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## Typal Sets and Syndromes of Administrative Behavior

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*University of Tennessee - Knoxville*

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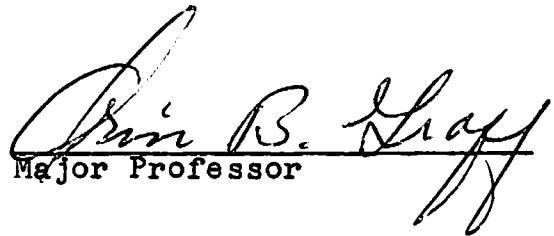
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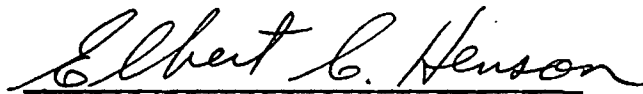
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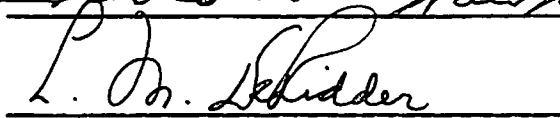
I am submitting herewith a thesis written by Robert B. Smawley entitled "Typal Sets and Syndromes of Administrative Behavior." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Supervision.

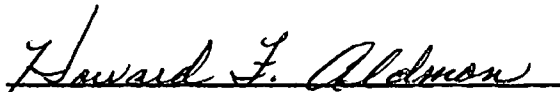
  
Major Professor

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recommend its acceptance:

  
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Accepted for the Council:

  
Acting Dean of the Graduate School

TYPAL SETS AND SYNDROMES OF  
ADMINISTRATIVE BEHAVIOR

---

A Thesis  
Presented to  
the Graduate Council of  
The University of Tennessee

---

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

---

by  
Robert B. Smawley  
June 1961

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## CHAPTER I

### INTRODUCTION

#### A. GENERAL BACKGROUND

One marked shift in appraisal programs during the past few years has been directed towards assessing performance on the job rather than on the personal characteristics of those being rated.<sup>1,2</sup> Despite the trend, however, there remains a seemingly innate proclivity among raters to project their views of ratees to encompass not only what is observed, but also the etiology and mode of behavior.<sup>3</sup>

Perhaps this stems from a natural desire on the part of the rater to rate not only what an employee does, but how and why he does it. It is also, no doubt, a carry over from the rating forms of the past which predominately featured personal characteristics as the principal means of expressing opinions about job performance. But whatever the reason for the continued popularity of trait rating, so long as it prevails in practice there is clearly a need to make it as precise as possible.<sup>4</sup>

The ensuing study reported here concerned an administrative behavior rating form. Specifically, the instrument

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<sup>1</sup>Carl Heyel, Appraising Executive Performance (New York: American Management Association, 1958), pp. 100-123.

<sup>2</sup>A. C. MacKinney, "What Should Ratings Rate," Personnel, 37 (May-June, 1960), 75-78.

<sup>3</sup>Ibid., p. 77.

<sup>4</sup>William B. Chew and Leonard E. Howell, "New Light on Trait Rating," Personnel, 37 (March-April, 1960), 42.

was one used to appraise educational administrators in particular, and the investigator sought to "make it as precise as possible."

Beginning in June, 1952, the Department of Educational Administration and Supervision at the University of Tennessee initiated a research project aimed at improving educational administrative leadership for the Southeastern Region. Supported by the W. K. Kellogg Foundation as an adjunct of the parental Southern States Cooperative Program in Educational Administration (SSCPEA), the research project's central purpose for the first four years focused on identifying behavioral characteristics of effective and ineffective school administrators. As one phase of the project, an instrument was developed which became known as the Tennessee Rating Guide.<sup>5</sup>

Basic to the development of the Tennessee Rating Guide was the assumption that the behavioral characteristics for effective and/or ineffective school administrators could be identified and stated. Furthermore it was assumed that a school administrator would be more effective and render a greater service if he followed a pattern of democratic leadership rather than other methods.<sup>6</sup>

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<sup>5</sup>University of Tennessee, College of Education, Department of Educational Administration and Supervision, "Characteristics of School Administrators" (Knoxville: The University of Tennessee, 1959), pp. 2-7. (Multilithed.)

<sup>6</sup>Ibid., pp. 32-33.

The Guide's rationale was structured in the original purposes of the University of Tennessee Research Project.

Those purposes were:

1. To validate some characteristics of (a) effective educational administration, and (b) effective school administrators (validation to be done in terms of criteria inherent in an accepted theory of educational administration).

2. To create a program which will be effective in developing desirable characteristics in educational administrators and those preparing for educational administration.

3. To further round out and fill the pattern of studies of the Southern States Cooperative Program in Educational Administration, which are designed to develop new insights in the nature of educational administrators, the characteristics of successful educational administration, and preparational programs for developing administrators who possess the characteristics needed for effective administration of public education.<sup>7</sup>

The research staff employed various techniques and plumbed many sources in building the Guide's content, ever searching for characteristics which appeared to differentiate effective from ineffective administrators. From the voluminous data collected, statements of those characteristics were converted into categorized scales. The composite of all the scales became the first draft of the Guide.<sup>8</sup>

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<sup>7</sup>"A Progress Report of the University of Tennessee SSCPEA Research Project." Prepared by the Staff of the Department of Educational Administration and Supervision, University of Tennessee, Knoxville, January, 1953. (Mimeographed.)

<sup>8</sup>University of Tennessee, op. cit., pp. 32-44.

The instrument was constructed to serve two fundamental purposes. First, it was designed to serve as a discriminating device among incumbent administrators. Second, and of particular interest and implication, it would be used in the selection and screening processes to help discern those potentially successful administrators for education from among the vast corps of students and teachers.

Since 1952, the instrument's utility has been applied and probed in nine doctoral dissertations and seven master's theses and has undergone sequential revision as the studies were completed. Additional modifications resulted from staff investigations made in conjunction with professors of the University of Tennessee Department of Psychology.<sup>9</sup> Appendix A and Appendix B contain copies of the 1952 and 1959 Tennessee Rating Guides, respectively.

The original Guide contained a total of thirty-six item scales, each based on a five-point continuum, grouped under the following six, assumed-factorial divisions:

I. Democratic Operation; II. Intelligent Operation; III. Condition of Health (physical and emotional); IV. Ethical and Moral Strength; V. Adequacy of Communication; and VI. Operation as a Citizen.<sup>10</sup> The most recent (1959)

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<sup>9</sup>Ibid., p. 33.

<sup>10</sup>Ibid., Appendix A.

Guide also featured six, assumed factorial-divisions but was reduced to twenty-five item-scales; also, certain re-grouping suggested that the first division should be termed "Interpersonal Relations" and the third, "Emotional Stability."<sup>11</sup> With five statements to choose from under each item-scale, 180 statements had been reduced to 125.

Each item-scale was so arranged that one statement on one end of the five-point continuum represented the most desirable administrative behavior, and the opposite end described the least desirable behavior. Somewhat at random, the statements were reversed in the belief that such arrangement would reduce raters' "halo" errors. Hence, weighting for scoring purposes was feasible.<sup>12</sup>

Seven years of development, research, and revision revealed certain flaws and limitations in/to the Guide. Wherever possible, the shortcomings were compensated for and corrected as they were detected. Abstracted and itemized below, the drawbacks were:

1. While clearly discriminating "superior-effective" administrators from those judged "inferior-ineffective," the Guide did not separate those dichotomous extremes from the large middle group, the "average" administrators.

2. The Guide required considerable time and effort to administer. Consensus that it was an

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<sup>11</sup>Ibid., Appendix B.

<sup>12</sup>Ibid., pp. 33-35.

unwieldy instrument posed severe limitations to general use.<sup>13</sup>

From conferences with members of his doctoral committee, the present author became aware of three more dissatisfactory aspects of the Guide. From their intimate knowledge of its content and research history, the following additional inherent and suspect foibles were voiced:

3. Overlap existed among the six divisions and the twenty-five item-scales grouped therein. The presence of only a few critical, behavioral factors was implied, yet unidentified statistically.

4. The internal structure of the Guide was still a question. Was there a hierarchy among the item-scales? Of the individual item-scales, which ones had been pivotal perceptions in raters' appraisals of subjects?

5. To some degree, semantic haze clouded many statements. One member recommended that further application of the Guide should be postponed until descriptive polarity of the statements was improved. Such amelioration might promote greater agreement among raters.

Considering the Tennessee Rating Guide's inadequacies delineated above, the purpose of this thesis was one of fivefold refinement.

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<sup>13</sup>Ibid., pp. 40-45.

## B. RESEARCH WITH THE GUIDE

Nine doctoral and seven master's theses have utilized the Tennessee Rating Guide, either as the central focus or as an accessory, such as the criterion of success or failure in studying variables pertinent to administrative effectiveness. The sixteen studies, presented in chronological order of completion, were reviewed to supplement the background for the present research.

Moffett,<sup>14</sup> as part of his study, first used the Guide as the criterion with which he sought to relate selected standardized psychological tests as possible predictors of administrative effectiveness. His investigation revealed certain portions of the instrument to be invalid. The revised form resulting from Moffett's thesis was used by Luton,<sup>15</sup> who concentrated on psychological testing and its utility as a selection system for potential educational scores, correlating them with the Rating Guide by sections.<sup>16</sup>

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<sup>14</sup>Charles R. Moffett, "Operational Characteristics of Beginning Master's Students in Educational Administration and Supervision" (unpublished Ed. D. thesis, University of Tennessee, Knoxville, June, 1954).

<sup>15</sup>James N. Luton, "A Study of the Use of Certain Standardized Tests in the Selection of Potential Educational Administrators" (unpublished Ed. D. thesis, University of Tennessee, Knoxville, March, 1955).

<sup>16</sup>Ibid., p. 58.

Greever's dissertation<sup>17</sup> concerned validation of the Guide, in which he studied six effective superintendencies to determine operational behaviors. From 178 critical incidents, 137 statements of behavior were abstracted. All but 55 had already been identified in the Guide's content, and it was concluded that those 55 statements lay outside the Guide's framework.<sup>18</sup>

Jackson's<sup>19</sup> and Keeney's<sup>20</sup> companion theses were aimed at measuring the success of the 1952 Special Class in Educational Administration and Supervision at the University of Tennessee. Each studied half of the subjects who had been enrolled, and used the Guide as the criterion of improvement among the thirty-two graduates.

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<sup>17</sup>Clarence E. Greever, "A Study of the Characteristics of Selected Effective Superintendencies in East Tennessee" (unpublished Ed. D. thesis, University of Tennessee, Knoxville, June, 1956).

<sup>18</sup>Ibid., pp. 187-188.

<sup>19</sup>Harry F. Jackson, "A Follow-Up Study of Sixteen Participants of the 1952 Special Class in Educational Administration and Supervision" (unpublished M.S. thesis, University of Tennessee, Knoxville, June, 1956).

<sup>20</sup>James L. Keeney, "A Study of Selected Students Who Participated in the 1952 Kellogg Project in the Department of Educational Administration and Supervision" (unpublished M. S. thesis, University of Tennessee, Knoxville, June, 1956).



Coker<sup>21</sup> continued the validation phase of the Guide by using it as the sole means of differentiating effective from ineffective school administrators. With combined opinions from four judges as criteria, sixteen "most effective" and sixteen "least effective" principals were identified. That step was followed by having each of the thirty-two principals rated independently by two experienced raters. The author concluded that the Guide was adequately valid.<sup>22</sup>

Gentry<sup>23</sup> also helped to validate the Guide on a national scope. In all, he obtained Guide ratings on 110 school administrators, fifty-five of whom were pre-judged to be effective with the other half of the sample described as ineffective personnel. The raters were seventy-five superiors who had been selected by twenty-five professors of educational administration at universities located in various geographic regions of the United States. Gentry's findings corroborated those of Coker's with a mean rating of four or better characterizing effective personnel and a

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<sup>21</sup>Phyllis U. Coker, "A Study of the Use of the Tennessee Rating Guide as a Means of Differentiating Between Effective and Ineffective School Administrators" (unpublished M.S. thesis, The University of Tennessee, Knoxville, August, 1956).

<sup>22</sup>Ibid., p. 51.

<sup>23</sup>Harold W. Gentry, "Patterns of Behavioral Characteristics Exhibited by School Administrators" (unpublished Ed. D. thesis, The University of Tennessee, Knoxville, June, 1957).

mean score of three or less identifying ineffective administrators.<sup>24</sup>

Assuming that the criterion of improved and learned behavioral changes should be the net differences in scores of "before" and "after" ratings using the Guide, Taylor<sup>25</sup> studied a group of seventeen graduate students in educational administration and supervision. She also used the Guide as one means of identifying her 1956 experimental group.

The objective of Evernden's<sup>26</sup> work was to determine the reliability of the Guide. Using the rate and re-rate formula, eight raters' evaluations on sixty principals were computed into correlations between first and second ratings. Coefficients ranged from 0.76 to 0.95 on the various categories and item-scales. Implications of raters being prone to "halo" afflictions were raised by Evernden.

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<sup>24</sup>Ibid., pp. 94-95.

<sup>25</sup>Gem Kate Taylor, "The Development of Effective Characteristics in Students of School Administration" (unpublished Ed. D. thesis, The University of Tennessee, Knoxville, June, 1957).

<sup>26</sup>William L. Evernden, "The Reliability of the Tennessee Rating Guide for School Administrators" (unpublished M. S. thesis, The University of Tennessee, Knoxville, June, 1958).

Nunnery's<sup>27</sup> problem was an extension of Moffett's and Luton's researches, except that he hypothesized the presence of common content between sections of the Guide and a different sequence of psychological tests, when testing a given group of practicing school administrators. To test his hypothesis, Nunnery used two non-parametric formulae (Kruskal-Wallis One-Way Analysis of Variance and Mann-Whitney "U" Tests). Parenthetically, Nunnery's techniques were the only statistics used with the Guide other than basic techniques such as correlation and t-test.<sup>28</sup> Nunnery also reported research conducted at the University of Florida testing the Guide's validity and reliability. Satisfactory findings were recorded on both counts which supported studies at the University of Tennessee.<sup>29</sup>

Schmitt<sup>30</sup> expanded Greever's study, being in many respects a companion thesis aimed at furthering validation of the Guide. He found related the observed behavioral characteristics of twenty-four pre-judged principals,

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<sup>27</sup>Michael Yates Nunnery, "A Study in the Use of Psychological Tests in Determining Effectiveness and Ineffectiveness in School Administrators" (unpublished Ed. D. thesis, The University of Tennessee, Knoxville, June, 1958).

<sup>28</sup>University of Tennessee, op. cit., p. 52.

<sup>29</sup>Nunnery, op. cit., pp. 50-51.

<sup>30</sup>Leonard R. Schmitt, "Behavioral Characteristics of School Principals" (unpublished Ed. D. thesis, University of Tennessee, Knoxville, June, 1958).

twelve of whom were effective and twelve ineffective, with behavioral statements of the Guide.

McNabb<sup>31</sup> used the Guide to test its power in distinguishing the trichotomous groups of "superior," "good," and "ineffective" administrators. Again using judges' assessments as the initial criterion, sixty subjects were rated on the Guide. While clearly identifying the extremes, the Guide did not separate them consistently from the middle "good" group.

When administered to classroom teachers for the purpose of distinguishing the potential administrators from the many others, the Rating Guide was found to be a valid instrument.<sup>32</sup> Palmer's hypothesis was implied in the original purposes of the University of Tennessee Project mentioned earlier.

The final three theses were those of Powers,<sup>33</sup>

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<sup>31</sup>William R. McNabb, "A Study of Behavioral Characteristics Exhibited by Good School Administrators" (unpublished M. S. thesis, The University of Tennessee, Knoxville, August, 1958).

<sup>32</sup>Albert L. Palmer, "A Rating of the Administrative Potential of Twenty-two Classroom Teachers" (unpublished M. S. thesis, The University of Tennessee, Knoxville, August, 1958).

<sup>33</sup>Helen Stratton Powers, "Changes in the Characteristics of Master's Students in Educational Administration" (unpublished Ed. D. thesis, The University of Tennessee, Knoxville, August, 1958).

Feltner,<sup>34</sup> and Hartsell.<sup>35</sup> The first of these was collateral to Taylor's cited previously, and provided checkpoints for the second, Feltner's, whose object it was to re-enact Jackson's and Keeney's efforts. Exceptions were, of course, that different subjects and programs were involved. In the last study, Hartsell borrowed from group dynamics techniques one known as "role playing" to examine its usefulness as a substitute for on-the-job observations of personnel who are practicing or potential administrators. Following the performances in various role situations, the subjects were rated on the Guide and the two sets of scores were then correlated. In general, it was concluded that the instrument's applications did not include the methodology used.<sup>36</sup>

An interesting and very pertinent experiment with the Guide was conducted during the Summer Session of 1960 by Dr. Galen Drewry, Chairman of the Department of Educational Administration at Auburn University. Formerly a professor on the staff of the counterpart department at the University of Tennessee and also a former member of the

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<sup>34</sup>Billy D. Feltner, "A Comparison of Behavioral Changes Among Groups of Beginning Master's Students in Educational Administration and Supervision" (unpublished M. S. thesis, The University of Tennessee, Knoxville, March, 1959).

<sup>35</sup>Charles W. Hartsell, "Role Playing as a Means of Selecting Administrators" (unpublished Ed. D. thesis, The University of Tennessee, Knoxville, December, 1959).

<sup>36</sup>Ibid., pp. 68-73.

present author's doctoral committee, Dr. Drewry had served on several previous researchers' committees and was, therefore, quite familiar with the Guide's developmental history. A complete report of the experiment was received upon its completion.

Drewry first randomized all 125 statements of the 1959 Guide (each of the twenty-five item-scales having five-statement continua), and then had the list multilithed along with an answer sheet offering seven-choice rows for each statement. Assumed factorial-divisions or categories were removed, and the randomized list was thus a simple itemized inventory of the 125 behavioral statements. The seven-choice continua rows, going from left to right, represented possible assignments ranging from "best" to "worst" administrative behavior. Fifty-four Auburn graduate students, many of whom were practicing school administrators, were asked to consider each of the 125 statements and then place each one into one of the seven slots as they perceived them to belong.

The results were quite revealing and appeared to explain and confirm much concerning disappointing aspects of the Guide in previous applications and studies. Specifically, new light was cast upon the first and fifth flaws described earlier in this chapter. Also, further implications of raters' proneness to preconceptions of

"effectiveness" and "halo" afflictions were raised again.

The findings are enumerated below:

1. When experimental seven-choice data were tabulated into "A" for "superior," "B" for "average-good," and "C" for "ineffective" behaviors (the two extreme choices at both ends representing "A" and "C" respectively, with the middle three assigned to "B"), descriptive antonymous polarity was found missing in many of the item-scales of the present Guide. For example, the fifty-four subjects often perceived "average-good" behaviors to be either "superior" or "ineffective." Such revelations help to explain McNabb's findings, previously cited.

2. The following Guide item-scales appeared to be adequately polarized: I-B, I-C, I-D, I-G, II-A, II-C, II-E, II-F, II-G, IV-A, IV-B, V-A, V-B, and VI-C. (See Appendix B, 1959 Guide.)

3. After examining individual scoring sheets, the Auburn staff suspected that many subjects had established extreme categories before they had gone through the entire inventory.<sup>37</sup>

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<sup>37</sup>Galen N. Drewry, Chairman of Department of Educational Administration, Auburn University, personal letter, July 21, 1960.

### C. THE PROBLEM

The foregoing general background provided a brief review of previous research with the Tennessee Rating Guide, from its genesis to the present study. Certain infirmities and limitations of the instrument as had been perceived by previous researchers and staff were also posed. The investigation was one of macroscopic dimensions, namely, to analyze, convert, and revise the instrument by statistical procedures. In a sentence, then, the problem was to refine the Tennessee Rating Guide for the purpose of increasing its utility.

#### Sub-problems

The refinement process posed by the problem above represented certain sub-problems, wherein the author:

1. Reviewed and synthesized related research and writings pertinent to the problem.
2. Extended validation of the Guide by performing a point-biserial item analysis.
3. Using McQuitty's methods,<sup>38, 39</sup> determined the

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<sup>38</sup>Louis L. McQuitty, "Elementary Linkage Analysis for Isolating Orthogonal and Oblique Types and Typal Relevancies," Educational and Psychological Measurement, 17 (Summer, 1957), 207-229.

<sup>39</sup>Louis L. McQuitty, "Hierarchical Syndrome Analysis," Educational and Psychological Measurement, 20 (Summer, 1960), 293-304.



factorial structure of the Guide. The twenty-five item-scales (Appendix B) were grouped into first-order typal sets, which then were analyzed into a hierarchical structure of behavioral syndromes.

4. Secured a jury whose function was reaching consensus as to combination, reduction, and revision of the Guide, following as guidelines the results of the analyses described above.

5. Constructed an equivalent form of the Guide, the format consisting of an adjective check list adopted from Osgood's Semantic Differential.<sup>40</sup>

#### D. HYPOTHESIS

It was hypothesized that there existed no more than a few very important typal sets and syndromes of administrative behaviors as measured by the Tennessee Rating Guide, and perceived by raters.

#### E. ASSUMPTIONS

Three basic assumptions provided the foundation for the study. First, the methods and techniques employed in the thesis were assumed to be valid and capable of yielding

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<sup>40</sup>Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1957).

results commensurate to the stated objectives detailed as hypothesis and problem respectively. Second, the Tennessee Rating Guide and the data were assumed to be sufficiently reliable and valid. Third, the basic data were not direct products of subjects' behaviors, but rather such data represented products of raters' behaviors in reference to perceived behaviors of subjects in specific and restricted circumstances.

#### F. SIGNIFICANCE OF THE STUDY

Limitations of paper and pencil instruments for assessing and predicting behavior were acknowledged. Certainly, rating scales may be counted among such devices, since research has disclosed many significant differences between indicated and observed behavior. Nevertheless, as in any area of human endeavor, evaluation is also sine qua non to educational administration. Rating scales have served an appropriate function along with other appraisal techniques, as a review of related literature revealed.

Perhaps the need for and significance of the present research were implied most lucently by Pierce and Albright in their recent book.<sup>41</sup> In their summation of nine years

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<sup>41</sup>Truman M. Pierce and A. D. Albright, A Profession in Transition (Nashville: The Southern States Cooperative Program in Educational Administration and Its Successor, The Associated Programs in Educational Administration, 1960).

of effort towards improving educational administration in the South, the following passages read:

Although a tremendous amount of research was undertaken for the purpose of determining valid instruments for use in the selection process, the efforts met with limited success. New instruments were created and tried out, but much remains to be done before selection can be based upon objective measures.<sup>42</sup>

Recounting the emphases placed upon administrative behavior in preparation programs throughout the Southern States Cooperative Program in Educational Administration (SSCPEA) and its successor, the Associated Programs in Educational Administration (APEA), the authors also observed that:

New devices for measuring student growth and development were obviously required. In spite of a great deal of experimentation with newly created instruments, much remains to be done before the evaluation of student progress in terms of behavioral goals can be considered to be objective.<sup>43</sup>

The reader may have observed that the two quotations above are quite similar with the exception of contexts relating to "selection" and "evaluation" respectively. Such were the two key words in the Rating Guide's intended and purported utility.

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<sup>42</sup>Ibid., pp. 115-116.

<sup>43</sup>Ibid., p. 136.

## G. LIMITATIONS AND SOURCES OF DATA

1. The study involved the original raw score data used in Jackson's,<sup>44</sup> Keeney's,<sup>45</sup> and Feltner's<sup>46</sup> theses. Peer ratings and professors' ratings were both acquired by Jackson and Keeney. The data consisted of 152 ratings on thirty-eight subjects. Feltner's data, also derived from ratings by both peers and superiors, were secured from original forms which were still available to the present author.

2. Only data relating to the twenty-five item-scales of the most recent version of the Tennessee Rating Guide (1959 Form, Appendix B) were used.

3. Only those subjects for whom data consisted of rating scores by four observers (the maximum available) were included. The ratings were averaged to minimize bias and spuriousness.

4. Feltner's data on his sixteen subjects met the above criteria. The scores on ten of Jackson's and twelve of Keeney's subjects were adequate, with six of the former's and four of the latter's ratees being excluded.

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<sup>44</sup>Jackson, op. cit., pp. 43-71.

<sup>45</sup>Keeney, op. cit., pp. 37-67.

<sup>46</sup>Feltner, op. cit.

## H. DEFINITIONS

Administrator. An individual engaged in educational administration, extended to describe both incumbent personnel and anyone pursuing a graduate program in educational administration and supervision.

Behavioral characteristic. As distinguished from a single action or instance of behavior, a pattern of behavior which an individual sets up by habitual repetition.<sup>47</sup>

Effective behavior. Administrative behavior judged to result in successful job performance.

Factor analysis. Any method for analyzing the relationships among sets of values within a matrix of inter-correlations for one or both of two purposes: (a) to describe test correlations with the smallest possible number of factors and/or (b) to determine the nature of basic processes that effect test performances.

Item-scale. Any one of the twenty-five items of the Tennessee Rating Guide contained in Appendix B, each of which affords a five-point continuum scale of five statements. For the analytic purposes of the study, each item-scale was regarded as a separate or sub-test.

Tennessee Rating Guide. An inventory of behavioral characteristics used to evaluate administrators.

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<sup>47</sup>Heyel, op. cit., p. 103.

Constructed, developed, and revised by the Department of Educational Administration, College of Education, University of Tennessee, the 1959 form was used herein. Throughout the study, it is referred to as stated above or simply as "Rating Guide" or "Guide."

## I. METHODS AND TECHNIQUES

To attain the ends set forth previously in the chapter, a progression of steps was necessary, with each successive step dependent upon the preceding ones. The methods and techniques evolved as follows:

1. The matrix. In any factor analytic method, a matrix is a prerequisite. Raw scores were extracted from the original rating forms and tabulations. The data were then recorded on IBM mark-sensing cards which were converted into IBM punched-cards by processing the former through an IBM 514 Reproducer. Preliminary totals of sums and sums of squares for the machine-formula Pearson Product-Moment coefficients were obtained by using the IBM 082 Sorter and IBM 402 Accounting Machines. The twenty-five by twenty-five squared matrix of intercorrelations was computed on an R-M LGP-30 Computer located in the Department of Electrical Engineering Laboratory, University of Tennessee. A special program was written and taped. To the squared matrix were added the point-biserial

coefficients described in the next step. The 650 coefficient ( $N \times N-1 = 26 \times 25$ ) squared matrix was complete.

2. Point-biserial item analysis. A point-biserial item analysis was performed on each of the Guide's twenty-five item-scales. This statistic is both advised and justified where one variable is a continuous one and is to be correlated with a dichotomous criterion variable, such as those judgments of "effective-ineffective" in the present case.<sup>48</sup> The continuous variable in the present case lay in the numerical ratings provided in the continuum, one through five, for each item-scale. The dichotomous criterion variable was provided by previous research norms, i.e., a mean score of four being the bisector point. The final results were added to the squared matrix obtained in the first step.

3. Linkage analysis. A linkage analysis on the matrix was the next operation. The analysis produced first-order typal sets, analogous to factors. In other words, the item-scales in each linked, typal set had greater semantic concordance and higher correlation with

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<sup>48</sup>Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Rinehart and Company, Inc., 1954), pp. 182-185, 209-210; also, Francis G. Cornell, The Essentials of Educational Statistics (New York: John Wiley and Sons, Inc., 1956), p. 310.

each other than with item-scales not in the typal set.<sup>49</sup> The analysis was considered as having revealed the perceptual foci involved in the Guide as a rating instrument.

4. Hierarchical syndrome analysis. It was noted above that linkage analysis yields only first-order classifications. Therefore, an elaboration of linkage analysis termed hierarchical syndrome analysis<sup>50</sup> was undertaken as a sequel. The purpose was to pyramid the first-order findings until the Guide's hierarchical structure was completely established. The analysis revealed the genealogical relationship of every item-scale, typal sets of item-scales, and syndromes of phenotypes.<sup>51</sup> Graphically, the composite resembled a complex whiffle-tree.

5. The Guide's reduction and revision. Following in general the procedures used by Chew and Howell at General Motors,<sup>52</sup> the findings and results of the completed analyses were submitted to a jury of staff and graduate

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<sup>49</sup>McQuitty, "Elementary Linkage Analysis for Isolating Orthogonal and Oblique Types and Typal Relevancies," op. cit., pp. 207-210.

