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Leader Behavior Factor Structures: A Function of Leader Behavior, Implicit Leadership Theories or Both?

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1983

LEADER BEHAVIOR FACTOR STRUCTURES:
A FUNCTION OF LEADER BEHAVIOR,
IMPLICIT LEADERSHIP THEORIES, OR BOTH?

A Thesis

Presented to

the Faculty of the Department of Psychology

Western Kentucky University

Bowling Green, Kentucky

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Jeffrey D. Prewitt

May 1983

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LEADER BEHAVIOR FACTOR STRUCTURES:
A FUNCTION OF LEADER BEHAVIOR,
IMPLICIT LEADERSHIP THEORIES, OR BOTH?

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A man would do nothing, if
he waited until he could do
it so well that no one would
find fault with what he has
done.

-John Henry Newman

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Jeffrey D. Prewitt April 1983 39 Pages
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This study attempted to resolve the controversy in implicit leadership research concerning whether factor structures commonly found in leadership questionnaires are a function of the actual factor structures of leader behaviors, of the preconceived structures of leader behavior imposed by raters, or both. This study replicated and extended the Weiss and Adler (1981) study on implicit leadership theory. 250 subjects were asked to describe an imaginary supervisor using the Survey of Organizations and the Leader Behavior Description Questionnaire Form XII leadership scales. The subjects also completed a measure of the differentiation aspect of cognitive complexity. High- and low-differentiation subgroups, formed by a median split, were then compared on perceptions of leader behavior covariation. The results were mixed. With the Survey of Organizations items, the high-differentiation subgroup had a lower mean inter-item correlation and a more differentiated factor structure than the low-differentiation subgroup. The correlation between differentiation scores and within-subject across-item variances also indicated that high-differentiation raters showed greater variability in scores for each ratee

across dimensions than the low-differentiation raters using the Survey of Organizations items. However, the items from the LBDQ XII did not find any substantial differences between the differentiation subgroups. The analysis of a total of 44 items chosen from the two leadership questionnaires based on their high standard deviations also failed to find a substantial difference between the two subgroups. The controversy in implicit leadership research was therefore not resolved. Further investigation with alternative methods is warranted.

Introduction

A controversy exists in implicit leadership research concerning whether factor structures commonly found in leadership questionnaires are a function of the actual factor structures of leader behaviors, of the preconceived, stereotype-like structures of leader behaviors imposed by the raters, or both. The aim of the present study was to resolve the implicit leadership controversy by examining the relationship between individual differences in implicit leadership theories and perceptions of the co-occurrence (i.e., factor structures) of leader behaviors. If the commonly found factor structures reflect the actual factor structures of leader behaviors, there should be no differences in factor structures of leader behaviors as a function of individual differences in implicit leadership theories. If, on the other hand, the commonly found factor structures reflect the preconceived structures of leader behaviors imposed by the raters, there should be differences in factor structures of leader behaviors as a function of individual differences in implicit leadership theories.

The validity of leadership questionnaires depends, in part, on the answer to the implicit leadership controversy. The interpretation of such measures would be undermined if they reflect only the rater's implicit leadership theories,

or if they reflect the rater's implicit theories sometimes, actual ratee behavior at other times, or a combination of the two at different times. Stated simply, one would not know what the measures were actually measuring.

The Emergence of the Issue

Eden and Leviatan (1975) argued that the factor structure of leadership items from the Survey of Organizations could be explained by implicit leadership theories of the raters. They based their argument on their findings from 235 Israeli students of similar factor structures between ratings of an imaginary manager and subordinate ratings found by Taylor and Bowers (1970) of a real manager in an oil refinery. Eden and Leviatan argued from this finding that the factor structures were brought to the study "in the heads" of the subjects and were not a function of the structure of actual leader behaviors. Rush, Thomas, and Lord (1977) replicated Eden and Leviatan's results using a different leadership measure, The Leader Behavior Description Questionnaire, Form XII, and American subjects. Both of these studies used an imaginary manager as the ratee in order to eliminate the effects of real leader behavior on the factor structures. In the absence of actual leader behavior, the authors argued that the factor structures must be representing the rater's implicit leadership theories (i.e., their preconceptions about the usual co-occurrence of particular

leader behaviors) instead of reflecting the actual co-occurrence of leader behaviors.

When rating the behavior of an actual leader, ratings might be determined by both actual observations of the leader and the rater's implicit leadership theories in conjunction. The implicit theories would be likely to come into play under difficult conditions such as rating a supervisor's behaviors over the last year when some forgetting of the leader's behavior has occurred or when no behavior has been observed (such as the case in the Eden and Leviatan, 1975, and Rush et al., 1977, studies). Someone trying to interpret the data from a leader behavior questionnaire (or any rating scale of performance) is therefore confronted with a dilemma. It may be difficult to distinguish whether the ratings reflect actual leader behaviors, implicit theories of the raters, or a combination of the two.

