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METHODS OF INVESTIGATING LEADERSHIP AND SELECTING LEADERS: A SU--ETC(U)  
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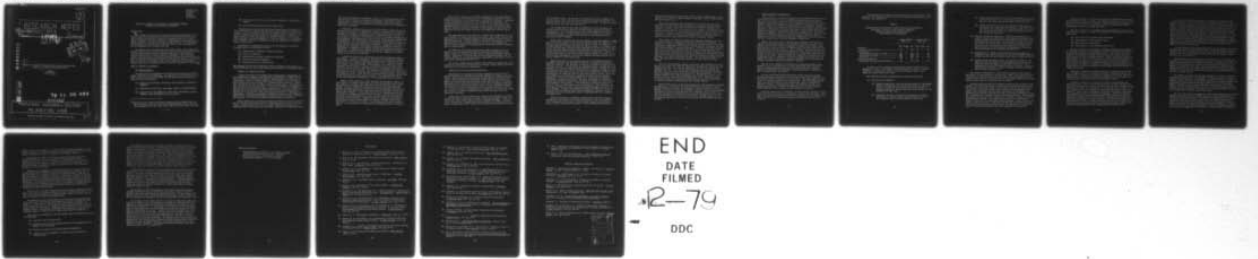
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METHODS OF INVESTIGATING LEADERSHIP AND SELECTING LEADERS:  
A SURVEY OF PSYCHOLOGICAL LITERATURE

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METHODS OF INVESTIGATING LEADERSHIP AND SELECTING LEADERS:  
A SURVEY OF PSYCHOLOGICAL LITERATURE

INTRODUCTION

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This survey has been compiled for the purposes of (1) finding out what research has been accomplished in selecting and identifying leaders and (2) reviewing the methods or theoretical approaches used with an eye to their applicability in the development of instruments for the selection of military leaders. The survey will not include a review of the definitions of "leadership" since the author feels that this is not a prerequisite to an understanding of the relevant research.

The survey covers the literature from 1930 to 1950, and is arbitrarily divided into two major sections, the first section covering applied research on leadership (both nonmilitary and military), and the second section covering theoretical or basic research on leadership. The author has avoided the inclusion of articles and reports which neither present research data nor suggest methodology pertinent to this area of research. The literature reported does not include those studies conducted by the Personnel Research Section of The Adjutant General's Office, Department of the Army. <sup>1/</sup>

APPLIED RESEARCH ON LEADERSHIP

Nonmilitary Studies

Stogdill (25) has comprehensively surveyed the literature on personal factors associated with leadership. For purposes of classification he combines under five main headings those factors which have been studied by three or more investigators.

- (1) Capacity (intelligence, alertness, verbal ability, originality, judgment)
- (2) Achievement (scholarship, knowledge, athletic accomplishments)
- (3) Responsibility (dependability, initiative, persistence, aggressiveness, self-confidence, desire to excel)

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<sup>1/</sup> Reports on these studies have been covered briefly by Sisson (22) and more thoroughly in the Research and Development Reports (3), especially under programs 4078, 4086, 4090, 4091, 4105, 4118, 4119, 4124, and 4130.

- 1 -

- (4) Participation (activity, sociability, cooperation, adaptability, humor)
- (5) Status (socio-economic position, popularity)

Stogdill feels a need to add a sixth section to take into account the facts that several of the authors have made a differentiation between the "leader" and the "figurehead" and that the leader has always been associated with the coordination of the group in the attaining of common goals. This sixth category he calls "Situation" and includes within it mental level, status, skills, needs and interests of followers, objectives to be achieved, etc. Stogdill's approach is theoretical, and will therefore be discussed later in this paper.

The methods of investigation reported in the literature surveyed by Stogdill make use of five types of data:

- (1) observations of behavior in group situations
- (2) choice of associates
- (3) nominations or ratings by qualified observers
- (4) data from selection processing
- (5) biographical and case history data.