<sup>50</sup>McQuitty, "Hierarchical Syndrome Analysis," op. cit., pp. 301-302.

<sup>51</sup>Ibid.

<sup>52</sup>Chew and Howell, op. cit., pp. 43-46.



students. Consensus as to additions, deletions, and revisions produced an abbreviated, simplified, and more valid Rating Guide.

6. Converting the Guide. The final step in the study was one of converting the newly-revised Guide into an adjective check list as an equivalent form. Adopting certain techniques of Gough<sup>53</sup> and Gowan<sup>54</sup> to ideas of Osgood,<sup>55</sup> the Guide was coupled to an abstract of Gough's standard list of three hundred adjectives and descriptive terms presented in Adams' book.<sup>56</sup> Along with a specially constructed worksheet, copies of the three items were submitted to members of graduate courses and seminars, the latter serving as a semantics laboratory through whom the individual item-scales were transformed into antonymous adjectives such as "aloof--friendly." The matched selections thus became an equivalent form.

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<sup>53</sup>Harrison G. Gough, "The Adjective Check List as a Personality Assessment Research Technique," Psychological Reports, 6 (February, 1960), 107-122.

<sup>54</sup>J. C. Gowan, "The Use of the Adjective Check List in Screening Teaching Candidates," Journal of Educational Research, 49 (May, 1956), 663-672.

<sup>55</sup>Osgood, Suci, and Tannenbaum, op. cit., pp. 76-124.

<sup>56</sup>Robert W. Adams, The Complete Employee: A Handbook for Personnel Appraisal (Chicago: Public Administration Service, 1959).

## J. ORGANIZATION OF THE STUDY

Chapter I includes the usual preliminaries such as a general background for the study, the origin, development and previous research with the Tennessee Rating Guide, problem and sub-problems, a hypothesis, basic assumptions, the thesis' significance, limitations acknowledged, definitions of terms to be used, methods and techniques employed, and finally, this listing of the study's organization.

Chapter II, the first half of a two-part review of related research and pertinent writings, is restricted to factor analytic investigations of rating scales and collateral aspects. A chapter summary which seeks to synthesize the various findings and observations concludes the chapter.

Chapter III, the second part of the related review, affords an examination of recent research and writings dealing with appraisal, educational leadership, creativity, and administrative effectiveness. The chapter summary interlaces these considerations.

Chapter IV opens with a detailed discussion of theory in factor analysis, the statistical analyses used, procedures, followed by tabulated data for the resulting typal sets and hierarchical syndromes of behaviors which comprise the Rating Guide's content. The summary is a

recapitulation of the instrument's internal structures.

Chapter V is reserved for the two phases which comprise the revising and converting steps in the Guide's refinement. Revision consists of reducing, regrouping, and rewording of the original twenty-five item-scales into a more brief and simplified, yet statistically valid form. The conversion facet recounts methods through which the newly-revised rating scale was transformed into an alternate and equivalent adjective check list. A chapter summation outlines the findings of these proceedings.

Chapter VI composes the dissertation's conclusions and recommendations. Essentially, it is the research's abstract prelude to suggestions for future study.

## CHAPTER II

### REVIEW OF RELATED RESEARCH:

#### FACTOR ANALYTIC STUDIES

The purpose of this chapter is to synthesize the literature relating to factor analyses of leadership behavior rating scales and check lists. The statistical methodology and variant procedures used in the studies will be presented along with the specific findings.

Smalzreid and Remmers<sup>1</sup> reported a factorial study of a rating scale for teachers. The instrument was designed especially for students, as subordinates to rate their instructors-superiors. In their Thurstonian analysis of ten trait-divisions on ratings of forty teachers, the authors found two primary factors. The first was named "Rapport or Empathy" and the second was designated "Professional Maturity."

Before proceeding further, it may be regarded as significant that powerful statistical methods such as factor analysis were not reported as having been applied to rating scales, social perceptions, opinion and attitude

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<sup>1</sup>N. T. Smalzreid and H. H. Remmers, "A Factor Analysis of the Purdue Rating Scale for Instructors," Journal of Educational Psychology, 34 (September, 1943), 363-367.

research prior to World War II.<sup>2</sup> That observation, additionally supported by an intensive search of the literature back thirty years, is indicative of the tremendous progress made in little more than a decade; the presentation which continues below may well portend more for the near and distant future.

The next few studies are so possessed of antecedent pertinence as to merit detailed reporting. Hobson<sup>3</sup> expanded and extended Smalzreid's and Remmer's work to investigate factors of administrative behavior in selected colleges and universities. In his review of research and writings on rating scales and tests as appraisal techniques prior to 1948, he noted that students, instructors and institutions had been well measured, but Hobson saw the academic administrator "being ignored if not forgotten."<sup>4</sup> While academic administrators had been the center of some attention, both adversely critical and complimentary, most of the writings represented philosophizing based upon observations of individuals in limited areas. Although such

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<sup>2</sup>Jesse C. Rupe, "Some Psychological Dimensions of Business and Industrial Executives" (unpublished Ph.D. thesis, Purdue University, Lafayette, February, 1950), pp. 1-16.

<sup>3</sup>Robert L. Hobson, "Some Psychological Dimensions of Academic Administrators" (unpublished Ph.D. thesis, Purdue University, Lafayette, Indiana, August, 1948).

<sup>4</sup>Ibid., pp. 1-2.

philosophizing had unquestionable values, little of it proceeded beyond the hypothetical stage.<sup>5</sup>

For his basic measuring instrument, Hobson chose to construct a subordinate-administrator rating scale. Such a choice was based upon the logical consideration of: (1) administrative effectiveness being largely a social quality which can, therefore, be better appraised by evidence of effective social interaction than by non-social measures of individual ability, and (2) no correlation existent between social intelligence and social effectiveness.<sup>6</sup>

Like others before and since his study, Hobson conceded that administrators could be selected on the basis of published, standardized tests which would do a better-than-chance job. However, beyond findings that a potentially successful administrator needed to possess intelligence, broad interests, and a relatively acceptable personality, the means of measuring "success" or effectiveness were tenuous due to many complexities and variables of social interaction. What was really needed were measures which would sample levels of an administrator's actual influences.<sup>7</sup>

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<sup>5</sup>Ibid.

<sup>6</sup>Ibid., pp. 4-5.

<sup>7</sup>Ibid.

In constructing his subordinate-administrator rating scale, entitled "The Purdue Rating Scale for Administrators," Hobson advanced certain criteria:

1. Each item of material must represent possibly important characteristics--desirable or undesirable--of an administrator in his job.

2. The materials must be wide enough in their sampling to touch all, or nearly all, such important characteristics.

3. None of the material may be specific to certain kinds of academic administrators, but must be applicable to all of them.<sup>8</sup>

Three primary sources for the instrument's content were: (1) oral and written descriptions by administrators themselves of the traits important to their jobs, (2) oral statements of university staff members concerning both good and poor characteristics of educational administrators, and (3) literature concerned with academic administration. Hobson left the reader with the impression that the literature's scope truly did span the ridiculous through the sublime.

The rating form's individual items were formulated within a framework of the following criteria, such that each item should:

1. Represent a continuum with generally accepted desirable and undesirable extremes.

2. Present only one characteristic or trait.

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<sup>8</sup>Ibid., pp. 6-7.

3. Be as brief as permitted by accurate and unambiguous presentation of the idea.

4. Be phrased, so far as possible, in such a way as to orient the rater to actual performance and characteristics of the administrator--a low level as opposed to a high level of semantic generalization.<sup>9</sup>

Coincidentally, Hobson's scales numbered thirty-six also, the same number which the original Tennessee Rating Guide possessed. Where the Guide's thirty-six item-scales were grouped under six divisions, Hobson's were assembled into ten "logical" groups as follows:

- I. Intellectual Balance
- II. Emotional Balance
- III. Administrative Leadership
- IV. Administrative Planning
- V. Use of Funds
- VI. Capacity for Work
- VII. Accomplishment
- VIII. Relations with Subordinates
- IX. Public Relations
- X. Social Responsibility<sup>10</sup>

Reviewed by two administrators and a seminar of graduate psychology students, the tentative "Purdue Rating Scale for Administrators" was revised according to suggestions.<sup>11</sup> The complete and final scale is presented in Table I, since it will be referred to in a later, brief review of Rupe's application of the scale in studying behavior of business executives.

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<sup>9</sup>Ibid.

<sup>10</sup>Ibid., pp. 7-8.

<sup>11</sup>Rupe, op. cit.



TABLE I  
THE PURDUE RATING SCALE FOR ADMINISTRATORS<sup>a</sup>

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I. Intellectual Balance

1. Possesses general knowledge:  
 (5) Very broad (4) Fairly broad (3) Limited  
 (2) Very limited (1) Lacking 1. \_\_\_\_\_

2. Possesses specific knowledge in his own field:  
 (5) Up-to-date (4) Good (3) Fair  
 (2) Poor (1) Lacking 2. \_\_\_\_\_

II. Emotional Balance

3. Is emotionally poised and calm:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 3. \_\_\_\_\_

4. Has adequate self-confidence:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 4. \_\_\_\_\_

5. Is concerned with his own personal problems:  
 (5) Never (4) Seldom (3) Sometimes  
 (2) Usually (1) Always 5. \_\_\_\_\_

6. Welcomes difference in viewpoints:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 6. \_\_\_\_\_

III. Administrative Leadership

7. Welds staff into a unit with clearly recognized goals:  
 (5) Exceptionally well (4) Very well  
 (3) Quite well (2) Poorly (1) Very poorly 7. \_\_\_\_\_

8. Uses democratic procedures wherever possible:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 8. \_\_\_\_\_

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TABLE I (continued)

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 III. Administrative Leadership (continued)

9. Inspires subordinates to independent, creative work:  
 (5) Always (4) Sometimes (3) Seldom  
 (2) Never (1) Makes creative work repulsive 9. \_\_\_\_\_

## IV. Administrative Planning

10. Makes plans carefully and adequately:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 10. \_\_\_\_\_
11. Is alert to recognize or devise useful innovations:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 11. \_\_\_\_\_
12. Understands the objectives and inter-relationships of his entire work:  
 (5) Exceptionally well (4) Very well  
 (3) Quite well (2) Poorly (1) Very poorly 12. \_\_\_\_\_
13. Does a good job of systematizing and coordinating units of work:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 13. \_\_\_\_\_
14. Has knowledge of pertinent details of his subordinates' work:  
 (5) Very good (4) Good (3) Fair (2) Poor  
 (1) Not at all 14. \_\_\_\_\_

## V. Use of Funds

15. Employs as capable personnel as possible  
 (5) Always (4) Good (3) Sometimes  
 (2) Seldom (1) Never 15. \_\_\_\_\_
16. Selects equipment wisely:  
 (5) Always (4) Usually (3) Sometimes  
 (2) Seldom (1) Never 16. \_\_\_\_\_
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TABLE I (continued)

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V. Use of Funds (continued)

17. Makes effective effort to obtain funds  
for self-improvement of subordinates:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 17.\_\_\_\_\_

## VI. Capacity for Work

18. Works hard:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 18.\_\_\_\_\_
19. Welcomes additional responsibilities:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 19.\_\_\_\_\_
20. Meets emergencies in his work competently:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 20.\_\_\_\_\_

## VII. Accomplishment

21. Conducts his work as expeditiously as  
possible:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 21.\_\_\_\_\_
22. The essential work of his organization  
gets done on time:  
(5) Always (4) Usually (3) Sometimes  
(2) Seldom (1) Never 22.\_\_\_\_\_
23. The important work of his organization  
is completed:  
(5) All of it (4) Most (3) Some  
(2) Little (1) None 23.\_\_\_\_\_
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TABLE I (continued)

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VIII. Relations with Subordinates		
24.	Compliments and thanks his subordinates appropriately and sincerely: (5) Very frequently (4) Quite frequently (3) Sometimes (2) Seldom (1) Often criticizes negatively	24. _____
25.	Is available to counsel and assist subordinates: (5) Sufficiently (4) Almost sufficiently (3) Sometimes (2) Seldom (1) Never	25. _____
26.	Recognizes and rewards meritorious achievement of his subordinates: (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never	26. _____
27.	Possesses insight into the problem encountered by his subordinates: (5) Complete (4) Much (3) Some (2) Little (1) None	27. _____
28.	Is honest and dependable in dealings with subordinates: (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never	28. _____
29.	Displays unwarranted favoritism to some subordinates: (5) Never (4) Seldom (3) Sometimes (2) Often (1) Continuously	29. _____
30.	Appropriates ideas and work of subordinates to improve his own standing: (5) Never (4) Seldom (3) Sometimes (2) Often (1) Continuously	30. _____
31.	Does everything possible, consistent with a subordinate's ability and achievement, to advance him: (5) Always (4) Usually (3) Seldom (2) Never (1) Curbs achievement	31. _____

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TABLE I (continued)

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VIII. Relations with Subordinates (continued)		
32.	Is just and considerate in discharging subordinates: (5) Always (4) Usually (3) Seldom (2) Sometimes (1) Never	32. _____
33.	The general morale of his staff: (5) Exceptionally high (4) Good (3) Fair (2) Poor (1) Very low	33. _____
IX. Public Relations		
34.	Promotes public relations: (5) Actively good (4) Fair (3) Poor (2) Not at all (1) Actively bad	34. _____
35.	Attempts to orient his work to the welfare of society at large: (5) Exceptionally well (4) Well (3) Fairly well (2) Indifferently (1) Poorly	35. _____
36.	Team work: Conforms to the purposes and plans of the organization which he serves: does not seek unfair advantage for his unit: (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never	36. _____

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<sup>a</sup>Source: Robert L. Hobson, "Some Psychological Dimensions of Academic Administrators" (unpublished Ph.D. thesis, Purdue University, Lafayette, Indiana, August, 1948), pp. 9-12.

A few additional comments concerning the scale above may be worthwhile. First, since previous research had revealed no significant differences between results from consistent continua versus randomized or staggered favorable ends of items, Hobson kept the most favorable items all to the left as noted. To the research evidence, other arguments were added to accepting the futility of randomized continua of items or item-scales in the present case. One valid argument was that such randomizing only calls for mental gymnastics and confuses the rater. Another point is the increased possibility of clerical errors in tallying total scores. Also, to project a meaningful and comparative profile item-scale by item-scale, some of the continua would have to be rotated 180°. Careless or hurried raters, operating from general impressions, could cause more damage than might be expected.<sup>12</sup>

Weighted identically to the present Guide, the most favorable behavior in each item-scale of Hobson's form was assigned five points, with the least favorable characteristic given a weight of one. The scale was so arranged that it could be processed with IBM mark sensing equipment.<sup>13</sup>

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<sup>12</sup>Hobson, op. cit., pp. 8-13.

<sup>13</sup>Ibid.

From nine mid-western colleges and universities, Hobson obtained rating scores from subordinates on forty-six college-level administrators. The group of subjects included presidents, deans, department heads and registrars.<sup>14</sup> Using Thurstone's centroid method of factor analysis, the Purdue researcher extracted two primary factors and one secondary factor. The first, "Factor A--Fairness to Subordinates," was composed of items 28, 29, 32, 33, 3, and 24. (See Table I.) The secondary factor, "Factor B--Administrative Achievement," consisted of items 12, 22, 23, 16, 14, 10, 7, 2, and 13. The criterion item was number 33. Hobson inferred that the third, "Factor C--Democratic Orientation," was a "forced" factor by psychologists' definitions. Nevertheless, it was there, made up of items 36, 8, 5, 34, 35, and 31.<sup>15</sup>

Rupe's investigation previously cited was a duplication of Hobson's efforts, except that the former's subjects were business and industrial executives. Rupe merely re-titled the rating form to read "executives" in lieu of "administrators."<sup>16</sup> Rupe's data were subordinates' ratings on 114 executives selected from Poor's 1949 Register of

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<sup>14</sup>Ibid., pp. 14-20.

<sup>15</sup>Ibid., pp. 35-73.

<sup>16</sup>Rupe, op. cit., p. 19.

Directors and Executives.<sup>17</sup> Only two factors were extracted in the study, with the author declining to "force" further dimensions.<sup>18</sup> The first, "Factor A--Social Responsibility for Subordinates and Society," was comprised of the group of items numbered 29, 24, 32, 8, 28, 35, 33, 26, 6, and 34. (See Table I.) Items 2, 16, 22, 23, 14, 4, 10, 1, and 12 suggested "Factor B--Executive Achievement."<sup>19</sup> Rupe, in synthesizing results of Hobson's and his own researches, acknowledged that the two main factors in both studies were remarkably similar, yet the two did not account for all that the scale measured.<sup>20</sup>

Considering the independency of his two identified factors, Rupe reflects:

It seems entirely credible that an executive may be considerate of his employees and socially oriented without attaining executive achievement. It also appears that he may succeed to a considerable degree, possessing knowledge, self-assurance, planning, and creativeness, without being entirely susceptible to the welfare of either the immediate or the larger group.

The history of industrial growth compounds those conclusions. Great accomplishment has been achieved by the industrial barons of the past, but the great labor movement developed. More modern growth through paternalism to the

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<sup>17</sup>Ibid., pp. 21-40.

<sup>18</sup>Ibid., p. 42.

<sup>19</sup>Ibid., pp. 43-51.

<sup>20</sup>Ibid., p. 52.



recognition of the need for equality of bargaining may be reflected by the weighting of the items of Factor B with Factor A. Executive achievement may be possible without considerateness for others, but the relationship indicated by this analysis surely echoes the philosophy of its importance in the long run. This may suggest that the industrial psychologist, with his modern personnel procedures and supervisory training methods which encourage individual recognition and reward, may view his course with optimism.<sup>21</sup>

As perceived by subordinates, then, the most common and important integer of both academic administrators' and business/industrial executives' effectiveness concerned "fairness and responsibility to subordinates and society." Rupe commented further:

As measured by this scale /"Purdue Rating Scale for Administrators-Executives"/, the similarities between business and industrial executives and academic administrators appear to be much greater than their dissimilarities. This is so much so that the scale may be profitably used by both, and a single set of combined norms could be used. Inconclusive differences seem to appear in what may be a slightly greater degree of frankness of rating by academic personnel and in a greater separation of concern for public-mindedness. These differences might well disappear in a more careful handling of the details of instruction to raters by a personal administration of the scale by a trained technician.<sup>22</sup>

While establishing and checking validity and reliability by many statistical techniques, both Hobson and Rupe chose to avoid or defer revision and/or conversion of

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<sup>21</sup>Ibid., pp. 52-53.

<sup>22</sup>Ibid., pp. 55-56.

the Purdue instrument into reduced or equivalent forms.

Using a polarized adjective rating scale (e.g., apathetic--alert), Ryans and Wandt<sup>23</sup> pursued factors of secondary teachers' behavior in California, working under a grant from the American Council on Education. Six oblique factors were identified among twenty-five variables of adjective-sets. The factors were:

1. Factor A - Sociable versus Unsociable  
Understanding-Fair versus Unfriendly/Domineering/Partial
2. Factor B - Business-like versus Disorganized/Irresponsible
3. Factor C - Pupil Participation versus Pupil Non-Participation  
Controlled Pupil Activity versus Uncontrolled Pupil Activity/Obstructive
4. Factor D - Reactive versus Composed
5. Factor E - Original/Tolerant versus Stereotyped/Intolerant
6. Factor F - Good-Appearing versus Poor-Appearing<sup>24</sup>

A year later Ryans reported an excellent review and synthesis of factor analytic studies for elementary teachers

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<sup>23</sup>David G. Ryans and Edwin Wandt, "A Factor Analysis of Observed Teacher Behaviors in the Secondary School: A Study of Criterion Data," Educational and Psychological Measurement, 12 (Winter, 1952), 574-586.

<sup>24</sup>Ibid., p. 585.

and secondary teachers,<sup>25</sup> the latter referred to previously. The same basic instrument and methodology were used. Of elementary teacher behaviors, only five oblique factors were extracted as:

1. Factor A - Pupil Participation versus Pupil Non-Participation  
Original/Tolerant versus Stereotyped/Intolerant
2. Factor B - Controlled Pupil Activity versus Uncontrolled Pupil Activity  
Business-like versus Disorganized/Irresponsible
3. Factor C - Understanding/Fair versus Unfriendly/Domineering/Partial  
Composed versus Reactive
4. Factor D - Sociable versus Unsociable
5. Factor E - Good-appearing versus Poor-appearing<sup>26</sup>

Although not exactly identical, the factors are similar indeed. What elements are common to both elementary and secondary teaching levels? Three factors are suggested.<sup>27</sup>

1. Factor A - One characterized by understanding, friendliness and responsiveness of the teacher (strongly suggestive of "empathy")

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<sup>25</sup>David G. Ryans, "The Investigation of Teacher Characteristics," Educational Record, 34 (October, 1953), 371-396.

<sup>26</sup>Ibid., pp. 386-387.

<sup>27</sup>Ibid., p. 387.

2. Factor B - A factor of systematic, responsible and organized teacher behavior (Shall we say teacher "consistency"?)
3. Factor C - Aspects contributed to by a teacher's innovating and original behavior. (A "unique-creative" element perhaps?)

Development of the "Leader Behavior Description Questionnaire" (LBDQ) at Ohio State represents a very noteworthy effort at measuring administrative-executive competence. Halpin,<sup>28</sup> Campbell and Gregg<sup>29</sup> describe the construction, validation, various analyses, and applications of this instrument along with others. Originally prepared for the United States Air Force, the LBDQ has undergone several revisions which permitted utility in non-military areas of research. The eighty items, most of which are expressed identically with, similar to, or implied in the Guide and/or the Purdue scales, were submitted to factor analyses. Two independent factors were extracted and named (1) "Initiating Structure" and (2) "Consideration."

The two primary and independent factors consumed thirty of the eighty total item-scales, with fifteen item-scales under each factor. Scoring was provided on a

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<sup>28</sup>Andrew W. Halpin, "The Behavior of Leaders," Educational Leadership, 14 (December, 1956), 172-176.

<sup>29</sup>Roald F. Campbell and Russell T. Gregg (eds.), Administrative Behavior in Education (New York: Harper and Bros., 1957), pp. 155-199, 346-347.

five-point continuum of adverbs: always, often, occasionally, seldom, never. (For the thirty item-scales, see Table II.)

The first oblique factor, "Initiating Structure," refers to an administrator's behavior in delineating relationships between his staff and himself, and in striving to organize, communicate, and execute "to get things done." The other LBDQ factor, "Consideration," incorporates behavioral characteristics that reflect warmth, mutual trust, respect, and friendship between the leader and group members. Actually, this factor connotes human relations aspects.<sup>30</sup>

Subsequent analyses performed on LBDQ data tentatively identified two sub-factors. The two lesser, dependent dimensions suggested the titles, "Production Emphasis" and "Social Awareness." Apparently, the first of these would be found under and linked to the parent "Initiating Structure," with the secondary "Social Awareness" (Sensitivity) being an element of "Consideration."<sup>31</sup> The literature confirmed the consistency of the two main factors, but nothing was found which would describe the

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<sup>30</sup>Halpin, op. cit., pp. 174-175.

<sup>31</sup>Andrew W. Halpin, The Leadership of Behavior of School Superintendents (Columbus: Ohio State University Press, 1956), p. 7.

TABLE II  
FACTORED DIMENSIONS OF THE LBDQ<sup>a</sup>

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Factor A - Initiating Structure

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1. He makes his attitudes clear to the staff.
  2. He tries out his new ideas with the staff.
  3. He rules with an iron hand.
  4. He criticizes poor work.
  5. He speaks in a manner not to be questioned.
  6. He assigns staff members to particular tasks.
  7. He works without a plan.\*
  8. He maintains definite standards of performance.
  9. He emphasizes the meeting of deadlines.
  10. He encourages the use of uniform procedures.
  11. He makes sure that his part in the organization is understood by all members.
  12. He asks that staff members follow standard rules and regulations.
  13. He lets staff members know what is expected of them.
  14. He sees to it that staff members are working up to capacity.
  15. He sees to it that the work of staff members is co-ordinated.
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Factor B - Consideration

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1. He does personal favors for staff members.
  2. He does little things to make it pleasant to be a member of the staff.
  3. He is easy to understand.
  4. He finds time to listen to staff members.
  5. He keeps to himself.\*
  6. He looks out for the personal welfare of individual staff members.
  7. He refuses to explain his actions.\*
  8. He acts without consulting the staff.\*
  9. He is slow to accept new ideas.\*
  10. He treats all staff members as his equals.
  11. He is willing to make changes.
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TABLE II (continued)

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Factor B - Consideration (continued)	
12.	He is friendly and approachable.
13.	He makes staff members feel at ease when talking with them.
14.	He puts suggestions by the staff into operation.
15.	He gets staff approval on important matters before going ahead.

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<sup>a</sup>Source: Andrew W. Halpin, The Leadership Behavior of School Superintendents (Columbus: Ohio State University Press, 1956), pp. 7-8.

\*Scored negatively.

two sub-factors as being stable.

One non-military application of the Ohio State LBDQ was an appraisal of twenty-two department heads in a liberal arts college. The departments with the best campus reputation (all were pre-judged by a panel on a continuum of "best-poorest") for being competently administered were those whose chairmen scored above the mean on both of the two primary factors.<sup>32</sup>

Another publication by Halpin<sup>33</sup> reported a second non-military study with the LBDQ, in which perceptions, and expectations of board members, school staff members, and school superintendents were considered and analyzed.

Fifty Ohio school superintendents and their professional structures were examined, with the LBDQ scales being administered in each community by a researcher. Meetings with staff and board members were held separately. Anonymity of all concerned was protected. One thousand two hundred and seventy-four questionnaires were scored on the two primary dimensions, "Initiating Structure" and "Consideration," and the raw data represented the interacting perceptions of behavior among the three--superintendents, staff, and school board members.

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<sup>32</sup>Halpin, "The Behavior of Leaders," op. cit., p. 175.

<sup>33</sup>Halpin, The Leadership Behavior of School Superintendents, op. cit. p. 7.



A discussion of the findings pointed up several interesting aspects. First, the effective superintendents were marked by high scores on both major factors as had been found with the college department heads. Second, some of the superintendents scored much higher on one dimension than on the other, implying that they acted as if they were forced to sacrifice one for the other. In other words, some administrators tended to feel that "being a nice guy" excludes "getting things done" by shared-responsibility in organizational media. Conversely, the opposite was true with a few administrators. Halpin asks,

Why, then, the apparent disinclination to place similar stress upon both aspects of behavior in dealing with the staff? This reluctance may be a reflection of some of the current emphasis in education upon human relations. The human relations approach and the burgeoning interest in group dynamics have developed in part as a protest against reactionary and even authoritarian leadership styles that have prevailed in far too many school situations. In our enthusiasm for the new approach, have we perhaps swung the pendulum too far?<sup>34</sup>

A third major finding pondered the superintendent's tendency to play different roles with his board and his staff, despite the revelation that both board and staff possessed near identical perceptions of the administrator's job. There appeared to be a better balance between the two dimensions (factors of "Initiating Structure" and

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<sup>34</sup>Ibid., p. 80.

"Consideration") in the superintendent's dealings with the board than in his relationships with his staff. Particularly, some superintendents failed in the first factor, "Initiating Structure," with the staff. Halpin wished to hypothesize that, since the administrator has fewer contacts with his board, the time-intervals gave him more time to ponder executive strategy with that group.<sup>35</sup>

Gibb<sup>36</sup> enlisted 119 male students in a liberal arts college and used the LBDQ to appraise seventy male college professors. Gibb's approach was similar to Hobson's and Rupe's in that they all were concerned with a "worms-eye" view of superiors by subordinates. Centroid factor analysis of the ratings on male college teachers identified four factors called: (1) Friendly Democratic Behavior, (2) Communication Behavior, (3) Systematic-Organization Behavior, and (4) Academic Emphasis. In brief, the male students rated highest the male college teacher who was friendly and impartial, clear and precise in oral and written communications, prepared and organized in his classroom, and professionally competent coupled with a determination to apply it for student benefit.

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<sup>35</sup>Ibid., pp. 81-86.

<sup>36</sup>Cecil A. Gibb, "Classroom Behavior of the College Teacher," Educational and Psychological Measurements, 15 (Autumn, 1955), 254-263.

