EFFECTS OF RATER-RATEE SIMILARITIES

ON PERFORMANCE EVALUATIONS

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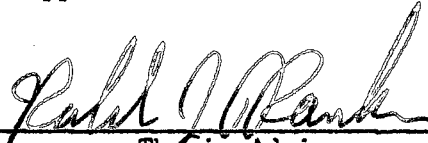
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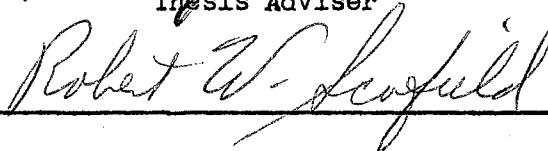
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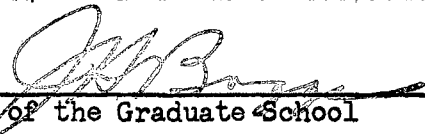
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ACKNOWLEDGEMENT

The author wishes to express his sincere appreciation to
Dr. Richard Rankin, who served as major advisor, and to the members
of the thesis committee, Dr. Robert Scofield and Dr. Charles Mahone
for their most valuable assistance and guidance.

Acknowledgement is also due Dr. Larry Brown for his assistance
in arranging for the presence of many of the subjects used in this
research.

Lastly, the inspirational guidance and assistance of the
author's wife, Sylvia, is eternally recognized.

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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

Today, the degree to which an individual succeeds within his
organization, as measured in both terms of retention and promotion,
is becoming increasingly dependent upon one primary source of
information; the periodic performance evaluation form. With this
increasing importance, the requirements for the most objective and
accurate instrument possible has become paramount and towards this
end, much research has been accomplished. One phase of this research
has been directed towards the identification and qualification of
the errors and biases present in performance evaluations.

Guilford (1954) defines several common sources of error in
ratings including halo effect, error of leniency, and error of
central tendency. Of these, the halo effect is perhaps the best
known, having been first noted by Wells (1907) and later named
by Thorndike (1920).

Until recently the halo effect, traditionally considered as a
spuriously high, average inter-trait correlation of composite
ratings has been studied predominately in terms of correlational
analysis. The degree to which halo was found to influence evaluations
varied considerably dependent upon the study cited.

Mayo (1956) in a study on the effects of halo on peer ratings
accomplished by United States Navy airmen interpreted his findings

as showing a marked effect of halo upon performance evaluations.
These findings were in general agreement with those reported earlier
by Grant (1952) who had additionally indicated that the effects of
halo, while present in all ratings, show a marked variation in
amount. Factor analytic studies (Gordon, 1955; Wherry, 1954) indicated
that raters tended to respond favorably or unfavorably to all or
almost all items in a questionnaire. However, Kellner (1961)
considering this phenomenon as "response set" was unsuccessful in
obtaining a general factor.

Although the existence of halo had never been seriously questioned,
attempts to accurately quantify or predict its appearance had been so
unsuccessful that Guilford, as late as 1954, could find no better
explanatory discussion to cite than that published by Symonds in 1925.

However, in 1954 Guilford reformulated the problem of rating
errors in terms of variance analysis and Johnson and Vidulich (1956)
used this design in an experimental study of halo effect which they
felt offered the first published verification of its existence. Using
two groups, one working under conditions designed to maximize halo
while the other worked under minimizing conditions, variance in
trait ratings due to raters was found to be significant beyond the
.01 level under both conditions. To maximize halo effect one group
rated one individual each day on 5 traits. The other group, to
minimize halo effect, rated all individuals each day on one particular
trait. The largest variance was due to raters being rated but was
greatly reduced under minimizing conditions. That portion of the
total halo effect due to rater-ratee interaction was considerably
smaller, being significant ($p < .05$) under maximizing conditions but

not so under minimizing conditions. Interaction between raters and traits, indicating a tendency on the part of some raters to give high ratings on some traits and low ratings on others was found to be operating in a manner exactly opposite the rater-ratee interaction, being significant (p < .05) under minimizing conditions but hardly identifiable under maximization conditions.

Wellingham and Jones (1958), after a thorough study of Guilford's design, presented a cogent argument to the effect that in such an analysis, the trait-ratee interaction must not be ignored as it was in the Johnson and Vidulich study, since this interaction is inversely related to the older measure of halo, the inter-trait correlation.

Recognizing the validity of this position Johnson (1963) reanalyzed his data more thoroughly and found both the interactions between raters and ratees and between traits and raters to be significant at the .01 and .05 levels respectively under maximum conditions and both interactions to be significant at the .01 level under minimum conditions. Additionally, the trait-ratee interaction, overlooked in the previous analysis was found to be highly significant (p < .01) under both conditions. Since rater variances and rater-ratee interactions were not found to be significantly different under differing conditions, this reanalysis does not justify the previous conclusion that judgment under conditions designed to minimize halo actually reduced its effect. Hence, although manipulation of judgment had some indeterminate effect, the evidence for halo due to judging operations remained questionable.

Johnson (1963) points out that under these circumstances the rater-ratee variance appears to be better evidence for the existence of halo

and that this particular interaction, otherwise designated as relative
halo, has been specifically investigated using other experimental
designs.

Kinder (1925) in an early study found a tendency to overrate
members of the same sex as compared to the opposite sex. Using a
similarly designed study, Maher (1956) was unable to find significant
differences as a function of age.

Fillenbaum (1961) investigated the relation between judgment on
an attribute and one's relationship to that attribute in terms of
similarity between the object judged and the rater. In estimating
height and weight for same and opposite sex students, a significant
positive relation was found between same sex ratings and the judge's
height and weight with no significant relation between opposite sex
ratings and the judge's physical stature.

Kirchner and Rersberg (1962) found differences in ratings of
subordinates dependent upon the supervisors ability with the poorer
supervisors being more lenient and showing less variability in their
ratings. Other studies (Pastore, 1960; Tupes and Kapalan, 1961; and
Vanesek, 1962) indicate that some specific factors unrelated to job
performance, such as poise, social polish, adjustment, and military
grade, may effect performance evaluations while others, such as
traits of surgency or extroversion, do not.

Cox and Krumboltz (1958), using peer ratings collected from
basic airmen, investigated the extent to which racial bias was operative
within Air Force training flights and found that generally, members
of one race are rated higher by members of their own race than by
members of a different race. This conclusion was not applicable to

some flights and applicable only to a lesser degree in others. DeJung and Kaplan (1962), in considering the same possible racial bias, obtained ratings by peers of military combat potential (sic) and found support for their hypothesis that ratees would receive higher ratings from members of their own race than from members of another race. These findings were significant for all ratee samples. The other hypothesis, that raters would give higher ratings to men of their own race, was supported for Negro raters but not for Caucasian raters.

Zoberi (1960) investigated the relationship between evaluative attitudes and rater traits of introversion and extroversion and found noticeable differences in evaluations. To the experimenter's (E) knowledge this finding has not been replicated. Hence, the effect of rater-ratee similarity in this area was included as one variable in the present study.

Present evidence is not conclusive when considering the area of rater-ratee interaction as a primary source of error in performance evaluations. The overall trend does, however, seem to support the position that this area may well be a significant contributor to bias in evaluation.

Purpose of the Study

The purpose of the present study was to investigate the impact of rater-ratee similarities in pre-selected areas. Specifically, a review of the available literature generated the hypothesis that the degree of similarity between rater and ratee in certain separate areas may significantly influence the raters evaluation of an

individual's performance even though these similarities exist in areas unrelated to those being evaluated. Consequently, the effects of rater-ratee similarities were selected for study in the following areas: age, sex, physical stature, intelligence, political party affiliation, and extroverted-introverted personality.