This grouping appears to be consistent with the studies covered in the survey included here and with those accomplished subsequent to Stogdill's survey.

#### Studies in Academic Situations

A large proportion of the nonmilitary investigations of leadership has been conducted in academic situations using high school or college students as subjects. These studies have reported the relationship of physical and intellectual factors to various criteria of leadership. Hunter and Jordan (12) studied qualities of leaders in a southern state university. Leaders were selected by the use of student ratings, faculty ratings, and biographical information denoting leadership. A total of 82 leaders were compared with 103 non-leaders on various traits and qualities. Using a critical ratio approach the investigators found that leaders differed significantly from non-leaders in age (leaders being younger), weight (leaders being lighter), intelligence, vocabulary, scholarship, maturity of interest, self-sufficiency (Bernreuter), dominance (Bernreuter), and liberality of attitudes. Leaders were superior in all the above characteristics, except as indicated.

These findings are in general agreement with those reported in Stogdill's survey (25) with the exception of those concerning the variables of age and weight. Stogdill reports a very low positive correlation between age and leadership and between weight and leadership. Caldwell and Wellman (4) report

that the age-leadership relationship differs in varying situations, school journal staff members having highest intelligence and athletic leaders having lowest intelligence among leaders studied. Howell (1), using a sociometric criterion of leadership, found intelligence to correlate negligibly with leadership.

Richardson and Hanawalt (9, 10, 19, 20) conducted a series of investigations on leadership as evidenced by leaders' responses on the Bernreuter Personality Measures. In the first two of these four studies (9, 10) differences in responses of college leaders and non-leaders were studied and in the last two studies in the series (19, 20) adult leaders and non-leaders were compared. The authors report that, on the whole, the chief differences between leaders and non-leaders, as measured by the Bernreuter scales, lay in adjustment, i.e., that leaders were generally better adjusted, more dominant, and more self-sufficient than non-leaders. Ratings and responses to biographical information questionnaires served as leadership criteria. Differences in responses were analyzed using critical ratio and chi-squared techniques. It appears that, despite the fact that objective methods of analysis were applied, interpretations made by the authors are, to some extent, inconsistent with the data.

A character rating scale was developed by Smith and Nystrom (23) in a 1932 study. A group of 56 pupils of the Trenton, New Jersey High School who had held positions of leadership were each rated on a series of "character traits" on a 5-point scale ranging from A to E. Teachers' ratings were compared with self-ratings. There appeared to be very close correspondence between teachers' ratings and self-ratings on the total scales (that is, the percent who rated themselves as "A" closely matched the percent rated "A" by the teachers). No consistent differences between teachers' and self-ratings can be observed although the authors did report differences in ranking of traits. There was fair agreement between teachers and students on the categories receiving lowest ratings. It is suspected that these traits were ambiguous, misunderstood, or not applicable to the situation.

Courtenay (6) conducted a follow-up study of high school leaders and non-leaders. The subjects were women graduates whose high school records gave indication of high school leadership. Leaders and non-leaders were matched on age of graduation, academic grades, and socio-economic background. Courtenay devised a questionnaire covering personal, occupational, and social status information. From mail returns 100 leaders and 100 non-leaders were selected. It was found that 72 of the leader group had gone to college, as compared with 29 of the non-leaders, and that the average length of college attendance for leaders was 2.10 years, as compared with 0.96 years for non-leaders. Among those who had attended college the leaders had engaged in a greater number of college activities than had the non-leaders. Courtenay also found a higher median yearly income among the leaders. These results were interpreted as showing persistence of leadership.

This writer suggests, as a possible explanation of the persistence of leadership, that early experience in some leadership capacity may be sufficiently stimulating so as to perpetually motivate the individual - resulting in the persistence of leadership. The opportunity or availability of leadership experience may be a factor as well. It has been sufficiently demonstrated that leaders do excel non-leaders in certain qualities, but, when one considers the various levels at which degrees of leadership must function, the need for further research into experiential factors can be seen.