In 1955, the staff of the University of Kentucky performed a factor analysis on effective administrative performances and survey data received from educators. Only one general factor for traits of successful educational administrators was shown, being described as the "democratic attitude."<sup>37</sup> Bills, one of the Kentucky staff of analysts, but more recently of Auburn University, has analyzed and developed a clinical instrument relating to perceptual dimensions of values and adjustment of the individual<sup>38</sup>; the index has been used in many investigations involving practicing and potential educational administrators.

Fiedler<sup>39</sup> summarizes the findings of a six-year (1951-1957) research program designed to identify psychological factors underlying group effectiveness. The specific aim was development of a theory concerning the role which inter-personal perception plays in making groups productive.<sup>40</sup> Although the research was not descriptive of factor analytic methodology on rating scales per se, the work at the University of Illinois is directly related to

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<sup>37</sup>Campbell and Gregg, op. cit., pp. 344-345.

<sup>38</sup>Robert E. Bills, "A Manual for the Index of Adjustment and Values" (Auburn: Auburn University, 1957). (Mimeographed.)

<sup>39</sup>Fred E. Fiedler, Leader Attitudes and Group Effectiveness (Urbana: University of Illinois Press, 1957).

<sup>40</sup>Ibid., p. 1.

the present study in many respects, and was rooted in factor analytic research.

Several methodologies and statistical techniques were applied and evaluated throughout the Illinois program. Q-technique ratings (Q-sorts, Q-blocks), Likert scales, Warrington unforced scales, and finally, adjective scales were used. The last of these, particularly Osgood's Semantic Differential, appeared to offer the most promise. The D statistic was used, a measure of "distance" between "ideal" and "real," "most-preferred" and "least-preferred" dimensions on individuals and groups.<sup>41</sup> The D statistic is really quite simple. Yielding "Assumed Similarity" (AS) scores, D is derived by the following steps in a given example:

Let us consider two descriptions, both made by Subject A. The first is his description of his most preferred co-worker, and the second is his description of his least preferred co-worker. We have scored each item scale from 1 to 6, thus:

	1	2	3	4	5	6	
Friendly	,	x	,	,	,	,	Unfriendly

An S who checks himself as quite friendly would therefore be assigned a score of 2 on this item. Let us now compare, say, five items which Subject A has marked on the scales describing his most preferred and his least preferred co-workers:

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<sup>41</sup>Ibid., pp. 6-15.

	Scale Item Number				
	1	2	3	4	5
Scores of A's description of most preferred co-worker	2	3	1	4	2
Scores of A's description of least-preferred co-worker	3	4	5	1	6
Difference between descriptions	1	1	4	3	4
Squared differences	1	1	16	9	16

$$D^2 = 43$$

$$D = 6.56$$

As can be seen,  $\underline{D}$  requires very few operations, namely, obtaining the difference between corresponding responses to scale items, and squaring and summing  $\underline{D}^2$ . Obtaining the square root of  $\underline{D}^2$  makes the distribution of scores nearly normal, and therefore permits the use of parametric statistics. One confusion frequently arises. As will be noted, we originally worked with Q-correlations. Hence, a high correlation indicates high Assumed Similarity (AS). However, when we deal with  $\underline{D}$  measures, it must be remembered that the larger  $\underline{D}$  score, that is, the Assumed Difference (AD), indicates a lower Assumed Similarity (AS) score.<sup>42</sup>

The Fiedler material presented above is reviewed here for purposes of inferring and/or suggesting possibilities for future research with the Guide, and to clarify the reasoning behind the present author's choice of methods and procedures. First, it took little more than a cursory glance to see that the  $\underline{D}$  statistic does indeed offer many possibilities in evaluative research on personnel;

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<sup>42</sup>Ibid., pp. 16-17.

particularly, it should encourage those non-mathematicians and those less inclined to statistical sophistication. Second, the treatment would appear to have many applications in attitude-opinion and interpersonal-perception research. Certainly where ratings are under study, perceptual considerations are presuppositions. Third, Osgood's Semantic Differential in measuring meaning represents a very recent and significant step in examining communication and comprehension between/among human beings; the reader may wish to ponder the extracted factors in meaning. Thurstonian methods of factor analysis were programmed into the high-speed "Ill-IAC" computer at Illinois: the data were adjectival terms abstracted primarily from Roget's Thesaurus. Three resultant major facts of meaning suggested being dubbed:

1. Evaluation ("goodness-badness")
2. Potency ("strength-weakness")
3. Activity State ("active-passive")<sup>43</sup>

What does this mean? The results simply help to confirm the observation that there is a general tendency among mankind to construe conceptual referents of all kinds in terms of only a few major dimensions. The researchers demonstrated that we human beings are prone to structure

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<sup>43</sup>Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1957), p. 38.

tremendously varied kinds of meanings in terms of the above three factors. Ours is a social world. A person's destiny is perhaps determined as much by what others see and think of him as by the characteristics he may "truly possess." This is so regardless of the origins of "those other persons'" beliefs. The three dimensions offer some substance in the way of criteria for constructing measuring instruments such as rating scales. Although the factorial content of the three dimensions may exist in raters' "heads and hearts," the rating scores themselves may possibly be seen as having something to do with subjects' behaviors. No matter what the three factors mean themselves, they are considered and judged consistently. Appearing as recognizable and statistical forms, they form as good a basis for measurement, prediction, and theory-construction as any other elements.

Tentatively identified were four other factors of meaning. Preserving continuity of numbering, the minor factors suggested the titles of:

4. Stability ("sober-drunk," "stable-changeable," etc.)
5. Tautness ("angular-rounded," "straight-curved," etc.)
6. Novelty ("new-old," "unusual-usual," etc.)
7. Receptivity ("savory-tasteless," "colorful-colorless," etc.)<sup>44</sup>

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<sup>44</sup>Ibid., pp. 31-75.

Again we might ask, "What does this mean?" It means that in our appraisals of other people, there exists the predilection to evaluate them in a framework of three major and possibly four minor dimensions. Further, it means that if we accept the notion of these dimensions being ever-present and static within our individual and unique selves, our concepts of "what ought to be" automatically govern our perceptions of "what is"! The reciprocal would also be true. But such reasoning is still incomplete. When we ponder injected variables of personality dynamics such as changes in attitudes occurring, the dimensions of interpretation set forth are no longer defined as "ever-present and static." While these latter domains and realms lie distinctly outside the scope of this paper, there is some evidence that attitudes are quite resistant to change. Let it suffice to note that there exist little theory and research about the nature, formation, learning and change of attitude systems anyhow.<sup>45</sup> Implications of these thoughts as they pertain to rating will be raised in the next chapter.

The next two factor analytic studies involving rating scales and/or check lists to be cited propound a contrast of profiles. Both theses focused upon student

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<sup>45</sup>Milton Rokeach, The Open and Closed Mind (New York: Basic Book, Inc., 1960), p. 18.



behavior, but from different angles. One was concerned with peers' views of effectiveness and the other was characteristic of superiors' concepts of success. The reader is invited to examine the findings and draw his own conclusions.

Bartlett<sup>46</sup> directed his dissertation toward locating the basic elements of leadership as seen by college students and comparing the merits of self-ratings versus peer ratings. The factor analytic phase reported here was also published in a professional journal.<sup>47</sup>

Bartlett's definition of leadership was simply one of an individual being perceived as a leader by fellow members of a discussion group. The author's structure was leadership behavior in classroom groups over a twelve-week period. The subjects were seventy-five college students enrolled in an introductory course of educational psychology, in which small sub-groups were observed and requested to participate.

From seventy-five individual essays and descriptions of leader behavior, a descriptive check list was constructed. Six tentative groupings of the item-scales were named: (a) Intelligence, (b) Personal Acceptability, (c) Motivation,

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<sup>46</sup>Claude J. Bartlett, "The Relationship Between Self-Ratings and Peer Ratings on a Leadership Behavior Scale" (unpublished Ph.D. thesis, Ohio State University, Columbia, 1958).

<sup>47</sup>Claude J. Bartlett, "Dimensions of Leadership Behavior in Classroom Discussion Groups," Journal of Educational Psychology, 50 (December, 1959), 280-284.

(d) Group Organization, (e) Democratic-Autocratic, and (f) Self-organization. The check list of five-point item-scales was then administered to one hundred college students divided into three, approximately equal groups. The first group was asked to think of someone in the upper half of the class in terms of leadership characteristics. The second group was requested to think of one from the lower half of the class, with the third group being asked to consider an average person.

Simplified (Wherry and Wherry-Winer) methods of factor analysis were employed to extract five factors.<sup>48</sup> The five factors which emerged consisted of one general factor and four group factors. Named and briefly defined, the five were:

General Factor: I. Halo--the general impression of an individual in his peers' perceptions.

Group Factors: II. Contribution of Ideas and Information--one's peers' perceptions of his intelligence; also, their noting his fund of information from which to contribute to the group.

III. Contribution of Friendly Atmosphere--extent to which he is easy to get along with and be a booster of morale to the class.

IV. Contribution of Labor and Effort--descriptive of one's fulfilling the role of "work horse."

V. Contribution of Policy and Decision--a measure of a person's "drive" and self-confidence.

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<sup>48</sup>Ibid., pp. 281-283.

Roger A. Myers<sup>49</sup> enlisted the aid of selected faculty members at Ohio State to establish factors encompassing their views of student effectiveness. Possibly, the question could have been stated, "What are professors measuring and perceiving when pronouncing students to be 'good' or 'poor' subjects?"

Myers' procedures were similar to Bartlett's. First, he interviewed twelve professors and asked them to describe "good" students and "poor" students. The descriptive statements were extracted and used as the content with which to construct a behavior rating scale, "Inventory of Student Accomplishment." A departmental faculty was invited to rate hypothetical "good" and "poor" students from their own concepts, but using the inventory as a common yardstick.

Using a modified factor analytic technique (Wherry-Winer Method), a matrix of intercorrelations was analyzed to yield one general and three group factors. The general factor suggested the title "Stereotype of Student Behavior," generally defined as a professor's over-all view of student behavior. The first group factor, "Readiness to Learn," was a dimension of a student's motivation; the second group factor, "Social Sensitivity," connoted aspects of empathy

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<sup>49</sup>Roger A. Myers, "A Factor Analytic Study of Faculty Views of Student Success" (unpublished Ph. D. thesis, Ohio State University, Columbus, June, 1959).

or concern for fellow students; the third group factor was called "Impulse Control," an element of both maturity and emotional conformity as defined by pertinent statements of student behavior on Myers' rating form.

Gross, Mason, and McEachern<sup>50</sup> of Harvard University, the U. S. Office of Education and the John Tracy Clinic respectively, have published a detailed report of studies dealing with roles of school superintendents. To analyze personal characteristics and administrative behaviors of 105 superintendents and 508 school board members in Massachusetts, the authors chose Guttman's Scalogram Analysis as their analytical method.<sup>51</sup> Concluding observations of their studies emphasized the dynamic variance between board-community expectations and superintendents' compliance. Also, the use of the role concept and concomitant methodology was found to yield few significant hypotheses of theoretical importance, being descriptive, therefore, of "heuristic sterility."<sup>52</sup>

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<sup>50</sup>Neal Gross, Ward S. Mason, and Alexander W. McEachern, Explorations in Role Analysis: Studies of the School Superintendency Role (New York: John Wiley & Sons, Inc., 1958).

<sup>51</sup>Ibid., pp. 91-93.

<sup>52</sup>Ibid., pp. 319-327.

The last analytic study to be reviewed, a very recent one by Chew and Howell<sup>53</sup> of General Motors Corporation, bears a direct relationship to the present research. The authors' methodology, rationale of rating, and theoretical treatment of their results pose interesting tangents of departure from other previous investigations. The implications will be discussed both here and in later chapters, where issues of the present case are concerned.

As an introduction to their work, Chew and Howell resurrect an old rating problem by saying,

One of the most difficult problems in developing a form for rating personal characteristics is to decide which traits are to be appraised. Here we run into the difficulty presented by the confusion over the actual meaning of the words customarily used to describe personal characteristics, since different raters often use different words to describe the same trait. Take, for example, the terms of friendliness, sociability, and human relations skills. Are these three ways of describing the same trait or three different traits?<sup>54</sup>

Their study was undertaken to help resolve the problems of overlap and similarity of meaning among rating terms traditionally used. The four following steps were involved:

1. Collecting many of the words and phrases traditionally used in industry to describe personal characteristics on rating forms.

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<sup>53</sup>William B. Chew and Leonard E. Howell, "New Light on Trait Rating," Personnel, 37 (March-April, 1960), 42-46.

<sup>54</sup>Ibid., p. 42.

2. Developing a special 80-item checklist from these words and phrases, for use as an experimental rating form.

3. Using the special checklist to obtain ratings by supervisors of their subordinates for a homogeneous group of industrial jobs.

4. Analyzing the data and classifying the 80 words and phrases into homogeneous sets.<sup>55</sup>

From a total of thirteen supervisors, each rating five subjects for a gross of sixty-five ratees, fifty-three usable checklists of the 80 items were obtained. Each supervisor-rater had at least eighteen months of acquaintance with their ratee-subordinates. Also, all thirteen received special training in rating, being exposed to terms and implications such as "halo" and "frame of reference" considerations. The 80 item-scales were submitted with seven-point continua of "slight amount - limited amount - fair amount - fairly large amount - large amount - quite a large amount - very large amount."<sup>56</sup>

The fifty-three ratings were then punched into IBM cards and each characteristic was correlated with the other 79 item-scales on an IBM 704 computer. Thus, an eighty by eighty (80 x 80) or 6,400 intercorrelated matrix was constructed. The matrix was then analyzed using McQuitty's simplified method, linkage analysis, which grouped the

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<sup>55</sup>Ibid., p. 43.

<sup>56</sup>Ibid.

statements into typal sets, each linked by having a homogeneous content. The results of the analysis are presented in Table III, which is shown in its original entirety. The linkages, analogous to factorial clusters, are self-explanatory. The "set" is the pair of characteristics most alike; the "very similar" traits could be classified as "first-cousins" to one or both in the parallel "set," with "similar" ones representing "second-cousins." Thus, Chew and Howell found twenty sets of personal characteristics, a considerable and valid reduction from the original 80 scales.<sup>57</sup> Their exhibit is shown in Table III.

On the bases of their experiences with their research, Chew and Howell recommended:

1. Employing a committee of experienced raters who are familiar with the appraisal program being developed.
2. Having each committee member to decide on the six or seven "sets" he considers most important (for the respective program's purposes), then single out the best word or phrase which he thinks best describes the set.
3. Asking each to delete those words or phrases which he thinks do not belong in or to the set.
4. Requesting each member to add any words or phrases that, in his opinion, should be included.
5. Seeking committee consensus, through analysis of the individual results, as to the format of the final form.

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<sup>57</sup>Ibid., pp. 43-44.

TABLE III  
CHEW'S AND HOWELL'S TWENTY SETS OF TRAITS<sup>a</sup>

Set	Very similar	Similar
1. Ability to get along with others--ability to work with others	Consideration of others; cooperation; discretion; friendliness; self-control	Approachability; consistency of behavior; courteousness; human relations skills; sociability; tact
2. Ambition--desire to succeed	Physical energy	
3. Dependability--reliability	Trustworthiness	Judgment; loyalty
4. Concern for accuracy--concern for quality	Attentiveness to detail; quality mindedness; thoroughness	Ability to work under pressure; perseverance; persistence
5. Honesty--integrity	Conscientiousness; fairness	
6. Creativeness--imagination	Objectivity	
7. Ability to concentrate--alertness		
8. Ability to carry out responsibility--resourcefulness	Leadership; productive work habits	Ability to organize; planning ability
9. Adaptability--flexibility	Versatility	Ingenuity



TABLE III (continued)

Set	Very similar	Similar
10. Industrious- ness--Interest in his job	Enthusiasm; willingness to work	Endurance
11. Attentiveness-- willingness to learn	Constructive attitude	
12. Analytical ability-- knowledge	Ability to solve problems	
13. Ability to learn --intellectual capacity		
14. Emotional maturity-- emotional stability	Intellectual maturity	
15. Aggressiveness-- drive	Initiative; willingness to accept responsibility	
16. Promptness-- punctuality		
17. Ability to com- municate--ability to express himself	Verbal skills	
18. Courage--forceful- ness		
19. Neatness-- orderliness		
20. Self-confidence-- self-reliance	Motivation	

<sup>a</sup>Source: William B. Chew and Leonard E. Howell, "New Light on Trait Rating," Personnel, 37 (March-April, 1960), 44.

6. Using as many words or phrases from chosen sets as possible, so that raters' semantic confusion may be reduced.<sup>58</sup>

The authors conclude by saying that a final rating form could be expected to contain about eight or nine different traits, and proposed a sample excerpt from their own work as a model.<sup>59</sup> Their appraisal form excerpt is detailed in Table IV.

### SUMMARY

In this chapter, the first portion of a two-part review of the literature, attention was confined to examining only those previous and related studies which were characteristic of factor analytic methodology. The search yielded data which propounded a seemingly logical synopsis, and the following itemized synthesis would appear justified:

1. The recent research in factored "meaning" and semantic space by Osgood et al. implies that both personal and personnel appraisement are universally inherent processes among human beings and occur continuously. One important implication here strongly supports the notion that every interpersonal contact, social or professional, is an appraisal. If accepted, this idea should serve to dispense with peoples' aversions to rating scales because the idea

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<sup>58</sup>Ibid., pp. 45-46.

<sup>59</sup>Ibid., p. 46.

TABLE IV  
CHEW'S AND HOWELL'S APPRAISAL FORM EXCERPT<sup>a</sup>

Personal characteristics	Limited	Satisfactory	Out- standing
A. Ability to work with others Consider: Ability to get along with others, consideration of others, cooperation, courteousness	_____	_____	_____
B. Dependability Consider: Relia- bility, trustworthi- ness, loyalty	_____	_____	_____
C. Concern for quality Consider: Concern for accuracy, atten- tiveness to detail, quality mindedness	_____	_____	_____

<sup>a</sup>Source: William B. Chew and Leonard E. Howell,  
"New Light on Trait Rating," Personnel, 37 (March-April,  
1960), 46.

itself depicts each and every human being as a rating scale anyhow. Furthermore, our assessments of other people (and theirs of us) can be seen as value-loaded perceptual products of three basic and stable dimensions: (a) Evaluation ("goodness-badness"); (b) Potency ("strength-weakness"); and (c) Activity-State ("activity-passivity").

2. In general, superiors will be rated high by subordinates if they: (a) are empathetic, fair, and friendly; (b) exhibit comprehensive and consistent professional competence; (c) display achievement-performance emphases rooted in benevolent intentions for subordinates and society; and (d) encourage the open-minded and innovative.

3. When superiors rate subordinates, they appear to prefer those who: (a) are considerately ambitious and motivated to achieve; (b) exercise self-discipline and direction; and (c) manifest innovation amid acceptable conformity.

The above three behavioral factors of superiors' concepts on subordinates in general may be seen as antilogies in our cultural stereotypes. Serious thought has been directed to these implications of individuality versus growing, automated conformity.

4. Factors of peers rating peers are descriptive dimensions such as: (a) esprit de corps; (b) self-confidence

and "drive"; and (c) earned leadership and cognizance of aptitude.

5. Similarities between executive and academic administrators (e.g., Hobson and Rupe studies) appear to be much greater than their dissimilarities.

6. Factorials of perceived effectiveness and competency in educational leaders differ from those of business executives primarily in the area of democratic orientation. The academic administrators were seen to be fair to subordinates without showing marked concern for the public welfare or society outside. For business success, the industrial executives were viewed as showing concern for both immediate and larger groups.

7. Apparently, as perceived by subordinates and research observers alike, an educational administrator or business executive can succeed in professional achievement with only a moderate degree of concern for subordinates or external public. Conversely, he may be quite considerate of his subordinates and profoundly public-spirited without being able to accomplish one iota of work, let alone succeed as an organizational leader. Therefore, responsibility to the public would seem to play a lesser role than does fairness to immediate subordinates.

8. Creation and maintenance of a democratic atmosphere and exercising behaviors of communicative skills

appear to be in sharpest focus where instructional staff is concerned. However, these two factors are no less important in perceived competence among educational administrators.

### CHAPTER III

#### APPRAISAL, EDUCATIONAL LEADERSHIP, CREATIVITY AND ADMINISTRATIVE EFFECTIVENESS

The purpose of this chapter is to review the more recent research and pertinent writings dealing with the titled topics above. The reader would be thoroughly justified in expressing skepticism of any treatment which sets the named topics apart and distinct from each other. That the headings are inextricably related and entwined is acknowledged. However, for the very reason that each topic may be seen as a function of another, the text which follows seeks to consider the extent to which each may be studied independently. Much of the data below is descriptive of the interplaying and overlapping considerations just discussed.

##### A. APPRAISAL

For the study's purposes, this chapter sub-topic shall in turn be dissected into three, arbitrarily arranged parts: (1) rating research and theory, (2) appraisal techniques, and (3) appraisal in educational administration.

Rating research and theory. Fiske<sup>1</sup> studied the consistency of factorial results in personality ratings

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<sup>1</sup>Donald W. Fiske, "Consistency of the Factorial Structures of Personality Ratings from Different Sources," Journal of Abnormal and Social Psychology, 44 (July, 1949), 329-344.

from different sources and concluded that similar dimensional patterns tended to emerge when the same scale was used by different groups of raters. Also, when the various groups of raters were subsequently analyzed with their respective data, peers' ratings were found to be the most accurate and reliable of all levels.

Hobson<sup>2</sup> used the Spearman-Brown Prophecy Formula to predict maximum theoretical reliability for ratings if ten raters were employed, with the ratings being averaged into a final mean-score assessment. Two years later, Rupe<sup>3</sup> arrived at similar conclusions.

Rupe's review of the literature to 1950 offers certain other observations here. After concluding that no single trait or group of characteristics had been isolated which would set off all leaders from their respective groups, Rupe speculated upon the finding that most surveys revealed people preferring to be rated only by superiors.<sup>4</sup> Mindful of the rarity in finding more than two or three superiors of anyone who would be in close daily contact

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<sup>2</sup>Robert L. Hobson, "Some Psychological Dimensions of Academic Administrators" (unpublished Ph. D. thesis, Purdue University, Lafayette, Indiana, August, 1948), p. 22.

<sup>3</sup>Jesse C. Rupe, "Some Psychological Dimensions of Business and Industrial Executives" (unpublished Ph. D. thesis, Purdue University, Lafayette, Indiana, February, 1950), pp. 54-84.

<sup>4</sup>Ibid., pp. 2-15.



to permit reliable rating, the Purdue researcher expressed disdain at finding large numbers of people being rated by single, individual-superiors. Sharp increments in "halo" error, negligence due to press of duties, leniency-error, and "central tendency convenience" will result from such a practice. Also, there lies the inclination of a subordinate to show only his best attributes to his/her superior. Rupe's comparisons among subordinates, peers, and superiors as groups of raters were aimed particularly at measuring "halo" vulnerability. Apparently, "halo" appears to be of much less concern where peers and subordinates are the raters.<sup>5</sup>

Suci and Vallance<sup>6</sup> tested the null hypothesis that peer ratings among U. S. Navy Officer Candidates would not be affected significantly by "like-dislike" variables. Current and potential ratings were obtained. No significant differences were revealed and the hypothesis was accepted.

Clarke's<sup>7</sup> doctoral thesis at Ohio State University sought to test certain theorems on rating and rating

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<sup>5</sup>Ibid., pp. 12-15.

<sup>6</sup>George J. Suci and T. R. Vallance, "A Study of the Effects of 'Likingness' and Level of Objectivity on Peer Rating Reliabilities," Educational and Psychological Measurement, 16 (Spring, 1956), 147-152.

<sup>7</sup>Howard Weston Clarke, Jr., "An Experimental Investigation of Theorems Relating to the Structure and Content of Rating Instruments" (unpublished Ph.D. thesis, Ohio State University, Columbus, June, 1956).

instruments. The theorems were rating postulates set forth by Dr. Wherry of the staff. Sixteen classes of an educational psychology course were involved in the study, with 421 students being rated by two fellow students. The results included several important observations related to the present study. First, reliability of a rating instrument portends little about its value since the coefficient could be due to bias rather than true scores. Second, raters tend to vary in the accuracy of ratings in proportion to the number of relevant contacts with the ratee. Third, the physical features of a rating scale which facilitate recall of the actual perception of behavior will increase the accuracy of ratings. Two corollaries of the third confirmed theorem were also verified, namely (a) that descriptive statements are more meaningful than single words such as adjectives, but (b) over-all ratings are made more accurate when completed after first filling out or checking off such an adjectival check list.

Heyel's book<sup>8</sup> is a recent contribution designed to help fill the request of top management calling for texts and guidelines which would augment job analyses and evaluation at the upper levels. Governments and industrialists, along with trades and labor unionists, have been quite

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<sup>8</sup>Carl Heyel, Appraising Executive Performance (New York: American Management Association, 1958), pp. 100-102.

successful in initiating and maintaining satisfactory plans for salary and wage determination at the middle and lower levels of endeavor. Progress at the middle-upper (junior-executive and up) and higher echelons, however, has come much more slowly due to complexities offered by "responsibility-ratios," supervisory weights and other factors--all difficult to evaluate. Criteria are more difficult to derive from consensus at the higher levels, too. In the introduction of his chapter on appraisal-instruction, Heyel warns that experience supports the appraiser who pinpoints his scales to performance rather than personality. Personality can only be inferred from performance.

The University of Texas, as one of the CPEA Centers for research and leadership in educational administration, has conducted many studies which involved rating scales in selection procedures. In a very recent publication by McIntyre<sup>9</sup> one general conclusion advocated acceptance of rating scales over letters of recommendation. Ratings scales, carefully constructed and competently applied, are far more systematic and sophisticated than personal letters, which are non-discrete and ungraded. McIntyre reported the Texas experiments clearly demonstrated:

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<sup>9</sup>Kenneth E. McIntyre, Selection and On-the-Job Training of School Principals (Austin: The University of Texas, Bureau of Laboratory Schools Publications Number 12, 1960), pp. 15-16.

1. Specific behaviors will produce ratings which are more reliable than yields of general dimensions. Only those behavioral characteristics relevant to the job should be assessed.

2. Raters must be trained systematically. Several ratings from trained observers should be obtained and then averaged. Vertical cross-sections of raters' groups should be obtained, with ratings from superiors, peers, and subordinates.<sup>10</sup>

For the purposes of identification and selection, the University of Texas experimented with many standardized tests, clinical techniques, and on-the-job tasks in addition to ratings and staff judgments. For the stated purposes, peers' ratings consistently produced the highest reliability coefficients.

The literature during 1960 contained general consensus that the previous decade's advances in rating scale construction and application had been remarkable. However, while a great deal about how to make ratings was learned, there exists little agreement among psychologists as to what ratings should rate.<sup>11</sup> The fundamental controversy centered on two rating alternatives. First, we can rate traits. The second elective says we should rate only overt behaviors and on-the-job performances. MacKinney believes

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<sup>10</sup>Ibid.

<sup>11</sup>A. C. MacKinney, "What Should Ratings Rate?" Personnel, 37 (May-June, 1960), 75-78.

we should confine our attention to the second choice because:

. . . Traits, of course, have no objective reality of their own--they are known only by inference from objective phenomena. No one ever saw a motivation; but on the evidence of certain overt behaviors one can make inferences about an employee's motivation. . . .<sup>12</sup>

The above observations were clearly directed to those professionals and semi-professionals other than the clinical psychologists and psychiatrists. Noting that rating experiments had produced reasonably good agreement only on the items which described highly overt performance factors, MacKinney advises us to "leave trait rating to the clinicians."<sup>13</sup>

Smith<sup>14</sup> used Osgood's Semantic Differential Adjective Scales in his dissertation at the University of Illinois to study variables of social adjustment as determinants of rating behavior. The clinical researcher found that the socially maladjusted (institutional patients) tended to check more frequently the extreme positions of rating scales, as compared to the socially adjusted. Three possible explanations were given as:

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<sup>12</sup>Ibid., p. 76.

<sup>13</sup>Ibid., pp. 77-78.

<sup>14</sup>Warren L. Smith, "Social Adjustment and Interpersonal Perception" (unpublished Ph.D. thesis, University of Illinois, Urbana, June, 1960).

1. They have a general and consistent bias which occurs regardless of the person rated and represents an arbitrary, psychologically meaningless characteristic.

2. They have a general and consistent bias which occurs regardless of the person rated, which represents a psychologically significant attitude.