A way out of this impasse was suggested by Weiss and Adler (1981). If implicit theories of the raters determine the factor structures of leader behavior questionnaires, individual differences in implicit theories should be related to differences in factor structures. On the other hand, if the factor structures found are reflecting the actual factor structure of leader behaviors, there should be no differences in factor structures as a function of differences in implicit theories.

Based on this general logic, Weiss and Adler (1981)

tried to test the alternative interpretations by using the personality construct of cognitive complexity. Wegner and Vallacher (1977) had found that cognitive complexity is related to individual differences in implicit personality theories (i.e., the presumed co-occurrence of personality traits). Bieri et al. (1966) defined differentiation as:

the capacity to construe social behavior in a multi-dimensional way. A more cognitively complex person has a more differentiated system of dimensions for perceiving other's behavior than does a less cognitively complex individual (p. 185).

Weiss and Adler based their decision on research which suggested that individual differences in differentiation are highly related to individual differences in implicit theories of trait and behavior co-occurrences (Halverson, 1970; Press, Crockett, and Delia, 1975; and Schneier, 1977).

As an example of these studies, Schneier (1977) found that subjects who scored higher on differentiation showed greater variability in scores for each ratee across dimensions than subjects who scored low on differentiation.

To assess differentiation, 60 male workers in a manufacturing organization filled out the Bieri REP Test with the two modifications suggested by Vannoy (1965) to increase reliability and decrease social desirability response sets. Vannoy suggested counterbalancing the desirable and undesirable adjectives and substituting the letters "L" and "R" for plus and minus marks.

All 60 subjects also participated in the development

of a Behavioral Expectation Scale (BES) and a simpler rating format. The BES format was developed in the same manner as described by Smith and Kendall (1963). The development of the BES was an iterative process of small group discussions which consisted of gathering critical incidents and attaching agreed upon levels of performance to the different behavioral examples. A simpler format consisted of merely using 10 dimensions obtained from the BES development as 10 criteria and using only 3 scale values (above average, average, and below average) for each dimension.

The results showed that raters high on differentiation were more confident ($p < .001$) with the BES format than with the simpler format and preferred it in use ($p < .025$). The low-differentiation group preferred the simpler format. On both formats, however, the raters high on differentiation showed greater variability in scores for each ratee across dimensions than the raters low on differentiation.

Weiss and Adler (1981) attempted to settle the implicit leadership controversy by testing the different predictions about the relationship between levels of differentiation and perceptions of the co-occurrence of leader behaviors. They administered the Survey of Organizations leadership scales to 254 male and female industrial psychology students to measure their perceptions of leader behavior. The subjects were instructed to rate an imaginary supervisor. The same subjects were

administered Bierl's REP Test (Bierl et al. , 1966) without the modifications suggested by Vannoy (1965) to measure their levels of differentiation.

Three methods were used to assess the effects of personality differences in differentiation on patterns of perceived leader behavior co-occurrence. First, the four factors (support, interaction facilitation, goal emphasis, and work facilitation) from the leadership scales were factor analyzed for the total sample and for the high and low differentiation subgroups defined by a median split of the total sample. As suggested by Rummel (1970), the variance accounted for by individual factors and the total factor solutions were examined to assess the similarity in subgroup factor structures. Secondly, the average intercorrelations among leader behavior items were compared for each subgroup. Thirdly, within-subject across-item variances were computed and correlated with differentiation scores.

The results of all three methods of analysis found no differences between differentiation subgroups. For the total sample and the subgroups, similar factor structures were found between these subjects and those of Eden and Leviatan (1975) and Taylor and Bowers (1970). The four factors only accounted for slightly more variance in the low-differentiation group (58%) than in the high-differentiation group (54%). The average inter-item correlation among high-differentiation subjects was .38 and

the average for low-differentiation subjects was .39. The correlation of $-.03$ between differentiation scores and within-subject across-item variances indicated no relationship between differentiation and perceptions of variances across leader behaviors. All three methods of analysis showed that perceptions of the co-occurrence of leader behaviors were not influenced by differences in differentiation.

A Need for Replication

Weiss and Adler's (1981) findings appear to support the argument that the factor structures found in leadership questionnaires reflect the actual structure of leader behavior. However, the measure Weiss and Adler used is not as valid a predictor of the differentiation aspect of cognitive complexity as the same measure with two modifications suggested by Vannoy (1965) to improve reliability and decrease social desirability response set error. Rather than place all the desirable adjectives on the same side, Vannoy suggested counterbalancing the desirable and undesirable adjectives. Vannoy also substituted the letters "L" and "R" for plus and minus marks.