The investigations cited above have centered about leadership as found in an academic, or rather institutional setting. This writer questions the applicability of the findings reported to the selection of leaders in military organizations. It appears that the criteria of leadership in academic situations are either too specialized or are, in a sense, superficial. That is, social leadership is being measured rather than leadership performance at various levels.

It cannot be denied that evidence exists which indicates that professional and executive leaders have demonstrated leadership qualities while in school or college, but this tends to omit intermediate leadership levels. Application of the findings of school leadership studies may be totally ineffective in selecting foremen, instructors, supervisors, or, for that matter, noncommissioned officers.

Few of the academic studies involve cross-validation research or later application of findings for purposes of selection. Hence, these studies are of limited use for military application.

#### Studies in Industry and Private Enterprise

Psychologists in industry and private enterprise have carried out research projects for identification and/or selection of leaders and supervisors. These studies are perhaps more closely allied to the purpose outlined in the introduction of the present paper than are the studies conducted in school situations because the former were directed at developing instruments and measures which could be put to use for selection purposes. This fact poses a serious limitation, however, since instruments developed in industry are often constructed for use in a very restricted situation, i.e., that of the plant or organization for which they are developed. There are, however, a number of commercial tests which have been in use for selection in industry.

Lawshe (14), while not denying the importance of personality factors in the selection of supervisors, claims to have achieved good results with the use of a short pencil and paper test of mental alertness. A group of 70 men selected for a supervisory training program at a rubber plant were given an "adaptability test" and the results were checked against attrition

data six months later. At the end of six months 24% of the original group had left the program. This 24% had made the lowest scores on the test, 18% scoring between 6 to 12 and 6% scoring between 12 and 18. All who had scored above 18 on the test were still on the job.

In a second phase of the study representatives of 44 companies were asked to nominate the two best and the two poorest supervisors in their organizations. The four persons nominated in each company were given the "adaptability test." Of those making scores of 30 or better all were in the "best" supervisor category while only 53% of those scoring 6 to 12 were in the "best" category.

While Lawshe's studies show what he considers to be good results through use of this test, absence of correlational analysis data and absence of information on the possible range of scores on the test leave the reader in a somewhat doubtful position with regard to interpretation. It is interesting to note the different "cut-off" levels suggested by the two parts of Lawshe's study, especially since different selection criteria may have been employed in each instance and by each of the 44 different organizations. The test purports to measure most of the so-called "Primary mental abilities" and may merit further investigation, but the data reported by Lawshe are not sufficiently complete to allow evaluation.

Bass (2) reports a study involving the use of the "leaderless group" discussion techniques for selection in place of the traditional selection interview technique. The technique is usually paralleled by other objective selection measures. Job applicants are assembled and are assigned topics of discussion or problems requiring administrative decision. Company observers rate the applicants on a number of observable characteristics, such as social intelligence, participation, and the like. Bass points out that one of the advantages of the technique over the interview method is that it, "automatically eliminates an interviewer's tendency to become a human multiple-regression - equation computing machine and to integrate the candidate's intelligence, previous experience, education, achievement and aptitudes, because the discussion observer has and gains no evidence of these factors while observing the candidate." The technique also eliminates the interviewer's being too much guided by job specifications. This technique has been used in German, British, and American military organizations, as well as in industry. Coupled with objective measures and adapted to job situations the technique should allow improved selection of leaders. A disadvantage lies in the restricted number of candidates who can be observed at a given time.

Beckman (3) devised a "following instructions test" which he administered to 30 executives and 31 water-meter readers. The test contained four instructions, the answers of which formed a design on cross-section paper. Scoring was based on the number of directions correctly followed.

The executives obtained a mean score of 91.1, with a standard deviation of 12.61, and water-meter readers obtained a mean score of 72.4, with a standard deviation of 27.05.