This study was further designed to investigate the interrelationships between the scales of a performance evaluation form.

The present study also evaluates an experimental design in an attempt to determine its potential value to future experiments in this area.

CHAPTER II

METHOD

Raters were asked to rate artificial profiles containing the

characteristics under investigation and then filled out forms allowing

their self-ratings in these areas to be evaluated.

In the analysis of each area, ratings of hypothetical students

possessing similar and opposite characteristics to those of the rater

were compared. To aid in the analysis, correlational procedures

were used to determine the interrelationships between separate scales

comprising the rating form and the rater's perception of these scales.

Subjects ($\underline{S}$), totaling 214, were obtained from among those

students in attendance at Oklahoma State University during the summer

session, 1964, in the classes of psychology, education, and speech.

These $\underline{S}$s formed a highly varied sample as shown by their responses

to the questions on the personal questionnaire.

Each $\underline{S}$ was given 5 short profiles of 5 hypothetical college

sophomores, each containing certain specific information relative

to their performance as students and to their social behavior and

attitudes. These profiles (Appendix A) were designed such that at

least two of the ratees exhibited each of the relatively extreme

characteristics in each area under investigation. In other words,

at least two ratees were identifiable as Democrats as shown by

their statements supporting Johnson as President in the forthcoming

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election. Two other ratees were identifiable as Republicans because of their support of the highly conservative candidate, Goldwater.

John Jones (Ratee J) is a young male with a high I.Q., who supports Johnson as President and appears introverted. Betty Barnes (Ratee B) is a young, small, smart, and extroverted female. Paul Peters (Ratee P) is a young, small, extroverted male who supports Goldwater for President. Susan Smith (Ratee S) is older, introverted, and quite tall. She has a lower I.Q. and is identifiable as a Johnson supporter. Don Douglas (Ratee D) is also older and is a tall, Goldwater supporting male with a relatively low I.Q.

After studying each profile, Ss were asked to evaluate the hypothetical students' performance on the traits of Cooperation, Judgment, Communication Facilities, Job Knowledge, Efficiency, Perseverance, and an Overall Performance rating, used as a separate scale as distinguished from a summed score scale. The ratee's performance was evaluated using a 9-point graphic rating form (Appendix B) allowing ratings from 1 to 9 on each trait.

The Ss then filled out a personal questionnaire giving their self-ratings on the variables under consideration (Appendix C). Answers given to this questionnaire provided the basis for the selection of those raters possessing relatively extreme characteristics on the variables under study. Ratees possessing similar and opposite characteristics from the rater could thus be identified for each comparison.

This design clarifies two problems. First: the majority of studies in this area have required the evaluation of well-known, real life persons. Consequently, a significant rater-ratee interaction term, when obtained, could be considered as partially due to variations

in the information available to different judges rather than to the judging operations. The method employed in this study insures that each S has the same information available as does any other S.

Second: this design evaluates the effects of rater-ratee similarities as perceived by the rater and reflected in his ratings. Other studies, using objective measures of the evaluator's standing in relative areas, have neglected the fact that the individual may perceive himself other than as he is. It is felt by the investigator that any differences in ratings due to similarities or differences between the rater and ratee would be more accurately manifested to the degree that the rater perceives these similarities.

Procedure

Each S was given the 5 hypothetical student profiles, with the order of presentation being totally randomized, and informed only that this was an experiment within the perceptual field. Each S was also provided 5 rating forms.

The instructions were:

You will find attached five short descriptions of five different hypothetical students within this University. Each of these students are assumed to be majoring in the same academic area and to have just completed their sophomore year. These five students are further assumed to have had one class in common this past semester and their verbatium replies to a question asked in this class are contained within each of their descriptions. This question was: 'Who of the possible candidates do you feel would make the best President of the United States and why?'

Using the information provided, you are requested to critically evaluate the performance of each of these hypothetical students on the performance rating scales provided.

Please complete reading these instructions for Part I
and then proceed in the manner described.

1. Review the rating form to determine the areas in
which you are to evaluate the student's performance.

2. Read each description thoroughly and then visualize
the individual described. Remember that these are
fictious persons. Do not attempt to relate them to any
real person you may know but visualize them only using
the information provided.

3. After visualizing the subject, complete the rating
form and then proceed to the next subject. You may
review the applicable profile while completing each
form, but once the rating is completed do not return
or refer to that form or profile again. In other words,
rate each student separately without reference to the
ratings assigned any other.

4. After completing the five rating forms you will have
finished Part I of this experiment. After completing
these forms you may then proceed immediately to Part II.

After completion of all rating forms, $\underline{S}$ completed the personal

questionnaire and were then dismissed.

Analysis of ratings was done using two techniques. First,

a factor analysis was completed to determine the internal relation-

ships existing within the rating form's correlations.

Factor analysis is appropriate for this investigation because of

the independence of tests. The reduction in size of the correlational

matrix results in easier interpretation of the fewer factors. The

procedure incorporates a Beaton Pearson r routine followed by a

Thurstone centroid factor analysis (Thurstone, 1947). Finally, a

varimax rotation (Kaiser, 1959) was completed to obtain the advantages

of simple structure and positive manifold.

To determine the effects of rater-ratee similarities, t tests for

uncorrelated means of ratings assigned selected ratees by selected raters

were made following techniques suggested by Peters and Van Voorhis (1940).

CHAPTER III

RESULTS

Ratings provided by each of the 214 $\underline{S}$s on each separate scale for each hypothetical student were factor analyzed using a Beaton routine with a centroid factor analysis followed by a varimax rotation. Additionally, the $\underline{S}$s personal standing on the characteristics of Age, Height, Intelligence, Perseverance, and Introvertive-Extrovertive personality were assigned scale values from 1 to 5 and related to scale ratings. The resulting correlational and residual matrix is shown in Appendix E. With the exception of the rater variables of Age, Height, Intelligence, Perseverance and Introvertive-Extrovertive personality, the many highly significant correlations ($p < .01$, df = 213, significant $r = .13$) indicate both a high interdependence among scales comprising the rating form and failure by the raters to totally differentiate between the areas evaluated. Correlations exceeding .50 were found between ratings of Judgment and Communication Facilities for all ratees evidencing a high degree of conceptual equivalence between these areas by the raters.

Correlations between the same scales for different ratees are generally lower than between different scales for the same ratee. This finding supports the hypothesis that halo is present in ratings of this type. Ratings of Cooperation showed the greatest independence of all scales used. This finding may indicate that evaluators can

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more easily identify ratee characteristics in this area or that traits

of Cooperation are particularly significant to the evaluator in

forming an evaluative judgment.

The centroid factor analysis and varimax rotation revealed that

the intercorrelations can be explained by 10 factors. The factor

matrix and communalities are shown in Appendix F.

Factor 1, accounting for 28% of the total variance, may be

identified as a Susan Smith factor with high loadings on Judgment,

Communications Facilities, Job Knowledge, and Overall Performance.

Factor 2, accounting for 14% of the total variance, may be

identified as a "not" Don Douglas or "phantom" factor with high

loadings on all variables (scales) comprising his ratings. These

loadings are all negative and present the only such negative factor

within this matrix.

Factor 3, accounting for 13% of the total variance, is identified

as a Paul Peters factor with high loadings on all scales comprising

his ratings.

Factor 4, accounting for 11% of the total variance, is identifiable

as a Betty Barnes factor with particularly high loadings on Judgment,

Communications Facilities, and Job Knowledge ratings.

Factor 5, accounting for 11% of the total variance, is identifiable

as a John Jones factor with high loadings on all scales comprising

his ratings.