There is ample evidence that Bieri's REP Test with Vannoy's modifications is superior to other measures of the differentiation aspect of cognitive complexity and to the same REP Test without these modifications. Schneier (1979)

compared the REP Test with Vannoy's modifications to the REP Test without Vannoy's modifications and found that they were not significantly related, $r=.08$. Schneier also compared the convergent and discriminant validities of the two forms of the REP Test (with and without modifications). He found that the validity correlations for the REP Test with Vannoy's modifications were "generally high and significant"(p.606), whereas the validity correlations for the instrument without the modifications were "generally low and insignificant"(p.606). Correlations were in the direction consistent with this interpretation.

The REP Test with Vannoy's modifications was also compared to Scott's (Scott, Osgood, & Peterson, 1962) measure designed to tap the same construct. The REP Test was found to have higher discriminant validity correlations than Scott's measure and to offer advantages in objectivity of scoring, reasonable time required for administration, and familiarity with the roles presented. Based on this research and the overly skewed distribution of differentiation scores on the REP Test used by Weiss and Adler (1981), a replication of Weiss and Adler seems justified.

In addition to using the REP Test with Vannoy's modifications instead of the REP Test without the modifications, one other alteration was used in this replication. The Leader Behavior Description Questionnaire Form XII was used along with the leadership scales from the

Survey of Organizations. The LBDQ Form XII offers the potential of more than four dimensions of leader behavior since 12 dimensions have been previously identified. The addition of the LBDQ Form XII was based on a suggestion by Bernardin and Boetcher (Note 1) that real differences in the differentiation aspect of cognitive complexity may not be manifested until more than seven dimensions of performance are to be evaluated. Since the Survey of Organizations has identified only four dimensions of behavior, the addition of the LBDQ XII offers the potential of 12 additional dimensions of behavior to be evaluated

In summary, the purpose of this study was an attempt to resolve the implicit leadership controversy by replicating the Weiss and Adler (1981) study with two alterations: (1) Bieri's REP Test with Vannoy's (1965) modifications to increase reliability and decrease social desirability response sets was used instead of the same measure without Vannoy's modifications; and (2) the LBDQ, Form XII was added to the leadership scales from the Survey of Organizations (Taylor and Bowers, 1970) to increase the number of dimensions to be evaluated.

Method

Sample

The subjects consisted of 250 psychology students at Western Kentucky University. Subjects were chosen from different class levels (e.g., freshmen, sophomores, juniors, and seniors) in an attempt to increase the range of differentiation scores based on the logic that students exposed to more classes may have obtained a higher level of differentiation than students who have been exposed to fewer classes.

Measures

Differentiation. Differentiation was measured using Bieri's grid form of Kelly's (1955) Role Construct Repertory (REP) Test (Bieri et al., 1966), with the two modifications suggested by Vannoy (1965). This measure provides subjects with a 10x10 grid. The subjects rate 10 familiar roles (e.g., father, mother) on 10 sets of bipolar adjectives (e.g., shy-outgoing). Overall similarity in ratings across roles and adjectives is reflected in a differentiation score. A low score reflects high differentiation and a high score reflects low differentiation. See Appendix A for the differentiation scale.

Leader Behavior. Two leadership scales were combined into a composite questionnaire. The composite questionnaire consisted of items from (1) the leadership scales of the 1969 version of the Survey of Organizations which is reproduced in Taylor and Bowers (1970, Appendix A-3) and (2) the Leader Behavior Description Questionnaire Form XII which is reproduced in Stogdill (1963). See Appendix B for a list of items from the composite leader behavior questionnaire.

The Leadership scales of the 1969 version of the Survey of Organizations were found in previous studies to measure four leadership factors. The four factors are (1) Support-behaviors which enhance someone else's feelings of self worth and importance, (2) Interaction Facilitation-behaviors which encourage group members to develop close, mutually satisfying relationships, (3) Goal Emphasis-behaviors which stimulate an enthusiasm for meeting the group's goal or achieving excellent performance, and (4) Work Facilitation-behaviors which help achieve work related goals by such activities as scheduling, coordinating, planning, and providing resources needed to get the job done.

The Leader Behavior Description Questionnaire Form XII is a 100-item questionnaire which was hypothesized to measure 12 distinct factors. Brief definitions of the subscales are listed below followed by the number of items in each subscale:

1. Representation-speaks and acts as the representative of the group. (5 items)
2. Demand Reconciliation-reconciles conflicting demands and reduces disorder to the system. (5 items)
3. Tolerance of Uncertainty-is able to tolerate uncertainty and postponement without anxiety or upset. (10 items)
4. Persuasiveness-uses persuasion and argument effectively; exhibits strong convictions. (10 items)
5. Initiation of Structure-clearly defines own role, and lets followers know what is expected. (10 items)
6. Tolerance of Freedom-allows followers scope for initiative, decision, and action. (10 items)
7. Role Assumption-actively exercises the leadership role rather than surrendering leadership to others. (10 items)
8. Consideration-regards the comfort, well being, status and contributions of followers. (10 items)
9. Production Emphasis-applies pressure for productive output. (10 items)
10. Predictive Accuracy-exhibits foresight and ability to predict outcomes accurately. (5 items)
11. Integration-maintains a closely knit organization; resolves intermember conflicts. (5 items)
12. Superior Orientation-maintains cordial relations with superiors; has influence with them; is striving

for higher status. (10 items)

Procedure

The procedure was very similar to that of Weiss and Adler (1981). The principle differences were the addition of the modifications suggested by Vannoy (1965) to the differentiation measure and the addition of the LBDQ-Form XII.