The author interpreted the difference to be a reflection of verbal intelligence, which seems to be reasonable but probably not sufficiently inclusive. It may reflect the fact that there should be minimum levels of verbal achievement for certain levels of employment. The previous school studies reported indicate the presence of high verbal ability among leaders and, while the Beckman study may not be appropriate to military purposes, a measure of ability to follow instructions and/or to interpret orders or directives may be highly relevant to military leadership ability.

The results of a study by Mandell (16) lend some support to the role of verbal ability and judgment in achieving positions of leadership. An examination program was designed for selection and promotion of five levels of foremen in shipyards, air stations, ordnance plants, warehouses and other field installations of the Navy Department. A total of over 1000 employees were tested in groups ranging from 20 to 171 men. Seven objective tests were constructed, the titles of which are descriptive of their general content: Supervisory Judgment Test, Spatial Relations Test, Mechanical Principles Test, Rules and Regulations Test, Reading Comprehension Test, Numerical Reasoning Test, and Blueprint Reading Test. The population included foremen, chief quartermen, quartermen, leading men, and "snappers" (straw bosses).

The tests were validated against supervisors' and associates' ratings. The two most valid tests were the Supervisory Judgment Test and the Reading Comprehension Test. The validity coefficients of each test ranged from approximately .00 to .50, the two above-mentioned tests making the best showing. These two tests, incidently, showed higher validities for higher-level supervisors (foremen, chief quartermen, and quartermen). The test battery yielded rather high intercorrelations, ranging from .397 to .684 with 16 of the 21 intercorrelations being above .500. Again, the nature of the data makes interpretation difficult and one is more or less forced to report the author's interpretation and withhold judgment.

Shartle (21) reports an interesting approach to the selection of leaders and executives. The general approach involves the development of "work pattern" profiles indicating the proportion of time a leader or executive devotes to each of a variety of activities. This is a sort of self-reporting job analysis and makes the assumption that leadership is situational, i.e., that the qualities of leadership are not general but specific to the functions of each position and to each organization. Shartle's approach will be described more fully in the section concerned with theoretical and basic research.

### Military Studies of Leadership

Jenkins (13) has surveyed the literature on leadership studies dealing with military problems. He has concluded from his survey that, due to (a) the lack of quantitative data in the literature and (b) the lack of agreement among investigators, previous studies of leadership have contributed but little to our prediction and definition of leadership. Many of the sources cited by Jenkins have little direct relationship to psychological research on the problem of military leadership. Among those cited which do involve psychological investigation one finds a preponderance of studies based upon ranking of traits and personality characteristics. Jenkin's conclusions are probably in keeping with the studies he reviewed and it is possible that, at the time he compiled his survey (1947), some of the more pertinent studies hadn't yet been released or published.

Baier's (1) comment on the Jenkins report indicates that "positive inroads" had been made by that time by military research agencies. Baier reports that the use of leader nominations by Marine Corps officer candidates yielded a correlation of .42 (tetrachoric) with later combat performance ratings by superior officers. Also, a similar approach was used in a follow-up study of West Point graduates by the Army and leader nominations by West Point cadets were found to correlate .51 with subsequent efficiency ratings in the field. Baier's comment and disagreement with the findings of Jenkins cannot be interpreted to mean that research agencies have been highly successful in predicting military leadership, but it does serve to correct the general impression reported by Jenkins.

The use of the nominating techniques for identifying and/or rating leaders has led to criticisms on the basis that these types of ratings were not really leadership criteria, but rather popularity contests. Wherry and Fryer (28) have conducted a study which seems to justify the use of "buddy ratings" as criteria.

In this study buddy ratings were compared with superiors ratings, academic grades, and attrition from OCS, these measures all being tested as to their relative merits for use as criteria. The relationship of these criteria to certain predictors was investigated. The prediction measures were: the Officer Candidate Test (intelligence test), a Biographical Information Blank, a recommendation blank, and previous ratings by non-commissioned officers. Populations consisted of 134 Officer Candidate School subjects from two classes at Fort Monmouth, New Jersey.