Factor 6, accounting for a smaller percentage (.06) of the total

variance, appears to be partially a Susan Smith's Efficiency and

Perseverance factor.

Factor 7, also accounting for 6% of the total variance, appears

to be partially a Betty Barnes' Efficiency and Perseverance factor.

These 7 factors, together accounting for 89% of the total variance in the correlational matrix, may be identified as ratee factors and further indicate that the evaluators, while successful in differentiating between ratees, were subject to a form of halo interrelating all evaluations of the same ratee.

The only split factors, i.e., two factors involving the same ratee, occurred with the two girls evaluated and both involved the separation of the Efficiency and Perseverance ratings from the others comprising the evaluation form.

The remaining factors 8, 9, and 10 together account for 11% of the total variance and are primarily uninterpretable residual factors. The low communalities show low reliability of scales.

The emergence of clearly identifiable ratee factors is considered to be particularly important, since emergence of "tests" such as introversion or perseverance scale ratings were equally predictable factors.

To investigate the specific effects of rater-ratee similarities, Ss were ranked on each of the specific variables under consideration. The Ss whose self-ratings were at the extremes of the group on each variable furnished the data for analysis. Each rater in the two extreme groups evaluated two ratees possessing similar characteristics and two ratees possessing opposite characteristics to the self-ratings of the evaluator. Since each rating form provided 7 scales consisting of 9 points, composite ratings of between 7 and 63 were possible for each ratee. Composite scores for each of the two similar ratees, such as small ratees, were combined and became the group scores

(Appendix G) used in the analysis. Differences in group scores as a function of rater-ratee similarities were then subjected to analysis using 4 t tests per characteristic.

A procedure suggested by Peters and Van Voorhis (1940) allowed analysis of each of the following possibilities: (1) Differences in ratings assigned low-ranked ratees by low and high self-ranked raters, (2) Differences in ratings assigned high-ranked ratees by low and high self-ranked raters, (3) Differences in overall ratings as assigned by low and high self-ranked raters, and (4) Interactive effects due to rater-ratee similarities. The first three analyses are clear and precise. The remaining interactive analysis, being somewhat more of an approximation, could be more easily analyzed in an analysis of variance if these data were amenable to such analysis. Since the absolute value of each ratee differs (Table I) analysis of variance appears inappropriate.

The results appear as a battery of 4 t tests in each area. It is recognized that such a battery of t tests devaluates the significance of each individual test. This situation can, however, be remedied by arbitrarily setting a higher confidence level.

Analysis of the variables under consideration revealed the following results (Tables IIa and IIb):

Sex: Ratings provided by 30 male and 30 female Ss were selected at random and analyzed relative to rating differences between male ratees (D & J) and female ratees (B & S). Results were not significant; however, the mean ratings of males when rated by males (46.25) versus females (44.82), female ratees when rated by males (47.75) versus females (45.92), and overall differences in ratings by males (47.00)

versus females (45.37) could be interpreted together as indicating a possible tendency for males to rate higher than females.

Age: All 18-year-old Ss plus a random selection of 8 from 10 available 17-year-old Ss comprised the young rating group (N = 30). All 25, 26, 27, 28, 29 and 4 randomly selected Ss from 7 available 30-year-old Ss comprised the old rating group (N = 30). Differences in ratings assigned young ratees (J & B) versus old ratees (D & S) were not significant. Mean ratings of young ratees when rated by young raters (48.38) versus old raters (48.20), old ratees when rated by young raters (40.63) versus old raters (42.25), and overall differences in ratings of young raters (44.49) versus old raters (45.22) were found.

Physical Stature: Fifteen female Ss 5' 7½" or over plus 15 males 6' 2½" or taller comprised the large rating group (N = 30). Fourteen female Ss 5' 2½" or less plus 16 males 5' 8" or under comprised the small group (N = 30). Comparison of ratings assigned small ratees (P & B) with large ratees (D & S) showed no significant differences. Again, the mean ratings of large ratees when rated by large raters (40.67) versus small raters (42.05), small ratees when rated by large raters (42.22) versus small raters (44.47), and overall differences in ratings by large raters (41.44) versus small raters (43.26) could be interpreted together as showing a possible tendency for shorter raters to rate higher than taller raters.

Intelligence: Twenty-six Ss, considering themselves as possessing I.Q.'s in the lower 50% of all college students, comprised the low rater group. Sixteen Ss, considering their I.Q.'s to be in the highest 10% of both the general population and of college students and a random selection, using random numbers, of 10 from the 29 Ss

considering their I.Q. as being in the highest 10% of the general
population and the upper 25% of all college students comprised the
high rater group. Differences in ratings assigned high I.Q. ratees
(J & B) and low I.Q. ratees (D & S) were not significant. Mean
ratings of high I.Q. ratees when rated by high I.Q. raters (48.12)
versus low I.Q. raters (49.60), low I.Q. ratees when rated by high
I.Q. raters (43.27) versus low I.Q. raters (41.83), and overall
differences in ratings of high I.Q. raters (45.69) versus low I.Q.
raters (45.71) were found.

Political: Sixteen Ss indicating a preference for Goldwater and
minimum desire for Johnson as President comprised the Republican group.
Sixteen Ss, randomly selected from the 95 who indicated a preference
for Johnson and minimum desire for Goldwater as President, comprised
the Democratic group. Differences in ratings of Republican-oriented
ratees (D & P) and Democratic-oriented ratees (J & S) were insignificant.
Mean ratings of Republican ratees when rated by Republican raters
(39.34) versus Democratic raters (35.88), Democratic ratees when rated
by Republican raters (44.09) versus Democratic raters (44.25), and
overall differences in ratings of Republican raters (41.72) versus
Democratic raters (40.06) were obtained.

Introversive-Extroversive: Twenty Ss identifying themselves
as extroverted comprised the extroverted rating group. Three Ss
classifying themselves as introverted plus a random selection of 17
of the 56 Ss identifying themselves as slightly introverted comprised
the introverted rater group. Differences in ratings assigned
extroverted ratees (P & B) were not significant when compared to
introverted ratees (J & S). In this area mean ratings of extroverted

ratees when rated by extroverted raters (41.92) versus introverted
raters (40.40), introverted ratees when rated by extroverted raters
(42.50) versus introverted raters (44.60), and overall differences in
ratings of extroverted raters (42.21) versus introverted raters
(42.05) were found.

TABLE I

ABSOLUTE VALUE OF RATEES AS
DETERMINED BY MEAN RATINGS
OF 214 EVALUATORS

Ratee	$\bar{M}$
John Jones (J)	45.38
Betty Barnes (B)	53.12
Paul Peters (P)	29.32
Susan Smith (S)	41.34
Don Douglas (D)	45.43

TABLE IIa

SUMMARY OF ANALYSIS OF RATER-RATEE SIMILARITY
EFFECTS ON RATINGS (RELATIONS)

Differences in ratings of male and female students by male and
female raters (N = 30)

	Male Raters	Female Raters	Difference	t
Male Ratees	46.25	44.82	1.43	1.23 ns
Female Ratees	47.75	45.92	1.83	1.80 ns
All Ratees	47.00	45.37	1.63	1.73 ns

Differences in ratings of young and old students by old and
young raters (N = 30)

	Young Raters	Old Raters	Difference	t
Young Ratees	48.35	48.20	.15	.10 ns
Old Ratees	40.63	42.25	-1.62	1.04 ns
All Ratees	44.49	45.22	- .73	.56 ns

Differences in ratings of large and small students by large and
small raters (N = 30)

