulties

not too interested in mixing socially with people

doesn't take responsibilities seriously

steady and composed at all times

takes the lead in group activities

a person who can be relied upon

easily upset when things go wrong

not too sure of own opinions

prefers to be around other people

finds it easy to influence other people

gets the job done in the face of any obstacle

limits social relations to a select few

tends to be a rather nervous person

doesn't make friends very readily

takes an active part in group affairs

keeps at routine duties until completed

not too well-balanced emotionally

Turn the page and go on.

Mark your answers in column B →

B

A

assured in relationships with others.
 feelings are rather easily hurt.
 follows well-developed work habits.
 would rather keep to a small group of friends.

M L

M L

becomes irritated somewhat readily.
 capable of handling any situation.
 does not like to converse with strangers.
 thorough in any work performed.

M L

M L

prefers not to argue with other people.
 unable to keep to a fixed schedule.
 a calm and unexcitable person.
 inclined to be highly sociable.

M L

M L

free from worry or care.
 lacks a sense of responsibility.
 not interested in mixing with the opposite sex.
 skillful in handling other people.

M L

M L

finds it easy to be friendly with others.
 prefers to let others take the lead in group activity.
 seems to have a worrying nature.
 sticks to a job despite any difficulty.

M L

M L

able to sway other people's opinions.
 lacks interest in joining group activities.
 quite a nervous person.
 very persistent in any task undertaken.

M L

M L

calm and easygoing in manner.
 cannot stick to the task at hand.
 enjoys having lots of people around.
 not too confident of own abilities.

M L

M L

can be relied upon entirely.
 doesn't care for the company of most people.
 finds it rather difficult to relax.
 takes an active part in group discussion.

M L

M L

doesn't give up easily on a problem.
 inclined to be somewhat nervous in manner.
 lacking in self-assurance.
 prefers to pass the time in the company of others.

M L

M L

	A	R	E	S	T
+					
-					
Sc.					