Subjects were administered the composite leadership behavior questionnaire and the differentiation measure during class time and told that they were participating in a research project on supervision in organizations. They first indicated their name, age, sex, and number of years work experience. They were then told to imagine "a factory you do not know. It is Plant X; it makes food products and it is located in the central region of the country" (Eden and Leviatan, p.737). They were then instructed to think of a fictitious supervisor employed in this imaginary plant and were asked to use the questionnaire provided to describe this supervisor along a 5-point continuum ranging from Always to Never for each item. It was emphasized that they were not to describe a leader that they knew.

Subjects were administered the differentiation measure either after or before the leader behavior questionnaire. By counterbalancing the administration of the two measures, the threat of any order effects could be evaluated.

Data Analysis

As in the Weiss and Adler (1981) study, three methods were used to assess the relationship between differentiation and perceived patterns of leader behavior covariation. First, the average intercorrelations among leader behavior items were compared between differentiation subgroups. Second, within-subject across-item variances were computed and correlated with differentiation scores. Third, factor analyses were performed using squared multiple correlations as communality estimates to obtain principal components rotated to a varimax solution. This analysis was done on the total sample and both differentiation groups. If substantial differences were found between the high and low differentiation groups, each group was split into two randomly assigned subgroups. Replication factor analyses on these subgroups were planned to determine whether the group differences in factor structures were a function of chance.

In addition to obtaining orthogonal factors, oblique factors were also obtained because the analysis of oblique factors may yield more subtle differences between differentiation subgroups than the orthogonal factors.

The differentiation subgroups were formed by a median split on the differentiation measure, the same criterion used by Weiss and Adler (1981).

In summary, the data analysis in this study was similar to the data analysis by Weiss and Adler (1981)

except that these analyses were done both between and within differentiation subgroups. Also, oblique factors were examined as well as orthogonal factors.

Results

The composite leadership questionnaire was not analyzed as a single questionnaire for two reasons. Firstly, the SPSS computer package cannot factor analyze over 100 items. Secondly, analyzing the Survey of Organizations items as a separate questionnaire provided the desired direct replication of the Weiss and Adler (1981) study. Therefore, the relationship between level of differentiation and perceptions of leader behavior co-occurrence was examined separately for the Survey of Organizations items and the LBDQ XII items. Also, 44 items from the composite questionnaire with standard deviations greater than or equal to .93 were factor analyzed. These items were selected since items with higher variance make possible higher correlations and higher factor loadings. The standard deviation of .93 was chosen arbitrarily because it appeared to provide an appropriate number of items for the factor analysis.

Differentiation Scores

The median of 132 was used as the criterion for splitting the subjects into differentiation groups. The range of scores on the REP Test with Vannoy's modifications was 244. The lowest score was 63 and the highest score was 307. High scores represent low differentiation and low

scores represent high differentiation. The mean was 137 and the standard deviation was 35.8.

The differentiation scores were correlated with subject age, class level, number of years work experience, and the order of presentation (i.e., leadership measures or differentiation measure administered first) in order to assess the relationship between the above variables and level of differentiation. As shown in Table 1, there were no significant correlations.

Survey of Organizations Items

Overall, the results from the Survey of Organizations items support the hypothesis that perceptions of leader behavior co-occurrence are influenced by the level of differentiation of the raters. A comparison of average intercorrelations among leader behavior items (using r to z transformations) revealed that the low-differentiation subgroup had a higher average intercorrelation ($r=.612$) than the high-differentiation subgroup ($r=.496$), $t(130)=4.88, p<.001$. The correlation between differentiation scores and within-subject across-item variances ($r=-.2168, p<.001$) also supports the hypothesis that differences in levels of differentiation are related to differences in perceived leader behavior co-occurrence. The factor analyses also showed differences between the two subgroups in their perceptions of leader behavior. The two most popular methods for determining the number of factors

Table 1

Correlations of Age, College Class,
Amount of Work Experience, and
Order of Presentation with Differentiation

	Correlation	Significance Level
Age	-.0043	p=.473
College Class	.0200	p=.376
Work Experience	.0153	p=.405
Order	-.0717	p=.129

are the scree test and using eigen values greater than or equal to 1.0. The eigen value criterion was used in this study. The eigen value criterion produced a more clear cut solution than the scree test. The reader can examine Table 2 and decide which method would best describe the data. For the entire sample, a two factor solution was extracted which accounted for 68.6 percent of the total variance. The high-differentiation subgroup yielded a two factor solution which accounted for 66.4 percent of the total variance. However, the low-differentiation subgroup yielded one general factor which accounted for 63.9 percent of the total variance. Unrotated factors are shown in Table 2 for all three samples.