3. Or this behavior is produced by psychologically significant attitudes toward specific individuals or roles, rather than by any general bias.<sup>15</sup>

While an extended analysis of group differences did not confirm the notion that maladjusted individuals employ a larger number of rating scale extremes to express specific attitudes toward specific individuals, a review of group differences did lead to the hypothesis that the third alternative above is the most correct one.<sup>16</sup>

Cronbach's revised book<sup>17</sup> has an excellent section on rating. The case for ratings is defined in concise terms.

Whether an individual's reputation corresponds to his behavior or not, it is unquestionably significant. A person who has impressed his former teachers as imaginative is favored by a college admissions committee. Business and military organizations file supervisors' opinions and use

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<sup>15</sup>Ibid., pp. 70-72.

<sup>16</sup>Ibid.

<sup>17</sup>Lee J. Cronbach, Essentials of Psychological Testing (second edition; New York: Harper & Brothers, 1960).

them in deciding whom to promote. Teachers find out what children think of each other in order to understand relationships in the classroom and to identify social misfits. Furthermore, as we have seen, ratings are an important criterion for studying job performance and adjustment. . . .<sup>18</sup>

Cronbach reviews the chief difficulties in rating, sources of error, probable undesirable consequences of such rating errors, and offers means to improve ratings and rating processes.<sup>19</sup> Generosity error is the tendency of raters to give only favorable assessments. Ambiguity is a rater error due to varied interpretations of criteria and factors. One rater may perceive "leadership" to mean efficient autocracy, while another may be looking for behaviors such as bringing out cooperative decisions, subordinating one's own views to those of the group, etc. Precise wording of item-scale statements can aid the reduction of ambiguity. Constant errors or biases are another problem area. One rater may rarely use the extreme ends of scales and another may be very dogmatic in describing all in black-and-white terms. Limited information or restricted opportunity to observe is also a source of rater differences. One person's rating of another, however reliable and valid, is still but one person's viewpoint. Halo is the general error which obscures the ratee's trait pattern. The rater forms a general opinion of the subject and the ratings are

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<sup>18</sup>Ibid., p. 506.

<sup>19</sup>Ibid., pp. 506-512.

greatly influenced by the over-all impression.

Four undesirable consequences result from the above errors, namely: (1) ratings may not reveal important individual differences because they pile up at the favorable end of the scale; (2) ratings may be seriously invalid, representing chance effects or traits other than the one supposedly rated; (3) halo effect obscures the descriptive picture; and (4) ratings by different judges disagree.

Ratings can be improved by several means. Selection of raters is important. Appraisal training should be given and some assurance needs to be given that raters have more than a passing acquaintanceship plus daily access to the ratee. If a rater is ordered to mark every trait, some ratings may represent little more than chance guesses. Reliability of ratings can be raised by averaging several observers' scores. Five ratings by as many judges being averaged can produce a .80 coefficient; for the same scale, a single rating would be worth about .45 and two combined ratings yielding a .60 reliability. Returning to raters' differences, such can be reduced by avoiding general and vague terms such as adaptable, sensitive and kindly. Attributes or traits reliably rated include talkative, assertive, bashful, and cultured.<sup>20</sup>

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<sup>20</sup>Ibid., p. 509.



Appraisal techniques. For the present purposes, reference here will be restricted to rating designs. Cronbach has outlined the most prevalent types, with merits and limitations of each included.<sup>21</sup>

Forced-choice methods were pioneered by the military services and were developed to counter generosity errors. Favorable-valid, favorable-invalid, unfavorable-valid, and unfavorable-invalid statements are combined in each item-scale. Usually, there is one of each statement type included, and the rater is directed to select two of the four, one "most like" and one "least like" statements. The aim in forced-choice theory is to separate the rater's task of describing what the ratee does from the task of evaluating what he does. Description rests on the rater, and evaluation is left to the decision-maker. Weights must be kept secret from raters and this necessity raises the serious limitation of rater antagonism. The most valid forced-choice type, and the one most acceptable to raters, emerged as an item-scale possessed of all four favorable statements, two being relevant and two irrelevant; the rater is simply asked to check the two most descriptive.

Ranking is another rating technique. If large numbers of subjects are involved, the raters are asked to

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<sup>21</sup>Ibid., pp. 512-533.

sub-divide the former into groups such as top 5 per cent, next 20 per cent, middle 50 per cent, next 20 per cent, and bottom 5 per cent. The result is a "forced-distribution." Certainly limited to groups, another drawback is that in which a man would be at the top of one group but at the bottom in another.

"Q-sort" techniques lend themselves well to collecting a great deal of information on a person. Also, the fixed distribution in a prescribed arrangement of sorted piles provides patterns of response styles. Rater bias is not eliminated, however, and the time consumption aspect plus sophistication needed combine to discourage popular utility by this method.

Descriptive graphic rating scales remain extremely popular and can be used by superiors, peers, and subordinates. For each item-scale, the continuum is arrayed in a horizontal row with each degree being supported by a single word or short phrase as:

Motivation	<u>1,</u>	<u>2,</u>	<u>3,</u>	<u>4,</u>	<u>5,</u>	<u>6,</u>
1 -	purposeless					
2 -	vacillating					
3 -	somewhat vacillating					
4 -	usually purposeful					
5 -	effectively motivated					
6 -	highly motivated					

Although it was long assumed that superiors were the logical ones to serve as raters, research evidence has found

otherwise. Validity coefficients have been generally low, but length of acquaintance and opportunity to observe are variables which tend to enlarge the coefficients.

Peer ratings give much more useful information than ratings by superiors in many situations. Variations of peer rating such as "nomination" techniques and sociometry have been particularly rewarding. Perhaps the best uses of peer ratings are those of selection and classification. Some researchers have concluded that peer rating is the "purest measure of leadership" superior to any other variable.<sup>22</sup> In the past five years, peer appraisal has produced extremely impressive correlations; rated traits related to the criterion include terms such as cooperative, emotionally stable, assertive, intellectual, and determined. Peer descriptions delineate behavioral characteristics of an individual which impede his acceptance.<sup>23</sup>

Adjective check lists simplify the rater's task and are most appropriate where raters are untrained, or if each rater must evaluate many ratees. Many aspects of behavior can be incorporated in such an instrument and marking can be done quickly. When used to obtain information about specific persons, the check list's format has related

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<sup>22</sup>Ibid., p. 523.

<sup>23</sup>Ibid.

adjectives classified into groups and a count is made of the frequency of adjectives checked in each category. The result leads to a descriptive profile.<sup>24</sup> MacKinnon implied that preference was being given to adjective check lists over Q-sorts and statement-scales in recent research.<sup>25</sup>

Appraisal in educational administration. A few passages devoted to reviewing a sample of varied approaches to administrative appraisal may serve to clarify specific studies in later sections. Mandell and Adkins<sup>26</sup> conducted earlier, extensive validation research using various standardized tests as correlates to judgmental criteria on selection of public administrators. Validity was found highest in measures of current affairs knowledge, verbal fluency, data interpretation (problem-identification), administrative know-how, and comprehension of governmental agencies. A great deal of similar research, but oriented towards selection of educational administrators in particular, can be found in the past decade's literature. One of

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<sup>24</sup>Ibid.

<sup>25</sup>Donald W. MacKinnon, "The Highly Effective Individual," Teachers College Record, 61 (April, 1960), 367-378.

<sup>26</sup>Milton M. Mandell and Dorothy C. Adkins, "The Validity of Written Tests for the Selection of Administrative Personnel," Educational and Psychological Measurement, 6 (Summer, 1946), 293-313.

the more interesting ones was that of Peterson at Stanford.<sup>27</sup> His doctoral study recalled prior ones done at the University of Tennessee by Luton and Nunnery. Peterson administered the Miller Analogies, Contemporary Affairs, Minnesota Teacher Attitude, Public Opinionnaire, Edwards Personal Preference, and Allport Study of Values instruments to fifty principals. The criterion was the "Administrative Evaluation Instrument," a Stanford-developed, administrative-climate set of scales. He found the Miller Analogies and Contemporary Affairs tests correlated most highly with Order-Affiliation-Abasement variables of the EPPS also significant. Perhaps of equal significance, the present writer noticed that the Religion Scale of the Allport Values produced a  $-.29$  relationship for the "highly-effective" group of principals. A word of caution about this type of research is needed. When a test fails to predict a rating, it is difficult to say whether the test or the rater is faulty. Similar logic would apply when a test does predict ratings. At the core, there lie the assumptions and value judgments of criterion advocates.<sup>28</sup>

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<sup>27</sup>Ted T. Peterson, "Selecting School Administrators: An Evaluation of Six Tests," Dissertation Abstracts, 19 (August, 1958), 262-263.

<sup>28</sup>Cronbach, op. cit., p. 108.

Stevens' thesis<sup>29</sup> held that the rationale of an executive selection test should center on "motivation-needs" measurement instead of "emotional" factors. The Purdue investigator reasoned that one's "drive" is the best criterion of ascendancy and successful achievement. Four-point scales descriptive of situational "attitude-intention" circumstances were used.

Using only item-analysis and jury techniques, Farrar<sup>30</sup> sought to improve an instrument constructed at the University of Florida. Called the "Principal Behavior Check List," the form consisted of eighty-six lengthy "key situations" frequently encountered by a principal offering from five to fifteen possible choices. The original form was shortened to fifty-five sub-tests and a very brief twenty sub-test form (G-D Form) was provided for general applications. Similarly, a rating form entitled "A Profile of Administrative Behavior (PAB) was developed at the University of Georgia.<sup>31</sup> Designed especially for studying

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<sup>29</sup>Samuel N. Stevens, "Development of a Personality Test for Executive Selection" (unpublished Ph. D. thesis, Purdue University, Lafayette, Indiana, September, 1954).

<sup>30</sup>Doc Farrar, "Refinement of an Instrument to Determine Certain Characteristics of the Working Patterns of School Principals" (unpublished Ed. D. thesis, University of Florida, Gainesville, June, 1956).

<sup>31</sup>Roald F. Campbell and Russell T. Gregg (eds.), Administrative Behavior in Education (New York: Harper and Brothers, 1957), pp. 338-340.

behavior of school principals, several doctoral studies applied the scales. Of interest here, preference and choice were sharpened by providing six-point continua in the item-scales. Both of the above instruments were products of research sponsored under the SSCPEA Program as was the Tennessee Rating Guide.

In developing and validating a test for empathy as a selection device for principals, Craig<sup>32</sup> assumed that the extent to which a principal does or does not possess such ability will be determined by his/her responses to specific situations. He says:

Of all the demands made upon public school administrators, perhaps one of the most important is the use of good judgment in responding to the many situations arising from interpersonal relationships. To many of us within the profession it appears the use of good judgment in dealing with these situations is dependent upon the empathetic ability of the administrator or his ability to sense and interpret the thoughts and feelings of others to the extent that an accurate prediction of their behavior can be made.<sup>33</sup>

Empathy, sympathy, insight, social insight, social sensitivity, realistic perception of others, role-taking skills, and diagnostic competency have all been terms used

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<sup>32</sup>Albert T. Craig, "The Development and Validation of a Test for Empathy as a Partial Basis for Selecting Public School Principals in Pinellas County, Florida" (unpublished Ed. D. thesis, Florida State University, Tallahassee, August, 1959).

<sup>33</sup>Ibid., p. 1.

to describe one's accuracy in perceiving others.<sup>34</sup> Craig's test consists of forty-eight actual situations arising from true life experiences and reported by principals.<sup>35</sup> The "correct choices" were products of panel consensus. Research in empathy as a factor of desirable administrative behavior would seem worthwhile to pursue. An implication of recent research findings into systems of beliefs demonstrates that a person's cognitive functioning is not a thing apart from his affective and emotional functioning; apparently, they are merely different facets of his total behavior.<sup>36</sup>

A study at the University of Alberta, Canada, is currently in progress and concerns administrator identification using the "nomination" technique, a variation of peer rating mentioned previously. Wallin, the researcher, reported that five hundred teachers and administrators are participating, and gave a tentative estimate that some thirty potential administrators had been identified.<sup>37</sup> The key to the technique he is using is the form shown in Table V. In each of several schools, every teacher and

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<sup>34</sup>Smith, op. cit., p. 2.

<sup>35</sup>Craig, op. cit., pp. 35-51.

<sup>36</sup>Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), p. 399.

<sup>37</sup>H. A. Wallin, Principal of the University School, University of Alberta, Edmonton, Alberta, Canada (personal letter to present author, September 13, 1960).



TABLE V  
WALLIN'S PRINCIPAL NOMINATION SCALE<sup>a</sup>

Teacher	1	2	3	Teacher	1	2	3
1				17			
2				18			
3				19			
4				20			
5				21			
6				22			
7				23			
8				24			
9				25			
10				26			
11				27			
12				28			
13				29			
14				30			
15				31			
16				32			

Column 1 - Very good principal

Column 2 - Unsuitable

Column 3 - Neither (1) nor (2)

<sup>a</sup>Source: H. A. Wallin, personal letter to author, September 13, 1960.

administrator classifies every other person according to one of the three estimates, "very good principal," "unsuited," or "neither."

Appraising job performance against job requirements, in addition to appraisal for identifying potentiality, has been studied intensively by industry, too. Wishing to have the first purpose of the former be one of helping an executive improve himself, IBM Corporation has been using a type of management evaluation called "third-party interviewer." The practice involves using a trained interviewer who conducts a patterned interview with the evaluator. The evaluator is the superior of the executive to be evaluated and is free to appraise, unencumbered by having to concentrate on talking and establishing rapport, etc. When appraisal time approaches (once each year), the superior is contacted by the third-party trained interviewer a week or so in advance and the conference is set. The evaluator-superior thus has time to review his subordinate's performance record. On the appointed day, the superior and third-party interviewer meet in an office with stipulations to outsiders of no interruptions and unlimited time. The subordinate-executive is not present. The superior-evaluator proceeds to appraise the subordinate on his performance on the job and nothing else. By question, challenge, and systematic probing, the superior-evaluator is

interviewed by the trained third-party man as to the ratee's performance. Vague and irrelevant answers are not accepted. Nine areas are considered by IBM in executive evaluation, namely,

1. Selection and development of subordinates
2. Delegation of responsibility and authority
3. Respect of his associates--subordinates, equals, and superiors
4. Business manners and tact with people
5. Attitude and disposition
6. Emotional maturity and stability
7. Integrity
8. Judgment and decision-making
9. Planning, foresight, and organization.<sup>38</sup>

Both interviewer and superior take notes to aid memory when the evaluation becomes official script, which the interviewer writes and superior signs. The next step is notifying the subordinate-executive, which is accomplished by the superior alone in a counseling fashion. Agreement between the two, superior and subordinate, is not guaranteed, but better understanding has been achieved. In this plan, the third-party trained interviewer is a common denominator to all superior-evaluators. He serves to counter both generosity and overly-strict rating errors, and is constantly prodding superiors to improve objectivity. Top management's active support is the most necessary ingredient.

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<sup>38</sup>John M. O'Brien, "IBM's Approach to Executive Evaluation," Overview, 1 (October, 1960), 65-66.

To the present author, an implication was seen in Wilson's recent report<sup>39</sup> outlining a relatively new destination of educational administrators--industry. More and more, industry is bidding for educators to fill training director posts. Increasingly, graduate preparation in educational administration is required. Wilson asks, "Are schools of administration rising to the task of preparing industrial training administrators?" The relevancy to new perspectives in appraisal calls for the tempting paraphrase, "What's good for education is good for industry."

#### B. EDUCATIONAL LEADERSHIP

Heyel speaks for the contemporary consensus on leadership definitions. While many authorities have defined leadership as a single trait, it is actually a combination of many traits, such as communicative skills, analytic ability, organizing aptitude, and talent for inspiring others to name a few.<sup>40</sup> More often than not, leaders in American organizations are characterized by being able to get other people to work willingly, by being adept at putting people at ease, knowing how to criticize constructively without

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<sup>39</sup>Newton Wilson, "Industry's Pull on Administrative Talent," Overview, 2 (January, 1961), 44-45.

<sup>40</sup>Heyel, op. cit., pp. 103-116.

antagonizing, and by meriting the confidence of subordinates.<sup>41</sup>

Bell and Hall reported research on the radar-like process known as empathy, which has been mentioned previously.<sup>42</sup> They hypothesized that there existed a positive relationship between empathy and leadership. Defining empathy as the ability to perceive the needs of others, the authors' findings recorded empathy as accounting for 20 per cent of the variance in leadership scores.

Wright's investigation<sup>43</sup> was one of grouping common patterns in the biographies among recognized leaders in education. Nine leaders were identified by the most-frequent-nomination method. Wright noted that educational leaders are likely to come from simple-living, hardworking religious families whose parents placed high value on education. The leaders were quite active in extra-curricular activities at school, and usually worked at part-time jobs. Choice of undergraduate major had little bearing. Graduate work followed successful teaching experience and led to a

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<sup>41</sup>Ibid.

<sup>42</sup>Graham B. Bell and Harry E. Hall, Jr., "The Relationship Between Leadership and Empathy," Journal of Abnormal and Social Psychology, 49 (January, 1954), 156-157.

<sup>43</sup>Robert C. Wright, "Leadership Characteristics in American School Administration," Dissertation Abstracts, 16 (October, 1956), 1831-1832.

doctoral degree. Experience-wise, a majority had been superintendents of public school systems. Associates checked most often the leaders' personality traits denoting friendliness, self-confidence, sense of humor, and optimism.

Goldman<sup>44</sup> constructed a student leadership rating scale and administered it to classes for the purpose of validation. Only three item-scales showed high validity coefficients as measured against judged groupings, the criterion. The three item-scales and their respective validity coefficients were: (1) What is the quality of his participation in group activities? (.89) (2) How well does he plan and organize the work of the group? (.70) (3) How is he seen by his peers? (.76) Underscoring Goldman's results, Stoops<sup>45</sup> reviewed leadership identification in educational administration through the intensified programs during the past several years, and flatly stated that leadership qualities can be more accurately identified by peers than by superiors.

Under the direction of David G. Ryans, a six-year study of "What makes a good teacher?" has been completed

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<sup>44</sup>Leo Goldman, "A Student Leadership Rating Scale," Personnel and Guidance Journal, 36 (October, 1957), 87-94.

<sup>45</sup>Emery Stoops, "New Developments in School Personnel Administration," Phi Delta Kappan, 41 (February, 1960), 225-227.

and published in monograph form. Although concepts of "good teaching" have varied, an attempt has been made to generalize on the consensus regarding leadership in teaching. The factors, some of which were reported in the preceding chapter, could become bases on which to augment merit rating for teaching personnel.<sup>46</sup>

### C. CREATIVITY

No doubt there are as many concepts of creativity as there are of leadership. One authority may view the creative person as one who has aptitude to initiate structure in an initially unstructured situation. This is the administrative, organizational definition which described one of the two independent factors of the Ohio State LBDQ Scales. Hence, in an administrative setting, the leader would be creative if he could be ever-bringing order out of chaos and confusion. In the American scheme of things, another characteristic needs to be added to such a person--the use of democratic means in measures of consideration for others. A second common stereotype of creativity is one which views the person in an impersonal or non-social environment. This concept views the innovator as one having "new discoveries" in laboratories, of synthesizing from analyses,

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<sup>46</sup>David G. Ryans, "Research on Teacher Characteristics," Phi Delta Kappan, 42 (January, 1961), 147.

and providing different elements, forms, and notions. Research on natural and physical scientists fits this second concept rather well.

MacKinnon<sup>47</sup> does an excellent job of reviewing the research on creativity to 1960 and starts right off by calling the "highly effective individual" one of the least understood phenomena in the entire area of human behavior. This misunderstanding was probably the result of directing most attention to the deviates on the lower ends of curves until World War II when the U. S. Armed Forces gave new direction to personnel selection and placement.

"What are the characteristics of the highly effective person?" is to ask too general a question. More specific questions must be asked: Effective in what way? Effective for what? Effective in what field or profession? Oversimplifying what is clearly a tremendously complex set of relationships, a first approximation conceived of two variables as centrally determining effective functioning: namely, (a) emotional stability or personal soundness, and (b) originality or creativity of thought and action.

For men, the following considerations appear to be the most important determinants of "emotional stability or

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<sup>47</sup>Donald W. MacKinnon, "The Highly Effective Individual," Teachers College Record, 61 (April, 1960), 367-378.



personal soundness" and subsequent "high effectivity" in behavior:

1. Health of the subject during childhood.
2. Integrity and stability of the home.
3. Imagery of the father as a respected, successful person.
4. Affection and close attention from the mother during childhood.
5. Presence of other siblings and positive relationships with them.
6. Athleticism and competitive play.
7. Sexual expression.<sup>48</sup>

MacKinnon said one of the most striking observations made of the creative person was that he seldom fits the layman's stereotype of him. Descriptive adjectives of the creative included deliberate, reserved, industrious, and thorough. Although both introverts and extroverts can be found among creative people, there is a tendency for them to be self-assertive, dominant, and possessed of a high level of energy. They seldom need to look for recreation, finding it instead in their work. They are well above average in intelligence and exhibit unusual capacities to record and retain information of all sorts. They are more capable than others in scanning data and producing those thoughts which meet some problem-solving criterion. The creative can synthesize items and seemingly irrelevant bits of information into more possible applications and combinations. Seldom interested in small details or facts as such,

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<sup>48</sup>Ibid., pp. 373-374.

they prefer to concentrate instead upon meanings and relationships. Male innovators are apt to score relatively higher on femininity and aesthetic-value scales. In general assessment, however, they are quite masculine.

In cited studies, most of the professionally-creative subjects, both male and female, were introverts; 80 per cent of the female mathematicians, 68 per cent of the architects, 65 per cent of the writers, and 60 per cent of the research scientists were so classified. Selection of their life careers came early for some, but later for others. For the latter, choice was far more difficult because they possessed so many skills and displayed so many interests. Independence in thought and action described most of the subjects. In college, the creative were described as skeptics, accepting nothing on mere say-so of their instructors. Faith, respect, and voices of authority meant little to them. Other evidence implied that the subjects concluded they had learned most from those who were not easy with them, but had instead achieved by continuous challenge.<sup>49</sup>

Harris<sup>50</sup> set forth conditions necessary for developing the highly-potential people. These necessary

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<sup>49</sup>Ibid., pp. 375-378.

<sup>50</sup>Dale B. Harris, "The Development of Potentiality," Teacher's College Record, 61 (May, 1960), 423-428.

elements are:

1. Basic ingredients such as genetic endowment.
2. Opportunity to experience and develop.
3. Encouragement and guidance to sustain motivation.
4. A varied program of activities and interests.
5. Early identification and special training.

Harris sees individual appraisal as still being the best identification means amid American society's inconsistencies, with the educational process itself being the best assurance of development. He adds:

Finally, there must be developed those personal characteristics which support the social expression of valuable abilities when potentiality is fully realized. As the public record occasionally shows, persons of realized high potential may destroy their useful contribution by inadequate development of traits of personality and character which relate skillful performance to society's goals.<sup>51</sup>

The inconsistencies in American culture and society described by Harris pertained to the big problem of individuality versus society. Henry M. Wriston charts this present peril into a more ominous future.<sup>52</sup> None too early, we are reminded that creative leadership requires courage, boldness, and the willingness to accept risks.

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<sup>51</sup>Ibid., p. 427.

<sup>52</sup>Henry M. Wriston, "The Individual in a Conformist Society," Overview, 1 (October, 1960), 48-49.

Is that what has been taught in recent years? Such a course for freeing creative potential may not be easy. "Men who have no fear of damnation still tremble at that word--insecurity."<sup>53</sup>

#### D. ADMINISTRATIVE EFFECTIVENESS

Some attention will first be directed to administrative effectiveness in general, to be followed by research on such performance in educational administration. Gaudet and Carli polled 177 top executives in industry in a survey of nearly two hundred companies, asking for answers to the question, "Why do executives fail?"<sup>54</sup> Personality reasons overshadowed knowledge/education deficiencies by a two-to-one ratio. Seven common pitfalls reported were:

1. Inability to delegate responsibility.
2. Inability to analyze and evaluate.
3. Inability to judge people.
4. Inability to cooperate with others.
5. Inability to make decisions.
6. Lack of breadth of knowledge.
7. Lack of personnel and administration knowledge.

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<sup>53</sup>Ibid., p. 49.

<sup>54</sup>Frederick J. Gaudet and A. Ralph Carli, "Why Executives Fail," Personnel Psychology, 10 (Spring, 1957), 7-21.

Ponder<sup>55</sup> studied practices of one hundred effective and ineffective foremen in General Electric Corporation plants. Six major findings were extremely interesting.

1. The least effective foremen dashed hither and fro more, showing a statistically significant higher activity rate.

2. The least effective foremen spent significantly more time in production aspects of the job, in contrast with the most effective foremen spending significantly more time with personnel, equipment, and methods aspects.

3. The least effective tended to emphasize the short-range goals of the job while the most effective exhibited a balanced perspective between short and long range aspects.

4. The most effective foremen spent significantly more time with people in carrying out the job.

5. The most effective foremen exhibited better communicative skills.

6. The most effective group gave more general supervision and work orders while the least effective were prone to verbalize details and specific orders.

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<sup>55</sup>Quentin D. Ponder, "Supervisory Practices of Effective and Ineffective Foremen," Dissertation Abstracts, 20 (April, 1960), 3983-3984.

Machaver and Erickson<sup>56</sup> saw only two broad groups of considerations in assessing executives. One group was headed "organization and planning" and the other concerned personality and "leadership" behaviors. The itemized considerations were strikingly similar to the item-scales of the Tennessee Rating Guide. Under "organization and planning," the authors ask:

1. Is he resourceful? Does he operate well under pressure?
2. Does he plan work realistically?
3. Does he budget his own time, or does he get bogged down in routine?
4. Does he set standards and attempt to achieve them?
5. What is his actual performance as compared with his plans?
6. Does he train subordinates to take over if necessary?
7. Is he burdened by so many details that he is always behind in his work?
8. Is he well-informed about what his people are doing and the progress of his department?

Nine social-interactional behaviors were posed under the personality and "leadership" group. Also in question form, the nine were:

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<sup>56</sup>William V. Machaver and Willard E. Erickson, "A New Approach to Executive Appraisal," Personnel, 35 (July-August, 1958), 8-14.

1. Do people consider him a lone wolf?
2. Are there dissension and disagreement in many of his relationships with others?
3. Does he stimulate others to their best efforts?
4. Do employees enjoy working with him?
5. Does he command a high degree of respect and confidence?
6. Does he bring out the best in people?
7. Does he give credit where it is deserved?  
Show appreciation when a job is well done?
8. Is he set in his opinions? Stubborn or resentful of different points of view?
9. Does he usually have an answer before all the evidence is in?<sup>57</sup>

The next researches are all doctoral studies which dealt directly with educational administrative effectiveness. Hess<sup>58</sup> used the chi-square test to check critical behaviors of elementary school principals and found that really critical areas of administrative behavior were those encompassing interpersonal and intragroup relationships. Clark's<sup>59</sup> collateral thesis (to Hess') involved high school

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<sup>57</sup>Ibid., pp. 10-11.

<sup>58</sup>Odean L. Hess, "Critical Areas of Administrative Behavior of Elementary School Principals," Dissertation Abstracts, 16 (April, 1956), 698-699.

<sup>59</sup>Dean O. Clark, "Critical Areas in the Administrative Behavior of High School Principals," Dissertation Abstracts, 16 (August, 1956), 1381.

principals, and using the same techniques, identified a high energy output trait among the effective administrators. Generated by this trait were categories of initiating-communication and delegation functions along with anticipatory-planning plus vis-a-vis contacts with others. Extending the Ohio State studies above were two investigations which included city and county superintendencies. Hartzler<sup>60</sup> looked at city school administrators and found the fundamental difference between five "most effective" and five "least-effective" superintendents rested in the manner in which they brought to bear the activities of other people in achieving educational goals. The "most effectives" excelled in organizing, augmenting, and maintaining cooperative action. Rosenberger<sup>61</sup> confined his work to school executives on the local county level and concluded that the more effective administrators were cognizant of others' opinions as they considered problems, initiated ideas, held goals consistently, gave sincere compliments freely, and delegated authority. The less effective people spent larger blocks of time and amounts of

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<sup>60</sup>John E. Hartzler, "Critical Areas of Administrative Behavior of City School Superintendents," Dissertation Abstracts, 17 (July, 1957), 1498-1499.