From the standpoint of reliability, the buddy ratings and buddy nominations were the most reliable of the criteria at the end of one month. After four months had elapsed all reliabilities had dropped, but the buddy nominations suffered least, retaining far greater reliability than the other criteria.

A comparison of the predictability of buddy ratings and academic grades was made. The following table, taken from the Wherry and Fryer study, will illustrate the comparison:

TABLE 3

PREDICTABILITY OF CRITERION 1 (BUDDY RATINGS) AND CRITERION 10 (ACADEMIC GRADES) BY VARIOUS KINDS OF PREDICTORS AFTER ONE MONTH (HIGHER COEFFICIENT IN EACH COMPARISON IS UNDERLINED)

	BUDDY RATINGS (Var. 1)		ACADEMIC GRADES (Var. 10)	
	(1) Class	(2)	(1) Class	(2)
<b>Aptitude:</b>				
Officer Candidate Test .....	.23	.29	.56	.80
<b>Personality:</b>				
Biographical Information Blank .....	<u>.38</u>	<u>.43</u>	.17	.34
Recommendation Blank .....	<u>.41</u>	<u>.36</u>	.12	.14
Interview .....	<u>.18</u>	<u>.13</u>	.05	-.04
<b>Previous Performance:</b>				
Ratings by Noncommissioned Officers .....	.19	.33	-.15	.15

In addition to the analysis described above Wherry and Fryer factor analyzed their data. Four factors were identified: a factor of "academic standing," a "leadership" factor, a "tactical standing" factor, and a "group difference correction" factor.

The following tentative conclusions were drawn from the study.

(1) From the factor analyses:

- (a) "Buddy ratings appear to be the purest measure of 'leadership'. Tactical officers are also able to rate this trait but their ratings are quite heavily weighted by tactical standing. Academic instructors' ratings are practically useless for the evaluation of this trait.
- (b) "Coworkers are able, at the end of one month, to evaluate leadership to a degree equalled by instructors (tactical, not academic) only after four months of observation.

- (c) "Nominations (variable 1) which are more reliable than graphic ratings (variable 3) are equally good measures of leadership. They have the added advantage of being easier to secure.
  - (d) "Nominations by class appear to be better measures of the leadership factor than any other variable. This would appear to indicate the advisability of predicting buddy ratings on the widest base upon which the acquaintanceship of the members of the group permits."
- (2) From the reliability comparison: "While both nominations and graphic ratings by coworkers show quite satisfactory reliability after one month, the reliability of nominations after four months is outstandingly higher than that of any of the other variables upon which the test was made. This is probably further evidence of the fact that the nominating technique has the property of early identification of the members of the group who constitute the two extremes of the leadership distribution."
  - (3) Predictability: "Except for prediction by the aptitude test, nominations were better predicted by all of the proposed selection devices than was the more commonly used academic grade criterion."
  - (4) Agreement with personnel action: "If ability to remain in the school at least two months is considered desirable, it may seem that nominations by buddies are as highly correlated as are academic grades with this overall measure of success. Similarly, buddy ratings contribute as much as academic grades to the overall criterion of graduation."

This study is outstanding in the literature because of the rigorous statistical and methodological approach used. While it may not have direct relationship to the development of instruments for predicting leadership, it offers some hope for the use of indirect performance measures as criteria against which a number of predictors can be tested.

Cranell and Mollenkoph (8) conducted a study for the Air Force in an attempt to determine the necessary and/or minimum essential characteristics for becoming a successful leader. For the first part of the study, flying officers who had returned to the United States for redistribution were asked to give anecdotes, based on their experience, to illustrate their evaluations of particular leaders with whom they had been associated in combat. Responses were obtained from over 4000 flying officers. The anecdotes were edited and categorized by judges into two groups according to the kind of leadership described. The categories used were (a) organizational-administrative and (b) inspirational-combat-emergency. After editing, 1237 usable anecdotes remained. Descriptive phrases were abstracted from these for incorporation into rating scale traits. The frequency of mention for each of the 40 resulting scale traits was tabulated for each phrase.