Each differentiation group was also split into two randomly assigned subgroups in order to assess the possibility that group differences in factor structures were a function of chance. Within the high-differentiation group, two factors were extracted from each subgroup. However, within the low-differentiation group one subgroup had only one factor with an eigen value greater than 1.0 and one subgroup had two factors with eigen values greater than 1.0. The second factor had an eigen value of 1.1. As shown in Table 3, each of the two factor solutions in the high-differentiation subgroups showed less of a general factor and a more robust second factor than either of the two low-differentiation subgroups.

Table 2

Survey of Organizations Items

Eigen Values and % of Variance Accounted for

	<u>Eigen Value</u>	<u>% of Variance</u>	<u>Cum PCT</u>
Total Sample		58.2	
Factor 1	6.99	58.2	58.2
Factor 2	1.24	10.3	68.6
High-Differentiation			
Factor 1	6.38	53.1	53.1
Factor 2	1.60	13.3	66.4
Factor 3	.74	6.2	72.7
Factor 4	.60	5.0	77.6
Factor 5	.56	4.7	82.3
Factor 6	.48	4.0	86.3
Factor 7	.39	3.2	89.5
Factor 8	.36	3.0	92.6
Factor 9	.28	2.4	94.9
Factor 10	.24	2.0	96.9
Factor 11	.23	1.9	98.8
Factor 12	.14	1.2	100.0
Low-Differentiation			
Factor 1	7.66	63.9	63.9
Factor 2	.93	7.7	71.6
Factor 3	.68	5.7	77.2
Factor 4	.55	4.6	81.9
Factor 5	.48	4.0	85.9
Factor 6	.37	3.1	89.0
Factor 7	.32	2.6	91.6
Factor 8	.30	2.5	94.1
Factor 9	.25	2.1	96.2
Factor 10	.19	1.6	97.8
Factor 11	.14	1.2	99.0
Factor 12	.12	1.0	100.0

Table 3

Survey of Organizations Items

Randomly Sampled Subgroups within Each Differentiation

Subgroup

	Eigen Value	% of Variance	Cum PCT
High Differentiation			
Subgroup A			
Factor 1	6.56	54.7	54.7
Factor 2	1.50	12.5	67.2
Subgroup B			
Factor 1	6.27	52.2	52.2
Factor 2	1.85	15.4	67.6
Low Differentiation			
Subgroup A			
Factor 1	7.58	63.2	63.2
Factor 2	1.13	9.4	72.6
Subgroup B			
Factor 1	7.84	65.4	65.4
Factor 2	.95	7.9	73.3

LBDQ Form XII Items

Overall, the results from the LBDQ Form XII items do not support the hypothesis that perceptions of leader behavior co-occurrence are influenced by the level of differentiation of the raters. The factor analyses failed to show any major differences between the two subgroups in their perceptions of leader behavior. The factor analysis of the 100 LBDQ XII items yielded 25 factors with eigen values greater than or equal to 1.0 which accounted for 69.9 percent of the total variance. Ten prominent factors that seemed to be extreme in social desirability were chosen for further analysis because it was hypothesized that the 42 items from the 10 factors would be most likely to show a halo effect and differentiate between differentiation subgroups. The factor analysis of the 42 items chosen based on their social desirability failed to distinguish between the differentiation subgroups. The low-differentiation subgroup yielded 10 factors which accounted for 67.8 percent of the total variance. The high-differentiation subgroup yielded a 10 factor solution which accounted for 65.3 percent of the total variance. A second order factor analysis also failed to distinguish between the two subgroups. The low-differentiation subgroup yielded four factors which accounted for 61.4 percent of the total variance. The high-differentiation subgroup yielded four factors which accounted for 59.1 percent of the total variance.

Further analyses of the 42 items from the LBDQ XII found weak but significant differences in perceptions of leader behavior co-occurrence. The average inter-item correlation (using r to z transformations) among low-differentiation subjects was .153 and the average correlation among high-differentiation subjects was .094, $t(1719)=4.55, p<.001$. The correlation between differentiation scores and within-subject across-item variances was $-.07$ ($p=.13$).

In summary, analyses of the LBDQ XII failed to support the hypothesis that perceptions of leader behavior co-occurrence are influenced by the level of differentiation of the raters.