	Large Raters	Small Raters	Difference	t
Large Ratees	40.67	42.05	-1.38	.95 ns
Small Ratees	42.22	44.47	-2.25	1.57 ns
All Ratees	41.44	43.26	-1.82	1.56 ns

TABLE IIa (Continued)

Differences in ratings of high and low I.Q. students by high
and low I.Q. raters (N = 26)

	High Raters	Low Raters	Difference	t
High Ratees	48.12	49.60	-1.48	1.10 ns
Low Ratees	43.27	41.83	1.44	.85 ns
All Ratees	45.69	45.71	- .02	.02 ns

Differences in ratings of Republican and Democratic students
by Republican and Democratic raters (N = 16)

	Rep. Raters	Dem. Raters	Difference	t
Rep. Ratees	39.34	35.88	3.46	1.61 ns
Dem. Ratees	44.09	44.25	- .16	.06 ns
All Ratees	41.72	40.06	1.66	1.27 ns

Differences in ratings of extrovertive and introvertive students
by extrovertive and introvertive raters (N = 20)

	Extro. Raters	Intro. Raters	Difference	t
Extro. Ratees	41.92	40.40	1.52	1.12 ns
Intro. Ratees	42.50	44.60	-2.10	1.11 ns
All Ratees	42.21	42.05	.16	.18 ns

TABLE IIb

SUMMARY OF ANALYSIS OF RATER-RATEE SIMILARITY
EFFECTS ON RATINGS (INTERACTIONS)

Difference due to rater-ratee interaction
on Sex variable   Cal. t = .36

    Required t value for significance at .05 level = 2.04

Difference due to rater-ratee interaction
on Age variable   Cal. t = 1.12

    Required t value for significance at .05 level = 2.04

Difference due to rater-ratee interaction
on Height variable   Cal. t = .53

    Required t value for significance at .05 level = 2.04

Difference due to rater-ratee interaction
on Intelligence variable   Cal. t = 1.50

    Required t value for significance at .05 level = 2.06

Difference due to rater-ratee interaction
on Political variable   Cal. t = 1.52

    Required t value for significance at .05 level = 2.13

Difference due to rater-ratee interaction
on Extrovertive-Introvertive Personality
variable   Cal. t = 1.68

    Required t value for significance at .05 level = 2.09

CHAPTER IV

DISCUSSION

The results of the present study have not provided complete
enlightenment on the possible results and effects of rater-ratee
similarities on performance evaluations but do present definite
evidence that halo effect is influencing evaluations.

Of the 10 factors emerging from centroid factor analysis and
varimax rotation, 7 may be identified as ratee factors representing
the ratees evaluated. This finding supports the general hypothesis
relative to the presence of halo in the ratings. It would seem
necessary to confirm the appearance of this type of factor when
using a different rating format.

The high negative loadings of the Don Douglas variables in
Factor 2 remains largely unexplainable. This "not" Don Douglas
factor can only be assumed to be related to the lack of relatively
unique characteristics specified in his profile. It is particularly
noted that this hypothetical student was the only one showing neither
pronounced introvertive nor extrovertive behavior patterns.

The many significantly high correlations among the rating scale
variables indicate that, to a large extent, raters are unable to
separate among the areas to be evaluated on each individual scale.
This would appear to be particularly true in the case of the Judgment
and Communications Facilities scales and can probably be accounted

for by the use of the "verbatium" response to a reasoning question in the informational profile.

The other area of apparent high correlations shown between the Job Knowledge, Efficiency, and Perseverance ratings is more easily accounted for by the similarities existing among these areas.

These findings indicate that separate scale reliabilities are individually low and the solution to this problem remains of continuing concern in the development of an objective rating instrument.

The low communalities of many of the variables indicate the presence of a large amount of general factor in the matrix and supports the findings of Gordon (1955) and Wherry (1954).

Failure of the possible effects of rater-ratee similarities to emerge as reflected by statistically insignificant differences between ratings by divergent groups might be accounted for in many ways:

First, Ss were asked to rate hypothetical students on their performance as college sophomores after receiving only a minimum of information relating to their performance. Consequently, individual biases were used which may possibly be much more subjective than those biases applied in evaluation when more information is available. Visual bias, for example, was eliminated in this study. The general lack of personal contact and reduced, more subjective biases available to the rater, undoubtedly combined to cause the high variances in ratings encountered in this study. This condition served to effectively mask any significant effects of rater-ratee similarities which might otherwise have been found.

Second, $\underline{S}$s were not told the purpose of the study or intended use of the ratings. Several $\underline{S}$s later indicated that they interpreted the purpose of the study as an evaluation of ratings as a concealed devise for use in political polling surveys. Although this misinterpretation of the study's purpose could be due to the period of time, an election year, the effects of such a misinterpretation cannot be evaluated. This condition is, obviously, in marked contrast to that prevalent during actual completion of a performance rating since raters normally know the purpose of the evaluation.

Third, this study considered similarly effects relative to the $\underline{S}$s perceived self-standing on the variables investigated. That a rater's self-perception may differ from his actual possession of various attributes is common knowledge and the presence of any rater-ratee interactive effects may be interrelated to the degree of difference between the raters perceived and actual similarities to the ratee.

The basic experimental design and analytic procedures applied in this study proved basically workable and suggests a method which can be used to overcome the differences in rater familiarity encountered in many of the experimental designs previously used in the investigations of biases in this area.

The importance of considering possible rater-ratee interactions as biasing influences on evaluations remains of concern. The design used in this study is uniquely applicable in the analysis of differences in ratings assigned to ratees because of rater characteristics, differences in ratings due to ratee differences, and the interactive effects when comparing stimuli of differing absolute values.

CHAPTER V

SUMMARY AND IMPLICATIONS FOR FURTHER RESEARCH

The present study was an attempt to determine the effects of
different degrees of identifiable rater-ratee similarities in areas
not of direct concern on performance evaluations. Additionally,
the interrelations between the separate scales comprising a graphic
performance evaluation form were considered. Finally, the study
allowed the evaluation of an experimental method designed to
investigate and quantify specific rater-ratee interactive effects
which have been previously found to be present to a highly significant
degree when using analysis of variance techniques (Johnson, 1963).

Significant interactive effects due to rater-ratee similarities
in age, sex, height, political preferences, intelligence, and intro-
vertive versus extrovertive personalities were not found, and
possible reasons for this failure were discussed.

Interrelations between separate scales were found to be high
indicating the raters failure to differentiate among the areas
encompassed by each separate scale.

Centroid factor analysis and varimax rotation indicated 10 factors
involved in the ratings. The 7 major factors were identifiable as
individual ratee factors and this finding, coupled with the high
correlations between scales, was interpreted as indicating the
presence of halo in the performance ratings.

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Further research using this experimental method would appear to necessitate using a more reliable rating form with greater separate scale independence and more precise methods for reducing rater variance. Additional research to accomplish this is currently being planned.

Implications for further research are numerous.

The potential value of this experimental design is dependent upon the development of techniques which will more adequately control rater variances. Further research using this method is needed to develop these variance controlling procedures. Assuming that such procedures can be developed, this design holds much promise in the analysis of rater-ratee interactive effects.

This design could also be used to investigate the effects of rater-ratee similarities on specific trait ratings. It is highly possible that the gross evaluations used in this study, i.e., sum total of the 7 individual scale ratings, obscures these effects and analysis of more limited ratings would show more significant results. Such research is currently planned.