Five-point rating scales were constructed and administered to a group of 2503 returned flying officers. The officers were asked to rate the other pilot whom they had known the longest. Subjects having rank of Captain (or above) were to rate subordinates and subjects below the rank of Captain rated flying officers in command positions.

The 40 rating scale item responses were intercorrelated and an "inspectional" factor analysis was done. The clusters of items yielded the following factors:

- (1) initiative and interest in military duties
- (2) proficiency and skill in flying duty
- (3) personality characteristics
- (4) proficiency in social-administrative duties

In the second part of the study, 350 bomber pilots from the population of 2503 were asked to rate subordinates whom they had known on the extent to which they possessed each of the 40 traits. This was done in order to determine the minimum leadership qualifications which these pilots considered acceptable in a squadron commander. Means and standard deviations were computed and the results were compared to the item-clusters found in the first part of the study. The results agreed with the clustering of items, with the exception that certain traits having high frequency of mention in the first part of the study were considered less important in the second part of the study in terms of minimum acceptable qualifications for squadron commander.

The authors concluded that mere frequency of mention cannot be taken as a reliable index of the relative importance of leadership traits and, further, that "observers may be able to recognize more readily those major categories of traits which form the most frequent and, at the same time, the most important manifestations of leadership in combat."

Several criticisms come to mind with regard to the Crannell and Mollenkoph study. First, the use of anecdotes of dramatic critical incidents of leadership tend to give a biased picture of the performance of the leadership function. In other words, it is possible that important traits or components of leadership might not have been represented in the traits obtained. Second, in the analysis no information was gained with respect to requirements for various levels of leadership. With such a large yet rather heterogeneous population additional information was potentially available. Lastly, and this may be due to operational limitations, the resulting rating scales were not validated. This last criticism is probably unjustified, since the study was effected rather late in World War II and the cessation of hostilities may have prevented either adequate populations or adequate criteria for validation from being obtained.

In another military study, which is of anonymous authorship (29), combat efficiency ratings were obtained in adjectival form on 176 Officer Candidate School graduates. The predictor variables investigated were AGCT scores, age, and final quintile company standing in Officer Candidate School. Quintile ratings correlated with combat efficiency ratings to the extent of .15 ( $\pm$  .075). In addition, it was reported that there was no relationship between AGCT scores and combat efficiency ratings and there was not predictable relationship between age and combat efficiency. Since the subjects in this study were graduates of OCS, the best interpretation of the relationship of intelligence to combat efficiency would be that, above a certain minimum level, intelligence has no relationship to combat efficiency. It should be emphasized that this study included a relatively small population and was of a preliminary nature and interpretations reported are therefor tentative.

A novel approach to developing instruments for the selection of leaders has been reported by Murray and Stein (18). Three tests were developed: a "construction" test, a sensori-motor test, and a "rapid projection" test. The first two tests of the battery were performance-type and the third a clinical test of personality.

The construction test required the candidate to set up a wooden frame construction with poles and blocks which were cut to close tolerances. The candidate was given a plan and three "refractory" subordinates who were to carry out his instructions. An intentionally impossible time limit, ten minutes, was allotted to the task. The subordinates were "stooges" who attempted to frustrate and impede the candidate. Ratings were obtained on (a) amount of construction completed, (b) personality and leadership traits, and (c) an overall rating.

The sensori-motor test required the candidate to attempt the solution of a pattern problem which was analogous to those used with the Yerkes Multiple-Choice apparatus. The candidate was given 15 minutes to solve the problem, during which time he was being bombarded by confusing instructions, suggestions, distractions and threats, coming over a set of earphones. Measures obtained were (a) total efficiency, (b) decrease in efficiency between practice and test periods, (c) ratings on "assured dominance," persistence of effort, control of emotions, etc., and (d) an over-all rating on the candidate's carriage, manner and conduct.