<sup>61</sup>David S. Rosenberger, "Critical Areas of Administrative Behavior of Local School Executives," Dissertation Abstracts, 17 (July, 1957), 1501-1502.



effort on office routines and records, allowed their schedules to be governed by details and trivia, and tended to be overly critical of others. Also, the less effective executives worked more with students whereas the more effective ones worked mostly with staff. More recently, Bewley<sup>62</sup> reenacted the plan of Hartzler's and Rosenberger's theses at the University of Southern California, using California superintendents as his subjects; however, Bewley delimited his sample to include only twelve adjudged-successful people, yet he still arrived at similar findings. A journal article by Lipham<sup>63</sup> is an abstract of a thesis done at the University of Chicago's Midwest Administration Center. The author used an adjective check list of twenty-five variables, a sentence completion test of fifty items and Edwards Personal Preference Schedule (EPPS) to identify and measure personal variables of administrators' effectiveness. Spearman rho and students' t-test were the statistical methods used. Six overlapping variables were named activity drive, achievement drive, mobility drive, social ability, feelings of security, and emotional control. The highest

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<sup>62</sup>Frederick W. Bewley, "The Characteristics of Successful Superintendents," Dissertation Abstracts, 20 (May, 1960), 4315-4316.

<sup>63</sup>James M. Lipham, "Personal Variables of Effective Administrators," Administrator's Notebook, 9 (September, 1960), 1-4.

correlations were those for achievement and mobility drives, which would add some support to Stevens' thesis cited previously in this chapter.

#### E. SUMMARY

The purpose of this chapter was to review recent research and writings pertaining to appraisal, educational leadership, creativity, and administrative effectiveness as these topics related to the present thesis. Definitional operations, empirical relationships, theoretical concepts, and methodological considerations were examined. The evidence would seem to warrant certain conclusions and propositions of axiomatic propensity.

1. The overwhelming weight of evidence favors peer appraisal for the purposes of leadership identification, rating reliability, and personnel selection. Rating by superiors may be improved by incorporating techniques such as those used by IBM.

2. Observers are vulnerable to several rating errors. The undesirable consequences of such errors can be partially countered by careful construction of scale content, limiting statements to overt behaviors, training of raters, and securing the average of several ratings by different evaluators.

3. Personality assessment should be reserved for

clinicians, since it can only be inferred from observed behaviors and overt performances. The research suggested rather strongly that appraisal results will yield more reliable scores by heeding the admonition above.

4. Descriptive graphic rating scales coupled to adjective check lists represent the most simple and versatile appraisal instruments offering acceptable reliability.

5. A person's "drive" would be a valid and predictive criterion of administrative potential. Peer rating methods are possibly one of the most available means of such measurement and perhaps second only to recorded past achievement.

6. Empathy, as a factor of administrative effectiveness, appears to be both confirmed and worthy of further study.

7. Leadership and administrative effectiveness are definitely not single traits, but are instead dynamic combinations of many attributes and characteristics which are affected by and relative to circumstances and situations.

8. Both theory and knowledge of creativity as a personal characteristic have changed. Research evidence on creative people would suggest that certain manifest tendencies, particularly in the realm of personality structures, would deter such people in achieving administrative effectiveness. If this proposition is accepted, causality

would possibly lie among current public role expectations and concepts of public and/or private leadership; apparently, pitfalls of interpersonal relationships make up a big factor in explaining executive failures. In conclusion, however, let it be said that research in this area is inconclusive and subject to change, since most investigations on factors of human innovation have concerned artists and research personnel. The absence of a universal criterion on creativity demands caution.

In general, a summary of the factors on which administrators are judged includes ten points, namely, (1) analytical-judgment, (2) planning ability, (3) empathetic consideration, (4) leadership "drive," (5) articulation-communication, (6) responsibility acceptance, (7) originality/synthesizing ability, (8) organizational knowledge, (9) follow-through skills, and (10) open-mindedness. Recent research writings also suggest that an effective administrator must possess a high energy level and stamina of emotions and physique. Acceptance of personal sacrifices and willingness in risk-taking round out the demands.

## CHAPTER IV

### STATISTICAL ANALYSES

This chapter is consigned to statistically analytic treatment of the Tennessee Rating Guide. After a brief treatise of axioms and theory in factor analytic methodology, the various analytical procedures are delineated. In order of presentation, the matrix construction, the point-biserial item analysis, the linkage analysis, and hierarchical syndrome analysis constitute the procedures.

#### A. FACTOR ANALYSIS: AXIOMS AND THEORY

Adcock<sup>1</sup> asked for a re-appraisal of factor analytic methods, observing that:

The technique developed within psychology and its chief exponents are still psychologists. It would, therefore, be a great pity if mathematical refinement should hinder its use or discredit the results. It is hoped that this present effort will help to bridge the gap between the experts who are continually adding to the flexibility and effectiveness of the method and the scientists who may distrust a technique which is becoming more and more esoteric.<sup>2</sup>

Apparently, the hypothetico-deductive methods known as factor analysis are becoming less and less "esoteric" as

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<sup>1</sup>C. J. Adcock, Factorial Analysis (Melbourne, Australia: Melbourne University Press, 1954).

<sup>2</sup>Ibid., p. 7.

attested to by Michael<sup>3</sup> and McClure,<sup>4</sup> to name but two witnesses. Michael cites the tremendous progress in statistical analysis made during just the past decade. McClure reports using factor analysis in school planning and evaluation; this latter domain in educational administration yielded two independent and primary factors, namely, (a) "Primary Environmental Conditions" and (b) "Dynamic or Behavioral Qualities of Human Elements in Organizations."<sup>5</sup>

That there are now many factor analytical methods and interpretations should be neither surprising nor puzzling. Factor analyses may be performed with different purposes held in mind. Factor analysis may be viewed as most useful in the preliminary stages of a science wherein fundamental and descriptive parameters or taxonomies are missing. The present writer subscribes to the viewpoint that a factor analysis should be corroborative to a system of logic in order to produce a science that can grow. The results derived by hypothetico-deductive techniques such as factor analysis will be determined by value judgments as

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<sup>3</sup>W. B. Michael, "Educational and Psychological Testing," Review of Educational Research, 29 (February, 1959), 1-131.

<sup>4</sup>William P. McClure, "Using Factor Analysis in School Evaluation and Planning," Phi Delta Kappan, 40 (February, 1959), 225-230.

<sup>5</sup>Ibid., p. 230.

presuppositions assumed in criteria of a given theory. Osgood and his associates established that postulate.

A few simple axioms may be seen as providing the logical basis of factor analytic theory. These axioms are abstracted from Adcock's work as:

- Axiom 1. Two scales or tests which measure the same thing must yield similar results.
- Axiom 2. Common abilities or elements residing within two scales or tests will cause the two to give results which correlate to the extent of the commonness involved. If, for example, lengths of table tops are compared with perimeters of the same table tops, there should be considerable correspondence, since length is an extremely important element in perimeter.
- Axiom 3. If scale A correlates to some degree with scale B, and scale A also correlates with scale C, it is assumed that there is a common factor at work if B also correlates with C. If the latter case is not found to be so, then it may be concluded that B and C agree with different sub-parts of A. To illustrate, if B is a memory test and C is an IQ test, then we may assume that A measures both IQ and memory.

Such reasoning as this differs in no way from what we should use in any experimental investigation. The only mathematical function involved is that of calculating the correlation coefficient to indicate the degree of relationship. The rest is just a matter of logical deduction from the linkages thus demonstrated. The techniques of factor analysis employ no magic. Their function is to show in quantitative terms the pattern of linkages among our variables. In this way insight is facilitated.<sup>6</sup>

In his recently revised book, Cronbach has set aside a chapter giving the neophyte a glimpse of factor analysis.<sup>7</sup> Awesomely perhaps to the student, the author begins by stating "it is hard to gain even a partial understanding of factor analysis."<sup>8</sup> Factor analysis, as stated, begins with seeking to interpret sets of correlations, going beyond subjective inspection. There are three types of factors usually distinguished by the methodology. A specific factor would be one found only in one item-scale or test. A group factor is one found in two or more item-scales or tests. Third, a general factor would be an element present in all of the item-scales or tests in a given study.<sup>9</sup>

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<sup>6</sup>Adcock, op. cit., pp. 8-9.

<sup>7</sup>Lee J. Cronbach, Essentials of Psychological Testing (second edition; New York: Harper and Brothers, 1960), pp. 247-268.

<sup>8</sup>Ibid., p. 247.

<sup>9</sup>Ibid., p. 250.



Factor analysis facilitates parsimonious grouping of item-scales or tests, augments scale validation, and reduces bias of popular notions which stem only from opinions of authorities.<sup>10</sup> The behavioral sciences in particular had a great need for the techniques, which explains why psychology has had a special claim on them. Basic methods of all sciences look for concomitance of variance in observing what happens with what. The scientist does something and notes the result. If only one thing at a time can be varied, the approach is powerful and fruitful. In the physical sciences, it is quite possible to control such conditions, but the behavioral scientist is not so blessed. The study of human behavior involves so many variables which resist isolation, and it is essential to examine many variables at the same time. But what goes with what? As computing machines become more available, factor analysis is a servant which will be resorted to with greater frequency in searches aimed at disentangling causal nets.<sup>11</sup>

One more caution is advanced. An arbitrary conglomeration of variables can hardly be expected to yield "real" factors, and results will vary widely from one study to another with no evidence of functional unity. However, if some semblance of logic and "good theory" governed the

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<sup>10</sup>Adcock, op. cit., pp. 82-83.

<sup>11</sup>Ibid., pp. 81-82.

selection of item-scales or tests, and repeated investigations found a stability of functional units, then it may be assumed that heuristic measurement had been achieved.<sup>12</sup>

Once the variables have been clustered or rotated into groups or sets, the theorist usually has little trouble in assigning a title to each group or set. This final step is sometimes called "naming." However, in between the matrix of intercorrelations and that final step, lies tremendous controversy among various schools of factor analysts. There have been at least two distinct schools. The Spearman people invariably find a general factor using centroid techniques. Thurstonians use oblique rotation and arrive at independent factors with no "g" present. The controversy may be ending in an apparent compromise due to agreement as to "second order" factors reappearing from general factors. Centroid analyses necessarily exaggerate early factors at the expense of subsequent ones. If we refer to intelligence, it is possible that a group of intellectual abilities are united by a group factor. This view of factors at different levels stems from evidence that the universe has something of a hierarchical structure.<sup>13</sup> Somewhat despairingly, Cattell laments that "any

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<sup>12</sup>Ibid., p. 84.

<sup>13</sup>Ibid., pp. 36-37.

decision as to the number of factors to be extracted from a naturally occurring correlation matrix is bound to be arbitrary."<sup>14</sup>

Where does all this lead us? The logical positivists may still search for the ultimate in prediction, but certainly it appears that factor analysis would not satisfy their criterion. Where is the paradigm observer? The answer to that question is a value judgment, to each his own. In the final analysis, factor analytic methodology depends upon "everyman's theory." However, it is in the very acceptance of these limitations that one can find factor analysis quite useful in exploring facets of behavioral sciences. The composite of many researches by many different investigators which would yield invariant findings could produce constructs, operationally defined, by which systematic explanation of empirical observations becomes possible.

## B. THE MATRIX

Sources of the raw data and precise methods for constructing the matrix of intercorrelations were detailed in

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<sup>14</sup>R. B. Cattell, "Extracting the Correct Number of Factors in Factor Analysis," Advance Publications Number Eight (Urbana: Laboratory of Personality Assessment, University of Illinois, 1957), p. 18.

the first chapter. The mean raw score data are arranged in Appendix C. The 300 coefficient matrix was then squared for the purposes of performing the subsequent linkage and hierarchical syndrome analyses. The resultant twenty-five point-biserial coefficients produced by the item analysis step were then added to the basic matrix in squared symmetry. The composite matrix is shown in Table VI on ensuing pages. For continuity and simplicity, the twenty-five item-scales of the Guide and the additional column-row of point-biserial coefficients were each assigned an alphabetically coded letter, there being a convenient and coincident number of twenty-six in each. Table VII depicts such assignment. Reflecting on Adcock's note of the desirability of computers in matrix construction and factor analysis, it may be of passing interest to the reader that the R-M LGP-30 computer used in the present case performed the product moment correlations ( $r_s$ ) at the rate of one per eleven seconds; the author required nearly three hours to compute four coefficients undertaken as a random check on the computer's veracity. Also, the author's three-place accuracy paled beside the computer's five-place precision, an automated reproof at human effrontery.

TABLE VI  
MATRIX OF INTERCORRELATIONS

	A	B	C	D	E	F	G	H	I
A									
B	69	<u>69</u>	45	58	36	53	26	53	52
C	45	40		62	42	62	32	54	<u>814</u>
D	58	49	62		52	62	38	48	<u>58</u>
E	36	41	42	52		56	37	44	65
F	53	46	62	62	56		37	<u>76</u>	59
G	26	31	32	38	37	37		29	38
H	53	52	54	48	44	<u>76</u>	29		57
I	52	57	<u>814</u>	58	65	59	38	57	
J	<u>73</u>	59	<u>70</u>	<u>69</u>	51	63	43	62	78
K	67	46	57	46	32	40	22	57	52
L	64	61	74	68	45	64	34	54	75
M	37	54	60	56	65	53	<u>48</u>	46	74
N	54	58	61	56	52	57	<u>23</u>	67	69
O	56	63	54	57	58	47	34	37	72
P	28	42	51	41	<u>66</u>	61	41	58	68
Q	51	51	46	47	56	38	24	32	64
R	58	63	51	60	40	51	39	43	58
S	37	11	32	27	22	40	03	43	31
T	36	52	56	53	51	53	31	52	61
U	36	15	77	46	30	53	09	58	60
V	12	24	41	24	40	53	35	54	48
W	62	48	52	57	37	55	19	39	64
X	64	51	37	63	32	48	28	45	48
Y	21	27	30	16	03	24	15	34	34
#Z	55	29	54	63	21	65	32	50	59

TABLE VI (continued)

	J	K	L	M	N	O	P	Q	R
A	73	<u>67</u>	64	37	<u>54</u>	56	28	51	58
B	59	<u>46</u>	61	<u>54</u>	58	63	42	51	63
C	70	57	<u>74</u>	60	61	<u>54</u>	51	46	51
D	69	<u>46</u>	68	56	56	57	41	47	60
E	51	32	<u>45</u>	65	52	58	66	56	40
F	63	40	64	53	57	47	61	38	51
G	43	22	<u>34</u>	48	23	<u>34</u>	41	24	39
H	62	57	54	46	67	37	58	32	43
I	78	<u>52</u>	<u>75</u>	<u>74</u>	69	72	<u>68</u>	64	58
J		54	<u>84</u>	<u>66</u>	62	67	<u>58</u>	62	<u>74</u>
K	<u>54</u>		53	31	51	42	20	46	37
L	<u>84</u>	53		58	61	66	53	50	71
M	66	31	58		53	47	60	46	47
N	62	51	61	53		72	63	70	53
O	67	42	66	47	<u>72</u>		61	<u>810</u>	63
P	58	20	53	60	<u>63</u>	61		<u>44</u>	48
Q	62	46	50	46	70	<u>810</u>	<u>44</u>		46
R	74	37	71	47	53	<u>63</u>	48	46	
S	39	43	<u>34</u>	27	33	15	26	22	07
T	61	37	66	71	61	46	57	46	49
U	53	61	49	39	47	27	34	30	25
V	34	34	39	56	36	16	49	19	12
W	76	46	72	<u>54</u>	60	66	52	63	64
X	69	37	66	31	61	68	44	55	69
Y	34	32	41	14	43	25	22	30	41
*Z	73	63	83	55	38	48	40	43	33

TABLE VI (continued)

	S	T	U	V	W	X	Y	Z*
A	37	36	36	12	62	64	21	55
B	11	52	15	24	48	51	27	29
C	32	56	77	41	52	37	30	54
D	27	53	46	24	57	63	16	63
E	22	51	30	40	37	32	03	21
F	40	53	53	53	55	48	24	65
G	03	31	09	35	19	28	15	32
H	43	52	58	54	39	45	34	50
I	31	61	60	48	64	48	34	59
J	39	61	53	34	76	69	34	73
K	43	37	61	34	46	37	32	63
L	34	66	49	39	72	66	41	83
M	27	71	39	56	54	31	14	55
N	33	61	47	36	60	61	43	38
O	15	46	27	16	66	68	25	48
P	26	57	34	49	52	44	22	40
Q	22	46	30	19	63	55	30	43
R	07	49	25	12	64	69	41	33
S		39	65	53	39	27	26	48
T	39		39	57	53	51	36	56
U	65	39		45	40	21	29	37
V	53	57	45		29	19	29	14
W	39	53	40	29		70	40	58
X	27	51	21	19	70		50	63
Y	26	36	29	29	40	50		33
*Z	48	56	37	14	58	63	33	

\*Effective-ineffective criterion (rpb)

TABLE VII

## TENNESSEE RATING GUIDE ITEMS: ALPHABETIC CODING

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IA	A	How does he relate to others?
IB	B	Does he utilize the opinion of others?
IC	C	Is he skillful in developing an organization in which each can do his best?
ID	D	Is he skillful in getting policies formulated cooperatively?
IE	E	Is he skillful in continuous implementation of policies?
IF	F	Does he help the group arrive at a working consensus?
IG	G	Does he believe that democratic processes are essential?
IIA	H	Does he give sufficient consideration to new data in problem solving?
IIB	I	Does he recognize and define problems?
IIC	J	Is he consistent in terms of his basic assumptions?
IID	K	Does he experiment?
IIE	L	Does he try to recognize and deal with his own biases?
IIF	M	Does he appear to have profited by previous experience?
IIG	N	Does he have the ability to size up people?
IIH	O	Does he accept responsibility wisely?
IIIA	P	Is he emotionally stable?

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TABLE VII (continued)

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IVA	Q	Does he have the courage of his convictions?
IVB	R	Does he exhibit integrity in dealing with others?
VA	S	How well does he express himself orally?
VB	T	Is he a good listener?
VC	U	Does he interest people in examining ideas?
VD	V	How skillfully does he lead group discussions?
VIA	W	Does he help people interpret significant contemporary trends and events?
VIB	X	Is he cooperative with non-educational groups working for community betterment?
VIC	Y	What is his attitude toward minority groups in the school community?
*	Z	$\sqrt{\text{Effective-ineffective criterion (r}_{pb})}$

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\*Note: Item analysis resultant column-row.

## C. POINT-BISERIAL ITEM ANALYSIS

Table VIII exhibits the complete item analysis of the Tennessee Rating Guide. First chapter methods and procedures were executed as stated. For the Feltner-Jackson-Keeney data and item analysis, the numerical rating of four provided the point of dichotomization as prescribed in previous researches on the Guide and also explained in the first chapter. The basic formula used is as follows:

$$r_{pb2} = \left( \frac{\bar{X}_p - \bar{X}_t}{s_t} \right)^2 \cdot \frac{p}{q}$$

Where

$\bar{X}_p$  = mean score of upper group

$\bar{X}_t$  = mean score of total item-scale scores

$s_t$  = sigma of the item-scale

$p$  = proportion of total group scored "effective"

$q$  =  $1 - p$

As shown in Table VIII, reliabilities of the point-biserial correlation coefficients were also tested. The significance at three possible levels of confidence for each item-scale was tested by the following formula:

$$t^2 = \frac{(r_{pb})^2 \cdot (N - 2)}{1 - r_{pb}^2}$$

TABLE VIII

TENNESSEE RATING GUIDE: POINT-BISERIAL ITEM ANALYSIS ( $r_{pb}$ )

Guide item-scale	Analysis code letter	$r_{pb}$	t	Significance levels		
				.05	.01	.001
IA	A	.55	4.0			*
IB	B	.29	1.8			
IC	C	.54	3.9			*
ID	D	.63	4.7			*
IE	E	.21	1.3			
IF	F	.65	5.1			*
IG	G	.32	2.0	*		
IIA	H	.50	3.5			*
IIB	I	.59	4.4			*
IIC	J	.73	6.3			*
IID	K	.63	4.7			*
IIE	L	.83	9.3			*
IIF	M	.55	4.0			*
IIG	N	.38	2.5	*		
IIH	O	.48	3.3		*	
IIIA	P	.40	2.6		*	
IVA	Q	.43	2.9		*	
IVB	R	.33	2.1	*		
VA	S	.48	3.3		*	
VB	T	.56	4.1			*
VC	U	.37	2.4	*		
VD	V	.14	0.85			
VIA	W	.58	4.3			*
VIB	X	.63	4.7			*
VIC	Y	.33	2.1	*		

The results show that the most discriminative item-scale in the Guide asks the question, "Does he try to recognize and deal with his own biases?" In short, judges and observers have viewed the dogmatic and closed-minded to be the least effective administrators. In second place, the item-scale which reads "Is he consistent in terms of his basic assumptions?" is the next most important differential in perceived effectiveness. Hence the effective administrator is indeed dependable and predictable in action and word. The third highest coefficient would imply that the effective administrators were seen as disciples of group dynamics. The query is "Does he help the group arrive at a working consensus?"

Only three more item-scales will be discussed. In a tie for fourth place were three correlates of the first three considerations above. "Is he skillful in getting policies formulated cooperatively?" "Does he experiment?" and "Is he cooperative with non-educational groups working for community betterment?" round out this brief profile of administrators in education.

#### D. LINKAGE ANALYSIS

Linkage analysis is analogous to factor analysis. The key concepts of factor analysis such as factors and factor loadings correspond to "types and typical relevancies"

respectively. Linkage analysis can be expected to yield results quite similar to, or identical with those of the conventional factor analytic methods.<sup>15</sup>

Advantages of elementary linkage analysis are its provision for investigating a particular theoretical position, its speed, and its objectivity. . . . The original solution of a linkage analysis gives the desired structure; no rotation is required.<sup>16</sup>

As a method of clustering, linkage analysis can be used to cluster people, items, and objects which have distinctive cluster-characteristics. It is the only cluster method that defines a linkage as the largest index of association which one variable has with any other or all other variables. A myriad of tests and ratings can be reduced to a relatively small number of representative variables.<sup>17</sup>

Clustering methods such as linkage analysis are necessary for investigating typal theories, such as those of human behavior. Typal theory contrasts with Thurstonian "simple structure theory" by seeking typal structure.

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<sup>15</sup>Louis L. McQuitty, "Elementary Linkage Analysis for Isolating Orthogonal and Oblique Types and Typal Relevances," Educational and Psychological Measurement, 17 (Summer, 1957), 207-229.

<sup>16</sup>Ibid., p. 207.

<sup>17</sup>Ibid., pp. 207-208.

. . . A typical structure is defined as one in which every member of a type is more like some other member of that type (with respect to the data analyzed) than he is like any member of any other type.

Once the members of a type have been isolated, it is then possible to define a prototype. A prototype is some composite of the characteristics possessed by the members of the type. Operationally, it may be defined as the centroid of the characteristics possessed by the members, or it may be defined as the characteristics possessed in common by all members of the type. If the centroid is used as the operational definition of a prototype, it is then possible to compute the relevancy that each member of the type has to the prototype. Relevancies to prototypes are computed by means of the same operations as the first factor loadings of a factor analysis. The only difference is that these operations in linkage analysis are applied to sub-matrices rather than the entire matrix. The first step of elementary linkage analysis selects the members of the first type. The coefficients of relationships between these members constitute the entries of the first sub-matrix. First factor loadings (computed on the variables of this matrix exclusively) constitute the relevancies for the first prototype. The members of the second type are then selected. Coefficients of relationships between these members constitute the second sub-matrix. The factor loadings on the centroid of this sub-matrix constitute the relevancies for the second prototype. Analogously, relevancies for subsequent prototypes are computed until every variable has been classified into a type.

The members which represent the first type are selected in terms of the original index of association. Those representative of subsequent types can be selected either in terms of the original indices, or in terms of residuals, where the latter term is defined to have an analogous meaning to the one which it possesses in factor analysis, viz., indices expressing the degree of association

between variables after that variance which they have in common with extracted types has been withdrawn.<sup>18</sup>

Linkage analysis compares with the Thurstonian methods in arriving at multiple and independent factors. Hierarchical syndrome analysis, which will be discussed and presented in the next topic of this chapter, appears to reconcile the Spearman school's g with the Thurstonians by providing for factors appearing at different levels in hierarchical fashion. As Adcock has observed, if we accept this assumption, second and third order factors should be expected.<sup>19</sup>

Twery, Schmid, and Wrigley<sup>20</sup> performed factor analyses on the "Air Force Job Satisfaction Inventory" as part of the United States Air Force Personnel and Training Research Program. The instrument consisted of twenty-one item-scales rated on a five-point system. This phase centered on evaluating three separate methods of factor analysis. The same basic matrix was used in all three analyses. The methods were:

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<sup>18</sup>Ibid., pp. 209-210.

<sup>19</sup>Adcock, op. cit., pp. 36-37.

<sup>20</sup>Raymond Twery, John Schmid, Jr., and Charles Wrigley, "Some Factors in Job Satisfaction: A Comparison of Three Methods of Analysis," Educational and Psychological Measurement, 18 (Spring, 1958), 189-202.

1. Principal axes factor analysis using communalities, with the seven largest factors rotated by quartimax methods.
2. Principal axes factor analysis using unities, with rotation as number one above.
3. McQuitty's techniques of analysis, applying them to the correlations to provide an objective cluster analysis procedure.

The results were the same from all three methods. However, McQuitty's procedures were acclaimed as being far less complex and laborious than the other two. In terms of effort, money, and time invested, his methods were seen as most efficient.

The linkage analysis performed on the Guide is portrayed in Figure 1. Four typal sets inherent in the instrument were found. The schematic arrangement in Figure 1 was so arranged to demonstrate the analytic simplicity involved. A descriptive presentation modeled over Chew's and Howell's ideas is tabulated in Table IX, page 130.

The first typal set and linkages suggested the title "Kinetic Philosophy," since the cluster's items deal with the person's operative point of view. The second group appeared to invite being named "Administrative Competence," due to items descriptive of organizational skill, intelligent analysis and planning, and democratic creativity.



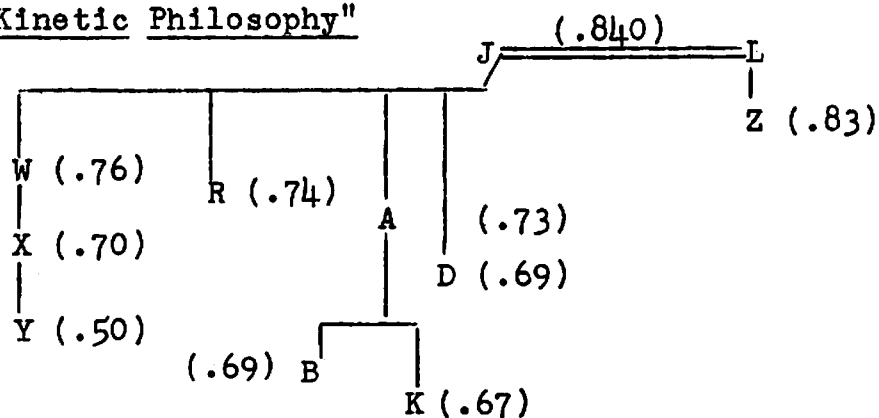
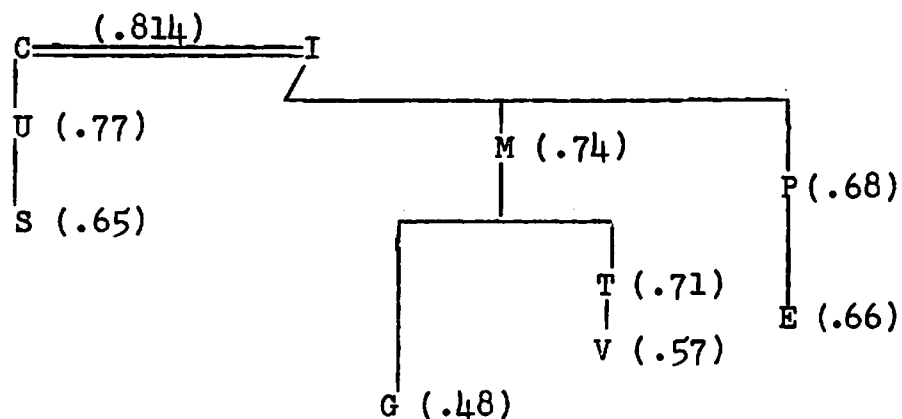
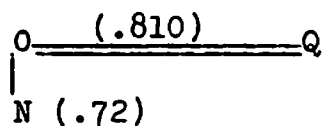
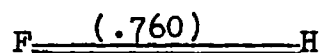
Typal Set I "Kinetic Philosophy"Typal Set II "Administrative Competence"Typal Set III "Empathetic-Ethical-Drive"Typal Set IV "Group Decision Skill"

FIGURE 1

TENNESSEE RATING GUIDE: LINKAGE ANALYSIS<sup>a</sup>

<sup>a</sup>Note: Full matrix analysis including "effective-ineffective" criterion  $r_{pb}$ .