Since the experimental method employed would seem to control the problems of insuring equivalent knowledge and familiarity on the part of many raters, it provides additional analysis which insures that differences, if obtained, reflect true differences in the perception of the ratee by the evaluator and identifies these rater characteristics. Previous research (Madden and Bourdon, 1963; Taylor and Wherry, 1951) has indicated that ratings differ dependent upon the type of rating scale employed. It is conceivable that rater-ratee interactive effects, if operating, could vary

in degree dependent upon the type of scale employed.

Other studies (Madden, 1960; Marsh and Schmid, 1956) have indicated that accuracy of ratings is related to the degree of familiarity of job requirements possessed by the rater. Rater-ratee interactive effects could also compound these differences if operating in varying degrees relative to the rater's job familiarity.

Further study of the comparative interactive effects between real rater-ratee similarities and perceived similarities is needed. The experimental method employed in this study would seem applicable in further studies in those areas cited above and the possibility of interactive effects must be considered in any analysis accomplished.

In essence, although the results of the present study are not totally significant, it would seem that considerably more research is needed concerning the possible practical effects of rater-ratee interactions as a source of bias in performance evaluations. The emergence of identifiable factors as ratees is considered to be a particularly important and relevant finding requiring further investigation.

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APPENDIXES

APPENDIX A₁

DISCRIPTIVE INFORMATION - RATEE J

Profile - John Jones

John Jones is a white male American, 19 years of age. He stands 5 ft. 11 in. tall and weighs 176 lbs. A neat but casual dresser, he consistently presents an excellent appearance both on and off campus.

John graduated from High School in the spring of 1962 and enrolled in this University the following fall. Entrance examinations indicate his I.Q. as approximately 128. His High School records indicated that he graduated in the upper 10% of his class. During his four semesters here he has completed 63 credit hours with an overall grade average of 3.4. During the last semester he completed 5 courses (15 credit hours) and received 3 "B's" and 2 "A's" as final grades.

He is a quiet individual who rarely volunteers information. However, if called on, he can be relied upon to present a considered and thoughtful response to the question or request. In his social contacts outside of class, he is very reserved and appears reluctant to take any initiative in the development of his group's activities. He is, however, well liked by those who know him. He spends much of his free time in the library and devotes approximately 38 hours per week in outside class studying directly related to his course work.

In response to the Presidential question he wrote:

"I do not feel well qualified to take a strong stand for any of the candidates as I do not know that much about them. However, if a choice is to be made, I would pick Johnson. Johnson is holding the

APPENDIX A$_1$ (Continued)

office of the Presidency at present, therefore, he has the opportunity to know just what tasks and responsibilities are involved. He seems to be doing the job adequately. He is supporting the ideas he believes in and is making an honest effort to sincerely fulfill his duties.

In conclusion, I would choose Johnson because he sincerely seems to be an honest and good man and I feel he has enough courage to stick up for what he feels needs to be done."

APPENDIX A$_2$

DISCRIPTIVE INFORMATION - RATEE B

Profile - Betty Barnes

Betty Barnes is an 18-year-old white American female. She is 5 ft. 2 in. tall and weighs 94 lbs. Dressing casually but always in good taste, she makes an excellent appearance both on and off campus.

Betty graduated from High School in the spring of 1962 and enrolled in this University the following fall. Entrance examinations indicate her I.Q. as approximately 135. She graduated from High School in the upper 10% of her class and since attending this University has accumulated 66 credit hours. During these four semesters she has maintained an overall grade average of 3.6. During the last semester she completed 6 courses (18 credit hours) and received 3 "A's" and 3 "B's" as final grades.

She is a vivacious person who makes friends easily and is one of the more popular persons on the campus. She willingly assists others in her group whenever a need arises and additionally leads an active social life. When in class, she often takes the lead in discussions and is noted for her witty but intelligent questions and observations, and she spends approximately 18 hours per week in outside class studying directly related to her course work.

In response to the Presidential question she wrote:

"The most capable candidate for the forthcoming presidential election is Richard M. Nixon. Mr. Nixon has proved to be very capable in the past because of his efforts made under President Eisenhower. Not only was he interested and vigorous then, he continued to travel

APPENDIX A$_2$ (Continued)

and to gain insight on the world situation. Probably the most realistic

thinkers of the candidates, he offers himself to the American public

only at their desire and continually shows interest not in his being

elected (which would be the greatest of honor for any American) but an

interest in gaining unity for his party which would carry out what

he stands for. Through experience Nixon has gained insight, through

defeat he has gained perspective, and these are the only things that

prepare a man for such a job."

APPENDIX A$_3$

DISCRIPTIVE INFORMATION - RATEE P

Profile - Paul Peters

Paul Peters is a white male American, 19 years of age. He is 5 ft. 7 in. tall and weighs 146 lbs. His dress is always immaculate and he shows a definite preference for well-tailored clothing.

Paul graduated from High School in the spring of 1962 and enrolled in this University that fall. Entrance examinations indicate his I.Q. as approximately 115. He graduated from High School with an academic standing somewhat below the middle of his class. During the four semesters on this campus he has accumulated 58 credit hours with an overall grade average of 2.1. During the last semester he completed 5 courses (14 credit hours) and received 1 "B," 3 "C's" and 1 "D" as final grades.

He is a very active and outgoing person with many friends throughout the campus. In classroom discussions he is occasionally somewhat disruptive due to a tendency to volunteer information in areas other than those in which he is well versed. If called upon, his responses may reflect a somewhat chronic failure to adequately study the required material. Outside of class he is a leader in the organization of social activities and is always the "life of any party" he attends. Rarely visiting the library, he spends approximately 10 hours per week in outside class studies directly related to his course work.

In response to the Presidential question he wrote:

"I feel Sen. Barry Goldwater would make a good President. He is conservative but I dont think he is as conservative as his opponents

APPENDIX A$_3$ (Continued)

make him sound. He is not an isolationist. I feel he he believes in

preserving the individual liberties of the citizen. Pres. Johnsons

"idea" of taking from the haves and giving to the have-nots is, to me,

nothing but a rewording of a maxim of Karl Marx—from each according

to his ability, to each according to his need. The Federal government

has encroached enough and I feel Goldwater would do his best to put

an end to this."

APPENDIX A₄

DISCRIPTIVE INFORMATION - RATEE S

Profile - Susan Smith

Susan Smith is a 24-year-old white American female. She stands
5 ft. 7 in. tall and weighs 134 lbs. Her dress is characteristically
conservative and in good taste.

Susan graduated from High School in the spring of 1957 and until
the fall of 1962 worked as a secretary in a large insurance office.
At that time she enrolled in this University on a full-time basis to
further her education. Her entrance examinations show an I.Q. of
approximately 104. She graduated from High School in the middle of
her class and during the four semesters on this campus has accumulated
60 credit hours with an overall grade average of 2.3. During the last
semester she completed 5 courses (15 credit hours) and received
3 "C's," 1 "B" and 1 "A" as final grades.

Susan is a quiet person who gives the appearance of being totally
dedicated toward the completion of school requirements to the best
of her ability. Having made only a limited number of friends her
social contacts outside of class are few and in these contacts she
is very reserved if not shy. She volunteers information very rarely
in classroom discussions although when called upon, she always
evidences the thorough preparation which has been accomplished.
She spends much of her free time in the library and works approximately
48 hours per week on outside class studies directly related to her
course work.

In response to the Presidential question she wrote:

APPENDIX A₄ (Continued)

    "In my opinion, Lyndon Johnson would make the best President of the United States. One of the biggest qualifications he has is his experience as Vice President and as President since John F. Kennedy's death. He has done an excellent job so far since he took over in November, and has already impressed the general public with his ability. He has seen several difficult bills passed or at least brought forth for consideration. I think he deserves the confidence of the American people and all the other countries and their leaders, and he should have a Presidential term to show what he can really do as a leader. Also, Mr. Johnson has a fine family and a lovely wife which too is an asset to a President of the United States."