High Standard Deviation Items

In addition to the previous analyses, 44 items from the composite leadership behavior questionnaire with standard deviations greater than or equal to .93 were factor analyzed. These items were chosen because they account for the most variance and are compatible with the SPSS computer package limitation of 100 or less items for factor analysis. For the total sample, 10 factors were extracted which accounted for 64.4 percent of the total variance. The low-differentiation subgroup yielded 10 factors which accounted for 69.0 percent of the total variance. The high-differentiation subgroup yielded 10 factors which accounted for 67.4 percent of the total

variance. Factor analyses of the items chosen based on their standard deviations also failed to support the hypothesis that perceptions of leader behavior co-occurrence are influenced by the level of differentiation of the raters.

In summary, the results are mixed. Analyses of the Survey of Organizations items support the hypothesis that differences in perceptions of leader behavior co-occurrence are influenced by the level of differentiation of the raters. However, the items chosen from the LBDQ XII and the items that accounted for the most variance in the composite questionnaire did not support the hypothesis. It appears that a controversy still exists in implicit leadership research.

Discussion

Weiss and Adler (1981) raised three issues to consider when interpreting their results. The first issue was the validity of their measure of differentiation which was used to assign subjects to subgroups. The second issue was that the range of scores on the differentiation measure may not have been sufficient to show an effect that actually existed. The scores were also skewed in the direction of high differentiation. Lastly, they suggested using other leadership measures because the sensitivity of the Survey of Organizations items to differences in differentiation was unknown.

The three issues raised by Weiss and Adler (1981) were addressed in this study. First, the REP Test with Vannoy's (1965) modifications was used instead of the measure used by Weiss and Adler. The REP Test with Vannoy's modifications has been shown to be superior to other measures of the differentiation aspect of cognitive complexity (Schneier, 1979). Second, while the differentiation scores ranged from 32 to 146 with a standard deviation of 18.5 for the Weiss and Adler sample, using the REP Test without Vannoy's modifications, the differentiation scores in this study ranged from 63 to 307 with a standard deviation of 35.8 using the REP Test with Vannoy's modifications. Therefore, this study had a much

larger range of differentiation scores. Third, the Leader Behavior Description Questionnaire Form XII was used in this study in addition to the Survey of Organizations leadership measure as an extended replication of the Weiss and Adler study. This study addressed the above issues in the hope of resolving the controversy in implicit leadership research concerning whether factor structures commonly found in leadership questionnaires are a function of the actual factor structures of leader behaviors, of the preconceived structures of leader behaviors imposed by the raters, or both.

This study failed to resolve the implicit leadership theory controversy. On one hand, raters with high levels of differentiation showed higher differentiation in their ratings of leader behaviors than raters with low levels of differentiation using the Survey of Organizations items. On the other hand, no substantial difference in perceptions of leader behavior was found between the low and high differentiation groups using the LBDQ XII and the 44 items with standard deviations greater than or equal to .93 from the two leadership measures combined. However, one indication of good research is that it sheds light on other methods of addressing an issue and on other questions that need to be addressed.

One of the questions to be addressed in future research concerns the effect of experience in observing leaders' behaviors on perceptions of leader behavior

co-occurrence. Weiss and Adler (1981) suggested that "The potential for error or distortion in respondent-derived leadership dimensions resulting from respondents' cognitive organization systems may be less of a problem when the respondents are experienced workers" (p. 76). Since 85% of the subjects in the present study reported having 6 years or less of work experience, the question of the effect of work experience was not addressed in any analyses of leadership scales. A collection of subjects with a wider range of number of years work experience could better address the issue concerning the effects of work experience on perceptions of leader behavior.

In order to be more generalizable to the "Real World," subjects who differ in work experience and level of differentiation should be instructed to rate several different leaders. Using taped examples of actual leader behavior that had been analyzed and rated by subject matter experts would give an independent measure of actual leader behavior. This method would provide a criterion with which to assess the validity of the ratings. The existence of differences in implicit leadership theories could then be assessed and the accuracy of the ratings could also be assessed. This method would better answer the question concerning whether leader behavior factor structures are a function of the actual factor structures of leader behaviors, of the preconceived, stereotype-like structures of leader behaviors imposed by the raters, or both.

Reference Note

1. Bernardin, H. J. and Boetcher, R. The effects of rater training and cognitive complexity on psychometric error in ratings. Paper presented at the meeting of the American Psychological Association, Toronto, August 1978.

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Footnotes

¹ Sauser and Pond (1981) suggested two alterations to increase the readability the Bieri REP Test. First, they suggested placing the semantic differential scales on the left side of the rating grid instead of the right side. Second, they replaced the letter number anchors above the semantic differential scales with single number anchors (see Appendix C for a copy of Sauser & Pond's scale with these alterations).

² See Bieri et. al. (1966), for details regarding the scoring of the REP Test.