The third test (the rapid projection test) was an adaptation of Murray's Thematic Apperception Test. Stimuli consisted of pictures suggesting emotional or stress situations. The subject was required to tell a story or describe his interpretation of the pictures. Twelve pictures were projected on the screen for 30 seconds each. Two alternative interpretations were offered for each picture from which the candidate was to select one for each picture. Twelve personality trends are supposedly measured by the test: A (aggressive), B (blaming), C (competitive), D (depressive),

E (extracceptive), F (fearful), H (hesitant), I (intracceptive), P (paranoid), SA (sociocentric-affiliative), SD (sociocentric dominant), and U (unconscionable).

The authors claim that the first two of these tests were validated on groups of ROTC students, and yet no validation data are reported. The first two tests were reported to be substantially differentiating between leaders and non-leaders, but the third test was considered unsatisfactory.

The absence of quantitative validation data raises considerable doubt as to the merits of the tests. Certainly it is not sufficient for an author to report that his instruments are valid without offering evidence in support of such a claim. This may be a reflection of Murray's approach to selection, however. In discussing the need for, and lack of, satisfactory selection instruments for military purposes, Murray remarks that it may be due to the fact that either psychologists have not had the opportunity to show what they can do or else the psychologists have nothing to show. Further, he feels that too many psychologists are awarded degrees for pursuing statistical training instead of being trained in the assessment of the whole personality. Such an attitude is narrow, to say the least.

Of vital importance in selecting and training leaders is the consideration of the interpersonal relationship between leaders and non-leaders - the attitudes of leaders toward non-leaders, and vice versa. In order for objectives to be attained cooperation and understanding must exist.

Stouffer et al (24), in "The American Soldier" series, reports on a number of attitude surveys of enlisted men, noncommissioned officers, and officers. Considerable discrepancy was found between the attitudes of officers and enlisted men (as well as noncommissioned officers) on many issues affecting morale. For example (page 374), at the end of the war cross sections of enlisted men and officers in the United States responded as follows to the statement, "If enlisted men have to observe curfew, officers should too":

Per cent agreeing

Among officers	35
Among enlisted men	84

The response was as follows to the statement, "Officers deserve extra rights and privileges because they have more responsibility than enlisted men":

Per cent agreeing

Among officers	67
Among enlisted men	23

The higher the rank of the officer, the more likely he was to defend the system of social segregation and special privilege. For example, in response to the statement, "An officer will lose the respect of his men if he pals around with them off duty" we have the following responses, by rank:

Per cent disagreeing	
Captains	27
First Lieutenants	39
Second Lieutenants	54
Enlisted men	82

In response to the statement, "The harder a man works in the Army, the better chance he has of succeeding" (page 421).

Such discrepancies may indicate the need for training on matters of policy at the various centers where officers are trained. This issue "affects leadership directly since it points up barriers to understanding and communication through various strata of command and supervision.

Further information on research conducted by military agencies may be found in Sisson's summary article (22) and in the Research and Development reports of the Personnel Research Section (30).

#### THEORETICAL APPROACHES TO LEADERSHIP

Throughout the literature there appears to be considerable lack of effort being expended along the lines of basic research on leadership. Among the few references found adaptations of sociometric techniques seem to be prominent.

Coffin (5) has presented a "three-component" theory of leadership advancing the hypothesis that "a job analysis of leaders' functions might disclose those functions as falling into three categories: planning, organization, and persuading." Coffin describes these three components as being segments of a continuum such that the job of any leader might have a 'central tendency' in any one segment and yet overlap into the other segments. He further states that, "The categories may further be described in terms of the purposes and duties of leadership in each situation, the nature of activities engaged in, the relation to the products emerging from the leadership situation, and to the people being led."

Coffin conducted a simple investigation in which he grouped 135 leadership traits into the three component functions and had college students categorize themselves according to the Spranger and Sheldon "somatotypes." He administered the Allport-Vernon Scale of Values and by some manipulation investigated his three-component theory. The experiment itself has no apparent significance to the problem at hand and the nature of the data offers nothing tangible. However, from the theoretical approach, the

significance of this theory lies in the attempt to study leadership in terms of the functional relationship between traits and situations. The situational aspect of leadership seems to be popular among current theorists.