APPENDIX A$_5$

DISCRIPTIVE INFORMATION - RATEE D

Profile - Don Douglas

Don Douglas is a 25-year-old white male American. He stands
6 ft. 3 in. tall and weighs 209 lbs. He is always well groomed and
dresses conservatively both on and off campus.

Don graduated from High School in the spring of 1956 and enlisted
shortly thereafter in the Marine Corps. His enlistment expired during
the summer of 1962 and he enrolled in this University the following
fall. Entrance examinations indicate his I.Q. as approximately 105.
High School records show that he graduated in the upper 50% of his
class and in the four semesters of attendance at this University
he has accumulated 60 credit hours with an overall grade average of
2.8. During the last semester he completed 5 courses (15 credit hours)
and received 3 "B's" and 2 "C's" as final grades.

He is a practical person seriously interested in improving his
education while maintaining a reasonable degree of social activity.
In class discussions he makes valuable contributions, particularly
in those areas with which he is familiar. In social contacts outside
of class, he is neither reserved nor forward having several close
friends and many acquaintances on the campus. He spends approximately
24 hours per week in outside class studies directly related to his
course work.

In response to the Presidential question he wrote:

"I am in favor of Goldwater who has said to be one of the 'most
misquoted men of this campaign.' I feel that we need a conservative

APPENDIX A$_5$ (Continued)

in office for the next term. In spite of many mistakes and what to

my mind must be misrepresentations, I feel that Goldwater is well

informed on the issues of the day. Many of his ideas seem feasible

and I would like to see them—in part at least—put to action. Although

an outspoken man, he is sincerely interested in the welfare, economy,

and public interests of this nation and his attitude toward areas of

national interest—Cuba, Viet Nam, foreign aid etc. closely parallel

my own."

APPENDIX B

PERFORMANCE RATING SCALE

Student's
Name _____

Evaluated
by _____

Unsatisfactory   Inferior   Average   Superior   Outstanding
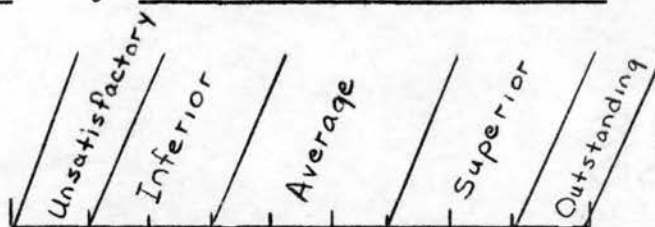
Performance Factors

1. Cooperation: How well does student get along with others?

   Creates Friction | Promotes Harmony

2. Judgment: How well does student evaluate the situation and requirements?

   Makes Many Errors | Excellent Grasp of Requirements

3. Communication Facilities: How well does student organize and express his thoughts?

   Unclear and Disorganized | Exceptional Grasp of Organization

4. Job Knowledge: What has the student learned?

   Lacks Knowledge | Excellent Achievement

5. Efficiency: How does student make use of his natural abilities?

   Fails to Apply Himself | Works at Total Capacity

6. Perseverance: How hard does student work to achieve desired goals?

   Makes a Poor Effort | Makes a Total Effort

7. Overall Performance: Consider student's performance in relation to all college sophomores?

   Unacceptable | Outstanding

APPENDIX C

QUESTIONNAIRE

Name_____

1. Age: _____   3. Height: _____

2. Sex: _____   4. Weight: _____

5. Date of Graduation from High School (Month & Year): _____

6. Present class standing: Freshman   Sophomore   Junior   Senior

                                       Graduate   Special

7. Your overall grade point average for all college courses

   completed: _____

8. Your grade point average obtained during the last completed semester

   and number of credit hours taken: _____ for _____ credit hours.

9. Do you consider yourself a: Republican   Democrat   Neither

10. Of the persons listed, whom do you feel would make the best President

    of the United States: Goldwater   Johnson   Nixon

11. Of the persons listed, whom do you feel would make the poorest

    President: Johnson   Goldwater   Nixon

12. When carrying a normal academic load during a fall or spring

    semester, how many hours per week do you spend studying outside

    class: less than 10   11-20   21-30   31-40   over 41

13. Do you consider your Intelligence Quotient in reference to the

    general population to be in the: upper 10%   upper 25%

    upper 50%   lower 50%   lowest 25%

14. In reference to college students, do you consider your Intelligence

    Quotient to be in the: upper 10%   upper 25%   upper 50%

    lower 50%   lowest 25%

APPENDIX C (Continued)

15. Remembering that the extrovert is outgoing, makes friends easily,
is talkative, initiates conversations, and can be counted upon
to be the life of a party while the introvert is withdrawn,
quiet, does not initiate much conversation, seems to give the
impression of being studious and might be a wallflower at a party,
do you consider yourself to be: Extroverted   Slightly Extroverted
Neither Extroverted nor Introverted   Slightly Introverted
Introverted

APPENDIX D

VARIABLE CODE FOR FACTOR ANALYSIS

Variable	1	Rater's Age	
Variable	2	Rater's Height	
Variable	3	Rater's IQ	
Variable	4	Rater's Perseverance	
Variable	5	Rater's Introversion-Extroversion	
Variable	6	John Jones	Cooperation
Variable	7		Judgment
Variable	8		Communication Facilities
Variable	9		Job Knowledge
Variable	10		Efficiency
Variable	11		Perseverance
Variable	12		Overall Performance
Variable	13	Betty Barnes	Cooperation
Variable	14		Judgment
Variable	15		Communication Facilities
Variable	16		Job Knowledge
Variable	17		Efficiency
Variable	18		Perseverance
Variable	19		Overall Performance
Variable	20	Paul Peters	Cooperation
Variable	21		Judgment
Variable	22		Communication Facilities
Variable	23		Job Knowledge
Variable	24		Efficiency
Variable	25		Perseverance
Variable	26		Overall Performance
Variable	27	Susan Smith	Cooperation
Variable	28		Judgment
Variable	29		Communication Facilities
Variable	30		Job Knowledge
Variable	31		Efficiency
Variable	32		Perseverance
Variable	33		Overall Performance
Variable	34	Don Douglas	Cooperation
Variable	35		Judgment
Variable	36		Communication Facilities
Variable	37		Job Knowledge
Variable	38		Efficiency
Variable	39		Perseverance
Variable	40		Overall Performance