³ The first 100 items are from the LBDQ-Form XII. The last 12 items are from the leadership scales of the Survey of Organizations.

APPENDIX A
 GRID INSTRUCTIONS

Please note that on the 10 X 10 grid there are 10 role types; one per column (i.e., 1. Yourself, 2. Person you dislike, 3. Mother, etc.). Also note that for each row of the grid there is a pair of words or phrases that can be used to describe a person (i.e., shy--outgoing, adjusted--maladjusted, etc.).

You are to think of a specific person that best fits each role type and then rate that person using the numbers found above the descriptive words. Put this number rating in its appropriate square in the grid. For example, in column 1 you are to rate yourself for every row of descriptive words 1 through 10. Then proceed to the next role type in which you are to rate a person you dislike. Continue until you've made ratings for all ten role types.

ROLES

1. Yourself										
2. Person you dislike										
3. Mother										
4. Person you'd like to help										
5. Father										
6. Friend of the same sex										
7. Friend of the opposite sex (or spouse)										
8. Person with whom you feel most uncomfortable										
9. Boss										
10. Person difficult to understand										

DESCRIPTIVE WORDS

	L3	L2	L1	R1	R2	R3
1. shy						outgoing
2. adjusted						maladjusted
3. decisive						indecisive
4. calm						excitable
5. self absorbed						interested in others
6. ill humored						cheerful
7. responsible						irresponsible
8. inconsiderate						considerate
9. independent						dependent
10. interesting						dull

DIRECTIONS:

- a. READ each item carefully.
- b. THINK about how frequently the leader engages in the behavior described by the item.
- c. DECIDE whether he/she (A) *always*, (B) *often*, (C) *occasionally*, (D) *seldom* or (E) *never* acts as described by the item.
- d. DRAW A CIRCLE around *one* of the five letters (A B C D E) following the item to show the answer you have selected.

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

- e. MARK your answers as shown in the examples below.

Example: Often acts as described A B C D E

Example: Never acts as described A B C D E

Example: Occasionally acts as described A B C D E

- 1. Acts as the spokesperson of the group A B C D E
- 2. Waits patiently for the results of a decision A B C D E
- 3. Makes pep talks to stimulate the group A B C D E
- 4. Lets group members know what is expected of them A B C D E
- 5. Allows the members complete freedom in their work A B C D E
- 6. Is hesitant about taking initiative in the group A B C D E
- 7. Is friendly and approachable A B C D E
- 8. Encourages overtime work A B C D E
- 9. Makes accurate decisions A B C D E
- 10. Gets along well with the people above him/her A B C D E
- 11. Publicizes the activities of the group A B C D E
- 12. Becomes anxious when he/she cannot find out what is coming next A B C D E

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

- | | | | | | |
|--|---|---|---|---|---|
| 13. His/her arguments are convincing | A | B | C | D | E |
| 14. Encourages the use of uniform procedures | A | B | C | D | E |
| 15. Permits the members to use their own judgment in solving problems ... | A | B | C | D | E |
| 16. Fails to take necessary action | A | B | C | D | E |
| 17. Does little things to make it pleasant to be a member of the group | A | B | C | D | E |
| 18. Stresses being ahead of competing groups | A | B | C | D | E |
| 19. Keeps the group working together as a team | A | B | C | D | E |
| 20. Keeps the group in good standing with higher authority | A | B | C | D | E |
| 21. Speaks as the representative of the group | A | B | C | D | E |
| 22. Accepts defeat in stride | A | B | C | D | E |
| 23. Argues persuasively for his/her point of view | A | B | C | D | E |
| 24. Tries out his/her ideas in the group | A | B | C | D | E |
| 25. Encourages initiative in the group members | A | B | C | D | E |
| 26. Lets other persons take away his/her leadership in the group | A | B | C | D | E |
| 27. Puts suggestions made by the group into operation | A | B | C | D | E |
| 28. Needles members for greater effort | A | B | C | D | E |
| 29. Seems able to predict what is coming next | A | B | C | D | E |
| 30. Is working hard for a promotion | A | B | C | D | E |
| 31. Speaks for the group when visitors are present | A | B | C | D | E |
| 32. Accepts delays without becoming upset | A | B | C | D | E |
| 33. Is a very persuasive talker | A | B | C | D | E |
| 34. Makes his/her attitudes clear to the group | A | B | C | D | E |
| 35. Lets the members do their work the way they think best | A | B | C | D | E |
| 36. Lets some members take advantage of him/her | A | B | C | D | E |