TABLE IX

## TENNESSEE RATING GUIDE: DESCRIPTIVE LINKAGE ANALYSIS

Typal set	Very similar	Similar	Less similar
I. Is he consistent in terms of his basic assumptions? - - - Does he try to recognize and deal with his own biases?	"Effective-ineffective" criterion (rpb) - - - Does he help people interpret significant contemporary trends and events? - - - Does he exhibit integrity in dealing with others? - - - How does he relate to others? - - - Is he skillful in getting policies formulated cooperatively?	Is he cooperative with non-educational groups working for community betterment? - - - Does he utilize the opinion of others? - - - Does he experiment?	What is his attitude toward minority groups in the school community?
II. Is he skillful in developing an organization in which each can do his best? - - - Does he recognize and define problems?	Does he interest people in examining ideas? - - - Does he appear to have profited by previous experiences? - - - Is he emotionally stable?	Is he a good listener? - - - Is he skillful in continuous implementation of policies? - - - How well does he express himself orally? - - - Does he believe that democratic processes are essential?	How skillfully does he lead group discussions?

TABLE IX (continued)

Typal set	Very similar	Similar	Less similar
<p>III. Does he accept responsibility wisely? - - -</p> <p>Does he have the courage of his convictions?</p>	<p>Does he have the ability to size up people?</p>		
<p>IV. Does he help the group arrive at a working consensus? - - -</p> <p>Does he give sufficient consideration to new data in problem solving?</p>			

The third linkaged set smacked strongly of characteristics the author called "Empathetic-Ethical-Drive." Certainly, the acceptance of responsibility would imply the courage required to discharge the obligations once accepted, and the American scheme of public organizations calls for objectivity in personnel judgments. The fourth and final set emerged as elements of "Group Decision Skill," and it was so dubbed.

#### E. HIERARCHICAL SYNDROME ANALYSIS

Hierarchical syndrome analysis is a very recent method of classifying people, tests, institutions or other objects into syndromes of successively higher orders, such as species, then genera, then families and so forth.<sup>21</sup> Essentially, it is an elaboration of linkage analysis, also developed by McQuitty. The purpose is to classify whatever is being investigated so that every object in any category is more like every other object of that category than it is like any object of any other category; the characteristics common to the objects of any syndrome can be readily determined. As in linkage analysis, the analysis is performed on a matrix of intercorrelations, whether the latter be

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<sup>21</sup>Louis L. McQuitty, "Hierarchical Syndrome Analysis," Educational and Psychological Measurement, 20 (Summer, 1960), 293-304.

agreement scores, coefficients of correlation, or any measures of relationships.<sup>22</sup>

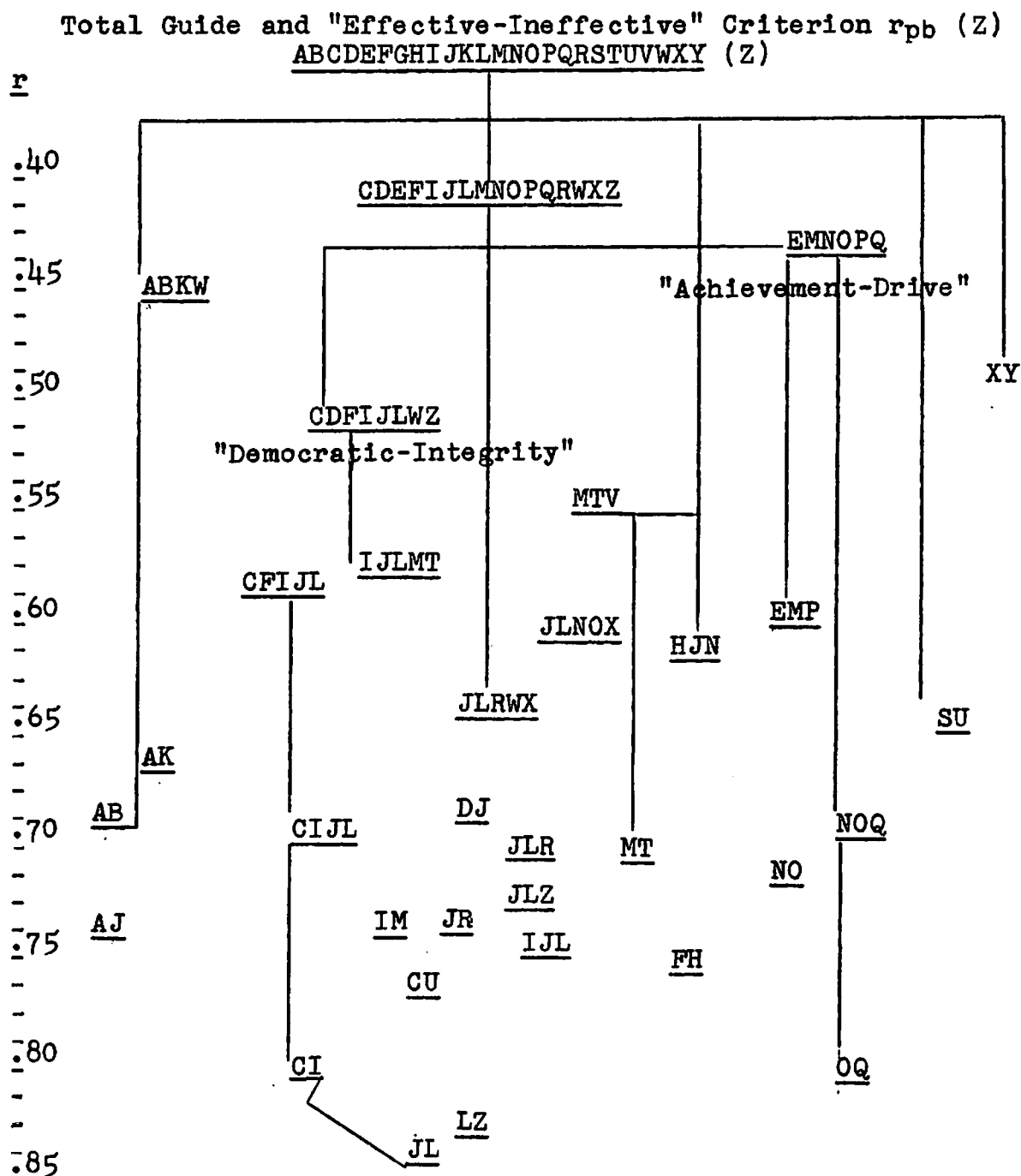
The hierarchical syndrome analysis performed on the Guide is arranged in Figure 2. While the reader is solicited to examine the syndrome structure of hierarchical orders, no attempt to discuss them here will be undertaken by the author, postponing instead such delineation until the succeeding chapter, wherein the analytic yields will be converted into adjectives. It was believed that adjectival terms would be far less cumbersome and more meaningful for both writer and reader in interpreting the hierarchical syndrome profiles.

#### F. SUMMARY

The purpose of this chapter was one of fourfold narration. The four statistical methods and procedures presented were those of matrix construction, biserial item analysis, linkage analysis, and hierarchical syndrome analysis. To be more meaningful, the fourth phase's interpretation will be considered in the next chapter, since it was believed that the descriptive complexities of the hierarchical syndrome analysis could be reduced by employing the

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<sup>22</sup>Ibid., p. 295.



polarized adjectival terms in lieu of the unwieldy statements heading the Guide's twenty-five item-scales.

The matrix was a product of modern computer precision. The biserial item analysis yielded the discriminating indices of the Guide's twenty-five item-scales and were added to the basic matrix as the twenty-sixth variable. The twenty-six variables were each assigned an alphabetical letter for simplification in coding. The item analysis revealed the item-scale which reads "Does he try to recognize and deal with his own biases?" to be the most discriminative one in the instrument. In descending order from this "open-mindedness" importance in administrative effectiveness, were item-scales which sketched the criticalness of being behaviorally consistent, mindful of group processes, scientifically methodical, and actively involved with community forces.

The linkage analysis extracted four typal sets. The first two clustered sets accounted for more than 80 per cent of the Tennessee Rating Guide and were named "Kinetic Philosophy" and "Administrative Competence" respectively. The third linkage suggested the title of "Empathetic-Ethical-Drive," with the fourth set appearing as elements of "Group Decision Skill."

## CHAPTER V

### THE GUIDE'S REVISION, CONVERSION AND HIERARCHICAL SYNDROMES

This chapter was reserved primarily for the two phases which comprise (a) the revision of the Guide into a reduced and reworded rating instrument and (b) the phase involving the Guide's transformation into a polarized adjectival form adapted from Osgood's methodology.<sup>1</sup> In addition to the steps mentioned above, adjectival clusters accounting for the hierarchical syndrome analysis (Figure 2, page 134) will be presented.

#### A. THE GUIDE'S REVISION

Table X is the conventional but reduced Guide of twenty item-scales. Item-scales IB, IE, IG, VD, and VIC (see Appendix B) were deleted from the instrument for reasons of (a) relatively low discriminating power in item analysis, (b) third-order typal set linkages, and (c) apparent overlapping in the typal set linkages. Although the five item-scales were deleted, it should be emphasized that all five could possibly be possessed of high ultimate

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<sup>1</sup>Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1957).



TABLE X  
UNIVERSITY OF TENNESSEE RATING GUIDE

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

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A. How does he relate to others?

- ☐ 1. Tends to be a lone wolf
- ☐ 2. Has a few friends but tends to ignore others
- ☐ 3. Friendly when approached by others
- ☐ 4. Popular; has many casual acquaintances
- ☐ 5. Steadily warm and appealing in relationship with others

C. Is he skillful in developing an organization in which each can do his best?

- ☐ 1. Most people with whom he works have important responsibilities in which they are genuinely interested
- ☐ 2. Sometimes delegates responsibilities with regard to special interests and abilities of associates
- ☐ 3. Delegates tasks largely mechanically; fails to recognize special abilities of others
- ☐ 4. Plays favorites in delegating responsibility
- ☐ 5. Runs the whole show himself

D. Is he skillful in getting policies formulated co-operatively?

- ☐ 1. Involves general public, staff members and students in major policy formulation
  - ☐ 2. Attempts to involve general public, staff members and students in policy formulation but has difficulty in setting up necessary machinery
  - ☐ 3. Involves only key people in policy formulation
  - ☐ 4. Discusses policies with others, but decisions are usually made prior to the discussion
  - ☐ 5. Formulates policies himself; rarely discusses them with others
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

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F. Does he help the group arrive at a working consensus?

- ☐ 1. Contributes little to help group arrive at a working consensus
- ☐ 2. Tries to force group to quick agreements without really considering problems
- ☐ 3. Tends to force action without careful group consideration
- ☐ 4. Strives for consensus but sometimes encourages group action on insufficient data
- ☐ 5. Continually strives for careful group problem analysis; helps group recognize points of agreement

H. Does he give sufficient consideration to new data in problem solving?

- ☐ 1. Disregards new data that challenge the status quo
- ☐ 2. Uses new data only when they support his position
- ☐ 3. Will consider new data when presented to him
- ☐ 4. Seeks new data along lines of special interest
- ☐ 5. Consistently seeks and employs new data

I. Does he recognize and define problems?

- ☐ 1. Tends not to recognize the existence of problems
- ☐ 2. Tends to consider symptoms instead of problems
- ☐ 3. Sometimes confuses symptoms with problems in his efforts to improve
- ☐ 4. Recognizes problems but has difficulty in analyzing them
- ☐ 5. Recognizes and analyzes problems

J. Is he consistent in terms of his basic assumptions?

- ☐ 1. Supports conflicting ideas; action characterized by inconsistency
  - ☐ 2. Has a tendency to discuss important problems in terms of his likes and dislikes
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

---

- ☐ 3. Frequently uncertain of his position on controversial subjects
- ☐ 4. Is certain of his position and consistent in his behavior in areas which he considers important
- ☐ 5. Is dependable and predictable in word and action

K. Does he experiment?

- ☐ 1. Tends to try out new ideas after careful study and follows through on basis of experimental evidence
- ☐ 2. Undertakes various new projects for improvement but fails to interpret their significance
- ☐ 3. May be premature in trying out ideas for improvement; fails to fully incorporate accepted principles of experimentation
- ☐ 4. Action tends to be based on subjective evidence
- ☐ 5. Tends to operate within traditional practices or on basis of hunches

L. Does he try to recognize and deal with his own biases?

- ☐ 1. Consistently examines his own position and attempts to understand the position of others
- ☐ 2. Tends to evaluate his position but will resort to biases under pressure
- ☐ 3. Feels uneasy about his position at times; can be stimulated to examine his own opinions
- ☐ 4. Assumes that his position is generally right; does not know how to identify his own biases
- ☐ 5. Refuses to examine his position

M. Does he appear to have profited by previous mistakes?

- ☐ 1. Frequently makes the same mistake but seldom admits it
  - ☐ 2. Usually attempts to justify mistakes
  - ☐ 3. Recognizes that some mistakes are inevitable but has difficulty in making readjustments
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

---

- ☐ 4. Makes some improvement as a result of past mistakes
- ☐ 5. Recognizes his mistakes and seeks to avoid repeating them

N. Does he have the ability to size up people?

- ☐ 1. Judges potentialities of people in terms of their race, religion, nationality, or other such concepts
- ☐ 2. Makes judgments about people in terms of hunches
- ☐ 3. Tends to base judgments of people on past experiences without rethinking in terms of present situations
- ☐ 4. Judges people on basis of personal experiences, using additional resources when problem situations arise
- ☐ 5. Consciously endeavors to understand the basic potentialities of each person through objective procedures

O. Does he accept responsibility wisely?

- ☐ 1. Budgets the assuming of responsibilities wisely in terms of own limitations in present situation
- ☐ 2. Carries out pressing responsibilities well but neglects less urgent duties
- ☐ 3. Concentrates on school routine; supports non-school endeavors on a highly selective basis
- ☐ 4. Attends strictly to school routine without participating in community enterprises
- ☐ 5. Accepts too many responsibilities or refuses to assume responsibilities normally expected of him

P. Is he emotionally stable?

- ☐ 1. Tends to be upset by everyday occurrences and keeps staff in continuous uproar
  - ☐ 2. Attempts to exemplify outward calmness but explodes about trivial matters
  - ☐ 3. Is upset in novel situations and has a tendency to upset others
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

---

- ☐ 4. Meets novel situations well but lets some problems involve him in distracting entanglements
- ☐ 5. Appears to meet crises with a contagious calmness; others feel at ease in his presence

Q. Does he have the courage of his convictions?

- ☐ 1. Tends to weasel out of situations
- ☐ 2. Usually follows most popular viewpoint
- ☐ 3. Has a tendency to accept some viewpoints which he realizes are in conflict with his own
- ☐ 4. Has well-tempered convictions which he tries to follow but is sometimes unsure of their soundness
- ☐ 5. Places principle above his own personal advantage

R. Does he exhibit integrity in dealing with others?

- ☐ 1. Considers agreements with others as promissory notes to which he is committed
- ☐ 2. Exhibits integrity in important agreements, but in less important agreements is somewhat careless
- ☐ 3. Tends to rationalize inadvertent breaches of agreements
- ☐ 4. Through indirect methods leads people to believe in false situations
- ☐ 5. Tends to be unscrupulous in accomplishing his purposes

S. How well does he express himself orally?

- ☐ 1. Chooses words which clearly convey thoughts; is able to express abstract ideas
  - ☐ 2. Expresses practical thoughts fairly well, but has difficulty with abstractions
  - ☐ 3. Is unimpressive in oral communication
  - ☐ 4. Expresses himself in a fuzzy, incomprehensible manner and tends to puzzle listeners concerning what he means
  - ☐ 5. Is either unable or does not desire to convey thoughts to others
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

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T. Is he a good listener?

- ☐ 1. Is attentive in trying to grasp ideas expressed by others
- ☐ 2. Listens carefully to ideas in which he is interested
- ☐ 3. Appears to listen but has difficulty in concentration
- ☐ 4. Tends to disrupt oral communication by inattentiveness or by introduction of irrelevant ideas
- ☐ 5. Tends to listen only to himself

U. Does he interest people in examining ideas?

- ☐ 1. Stimulates people to seek solutions through critical analyses of ideas
- ☐ 2. Encourages examination of ideas that he thinks are important
- ☐ 3. Waxes hot and cold in stimulating examination of ideas
- ☐ 4. Appears to consider intellectual curiosity unimportant
- ☐ 5. Discourages examination of ideas

W. Does he help people interpret significant contemporary trends and events?

- ☐ 1. Does not seem to be informed about or interested in contemporary events
  - ☐ 2. Discusses current affairs in terms of stock phrases and generalities
  - ☐ 3. Knows about current affairs but shows prejudice in discussing them
  - ☐ 4. Is well informed in the socioeconomic problems in which he is interested
  - ☐ 5. Discusses intelligently major social, political, and economic issues
-

TABLE X (continued)

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Characteristics of School Administrators  
(As Revised January 8, 1959; Reduced to Twenty Item-Scales  
March 14, 1961)

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- X. Is he cooperative with non-educational groups working for community betterment?
- ☐ 1. Is aware of and actively concerned with desires and interests of community betterment
  - ☐ 2. Is interested in cooperating with community groups but spreads his efforts too thinly
  - ☐ 3. Is selective in cooperating with groups in proportion to pressures applied
  - ☐ 4. Becomes so involved with activities of non-educational groups that he neglects proper administration of the school program
  - ☐ 5. Considers the school an island that is competitive with non-educational groups
- 
-

item indices. Length of time for rater-subject acquaintanceship and observation, whether or not the subject was in an actual administrative setting and ambiguous interpretation of the item-scale statements by raters could be possible explanations for the question, "Why were the yields so low?" Also, for most of the dropped item-scales, one might suspect that raters would need to be "minority" people, subordinates, or at least peer members of the subject's administrative environment. The remaining twenty item-scales are alphabetically, consecutively, and respectively lettered for consistency of the study, following the same simple coding set forth in Table VII of Chapter IV. Therefore, subsequent reference to item-scales will be cited by alphabetical letter. For present purposes, the five-statement continua are also included in Table X under their respective interrogative captions. The six Roman-numeraled categories were also eliminated. These provisions of Table X were designed as aids to the reader.

Incorporating certain ideas of Chew's and Howell's work at General Motors,<sup>2</sup> Table XI presents the author's simplified Guide of twenty item-scales. The inclusion of the three choice-levels, "extremely," "quite," and "slightly" was no chance whim. Osgood and his associates found the

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<sup>2</sup>William B. Chew and Leonard E. Howell, "New Light on Trait Rating," Personnel, 37 (March-April, 1960), 42-46.



TABLE XI

UNIVERSITY OF TENNESSEE RATING GUIDE (CHARACTERISTICS OF  
EDUCATIONAL ADMINISTRATORS, AS REVISED MARCH 14, 1961)

Person being rated \_\_\_\_\_

Characteristics to consider:		Slightly	Quite	Extremely
(A)	1. Is friendly and sociable?	_____	_____	_____
(C)	2. Is skillful in stimulating others to achieve and share responsibility?	_____	_____	_____
(D)	3. Is skillful getting policy-decisions made cooperatively?	_____	_____	_____
(F)	4. Is group-minded in problem analysis toward consensus?	_____	_____	_____
(H)	5. Is open to new data and progress?	_____	_____	_____
(I)	6. Is intelligent and perceptive in problem analysis?	_____	_____	_____
(J)	7. Is consistent, dependable and predictable?	_____	_____	_____
(K)	8. Is inclined to experiment after careful planning?	_____	_____	_____
(L)	9. Is honest about his own biases and viewpoints?	_____	_____	_____
(M)	10. Is mindful of past errors, profits from experience?	_____	_____	_____
(N)	11. Is objective in evaluating people?	_____	_____	_____

TABLE XI (continued)

Characteristics to consider:	Slightly	Quite	Extremely
(O) 12. Is efficient and practical in energy/time budgeting?	_____	_____	_____
(P) 13. Is stable "under fire," inspires others' confidence?	_____	_____	_____
(Q) 14. Puts personal principles above personal gain?	_____	_____	_____
(R) 15. Is trustworthy in dealings with people?	_____	_____	_____
(S) 16. Is clear and expressive in speaking?	_____	_____	_____
(T) 17. Is a keen and attentive listener?	_____	_____	_____
(U) 18. Stimulates others to examine ideas and seek solutions?	_____	_____	_____
(W) 19. Is well-informed of current affairs and trends?	_____	_____	_____
(X) 20. Is active in community and public life?	_____	_____	_____
(*) 21. Is an effective (or potentially-effective) administrator?	_____	_____	_____

(\*) Over-all criterion judgment.

three adverbial quantifiers had yielded 1.50, 1.00, and .50 degrees of intensity respectively--near perfect.<sup>3</sup> Adverbial quantifiers have been shown to combine multiplicatively with adjectives for descriptive measures.<sup>4</sup> A helpful critique by Dr. Louise W. Cureton, a recognized expert in psychometrics, resulted in the inclusion of an additional item-scale (Number 21)--a final, over-all immediate criterion judgment of effectiveness.

#### B. CHECK LIST CONVERSION

Devoid of instruments such as microscopes or spectrometers which would permit us to analyze and explore peoples' personal characteristics that make for success or failure in jobs, our recourse is to take due note of what we see and hear and then form our own best judgments of people.

In thus forming our judgments of people, we have to use words. In fact, we can do little or no thinking without using words. We can't even be sure that we know anything about a person unless we can put that knowledge into words--and the right words are sometimes hard to come by. People differ so greatly that we are often puzzled to find the words that accurately describe some man or woman of our acquaintance. But until we find the right words our thinking about that person is fuzzy and inexact.<sup>5</sup>

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<sup>3</sup>Osgood, op. cit., p. 152.

<sup>4</sup>Ibid.

<sup>5</sup>Robert W. Adams, The Complete Employee: A Handbook for Personnel Appraisal (Chicago: Public Administration Service, 1959), pp. 1-2.

There are over 17,000 words in the English language that may be used to describe people. From an unpublished thesaurus of those words, about 2,000 terms have been compiled for personnel rating.<sup>6</sup> Adams' book does indeed appear to lend itself to those who would construct rating sheets, with descriptive terms suggestively categorized under various characteristic headings.

Gough<sup>7</sup> authored a very recent and comprehensive review of the merits afforded by adjective check lists as personality assessment and research techniques. He projects the utility of adjective check lists by noting that:

One of the research needs of any psychological enterprise which is concerned with the study and description of human behavior, especially in its interpersonal and interactional aspects, is for a set of descriptive terms which is (a) meaningful, (b) sufficiently complex in scope to cover the ordinary range of behavior observed, and (c) susceptible of systematic analysis.<sup>8</sup>

Earlier in the present thesis, reviews in the second and third chapters had included researches which incorporated adjective check lists and adjunctive versions such as the Semantic Differential scales.<sup>9</sup> Discussion of two

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<sup>6</sup>Ibid., p. 4.

<sup>7</sup>Harrison G. Gough, "The Adjective Check List as a Personality Assessment Research Technique," Psychological Reports, VI (February, 1960), 107-122).

<sup>8</sup>Ibid., p. 107.

<sup>9</sup>Osgood, et al., loc. cit.

studies that seemingly should have been covered in the third chapter were withheld deliberately until the present section for reasons of (a) detailing the rationale for the Guide's adjective check list conversion and (b) citing the sources tapped in building the pool of terms used to define the Guide's original item-scales in its 1959 form.

The first of the two withheld works reports Gowan's findings.<sup>10</sup> Significant at the 1 per cent level were adjectives found to describe "good" teachers; "attractive," "active," "intelligent," "clear-thinking," "capable," "clever," "interests-wide," "cheerful," "goodnatured," "humorous," "confident," "mature," "organized," "reliable," "cooperative," "affectionate," "friendly," and "ambitious" rounded out the perceived profile for teachers. Negative correlations for other adjectives, also of 1 per cent significance level, included "quiet," "hesitant," "shy," "reserved," and "conventional."

The other writing to present here is Gough's article. Of the various appraisal investigations he mentions, one involved eighty graduate students, with the highly-rated ones being described as "cold," "conscientious," and "responsible." Another study concerned 343 military officers at various

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<sup>10</sup>J. C. Gowan, "The Use of the Adjective Check List in Screening Teaching Candidates," Journal of Educational Research, 49 (May, 1956), 663-672.

bases in the United States. Rated above the mean were those officers seen as "dominant," "formal," "sharp-witted," "sincere," "tactful," and "tolerant." Gough saw "tantalizing implications" in the two profiles above, but he declined to theorize about the "effective personality."<sup>11</sup>

Of the purposes and methods of applying adjectives and adjectival terms to personnel appraisal, Gough is specific in stating:

The goal of an adjective check list is to present a library of descriptive terms, covering the widest possible range of behavior, self-conceptions, and personal values. The list should be organized in such a way that it can be filled in by an S himself, or by an observer who records his reactions to an S. Adjectives themselves are the natural language of description, and are responded to easily and with approval by most persons. Furthermore, the use of checking technique, as opposed to Q-sorting, graphic ratings, etc., simplifies their use. Some analytical and statistical precision is lost in this way, but the gain in providing the respondent with a method of reporting his reactions, much as he would in ordinary discourse, or in an interview, seems to justify the check list procedure.

One might say that, as a general principle in ratings, it would appear sound to use techniques which minimize the concern of the rater with the means and paraphernalia of rating, and which allow him to concentrate maximally on the descriptive and evaluative task. A trained respondent, such as a psychologist, can usually adapt to almost any procedure of response recording, but for an instrument to have wide applicability and validity, response mechanics should be de-emphasized.

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<sup>11</sup>Gough, op. cit., p. 111.

Parenthetically, other response forms such as Q-sorts, distributed ratings, etc., have been tried with adjective lists in the assessment programs at Institute of Personality Assessment and Research (University of California, Berkeley). No superiorities sufficient to outweigh the virtues of the simple check list method have yet been discovered.<sup>12</sup>

In building a library of descriptive terms with which to begin converting the Guide, an extracted list of 145 adjectives and adjectival terms taken from abstracts of Adams', Gough's and Gowan's lists was duplicated and coupled with copies of the 1959 Guide and blank answer sheets. Sets of these papers were first presented to a regular meeting of Education/Educational Administration 604 Doctoral Seminar. These seventeen participants were most enduring and patient individuals. The group was requested to equate one or more sets of antonymous descriptive terms with each item-scale in the Guide in accordance with individual semantic interpretation. In addition, provision was verbalized to encourage the members, adding other opposite terms than those offered in the 145-term suggestive list. Two hours were required for this initial "conversion" session, during which time constructive and helpful criticisms were voiced by various seminar members.

The following week, the author was given an opportunity to solicit the aid of another "semantic laboratory"

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<sup>12</sup>Ibid., p. 109.

group, the off-campus Winter Quarter 1961 class of doctoral students enrolled in Educational Administration 598, conducted at East Tennessee State College, Johnson City, Tennessee. Also during that same week, responses were obtained from eight professors of education, a city school system superintendent, two high school principals, a public school guidance counselor, and four full-time public school teachers. In all, forty-two educators participated.

Acting upon the recommendations of many of the former participants, the present author enlisted the membership of the Departmental Seminar of Educational Administration and Supervision at a regular weekly session, for the purpose of a final semantic interpretation of the Guide. At that meeting, a recommended procedural change was made. The sixteen members simply were asked to think of two adjectives or descriptive terms which, in their minds, best connoted the intended thought in each item-scale of the Guide.