CORRELATIONAL-RESIDUAL MATRIX

Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	(.05)	-.03	-.21	.09	-.02	-.05	-.12	.02	-.03	-.09	-.01	.01	-.16	-.01	-.06	.00	-.01	-.06	-.07	-.19
2	-.01	(.08)	-.02	-.12	.09	-.06	-.07	-.07	.00	.04	.05	.01	-.01	.06	.07	.03	.18	.13	.12	.02
3	-.09	-.03	(.08)	.13	.14	-.05	.04	-.03	.07	.01	-.05	-.01	-.05	.03	-.01	.13	.04	.01	.03	.04
4	.05	-.06	.07	(.07)	.07	-.03	.07	.04	.09	.04	-.05	.00	-.01	.01	-.05	.04	-.09	-.10	-.12	-.06
5	.02	-.01	.05	.01	(.05)	-.02	-.02	.02	.00	.01	-.04	.07	.13	-.06	-.07	-.04	-.02	-.02	.09	.05
6	.04	.05	-.04	.02	-.02	(.07)	.37	.25	.24	.24	.25	.25	.00	.07	.07	-.01	.06	.11	.06	-.02
7	.07	-.02	.01	.02	-.03	.08	(.10)	.54	.47	.35	.23	.38	.04	.12	.15	.09	.04	.09	.06	.00
8	.00	.00	-.04	-.06	.04	.05	-.06	(.08)	.39	.42	.32	.37	.07	.12	.11	.19	.06	.17	.09	-.04
9	.01	.03	.01	.03	-.02	-.03	.01	-.08	(.08)	.47	.37	.49	.09	.16	.18	.35	.09	.09	.28	.09
10	-.07	.01	.01	.05	-.08	.03	.04	.00	-.02	(.06)	.51	.50	.06	.00	.03	.25	.07	.17	.20	.14
11	-.05	.01	-.01	-.04	.04	-.04	-.08	-.01	-.02	-.09	(.07)	.35	.17	.07	.06	.18	.26	.21	.20	.08
12	.08	-.01	-.05	-.01	-.03	-.01	-.01	-.01	.04	-.01	.03	(.10)	.11	-.01	.05	.14	.07	.04	.32	.20
13	.02	.07	.06	.00	-.08	-.05	-.01	-.02	.02	.02	.03	-.02	(.07)	.23	.34	.24	.21	.21	.22	.17
14	-.02	-.03	-.02	.03	-.02	.03	.02	.01	-.01	.04	.00	-.03	-.03	(.05)	.56	.51	.28	.27	.28	-.03
15	.01	-.02	-.02	.06	.00	.03	.06	.01	-.01	.04	-.07	-.02	.00	.02	(.07)	.42	.23	.25	.34	.02
16	.02	-.06	.03	.01	-.07	-.01	.08	-.01	.04	.03	-.02	.01	-.03	-.03	.03	(.06)	.39	.36	.34	-.03
17	.04	.01	.00	.06	.00	.03	-.02	.02	-.02	-.03	-.05	.00	-.04	.03	.06	.02	(.06)	.55	.42	-.04
18	-.03	-.02	-.06	.00	.01	-.01	-.03	.07	-.06	.03	-.01	-.07	-.08	.02	.01	-.01	.03	(.05)	.34	-.02
19	.01	-.02	.01	-.03	.04	.00	.02	-.02	.05	-.06	.06	.09	.03	.00	-.02	-.03	.04	-.02	(.10)	.09
20	-.02	.00	.02	.00	.00	.03	-.03	.01	.00	-.02	.00	-.04	.01	.01	-.01	.00	-.01	-.03	.04	(.07)

Variables

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	-.13	-.00	-.06	-.02	.13	-.03	.13	-.09	.07	-.14	.03	.00	.05	.00	-.03	.01	-.01	.06	.02	.07
2	-.02	.05	.03	-.12	.02	-.03	.04	.11	.08	.11	.06	.07	.09	-.02	.04	.03	.00	-.01	.06	.04
3	.03	-.05	-.04	.02	-.06	-.04	-.10	.03	-.07	.05	-.11	-.21	-.02	-.10	-.08	-.03	-.08	-.12	-.07	-.10
4	-.02	-.10	-.04	-.11	-.09	-.11	-.02	.03	.09	.03	.03	.06	.05	.06	.10	-.01	.06	.00	-.04	-.10
5	-.08	-.04	-.07	-.17	-.17	-.24	.16	.06	.10	.09	.12	.17	.12	-.01	-.08	.00	-.09	-.04	-.02	.05
6	.12	.16	.13	.08	.08	-.02	.38	.10	.09	.21	.05	.02	.17	.37	.16	.01	.18	.08	.13	.09
7	-.05	.06	.09	.07	.07	-.01	.17	.15	.05	.11	.07	.01	.05	.11	.04	.01	.01	-.02	.06	.01
8	.02	.13	.09	.05	.02	.01	.24	.04	.18	.01	-.04	.00	-.03	.20	.07	.06	.11	.03	.07	.06
9	.01	.12	.12	.06	.11	-.06	.13	.09	.05	.05	-.07	.03	-.07	.14	.06	-.03	.12	.09	.11	.04
10	.15	.17	.19	.01	.05	.00	.17	.03	.00	.00	.12	.03	.05	.10	-.02	-.07	.08	.15	.12	.09
11	.01	.10	.07	.01	.04	.02	.10	.06	.10	.13	.03	.18	.06	.22	.07	-.05	.21	.16	.17	.18
12	.00	.16	.14	.03	.06	-.01	.15	.00	.07	.04	.01	.00	.12	.10	.09	-.01	.15	.20	.15	.09
13	.05	-.01	.08	.02	-.10	.01	.04	.16	.12	.18	.17	.27	.12	.27	.29	.24	.20	.21	.20	.12
14	.22	.03	.12	.02	-.02	.01	-.06	.14	.10	.16	.05	.13	.10	.16	.26	.21	.09	.07	.06	.01
15	.21	.07	.08	.01	-.04	-.05	.02	.13	.11	.14	.12	.20	.05	.27	.31	.24	.26	.24	.24	.13
16	.07	.05	.14	-.02	-.07	-.08	-.02	.08	.10	.10	.03	.07	.03	-.04	.03	.02	.07	.04	.15	-.06
17	.07	-.01	.06	.08	.11	.06	.04	.10	.13	.10	-.01	.06	.09	.18	.08	.10	.17	.17	.17	.11
18	.16	.00	.19	.07	.12	.04	.01	.05	.14	.02	-.12	-.13	.09	.14	.07	.08	.11	.15	.26	.15
19	.10	.11	.21	.11	.01	.08	.06	.06	.08	.08	.07	.18	.05	.22	.14	.10	.19	.24	.27	.18
20	.25	.19	.29	.11	.14	.27	-.19	.03	.13	.14	.04	.18	.00	.04	.01	.05	.08	.19	.04	.12

Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	-.05	-.04	.04	.02	-.02	-.01	.03	-.01	-.02	.06	.01	-.04	.05	-.02	-.03	-.03	-.01	.04	-.05	-.03
22	.00	.02	.01	-.06	.04	-.01	-.03	.02	.02	-.06	.00	-.02	.03	.02	-.04	.01	-.01	-.06	-.02	.01
23	-.02	.00	-.04	.02	-.02	-.02	-.03	-.02	.00	.00	.01	-.02	-.02	.01	.02	.04	-.04	.02	.03	-.02
24	.00	.07	-.03	.03	-.04	-.01	-.02	.02	-.01	.01	.02	.00	.05	-.01	.00	-.02	-.02	.04	-.07	-.04
25	.08	.05	-.01	.01	.02	.00	.00	-.04	.08	.02	-.01	.02	.01	.01	-.02	-.02	.04	.00	-.02	-.02
26	-.01	.01	-.03	-.01	.04	-.06	.01	-.04	.03	-.01	.03	.00	.01	-.01	-.07	.01	-.03	.01	-.04	.03
27	.01	.00	.00	-.06	.08	-.07	-.01	.03	.02	-.01	.05	-.01	-.06	.04	-.06	.01	-.01	-.05	.05	.07
28	-.06	.03	.01	-.02	-.06	.02	-.01	-.04	.04	.04	-.01	-.04	.00	.01	.00	-.02	-.04	-.04	-.02	.03
29	.05	.02	-.09	.02	.00	.03	.10	.08	-.02	-.01	-.05	.01	.01	.02	-.01	.02	.02	.06	.01	-.09
30	.04	-.02	-.05	-.02	.04	.06	-.01	.04	-.02	.01	.03	.02	-.07	.02	-.02	-.04	.04	.04	.04	.00
31	-.01	.02	-.03	-.02	.04	-.01	-.03	.01	.02	-.09	-.03	.00	-.01	-.02	.00	-.02	-.02	.01	.00	-.02
32	.00	-.01	.04	-.07	-.08	-.03	.01	.00	-.02	.03	.07	.05	.01	-.01	-.04	-.02	-.06	.04	-.04	.02
33	.02	-.02	.05	.05	-.02	-.02	-.01	-.06	-.05	.02	.02	.08	-.01	-.05	.00	.01	-.02	.02	-.02	.01
34	-.04	.03	-.01	-.06	-.04	.04	-.02	-.03	-.03	.03	.00	.05	.04	-.01	.02	.06	-.04	-.02	-.06	.04
35	-.02	-.05	.03	-.02	.05	-.05	-.01	.03	-.02	.00	.01	-.05	.02	.03	-.01	.00	.02	.02	-.01	-.05
36	.02	.02	-.01	-.11	.00	.06	-.04	.03	-.02	.01	.02	-.01	.02	-.01	.05	-.01	-.03	-.01	-.02	.02
37	-.01	.00	.01	-.04	.03	-.03	-.08	.02	-.03	-.02	.05	-.02	-.04	-.04	.00	-.06	-.02	.04	-.02	.02
38	-.03	-.06	.02	.06	.01	-.02	.01	-.04	-.02	.01	.02	.01	-.01	-.01	-.02	.01	.03	.01	-.01	-.05
39	-.08	-.03	.05	.02	.00	-.07	-.05	-.01	-.02	-.03	.04	-.03	-.02	.03	.01	.03	-.06	.03	-.02	.03
40	.00	-.01	.04	-.01	.02	-.04	-.03	.04	-.02	.01	-.01	-.06	.02	-.04	-.01	-.02	-.04	.00	-.01	-.01