Murphy (17) also believes that any study of leadership calls for a situational approach. He points out that leadership qualities vary indefinitely as the needs of the group vary indefinitely, that different situations call for different traits of leadership to be displayed. Also, he believes that the personality does not stand alone but is a changing element in a total situation.

The point of view presented above by Murphy is worth considering and is one which would probably meet with fairly extensive agreement. But if the "personality is a changing element in a total situation," one must be able to predict that change in a number of situations, at least for the purpose of selecting and classifying leaders for military purposes. (This may be imposing too hasty a demand from an hypothesis which is yet undeveloped.) Furthermore, the question should be raised as to whether we are interested in predicting the changing element of the personality or in finding the kind of personality which is sufficiently adaptable to exercise functions of leadership in changing situations.

Probably one of the most extensive programs on basic research in leadership is that being currently pursued by Shartle, Stogdill, et al (21, 25, 26, 31). This group is engaged in a ten-year program under the US Navy and the Ohio State University Research Foundation.

The approach to this program (31) was to determine what administrators do on their jobs, how they get their work done, and their working relationships with other people. This differs from the customary procedure of obtaining measurements of ability and personality characteristics. The Ohio State studies are based on the assumption that leadership is a relationship between persons. Consequently the authors have attempted to work on the intensive study of a small number of cases rather than with mass data.

Four steps were involved in the preliminary study of developing criteria of leadership:

- (1) A survey of the literature (25)
- (2) Formulation of tentative hypotheses based on data gathered in the survey of the literature
- (3) Devising of methods for testing tentative hypotheses
- (4) Application of the methods to a study of Naval and civilian establishments

The methods used were free-response interviews, sociometric questionnaires (and sociograms), study of organization charts and manuals of establishments visited, study of time-distribution lists, and use of the "R, A, D" scales. The time-distribution lists were profile sheets on which members of an organization reported the proportion of time spent in certain activities in the performance of their jobs. On a series of statements for each RAD (Responsibility, Authority, Delegation) scale the respondent was to check the statements most descriptive and next most descriptive of his status. Then the relationship between the respondent's level (status) in the organization and his RAD scores are analyzed. The use of sociometric measures, of course, can serve as a cross-check upon the level of a given job as prescribed in an organization chart, or both could be used as criteria.

In the preliminary study, data were obtained on administrative personnel at three Navy shore installations. Sociometric measures were used as criteria and the other measures mentioned previously were used as predictors. Data were factor analyzed and four factors were found which were common to all three installations: Factor A was identified as an "administration" factor; Factor B, a "policy-making" factor; Factor C, a "methods-planning" factor; and Factor D, pertaining to personnel officers. Two additional factors resulted but were not common to all of the installations studied, a factor pertaining to technical experts and a factor pertaining to investigating and report writing.

The authors felt that the results of this preliminary study served to justify the methods used, but add the statement that: "Only a beginning has been made toward introduction of effective criteria for leadership. Much needs to be done in order to develop these methods into a practical procedure for the selection and assignment of persons for positions of leadership." (31)

In discussing their program of basic research, the Ohio State group (31) state their belief that it is possible to determine the administrator's work patterns and personal interaction patterns by studying the leadership structure of his organization. If a position is to be filled in a certain department, the best approach is to first study that department in order to determine the requirements of the job. This is where the job analysis and factor analysis phases enter the picture. Further, these researchers realize that such a method is both costly and time-consuming, but, in terms of results obtained, it may represent a saving in the long run. They criticize traditional methods of studying leadership: "The usual idea is to use personality, intelligence, and interest tests, assuming that all leaders perform comparable function and the same general function. The present results question the validity of that assumption.. Past experience with such measures also questions the validity of that assumption."

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