When finally tabulated in "scatter-plot" fashion, 232 different adjectival terms had been proposed as connotative equivalents for the Guide's item-scales. Somewhat dismayed but armed with a dictionary and a thesaurus, the present writer undertook the logical task of finding common denominators among the 232 terms toward reducing the number to a minimum. Item-scales A, C, D, H, I, K, L, O, and S were most troublesome due to their content of multiple



frames of reference. The remaining eleven item-scales were rather simple to handle. A summary of adjectival and descriptive equivalents for the twenty item-scales is presented in Table XII. The 232 descriptive terms had been consolidated into fifty terms. The reader may be interested in noting that some overlap, long suspected in the Guide, is confirmed. Table XIII sets forth the composite adjectival check list of fifty terms, an instrument hypothesized to be an equivalent form of the twenty item-scale Tennessee Rating Guide (March 24, 1961).

### C. HIERARCHICAL SYNDROMES

Excluding the five, deleted item-scales B, E, G, V, and Y, plus the (Z) "effective-ineffective" criterion, the reader is invited to examine the perceived hierarchical syndromes of effective administrative behavior in Figure 3, page 157. Substitution of adjectival and descriptive terms for the alphabetical code letters used in the analysis performed and shown in Figure 2, Chapter IV, was the simple procedure involved. Conversely, hierarchical syndromes of an ineffective administrator's behavior would employ the unfavorable opposite terms given in Table XII. In retrospect, inspection of Figure 2 and Figure 3 suggests that only two main and independent factors are at work in the Guide, namely, one of "Democratic-Integrity" and the other

TABLE XII  
SUMMARY OF DESCRIPTIVE TERMS FOR THE GUIDE'S  
TWENTY-TWO REVISED ITEM-SCALES

Alphabetical code letter	Item-scale	Descriptive term connotations	
A	1.	friendly_____	unfriendly
		sociable_____	shy
C	2.	considerate_____	inconsiderate
		democratic_____	autocratic
		stimulative_____	discouraging
D	3.	considerate_____	inconsiderate
		democratic_____	autocratic
F	4.	group-mindful_____	group-indiffer- ent
H	5.	creative_____	obstructive
		intelligent_____	unintelligent
		open-minded_____	closed-minded
		progressive_____	regressive
I	6.	intelligent_____	unintelligent
		perceptive_____	"blind"
J	7.	consistent_____	inconsistent
K	8.	careful_____	careless
		creative_____	obstructive
		open-minded_____	closed-minded
L	9.	honest_____	dishonest
		open-minded_____	closed-minded
M	10.	progressive_____	regressive
N	11.	objective_____	subjective

TABLE XII (continued)

Alphabetical code letter	Item-scale	Descriptive term connotations
O	12.	courageous _____ cowardly efficient _____ inefficient practical _____ impractical
P	13	stable _____ unstable
Q	14.	courageous _____ cowardly
R	15.	trustworthy _____ untrustworthy
S	16.	clear _____ confusing expressive _____ "blank"
T	17.	attentive _____ inattentive
U	18.	stimulative _____ discouraging
W	19.	well-informed _____ narrowly- informed
X	20.	public-active _____ public-passive

TABLE XIII

UNIVERSITY OF TENNESSEE RATING GUIDE, ADJECTIVAL CHECK LIST  
OF ADMINISTRATIVE BEHAVIOR (MARCH 24, 1961)

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(person being rated)				
courageous	:	:	:	cowardly
open-minded	:	:	:	closed-minded
creative	:	:	:	obstructive
stable	:	:	:	unstable
considerate	:	:	:	inconsiderate
efficient	:	:	:	inefficient
friendly	:	:	:	unfriendly
practical	:	:	:	impractical
intelligent	:	:	:	unintelligent
careful	:	:	:	careless
sociable	:	:	:	shy
consistent	:	:	:	inconsistent
trustworthy	:	:	:	untrustworthy
expressive	:	:	:	"blank"
clear	:	:	:	confusing
attentive	:	:	:	inattentive
well-informed	:	:	:	narrowly-informed
public-active	:	:	:	public-passive
progressive	:	:	:	regressive
objective	:	:	:	subjective
group-mindful	:	:	:	group-indifferent
stimulative	:	:	:	discouraging
democratic	:	:	:	autocratic
perceptive	:	:	:	"blind"
honest	:	:	:	dishonest

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<u>E</u>	attentive/careful/clear	creative/democratic/efficient	
	expressive/friendly/grdve	open-minded/perceptive/	
	practical/progressive/ptive	trustworthy/well-informed	
.40	considerate/consistent/	open-minded/honest/intelligent/	
	objective/open-minded/ptable	stimulative/trustworthy/	
	well-informed	brave/efficient/objective/	
		practical/progressive/stable	
.45	<u>careful/creative/friend</u>		
	<u>sociable/well-informed</u>		
.50			
	<u>considerate/consist</u>		
	<u>honest/intelligent</u>		
		attentive/progressive	
.55			
	attentive/consis		
.60	perceptive/	progressive/stable	
		pub	
.65		pressive/stimulative	
	careful/		
		gent/perceptive/stable	
.70	considerate/consistent/d	brave/efficient/objective/	
	intelligent/open-minded/	practical	
	consistent/friendly/so		
.75		formed	
		en-minded/progressive	
.80	considerate/democratic/		
	perceptive/stimulati	ageous/efficient/practical	
.85	consistent		

HIERARCHICAL SYNDROME  
 RECEIVED BEHAVIOR  
 AS PROVIDED (14, 1961)

"Achievement-Drive." Of the two arbitrarily named factors, the first is by far most dominant and would seem to compare somewhat with "consideration" in Ohio States LBDQ. The second factor, "drive," could be compared to the LBDQ factor termed "Initiating Structure." It will be recalled that four factors of typal sets had been identified by the linkage analysis shown in Figure 1 of Chapter IV. Apparently, a portion of Typal Set II tends to merge with Typal Set III at higher levels (i.e., lower r's) to become "achievement-drive."

#### D. SUMMARY

This chapter had been reserved primarily for the study's revision and conversion phases of the Tennessee Rating Guide. Bases for the two phases had been provided in the statistical analyses of Chapter IV. In addition to the two phases above, a third sub-topic concerned a meaningful explanation of the hierarchical syndrome analysis which had been performed at the close of Chapter IV, the discussion for which had necessarily been held in abeyance until item-scale statements could be reduced to single terms.

The twenty-five item-scale Guide was reduced to twenty item-scales, which were then reworded and given four-level continua with trichotomous adverbial quantifiers.

Adjectival terms were obtained for the twenty item-scales from forty-two professional educators. From a total of 232 different adjectival terms, fifty were extracted by definitional cross-comparison methods. The fifty terms were then arranged into a hypothesized equivalent form of the Guide. Perceived hierarchical syndromes of administrative behavior, in the form of the fifty descriptive terms, were portrayed in figurative form.

## CHAPTER VI

### RECAPITULATION

The central purpose of this study aimed at fivefold refinement of the Tennessee Rating Guide, an instrument developed at the University of Tennessee to serve the two functions of (a) appraising practicing educational administrators and (b) identifying potentially successful administrators. Fivefold refinement concerned attention to five flaws and limitations inherent in the Guide as revealed by seven years of previous research. Sharpening the rating form's discriminating power, making the instrument more wieldy to use, identifying the factorial elements among the item-scales, determining the possible hierarchical levels of perceived behavior, and reducing the semantic haze clouding many of the descriptive statements were the author's five objectives.

Research methods and techniques designed to accomplish the objectives described above included an extensive review and synthesis of related literature, IBM punched card entry and tabulation of raw score data, an R-M LGP-30 Digital Computer programming for a three hundred coefficient intercorrelational matrix, a point-biserial item analysis with significance tests, McQuitty linkage and hierarchical syndrome analyses, and jury consensus for the instrument's



revision and subsequent conversion into an equivalent adjective check list, modeled over Osgood's Semantic Differential. The data used were the original raw scores used in three previous master's theses. The subjects had been thirty-eight administrators who had been appraised on behavioral characteristics relating to the Tennessee Rating Guide's twenty-five item-scales, 1959 Form (Appendix B).

#### A. FINDINGS: PRESENT STUDY

The findings as they relate to the single hypothesis are as follows:

Hypothesis: There existed no more than a few very important typal sets and syndromes of administrative behavior as measured by the Tennessee Rating Guide and perceived by raters.

The hypothesis was substantiated. The linkage analysis yielded only four typal sets, which are analogous to factors. The first typal set and oblique linkages suggested the title of "Kinetic Philosophy," since the clustered item-scales deal with an administrator's operative point of view. Here, the administrator as a person is involved. The effective/ineffective judgmental criterion of perceived competence focused most heavily on the first perceived cluster. Descriptive dyadic measures appraised an

administrator as being consistent or inconsistent, honest or dishonest, open-minded or closed-minded, trustworthy or untrustworthy, careful or careless, friendly or unfriendly, sociable or shy, creative or obstructive, considerate or inconsiderate, democratic or autocratic, well-informed or narrowly-informed, and public-active or public-passive.

The second typal set clustered item-scales suggestive of the name "Administrative Competence." Stimulative or discouraging, intelligent or unintelligent, perceptive or "blind," clear or confusing, stable or unstable, attentive or inattentive, expressive or "blank," progressive or regressive, and objective or subjective were the various dyadic terms which described the set.

The third typal set structure was termed "Empathetic-Ethical-Drive," having item-scales which connoted adjectival sets of courageous or cowardly, efficient or inefficient, practical or impractical, and objective or subjective behaviors.

The fourth set was a single orthogonal pair which prompted the name "Group Decision Skill." Group-mindful or group-indifferent, creative or obstructive, intelligent or unintelligent, open-minded or closed-minded, and progressive or regressive were terms perceived to discriminate between effectiveness and ineffectiveness for this dimension.

The first and second typal sets accounted for a

tetrad consuming more than 80 per cent of the total Guide. The hierarchical syndrome analysis revealed that those first two sets merged at higher levels and, along with the later-arriving fourth set, suggested being named "Democratic-Integrity." The third typal set structure formed a triad with part of the second set at a higher-order level to prompt being dubbed "Achievement-Drive." Summarizing the results of the hierarchical syndrome analysis, only two general and apparently independent factored syndromes of perceived administrative behavior were measured with the Guide.

## B. FINDINGS: PREVIOUS RESEARCH

Chapters II and III presented an extensive review of previous and related literature, a synthesis of which resulted in the following findings:

1. No one can avoid being rated. An administrator's colleagues, superiors, and subordinates constantly judge him. The only real choice involved is whether or not the administrator desires to know how others perceive him. His open-mindedness or closed-mindedness to such cybernetics appears to be an important element in his adjudged competence and effectiveness.

2. In general, superiors are rated above the mean by subordinates, if they are fair, professionally competent,

and open-minded. When superiors rate subordinates, the latter fare rather well if they are ambitious and motivated to achieve, exhibit self-discipline and direction, and appear to be creative yet conform to the group. When peers rate peers, dimensions preferred are esprit de corps, self-confidence and "drive," earned leadership and aptitude.

3. Similarities between educational leaders and business executives appear to be much greater than the dissimilarities. Public approval seemed to be more important to business executives than academic administrators.

4. For both educational administrators and teachers, the two most important factors in perceived competence and effectiveness concerned (a) creation and maintenance of a democratic atmosphere and (b) skillful communication.

5. The weight of evidence dealing with leadership identification and selection favors peer appraisal techniques. Ratings and nominations appear to be both more reliable and more valid.

6. Observers are vulnerable to several rating errors which can be countered by careful construction of scales, limiting items to overt behavior, training of raters, and averaging several ratings by different individuals.

7. Personality assessment should be left to trained clinicians, since, at best, such appraisal can only be

inferred from observation of overt performance.

8. A descriptive rating scale used in conjunction with an appropriate adjective check list appears to be the most simple and versatile combination of personnel measurement devices which offer acceptable reliability yields. Even-numbered continua arrangements promise more reliability than do odd-numbered continua.

9. A person's "drive" appears to be a valid and predictive criterion of administrative potential. Second only to recorded past achievement data, peer appraisal methods are possibly the most available means to such measurement.

10. Empathy, as a factor of administrative effectiveness, appears to be both confirmed and worthy of further study.

11. Leadership and/or administrative effectiveness are not single characteristics or traits, but are instead dynamic combinations of many characteristics.

12. Most investigators have conceded that to be a successful administrator requires mental aptitudes above the mean, broad interests, and an acceptably pleasing personality. In doing a better-than-chance job of predicting administrative potentiality, standardized tests such as the Miller's Analogies and Contemporary Affairs have done a fair job in their two respective areas. In the third consideration, personality assessment, paper and

pencil tests have left much to be desired. To restate a previously mentioned finding, personality at best can only be inferred from observed overt behavior. Hence, rating scales and related instruments which are properly applied offer the most available avenue to such inference.

13. The literature suggested a summary of rather invariant and stable factors on which administrators are judged, namely,

___	___	___	analytical judgment
___	___	___	planning ability
___	___	___	empathetic consideration for others
___	___	___	leadership "drive"
___	___	___	articulation/communication
___	___	___	responsibility acceptance
___	___	___	originality/synthesizing ability
___	___	___	follow-through skills
___	___	___	open-mindedness
___	___	___	high energy level
___	___	___	stamina of emotions and physique
___	___	___	acceptance of personal sacrifices
___	___	___	willingness in risk-taking

14. Considering the stated content of the Tennessee Rating Guide and the findings of the present investigation which emerged from the various analyses, the Guide yielded dimensions and elements remarkably similar to those derived from many other independent researches and writings.

### C. CONCLUSIONS

Certain conclusions were reached as a result of this study. The conclusions were:

1. The Tennessee Rating Guide in its 1959 original

form was indeed a valid instrument with which to appraise practicing administrators and to help identify the potentially effective administrators. The Guide's validity apparently had been obscured by its low discriminating indices in trichotomous tests (low-average-high designs). Contributory variables in this past respect were identified as the use of odd-numbered continua and the presence of semantic haze within the twenty-five item-scales. Also, the five item-scales which were deleted in the present thesis had demonstrated very low discriminating indices and third-order linkages to the other twenty item-scales; hence, the five deleted considerations could possibly have been contaminating the total mean ratings in the previous studies which applied the Guide.

2. The value of standardized tests as predictors of effectiveness in screening educational administrators has been rather tenuous. Only two tests have reappeared in the literature with any encouraging frequency. The Miller's Analogies and Contemporary Affairs tests have shown limited promise. Interestingly enough, both areas of the respective elements are acknowledged in the Guide; it may be hypothesized that efficient application of the Guide would obviate even those few tests which have shown a linear relationship with adjudged effectiveness. Therefore, the merits offered by any further pursuit of standardized tests as predictors

or norms of criteria are viewed with reservations if not skepticism.

3. Since this investigation resulted in a reduced Tennessee Rating Guide of twenty item-scales and an adjective check list conversion form, a two-phase research design should be implemented. First, a study should be made to determine the validity coefficients for each of the twenty revised item-scales, and then for the entire Guide as a whole instrument. The criterion, of course, would be the immediate criterion of over-all effectiveness as provided by the inclusion of item-scale number 21. Second, the correlation of equivalence between the revised Guide (descriptive rating scale form) and the adjective check list (twenty-five pairs of polarized terms as dyadic measures) should be determined. Simple correlation of mean scores should suffice for the second problem, with a subject sample of twenty or thirty administrators.

4. The evidence on rating theory and research supported the following conclusions pertaining to the Guide's utility:

- a. For purposes of identification and selection, peer ratings should be sought.
- b. Five or more ratings by different appraisers should be obtained on an individual, with the multiple scores being averaged.



- c. Acquaintanceship of rater with ratee should be no less than six months and preferably longer.
- d. For best results, the adjective check list should be used with but before the descriptive rating form of the Guide; raters should be requested to fill in the adjective check list prior to applying the descriptive rating form to facilitate recall of perceptual referents and thus afford increased reliability.
- e. For the purpose of appraising practicing administrators in their organizational settings, ratings should be obtained from all three levels, namely, superiors, peers, and subordinates, with the ratings being averaged.
- f. Considering the Guide's previous negatively skewed curve of norms, i.e., four and higher for mean scores of effective administrators, the new four-level continua should be assigned numerical values of two, three, four and five respectively for "low," "low-medium," "medium-high," and "high" ratings.

6. Finally, this study was in no sense a documentary paradigm of all the answers to appraisal and selection problems in educational administration. It does not purport to describe the complete and ideal administrator, nor does it

prescribe formulae by which administrators could overcome observed disparities once they had expressed the desire for feedback information. The study and the rating instrument involved do, however, provide a means by which appraisal and selection may be sharpened.

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## APPENDIXES

APPENDIX A  
1952 Tennessee Rating Guide  
(Original)

UNIVERSITY OF TENNESSEE RATING GUIDE  
Characteristics of School Administrators  
First Edition, 1952

I. Democratic Operation

A. How does he relate to others?

- ☐ 1. Seldom associates with others.
- ☐ 2. Forms few close friendships and tends to neglect others.
- ☐ 3. Tends to make friends with some.
- ☐ 4. Quiet and less overt in expressing affection for others.
- ☐ 5. Steadily warm, appealing in relationship with others.

Remarks:

B. Does he value the opinion of others?

- ☐ 1. Tends to ignore the viewpoints of others.
- ☐ 2. Respects opinion if they agree with his own; plays down opinions that conflict with his.
- ☐ 3. Values opinion of persons considered intellectual superiors or peers; highly selective in considering opinions.
- ☐ 4. Usually seeks the opinion of others on problems; usually examines ideas fairly; and is usually willing to alter personal opinions when idea has merit.
- ☐ 5. Consistently seeks the opinion of others on problems; examines all ideas fairly; and is willing to alter personal opinions when idea has merit.

Remarks:

C. Is he skillful in developing an organization in which each can do his best?

- ☐ 1. Each person clearly understands his responsibility in relation to others; little confusion exists.

- \_\_\_2. Most persons clearly understand their responsibility in relation to others; some confusion exists which is generally recognized and remedied.
- \_\_\_3. Most persons clearly understand their responsibility in relation to others; some confusion exists.
- \_\_\_4. Most persons understand their responsibility in relation to others; some confusion exists which is not recognized.
- \_\_\_5. Few understand their proper place in relation to others; considerable unrecognized confusion exists.

Remarks:

D. Is he skillful in getting policies formulated co-operatively?

- \_\_\_1. Involves lay public, staff members, and students in major policy decisions.
- \_\_\_2. Involves lay public, staff members, and students in policy formulation; sometimes neglects machinery for full group participation.
- \_\_\_3. Involves only key people in policy formulation; sometimes neglects machinery for group participation.
- \_\_\_4. Discusses policies with associates, but decisions are usually made prior to the discussion.
- \_\_\_5. Usually makes decisions on policy matters himself; infrequently discusses decisions with associates.

Remarks:

E. Is he skillful in continuous implementation of policies?

- \_\_\_1. Infrequently fails to act on new policies; operates successfully on older policies.
- \_\_\_2. Slow to move on new policy; operates satisfactorily on old policies.
- \_\_\_3. Usually acts to carry out new policies; operates well on old policies.
- \_\_\_4. Generally acts quickly to carry out policy; is sometimes hesitant to revise procedure with respect to new situation.
- \_\_\_5. Acts quickly to carry out policy; constantly revises procedures as new situations arise.

Remarks:

F. Does he help the group to arrive at a true consensus?

- \_\_\_ 1. Disregards group suggestions in conflict with his own; acts when majority accepts his view; personally makes major decisions.
- \_\_\_ 2. Operates on majority opinion; often disregards minority viewpoints; seldom concerned with true consensus.
- \_\_\_ 3. Sometimes operates on basis of majority decisions; not too concerned with true consensus; sympathetic with minority viewpoints.
- \_\_\_ 4. Strives for consensus; seldom tries to force rapid decisions; skillful in getting group to recognize points of agreement.
- \_\_\_ 5. Continually strives for consensus; never tries to force rapid decisions; very skillful in getting group to recognize points of agreement.

Remarks:

G. Does he recognize that democratic means are essential to attainment of democratic ends?

- \_\_\_ 1. Gives equal attention to means and end; action indicates belief that the means used determine the end.
- \_\_\_ 2. Change and growth in participants considered important; the ends are not clearly determined but are considered more important.
- \_\_\_ 3. Ends are sometimes predetermined but effort is made to use democratic methods to achieve them.
- \_\_\_ 4. Recognizes that means are important but seldom lets them interfere with the end when a choice is involved.
- \_\_\_ 5. His action indicates that accomplishment of a well defined goal is of major importance; means of reaching the goal are unimportant.

Remarks:



## II. Intelligent Operation

A. Does he give sufficient consideration to data even when they challenge a belief?

- \_\_\_ 1. Ignores new facts that challenge his position; acts in terms of previous beliefs.
- \_\_\_ 2. Uses data which support his position; insecure when data challenges his beliefs; avoids investigations which would weaken his position or challenge beliefs.
- \_\_\_ 3. Will sometimes consider new data if made available to him and will sometimes act in terms of the data.
- \_\_\_ 4. Sometimes seeks new data on problems; sometimes acts in terms of data instead of previous beliefs.
- \_\_\_ 5. Consistently seeks new data on problems; acts in terms of data instead of previous beliefs.

Remarks:

B. Does he recognize and define problems?

- \_\_\_ 1. Is unaware that problems exist or cannot analyze problem when recognized; treats symptoms as problems.
- \_\_\_ 2. Disturbed by any usual situation; cannot understand casual relationships; permits prejudice and/or emotions to influence problem analysis.
- \_\_\_ 3. Usually recognizes problems but has some difficulty in analyzing and defining them.
- \_\_\_ 4. Usually recognizes relationships; has ability to detect problems; skill in analyzing a problem.
- \_\_\_ 5. Consistently recognizes cause and effect; grasps problems quickly; can analyze problem clearly.

Remarks:

C. Is he logical in argument?

- \_\_\_ 1. Argues in terms of personal likes and dislikes; continually contradicts himself.
- \_\_\_ 2. Emotionally inclined; has some ability to carry on logical discussion but can be easily side-tracked.
- \_\_\_ 3. Often uncertain of position; sometimes not consistent in argument.

- \_\_\_4. Can analyze a proposition and see the relationships but sometimes has difficulty in remaining consistent.
- \_\_\_5. Analyzes underlying assumptions; sees points in proper relationship; can follow point to ultimate conclusion.

Remarks:

D. Does he experiment and test results in terms of group objectives?

- \_\_\_1. Accepts objectives as stated; experiments or test results not usually related to group goals.
- \_\_\_2. Seldom experiments in terms of group goals. Experiments are usually in terms of statistical and mechanical data.
- \_\_\_3. Does some experimentation in terms of group goals; some experimentation purely mechanical and unrelated.
- \_\_\_4. Most experiments are purposeful in terms of group goals; carries on considerable experimentation.
- \_\_\_5. Has well determined group goals; develops related, meaningful, and purposeful experiments concerning goals.

Remarks:

E. Is he ultimately concerned with the welfare of people in the selection of experiments and use of their outcomes?

- \_\_\_1. Most experimentation is concerned with the welfare of people.
- \_\_\_2. Usually experimentation is concerned with the welfare of people.
- \_\_\_3. Some experimentation is carried out that is concerned with welfare of people; some unrelated experimentation.
- \_\_\_4. Sees little relationship between welfare of people and experimentation.
- \_\_\_5. Does not relate experiments to the welfare of the people and/or sees little value in experimenting.

Remarks:

F. Does he consistently seek to understand his own bias and limitations?

- ☐ 1. Consistently examines positions with others; recognizes that all persons have biases and limitations.
- ☐ 2. Usually examines position with others; recognizes that all persons have biases and limitations.
- ☐ 3. Usually examines position with others; he recognizes that all persons have biases but fails to see his own on some occasions.
- ☐ 4. Biases color his evaluation of positions of others; does not often examine his position with others.
- ☐ 5. Has strong biases; refuses to examine position; not aware of his own limitations.

Remarks:

G. How intelligently does he manage his own personal affairs?

- ☐ 1. Manages personal finances well; stable moral codes; wholesome family relationships; others recognize "good judgment" on personal matters.
- ☐ 2. Is recognized as a man of "good judgment" in personal affairs; above average family relationships, financial management and other personal community obligations.
- ☐ 3. Sometimes fails to manage personal finances well; good family relationships; average of community on management of personal affairs.
- ☐ 4. Makes many errors in personal finances; family relationships and other operations as a citizen in community are sometimes questionable.
- ☐ 5. Considered a poor financial risk; impractical or "bookish"; many people consider him a "joke" in management of his personal affairs.

Remarks:

H. Does he profit by previous mistakes?

- \_\_\_ 1. Makes the same mistake frequently and will seldom admit he has made mistakes; shows little improvement.
- \_\_\_ 2. Has difficulty recognizing mistakes; symptoms of same problems repeat from year to year; hesitates to question own action; shows some general improvement.
- \_\_\_ 3. Usually recognizes mistakes but sometimes tries to justify them.
- \_\_\_ 4. Usually recognizes mistakes and rarely repeats a mistake recognized.
- \_\_\_ 5. Recognizes mistakes and never repeats the same mistakes.

Remarks:

I. Does he have the ability to size up people in relation to jobs?

- \_\_\_ 1. Little ability to analyze the important characteristics of people; seldom considers these characteristics in relation to the job.
- \_\_\_ 2. Often fails to see important characteristics of people in relation to the job; makes personnel selections which sometimes result in inefficiency.
- \_\_\_ 3. Has some ability to perceive the basic potentialities of people in relation to job; makes some mistakes.
- \_\_\_ 4. Able to perceive the basic potentialities of people but occasionally does not relate this to the job.
- \_\_\_ 5. Able to perceive basic qualities or potentialities in relation to the requirements of the job.

Remarks:

III. Condition of Health

A. His physical condition:

- \_\_\_ 1. Frequently lacking in physical drive; suffers chronic ailment; is in poor physical condition for age.
- \_\_\_ 2. Does not always have proper energy to do the job; sometimes has illnesses which keep him from his job; sometimes appears to be in poor physical condition.

- \_\_\_3. Has necessary strength and vitality; sometimes misses work because of illness; not always in the best physical condition.
- \_\_\_4. Possesses strength and energy necessary for job; rarely misses work because of illness; appears to be properly conditioned and balanced physically.
- \_\_\_5. Has abundance of energy; rarely misses work because of illness; no obvious physical handicap.

Remarks:

B. His emotional condition: How well is he adjusted to others?

- \_\_\_1. Frequently in difficulty with associates; moody; little control of emotions; cannot maintain personal friendships very long.
- \_\_\_2. Sometimes irritates associates; sometimes has difficulty controlling emotions; reactions sometimes not predictable.
- \_\_\_3. Usually gets along well with associates; on some occasions lets emotions get out of control; reactions usually predictable.
- \_\_\_4. Gets along well with most associates; rarely loses emotional control; emotionally stable.
- \_\_\_5. Gets along well with associates; doesn't lose emotional control; not upset by unusual conditions.

Remarks:

C. Is he responsible but not overburdened with responsibility?

- \_\_\_1. Accepts responsibilities without undue worry or indications of emotional tensions.
- \_\_\_2. Accepts responsibility but sometimes permits responsibility to worry him.
- \_\_\_3. Accepts responsibilities that sometimes he is unable to carry out; sometimes lets work interfere with proper recreation and home life.
- \_\_\_4. Sometimes avoids responsibility or becomes overburdened with responsibility; often builds up emotional stress because of responsibility.
- \_\_\_5. Avoids responsibility; or he assumes responsibility to the degree that he is in a continual state of tensions (worries a great deal).

Remarks:

D. How well does he use recreational devices?

- ☐ 1. Has little apparent recreational interests; seldom sheds burdens of professional activities; continually thinks and talks shop
- ☐ 2. Has minor recreational interests but tends to let work responsibility crowd recreation out of program.
- ☐ 3. Engages in recreational activities when urged by friends but does not consciously plan for recreation.
- ☐ 4. Has a number of recreational interests; usually manages to get some recreation in his program.
- ☐ 5. Has widespread recreational interests; maintains a wholesome balance with professional activities.

Remarks:

IV. Ethical and Moral Strength

A. Does he have the courage of his convictions?

- ☐ 1. Does not manifest strong convictions or is afraid to express convictions.
- ☐ 2. Has some definite convictions but usually follows the most popular viewpoint.
- ☐ 3. Has fairly strong convictions (Not always sure of belief) but hesitant to express views.
- ☐ 4. Has strong convictions but doesn't always express his views.
- ☐ 5. Has strong convictions; defends and expresses convictions; not dogmatic but places principle above personal welfare.

Remarks:

B. Does he deal honestly in personal and professional matters?

- ☐ 1. Has defined honesty; consistently honest in personal and professional matters; associates see him as being consistently honest.