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

- | | | | | | |
|--|---|---|---|---|---|
| 37. Treats all group members as his/her equals | A | B | C | D | E |
| 38. Keeps the work moving at a rapid pace | A | B | C | D | E |
| 39. Settles conflicts when they occur in the group | A | B | C | D | E |
| 40. His/her superiors act favorably on most of his/her suggestions | A | B | C | D | E |
| 41. Represents the group at outside meetings | A | B | C | D | E |
| 42. Becomes anxious when waiting for new developments | A | B | C | D | E |
| 43. Is very skillful in an argument | A | B | C | D | E |
| 44. Decides what shall be done and how it shall be done | A | B | C | D | E |
| 45. Assigns a task, then lets the members handle it | A | B | C | D | E |
| 46. Is the leader of the group in name only | A | B | C | D | E |
| 47. Gives advance notice of changes | A | B | C | D | E |
| 48. Pushes for increased production | A | B | C | D | E |
| 49. Things usually turn out as he/she predicts | A | B | C | D | E |
| 50. Enjoys the privileges of his/her position | A | B | C | D | E |
| 51. Handles complex problems efficiently | A | B | C | D | E |
| 52. Is able to tolerate postponement and uncertainty | A | B | C | D | E |
| 53. Is not a very convincing talker | A | B | C | D | E |
| 54. Assigns group members to particular tasks | A | B | C | D | E |
| 55. Turns the members loose on a job, and lets them go to it | A | B | C | D | E |
| 56. Backs down when he/she ought to stand firm | A | B | C | D | E |
| 57. Keeps to himself/herself | A | B | C | D | E |
| 58. Asks the members to work harder | A | B | C | D | E |
| 59. Is accurate in predicting the trend of events | A | B | C | D | E |
| 60. Gets his/her superiors to act for the welfare of the group members | A | B | C | D | E |

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

61. Gets swamped by details	A	B	C	D	E
62. Can wait just so long, then blows up	A	B	C	D	E
63. Speaks from a strong inner conviction	A	B	C	D	E
64. Makes sure that his/her part in the group is understood by the group members	A	B	C	D	E
65. Is reluctant to allow the members any freedom of action	A	B	C	D	E
66. Lets some members have authority that he/she should keep	A	B	C	D	E
67. Looks out for the personal welfare of group members	A	B	C	D	E
68. Permits the members to take it easy in their work	A	B	C	D	E
69. Sees to it that the work of the group is coordinated	A	B	C	D	E
70. His/her word carries weight with superiors	A	B	C	D	E
71. Gets things all tangled up	A	B	C	D	E
72. Remains calm when uncertain about coming events	A	B	C	D	E
73. Is an inspiring talker	A	B	C	D	E
74. Schedules the work to be done	A	B	C	D	E
75. Allows the group a high degree of initiative	A	B	C	D	E
76. Takes full charge when emergencies arise	A	B	C	D	E
77. Is willing to make changes	A	B	C	D	E
78. Drives hard when there is a job to be done	A	B	C	D	E
79. Helps group members settle their differences	A	B	C	D	E
80. Gets what he/she asks for from his/her superiors	A	B	C	D	E
81. Can reduce a madhouse to system and order	A	B	C	D	E
82. Is able to delay action until the proper time occurs	A	B	C	D	E
83. Persuades others that his/her ideas are to their advantage	A	B	C	D	E

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

84. Maintains definite standards of performance	A	B	C	D	E
85. Trusts members to exercise good judgment	A	B	C	D	E
86. Overcomes attempts made to challenge his/her leadership	A	B	C	D	E
87. Refuses to explain his/her actions	A	B	C	D	E
88. Urges the group to beat its previous record	A	B	C	D	E
89. Anticipates problems and plans for them	A	B	C	D	E
90. Is working his/her way to the top	A	B	C	D	E
91. Gets confused when too many demands are made of him/her	A	B	C	D	E
92. Worries about the outcome of any new procedure	A	B	C	D	E
93. Can inspire enthusiasm for a project	A	B	C	D	E
94. Asks that group members follow standard rules and regulations	A	B	C	D	E
95. Permits the group to set its own pace	A	B	C	D	E
96. Is easily recognized as the leader of the group	A	B	C	D	E
97. Acts without consulting the group	A	B	C	D	E
98. Keeps the group working up to capacity	A	B	C	D	E
99. Maintains a closely knit group	A	B	C	D	E
100. Maintains cordial relations with superiors	A	B	C	D	E

APPENDIX B

A = Always

B = Often

C = Occasionally

D = Seldom

E = Never

101. Friendly and easy to approach A B C D E
102. Attentive to what you say A B C D E
103. Willing to listen to your problems. . . A B C D E
104. Encourages effort A B C D E
105. Maintains high standards A B C D E
106. Sets example by hard work A B C D E
107. Shows you how to improve A B C D E
108. Helps you plan ahead A B C D E
109. Offers ideas for solving problems . . . A B C D E
110. Encourages teamwork A B C D E
111. Encourages exchange of ideas A B C D E
112. Frequency of group meetings with
subordinates to get their ideas A B C D E

Ba, Fa