- \_\_\_2. Honest in personal affairs but does not see professional honesty in the same light; motivations are honest but actions not entirely consistent.
- \_\_\_3. Strives for honesty but has conflicts when personal welfare is at stake; does not always see personal and professional honesty as the same thing.
- \_\_\_4. Gives lip service to honesty but sometimes fails to manifest honesty when it is not expedient to do so.
- \_\_\_5. Little regard for honesty; associates question his motives.

Remarks:

C. Does he deal in terms of central ideas and beliefs rather than people?

- \_\_\_1. Guided by the personal factor and tends to neglect central ideas and beliefs.
- \_\_\_2. Believes people are more important than central ideas and beliefs; tries to reconcile the two but if forced to choice will decide on basis of personal factor.
- \_\_\_3. Has central ideas and beliefs but will sometimes sacrifice them in interest of the welfare of people he likes and admires.
- \_\_\_4. Is guided by central ideas and beliefs but personal factors influence his decisions.
- \_\_\_5. Follows central ideas and beliefs in action; respects people but not to the extent that he places them above principle.

Remarks:

D. Is he intellectually honest?

- \_\_\_1. Intellectual honesty is not important to his thinking.
- \_\_\_2. Does not realize importance of intellectual honesty.
- \_\_\_3. Is struggling with a concept of intellectual honesty; tries to act in terms of this concept.
- \_\_\_4. Is intellectually honest but ideas sometimes not well thought out.

- \_\_\_5. Consistently acts in terms of what he believes is right; has well thought out ideas of what makes up intellectual honesty.

Remarks:

V. Adequacy of Communication

A. Can he read well?

- \_\_\_1. Reading speed and interpretation considerably below average of college graduates.  
\_\_\_2. Reading speed and interpretation slightly below average of college graduates.  
\_\_\_3. Reading speed and interpretation about average of college graduates.  
\_\_\_4. Reading speed and interpretation above average of college graduates.  
\_\_\_5. Reading speed and interpretation well above average (exceptional) of college graduates.

Remarks:

B. Can he write well?

- \_\_\_1. Excellent ability to organize and portray thoughts through written expression.  
\_\_\_2. Above average (of college graduates) ability to organize and portray thoughts through written expression  
\_\_\_3. About average (of college graduates) ability to portray thoughts through written expression.  
\_\_\_4. Below average (of college graduates) ability to portray thoughts through written expression.  
\_\_\_5. Poor (far below average) ability to portray thoughts through written expression.

Remarks:

C. Does he speak well?

- \_\_\_1. Excellent ability to express himself orally; pronunciation excellent; decisive in organizing and building on central ideas.  
\_\_\_2. Above average ability to express himself orally; pronunciation good; is decisive in portraying ideas.



- \_\_\_3. Average ability to express himself orally; pronunciation acceptable to groups; is generally decisive in making points.
- \_\_\_4. Is awkward at times in organizing and portraying central ideas; some hesitation and sometimes unclear pronunciation.
- \_\_\_5. Halting and hesitant in presenting ideas; sometimes unclear pronunciation; and seldom clinches vital ideas.

Remarks:

D. How well does he listen to others?

- \_\_\_1. Always intent on understanding points others make; doesn't monopolize conversation; and seeks clarification of ideas presented by others.
- \_\_\_2. Generally intent on understanding points other made; doesn't monopolize conversation; shows interest in what others have to say.
- \_\_\_3. Generally listens to what others say but is sometimes unable to follow certain ideas; doesn't always seek clarification of points.
- \_\_\_4. Sometimes does not listen attentively to what people say; unable to recall vital points made by speaker; at times has a tendency to talk too much.
- \_\_\_5. Is not attentive when others talk; cannot recall points made; disrupts conversation with irrelevant ideas.

Remarks:

E. Can he communicate well with laymen?

- \_\_\_1. Little ability to communicate with lay groups; is often misunderstood and misquoted; tries to clarify points to lay people but is sometimes accused of statements which he has not intended to make.
- \_\_\_2. Sometimes misunderstood by lay groups because of technical vocabulary, rambling organization, and misunderstanding of lay language.
- \_\_\_3. Occasionally uses technical expressions which confuse lay groups; usually makes his ideas understandable.
- \_\_\_4. Adjusts communication to terms understood by each lay group; laymen usually understand his position.

- \_\_\_5. Skillfully adjusts communication to that of each particular lay group; makes ideas clear to lay persons; can and does use lay language.

Remarks:

F. Can he interest people in examination of ideas?

- \_\_\_1. Has unusual ability to interest people in fundamental problems; stimulates people to seek solutions through critical analysis of problems.
- \_\_\_2. Has ability to interest people in fundamental problems; can usually stimulate them to seek solutions through critical analysis of problems.
- \_\_\_3. Has some ability to interest people in fundamental problems; some skill in stimulating them to seek solutions through critical analysis of problems.
- \_\_\_4. Not skillful in interesting people in the critical analysis of problems.
- \_\_\_5. Has little ability in interesting people in critical analysis of problems; rarely stimulates people to examine ideas.

Remarks:

G. How skillful is he leading discussions?

- \_\_\_1. Has trouble leading group discussions; sometimes loses the trend of central ideas; does not always grasp group problems; lets group drag and does not always help reach conclusions.
- \_\_\_2. Sometimes lacks ability to lead certain group discussions; sometimes not skillful in stimulating thought; sometimes fails to secure full participation; sometimes closes meetings without having reached conclusions.
- \_\_\_3. Has ability to lead group discussions; secures good participation; discerns central trends of ideas; some skill in getting agreement.
- \_\_\_4. Has superior ability to lead group discussions; secures participation of most members; discerns trend of central ideas; guides group toward agreement.

- \_\_\_5. Has outstanding ability to lead group discussions; secures participation of members; discerns central trend of ideas; guides group toward agreement.

Remarks:

## VI. Operation as a Citizen

### A. How well can he help people interpret the significance of what is happening today?

- \_\_\_1. Is not informed and not interested in current affairs; infrequently discusses current big news items.
- \_\_\_2. Is not too well informed on current affairs; discusses in terms of stock phrases and ideas.
- \_\_\_3. Is informed on current affairs but occasionally influenced by prejudice in discussing them.
- \_\_\_4. Is informed on current affairs and can intelligently discuss them.
- \_\_\_5. Is well informed on current affairs; intelligently discusses major social, economic, and political issues with people.

Remarks:

### B. How well does he cooperate with non-educational groups?

- \_\_\_1. Maintains excellent working relationship with non-educational groups; is active member of civic community groups.
- \_\_\_2. Attempts to work with non-educational groups; is member of civic community groups.
- \_\_\_3. Usually cooperates with non-educational groups but does not always appear to be interested in their problems.
- \_\_\_4. Says he would like to work with non-educational groups, but not willing or able to spare time.
- \_\_\_5. Does not appear interested in non-educational groups; infrequent contact with other groups.

Remarks:

C. Does he accept a proper share of responsibility for community betterment on the local and other levels?

- \_\_\_ 1. Active participation in community affairs; maintaining good balance between own work and community affairs; has ready recollection and knowledge of community problems.
- \_\_\_ 2. Too active in community affairs; spreads work too thin to be effective; easily recalls and discusses current community problems.
- \_\_\_ 3. Accepts some responsibility but feels professional work largely meets this obligation.
- \_\_\_ 4. Participates in community affairs when some pressure is felt; not too interested in existing community problems.
- \_\_\_ 5. Takes little part in community affairs; little interest in community problems.

Remarks:

D. Does he help to bring about a spirit of cooperation despite his personal views after a group has made a decision?

- \_\_\_ 1. Sometimes sabotages decisions with which he is not in complete agreement.
- \_\_\_ 2. Is indifferent toward decision; tends to ignore group if views were not accepted.
- \_\_\_ 3. Tries to cooperate but sometimes criticizes agreement against his personal views.
- \_\_\_ 4. Cooperative, but does not always hide his personal wishes.
- \_\_\_ 5. Believes a democratic group decision is a contract to which he is obligated.

Remarks:

E. Does he help to develop a respect for rights of minorities?

- \_\_\_ 1. Points out minority view and insists that it be considered.
- \_\_\_ 2. Recognizes minority view and is willing to give some consideration to it.
- \_\_\_ 3. Believes that minority view should be recognized, but doesn't always suggest consideration of it.
- \_\_\_ 4. Gives some recognition to minority rights, but actions show little concern for them.
- \_\_\_ 5. Tends to ignore rights of minority groups.

Remarks:

**APPENDIX B**

**1959 Tennessee Rating Guide**

UNIVERSITY OF TENNESSEE RATING GUIDE  
Characteristics of School Administrators

As Revised January 8, 1959

I. Interpersonal Relations

A. How does he relate to others?

- ☐ 1. Tends to be a lone wolf
- ☐ 2. Has a few friends but tends to ignore others
- ☐ 3. Friendly when approached by others
- ☐ 4. Popular; has many casual acquaintances
- ☐ 5. Steadily warm and appealing in relationship with others

B. Does he utilize the opinion of others?

- ☐ 1. Generally ignores the viewpoints of others
- ☐ 2. Uses opinions if they agree with his own
- ☐ 3. Values opinions of those who volunteer suggestions but fails to seek opinions of others
- ☐ 4. Highly selective in utilizing opinions; sometimes values ideas that differ from his own
- ☐ 5. Consistently seeks and considers the opinions of others

C. Is he skillful in developing an organization in which each can do his best?

- ☐ 1. Most people with whom he works have important responsibilities in which they are genuinely interested
- ☐ 2. Sometimes delegates responsibilities with regard to special interests and abilities of associates
- ☐ 3. Delegates tasks largely mechanically; fails to recognize special abilities of others
- ☐ 4. Plays favorites in delegating responsibility
- ☐ 5. Runs the whole show himself

D. Is he skillful in getting policies formulated co-operatively?

- ☐ 1. Involves general public, staff members, and students in major policy formulation

- ☐ 2. Attempts to involve general public, staff members, and students in policy formulation but has difficulty in setting up necessary machinery
- ☐ 3. Involves only key people in policy formulation
- ☐ 4. Discusses policies with others, but decisions are usually made prior to the discussion
- ☐ 5. Formulates policies himself; rarely discusses them with others

E. Is he skillful in continuous implementation of policies?

- ☐ 1. Tends to ignore or defer action on policies
- ☐ 2. Vacillates in implementing policies
- ☐ 3. Tends to force policies without sufficient planning
- ☐ 4. Cautious in effecting policies
- ☐ 5. Moves surely and judiciously in effecting policies

F. Does he help the group arrive at a working consensus?

- ☐ 1. Contributes little to help group arrive at a working consensus
- ☐ 2. Tries to force group to quick agreements without really considering problems
- ☐ 3. Tends to force action without careful group consideration
- ☐ 4. Strives for consensus but sometimes encourages group action on insufficient data
- ☐ 5. Continually strives for careful group problem analysis; helps group recognize points of agreement.

G. Does he believe that democratic processes are essential?

- ☐ 1. Urges the use of processes consistent with best democratic practices
- ☐ 2. Is cognizant of responsibility to use democratic procedures; is sometimes unsure of how to employ them
- ☐ 3. Attempts to use democratic processes; however, usually resorts to expediency in pressing situations
- ☐ 4. Gives lip service to democratic processes which are not evident in his behavior.

- \_\_\_5. Uses any expedient method available to attain a predetermined end

## II. Intelligent Operation

### A. Does he give sufficient consideration to new data in problem solving?

- \_\_\_1. Disregards new data that challenge the status quo  
\_\_\_2. Uses new data only when they support his position  
\_\_\_3. Will consider new data when presented to him  
\_\_\_4. Seeks new data along lines of special interests  
\_\_\_5. Consistently seeks and employs new data

### B. Does he recognize and define problems?

- \_\_\_1. Tends not to recognize the existence of problems  
\_\_\_2. Tends to consider symptoms instead of problems  
\_\_\_3. Sometimes confuses symptoms with problems in his efforts to improve  
\_\_\_4. Recognizes problems but has difficulty in analyzing them  
\_\_\_5. Recognizes and analyzes problems

### C. Is he consistent in terms of his basic assumptions?

- \_\_\_1. Supports conflicting ideas; action characterized by inconsistency  
\_\_\_2. Has a tendency to discuss important problems in terms of his likes and dislikes  
\_\_\_3. Frequently uncertain of his position on controversial subjects  
\_\_\_4. Is certain of his position and consistent in his behavior in areas which he considers important  
\_\_\_5. Is dependable and predictable in word and action

### D. Does he experiment?

- \_\_\_1. Tends to try out new ideas after careful study and follows through on basis of experimental evidence  
\_\_\_2. Undertakes various new projects for improvement but fails to interpret their significance  
\_\_\_3. May be premature in trying out ideas for improvement; fails to fully incorporate accepted principles of experimentation  
\_\_\_4. Action tends to be based on subjective evidence



- \_\_\_5. Tends to operate within traditional practices or on the basis of hunches

E. Does he try to recognize and deal with his own biases?

- \_\_\_1. Consistently examines his own position and attempts to understand the position of others  
\_\_\_2. Tends to evaluate his position but will resort to biases under pressure  
\_\_\_3. Feels uneasy about his position at times; can be stimulated to examine his own opinions  
\_\_\_4. Assumes that his position is generally right; does not know how to identify his own biases  
\_\_\_5. Refuses to examine his position

F. Does he appear to have profited by previous experience?

- \_\_\_1. Frequently makes the same mistake but seldom admits it  
\_\_\_2. Usually attempts to justify mistakes  
\_\_\_3. Recognizes that some mistakes are inevitable but has difficulty in making readjustments  
\_\_\_4. Makes some improvement as a result of past mistakes  
\_\_\_5. Recognizes his mistakes and seeks to avoid repeating them

G. Does he have the ability to size up people?

- \_\_\_1. Judges potentialities of people in terms of their race, religion, nationality, or other such concepts  
\_\_\_2. Makes judgments about people in terms of hunches  
\_\_\_3. Tends to base judgments of people on past experiences without rethinking in terms of present situations  
\_\_\_4. Judges people on basis of personal experiences, using additional resources when problem situations arise  
\_\_\_5. Consciously endeavors to understand the basic potentialities of each person through objective procedures

#### H. Does he accept responsibility wisely?

- ☐ 1. Budgets the assuming of responsibilities wisely in terms of own limitations in present situation
- ☐ 2. Carries out pressing responsibilities well but neglects less urgent duties
- ☐ 3. Concentrates on school routing; supports non-school endeavors on a highly selective basis
- ☐ 4. Attends strictly to school routine without participating in community enterprises
- ☐ 5. Accepts too many responsibilities or refuses to assume responsibilities normally expected of him

### III. Emotional Stability

#### A. Is he emotionally stable?

- ☐ 1. Tends to be upset by everyday occurrences and keeps staff in continuous uproar
- ☐ 2. Attempts to exemplify outward calmness but explodes about trivial matters
- ☐ 3. Is upset in novel situations and has a tendency to upset others
- ☐ 4. Meets novel situations well but lets some problems involve him in distracting entanglements
- ☐ 5. Appears to meet crises with a contagious calmness; others feel at ease in his presence

### IV. Ethical and Moral Strength

#### A. Does he have the courage of his convictions?

- ☐ 1. Tends to weasel out of situations
- ☐ 2. Usually follows most popular viewpoint
- ☐ 3. Has a tendency to accept some viewpoints which he realizes are in conflict with his own
- ☐ 4. Has well-tempered convictions which he tries to follow but is sometimes unsure of their soundness
- ☐ 5. Places principle above his own personal advantage.

#### B. Does he exhibit integrity in dealing with others?

- ☐ 1. Considers agreements with others as promissory notes to which he is committed

- \_\_\_ 2. Exhibits integrity in important agreements, but in less important agreements is somewhat careless
- \_\_\_ 3. Tends to rationalize inadvertent breaches of agreements
- \_\_\_ 4. Through indirect methods leads people to believe in false situations
- \_\_\_ 5. Tends to be unscrupulous in accomplishing his purpose

## V. Adequacy of Communication

### A. How well does he express himself orally?

- \_\_\_ 1. Chooses words which clearly convey thoughts; is able to express abstract ideas
- \_\_\_ 2. Expresses practical thoughts fairly well but has difficulty with abstractions
- \_\_\_ 3. Is unimpressive in oral communication
- \_\_\_ 4. Expresses himself in a fuzzy, incomprehensible manner and tends to puzzle listeners concerning what he means
- \_\_\_ 5. Is either unable or does not desire to convey thoughts to others

### B. Is he a good listener?

- \_\_\_ 1. Is attentive in trying to grasp ideas expressed by others
- \_\_\_ 2. Listens carefully to ideas in which he is interested
- \_\_\_ 3. Appears to listen but has difficulty in concentration
- \_\_\_ 4. Tends to disrupt oral communication by inattentiveness or by introduction of irrelevant ideas
- \_\_\_ 5. Tends to listen only to himself

### C. Does he interest people in examining ideas?

- \_\_\_ 1. Stimulates people to seek solutions through critical analyses of ideas
- \_\_\_ 2. Encourages examination of ideas that he thinks are important
- \_\_\_ 3. Waxes hot and cold in stimulating examination of ideas

- ☐ 4. Appears to consider intellectual curiosity unimportant
- ☐ 5. Discourages examination of ideas

D. How skillfully does he lead group discussions?

- ☐ 1. Is either at a loss or monopolizes discussion when appointed official leader of a group
- ☐ 2. Permits everyone to talk without achieving a group discussion
- ☐ 3. Tends to rely on key persons in group discussions
- ☐ 4. Operates well within a structured agenda
- ☐ 5. Facilitates a stimulating and well-ordered climate conducive to reaching group decisions

VI. Operation as a Citizen

A. Does he help people interpret significant contemporary trends and events?

- ☐ 1. Does not seem to be informed about or interested in contemporary events?
- ☐ 2. Discusses current affairs in terms of stock phrases and generalities
- ☐ 3. Knows about current affairs but shows prejudice in discussing them
- ☐ 4. Is well informed in the socioeconomic problems in which he is interested
- ☐ 5. Discusses intelligently major social, political, and economic issues

B. Is he cooperative with non-educational groups working for community betterment?

- ☐ 1. Is aware of and actively concerned with desires and interests of community groups, agencies, and organizations
- ☐ 2. Is interested in cooperating with community groups but spreads his efforts too thinly
- ☐ 3. Is selective in cooperating with groups in proportion to pressures applied
- ☐ 4. Becomes so involved with activities of non-educational groups that he neglects proper administration of the school program
- ☐ 5. Considers the school an island that is competitive with non-educational groups

C. What is his attitude toward minority groups in the school community?

- ☐ 1. Insists that minority points of view be appropriately represented in community-school decisions
- ☐ 2. Upholds right of most minority viewpoints to be represented but neglects consideration of those that are extreme
- ☐ 3. Follows a hands-off policy in regard to minority groups in the community
- ☐ 4. Tends to ignore the existence of minority groups in the community
- ☐ 5. Indicates that minority groups have no right to representation in community-school affairs

APPENDIX C

Tennessee Rating Guide (1959)

Raw Mean Scores on Thirty-eight Subject  
Administrators

# APPENDIX C

## MEAN RAW SCORES OF RATINGS ON THIRTY-EIGHT ADMINISTRATORS TENNESSEE RATING GUIDE ITEM-SCALES

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	3.0	4.0	4.5	3.5	4.0	4.5	4.0	4.5	4.0	4.0	4.0	4.5	5.0
2	3.0	3.5	2.5	3.5	4.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	4.5
3	3.5	3.5	3.5	3.0	4.0	3.5	4.0	3.5	3.5	2.5	3.5	3.0	3.5
4	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	4.0	3.5	3.0	3.0	3.5
5	3.0	3.5	4.0	3.0	3.0	4.0	3.5	4.0	3.5	4.0	3.5	3.5	4.0
6	3.5	4.0	3.5	3.5	4.0	4.0	4.0	4.0	3.5	4.0	3.5	3.5	4.5
7	3.0	3.0	4.0	2.5	2.0	2.0	3.0	3.0	3.0	3.0	3.5	3.0	3.0
8	3.0	3.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0	3.5	5.0
9	3.5	4.0	3.0	3.5	3.5	2.5	3.5	3.5	3.0	3.5	2.5	3.0	3.5
10	3.0	3.0	3.5	2.5	3.0	3.0	2.5	2.5	3.0	2.5	3.5	3.5	2.5
11	4.0	4.0	4.0	3.5	3.5	4.5	3.5	4.0	3.5	3.0	4.0	3.5	3.0
12	4.0	3.5	4.0	4.0	4.5	4.5	4.0	4.5	4.5	4.5	4.0	3.5	4.5
13	4.0	4.0	3.5	4.0	4.0	4.0	3.0	3.0	3.5	3.5	3.0	3.5	4.0
14	5.0	4.0	3.0	2.5	4.0	3.5	3.0	4.0	4.0	4.0	3.5	3.0	5.0
15	3.0	2.0	2.0	2.0	2.0	4.0	2.0	4.0	1.5	2.0	3.0	2.0	1.5
16	5.0	5.0	5.0	5.0	4.0	5.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0
17	5.0	5.0	5.0	5.0	5.0	4.0	3.0	5.0	5.0	5.0	5.0	5.0	4.0
18	5.0	3.5	4.0	5.0	4.0	5.0	5.0	4.0	3.0	5.0	3.0	4.0	4.0
19	4.5	4.0	4.0	4.5	5.0	5.0	5.0	5.0	4.0	4.5	4.5	4.0	4.0
20	4.0	4.0	3.0	3.5	4.5	4.5	3.0	5.0	3.0	4.0	4.0	3.5	3.0
21	3.5	4.0	3.5	2.5	3.0	3.5	2.5	4.0	4.0	4.0	2.5	3.5	3.5
22	3.0	3.0	4.0	4.0	4.5	4.5	3.5	3.0	4.5	4.5	2.0	4.5	4.0
23	4.0	4.0	4.5	5.0	4.0	4.0	5.0	4.0	4.5	4.5	3.5	4.5	4.5
24	5.0	4.0	5.0	4.0	3.0	5.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0
25	4.0	4.0	1.5	3.0	2.0	1.5	3.0	1.5	2.0	3.0	3.0	3.5	2.5
26	5.0	4.0	4.5	5.0	4.0	5.0	2.5	5.0	5.0	5.0	4.5	5.0	4.0
27	5.0	4.0	5.0	3.0	4.5	2.0	5.0	5.0	4.0	5.0	4.5	4.5	4.0
28	5.0	3.0	5.0	5.0	4.0	4.0	3.0	3.0	4.0	5.0	5.0	5.0	4.0
29	4.5	4.5	3.0	4.0	4.0	4.5	3.0	4.0	3.5	4.0	4.0	3.5	4.0
30	5.0	4.5	2.5	3.0	3.0	4.0	3.0	4.5	3.0	4.0	4.0	4.5	3.5
31	4.5	4.0	3.0	4.0	4.0	3.5	4.0	3.0	3.0	3.0	4.0	2.5	3.5
32	5.0	4.0	4.5	3.0	3.0	4.0	5.0	4.0	4.5	5.0	5.0	4.0	3.5
33	5.0	5.0	5.0	4.5	3.0	4.5	3.0	4.5	4.0	4.5	4.5	4.0	4.0
34	4.5	4.0	4.5	2.5	4.5	3.5	3.0	3.0	4.5	4.5	4.0	4.0	4.0
35	4.5	4.0	3.5	3.5	4.0	4.0	5.0	4.5	4.0	5.0	4.5	4.5	4.0
36	4.5	4.5	3.5	4.5	3.0	4.0	5.0	4.0	4.0	4.5	4.0	4.0	4.0
37	5.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.5	4.5	5.0	4.0	4.0
38	2.0	1.5	1.5	2.0	1.5	1.0	2.0	2.0	1.5	2.0	3.0	1.0	1.5
	IA	IB	IC	ID	IE	IF	IG	IIA	IIB	IIC	IID	IIE	IIF

MEAN RAW SCORES OF RATING ON THIRTY-EIGHT ADMINISTRATORS  
TENNESSEE RATING GUIDE ITEM-SCALES (continued)

	N	O	P	Q	R	S	T	U	V	W	X	Y
1	4.0	3.5	4.0	4.0	4.5	4.5	5.0	4.0	4.5	4.0	3.5	4.5
2	3.0	3.5	3.0	3.5	4.0	3.5	4.5	3.0	3.0	2.5	3.5	3.0
3	3.5	3.5	4.0	3.5	4.5	3.5	3.0	3.5	3.5	3.0	3.5	4.0
4	3.0	4.0	4.0	3.5	4.5	3.0	3.0	3.5	3.0	3.5	4.5	4.0
5	3.5	3.0	4.5	4.0	4.5	4.0	5.0	4.0	3.5	4.0	3.0	4.0
6	4.0	4.0	4.5	4.0	4.5	3.0	4.5	4.0	3.5	3.5	3.5	3.5
7	3.0	2.0	3.0	2.5	4.5	2.5	3.5	3.5	3.0	2.0	3.0	4.0
8	4.0	4.0	4.0	4.0	4.5	3.0	4.5	4.0	4.0	4.0	3.0	3.0
9	3.5	3.5	4.0	4.0	4.0	3.5	4.5	3.0	3.0	2.5	3.5	3.5
10	3.0	4.0	3.5	4.0	2.5	3.5	3.5	3.0	3.5	3.0	3.0	3.0
11	4.0	4.5	4.0	4.0	4.5	3.5	5.0	4.0	3.0	3.5	4.0	4.0
12	3.5	4.0	4.5	4.5	4.5	4.5	4.0	4.5	3.5	3.5	3.0	3.0
13	4.0	4.0	4.0	4.0	5.0	4.5	4.5	3.5	3.5	4.0	3.5	4.0
14	4.0	3.0	4.0	4.0	3.5	4.5	4.5	3.5	4.0	4.5	3.5	3.5
15	1.5	1.0	2.0	1.5	3.0	4.0	2.0	4.0	3.0	2.0	2.0	3.5
16	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
17	5.0	5.0	4.0	5.0	5.0	4.0	4.0	5.0	3.0	4.0	4.0	4.0
18	3.0	4.0	4.0	4.0	5.0	4.0	4.0	3.5	3.0	4.0	5.0	3.0
19	5.0	5.0	5.0	5.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0
20	4.5	4.0	5.0	4.0	5.0	3.5	4.0	3.0	3.0	4.0	4.5	4.0
21	5.0	5.0	4.0	5.0	5.0	3.5	4.0	3.5	3.0	4.0	4.5	5.0
22	4.0	5.0	5.0	5.0	5.0	3.0	4.0	3.5	3.0	4.5	4.5	3.5
23	5.0	5.0	5.0	4.0	5.0	3.0	5.0	3.5	3.0	4.5	5.0	5.0
24	5.0	4.0	4.0	4.0	5.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
25	2.0	3.5	2.0	3.0	5.0	2.5	3.0	2.0	2.0	4.0	4.0	3.0
26	5.0	4.5	4.0	4.5	5.0	4.0	5.0	4.0	4.0	4.5	5.0	4.0
27	5.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	3.0	5.0	5.0	3.5
28	4.0	4.0	3.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0
29	4.0	4.0	4.0	5.0	5.0	2.5	4.0	3.0	3.0	4.5	4.5	4.0
30	4.5	4.5	4.0	4.5	5.0	4.0	4.5	3.0	3.0	4.0	5.0	4.5
31	4.5	4.5	3.0	5.0	4.0	3.0	2.5	3.0	2.0	3.0	3.0	3.0
32	4.5	5.0	4.0	5.0	5.0	5.0	4.0	4.5	3.5	4.5	4.5	4.0
33	4.0	4.5	4.5	5.0	5.0	3.0	4.5	4.0	3.0	4.0	4.5	4.0
34	3.0	5.0	4.5	4.5	5.0	2.5	3.5	3.5	2.5	4.0	3.0	3.5
35	3.5	4.5	4.0	4.5	5.0	4.0	4.0	3.5	4.0	4.0	4.5	5.0
36	3.0	4.0	4.0	4.0	5.0	3.0	4.0	3.0	3.0	4.0	4.0	4.0
37	5.0	5.0	4.5	5.0	5.0	4.0	5.0	4.0	3.0	4.0	5.0	4.0
38	2.5	2.5	2.0	4.0	3.0	3.0	2.0	3.0	2.0	3.0	3.0	4.0
	II G	II H	III A	IV A	IV B	VA	VB	VC	VD	VIA	VIB	VIC