Variables

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
21	(.06)	.50	.56	.27	.28	.45	.05	.07	.04	.10	.00	.06	.08	.07	.15	.09	.10	.10	.02	.05
22	.03	(.05)	.55	.25	.33	.32	.20	-.01	.00	.07	.03	.10	.05	.07	.03	.04	-.03	.08	.05	.05
23	-.01	.01	(.04)	.39	.47	.46	.08	.11	.10	.05	-.11	.05	.09	.12	.10	.08	.08	.13	.13	.08
24	.04	-.01	.01	(.12)	.48	.39	.13	-.01	.04	-.07	-.21	-.04	-.06	.06	.13	.08	.14	.12	.07	.13
25	-.04	.02	.02	-.06	(.08)	.45	.07	.09	.07	.01	-.12	-.04	.09	-.02	.04	-.03	.07	.07	.07	.11
26	-.04	.03	.02	-.02	.00	(.07)	-.04	.01	.04	.00	-.01	.02	.04	.08	.05	.05	.05	.17	.06	.11
27	-.01	.04	-.03	-.13	-.01	.02	(.10)	.26	.24	.16	.13	.16	.29	.22	.13	.05	.10	.07	.09	.01
28	.02	-.02	.04	.03	.00	.01	.01	(.06)	.58	.58	.31	.29	.46	.12	.18	.22	.11	.05	.08	.00
29	-.02	-.03	.00	.00	-.05	.00	-.02	.03	(.10)	.53	.24	.32	.33	.14	.16	.26	.18	.06	.08	.01
30	-.03	-.05	.01	-.06	.01	-.02	.06	-.03	-.03	(.07)	.41	.37	.51	.17	.24	.18	.23	.06	.12	.13
31	.00	.01	.06	-.03	.00	.07	.05	.01	.05	.03	(.08)	.46	.44	.10	.14	.12	.07	.11	.09	.06
32	.01	-.01	-.02	.06	-.01	-.01	-.03	.01	-.04	-.02	.00	(.08)	.30	.27	.16	.20	.18	.23	.22	.17
33	.01	-.04	.01	.03	.02	-.03	-.02	.00	-.11	-.05	-.08	.03	(.10)	.10	.16	.09	.07	.08	.17	.11
34	.04	.00	-.05	.00	.01	.06	-.02	.02	-.01	-.04	-.03	.07	.04	(.07)	.41	.39	.45	.40	.29	.23
35	.01	.01	.01	.04	-.05	.00	-.01	.01	.04	-.01	.03	-.04	-.02	-.05	(.06)	.60	.54	.34	.31	.27
36	-.04	.02	-.03	.01	-.02	.00	-.01	.03	.06	.03	-.02	-.01	-.02	-.02	-.04	(.08)	.52	.41	.33	.39
37	-.02	.05	.00	.01	-.03	-.01	.01	.03	-.02	.06	.02	.02	.03	.00	.01	.00	(.07)	.51	.43	.44
38	.04	-.01	-.01	.01	-.03	-.04	.02	.01	-.02	.01	-.02	.02	.02	-.07	.05	-.04	.00	(.07)	.70	.63
39	-.03	.01	.04	.02	-.01	.00	.00	-.02	-.06	-.01	.01	.00	.06	.00	.02	-.06	.02	.06	(.05)	.62
40	.05	.02	-.01	.01	-.02	.02	-.03	-.04	-.05	-.06	-.01	.00	.05	.05	.03	.03	.00	.02	.05	(.06)

APPENDIX F

FACTOR MATRIX FOLLOWING VARIMAX ROTATION

Var. No.	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI	Factor VII	Factor VIII	Factor IX	Factor X	H^2 Old
1	-.01	-.06	-.02	-.04	-.03	.09	-.05	-.47	.02	.07	.246
2	.10	-.02	.00	.03	-.04	.03	.27	.01	-.17	.03	.116
3	.01	.10	-.04	.05	.04	-.38	-.01	.17	-.11	.11	.215
4	.06	.00	-.08	.09	.05	-.14	-.31	-.09	-.12	-.01	.163
5	.17	.05	-.12	-.06	.04	-.04	.01	.06	-.46	.05	.271
6	.14	-.06	.08	-.05	.36	.07	.05	-.04	.08	-.51	.435
7	.15	.05	-.03	.08	.66	-.12	-.14	.03	.23	-.08	.554
8	.06	-.03	.04	.13	.63	-.08	-.12	-.12	.07	-.14	.483
9	.00	-.05	.02	.19	.69	-.08	-.02	.03	.01	.06	.531
10	-.05	-.02	.13	.03	.71	.09	.11	.01	-.19	-.03	.577
11	.02	-.11	-.01	.03	.53	.16	.27	.08	.03	-.13	.421
12	.01	-.13	.08	-.08	.65	-.01	.08	.11	-.16	-.01	.500
13	.15	-.24	-.02	.32	.06	.11	.07	.31	-.08	-.05	.312
14	.09	-.04	.06	.73	.02	-.01	.07	.00	.08	-.08	.571
15	.06	-.23	.02	.69	.06	.12	.07	.09	.04	-.05	.574
16	.03	.04	-.01	.65	.25	-.11	.24	-.07	-.09	.16	.600
17	.10	-.11	.01	.32	.06	-.13	.62	-.01	.05	-.07	.543
18	.03	-.12	.10	.30	.11	-.25	.57	-.08	.02	-.07	.531
19	.02	-.19	.10	.33	.23	.04	.40	.12	-.13	.06	.406
20	.06	-.11	.30	-.06	.10	.08	-.03	.48	-.06	.21	.400
21.	.02	-.01	.68	.20	-.03	.02	.00	.12	-.06	-.14	.549
22.	-.01	.02	.66	.02	.15	.14	.01	-.03	-.19	-.09	.519
23.	.05	-.06	.79	.09	.12	-.05	.07	.03	-.05	.00	.661
24.	-.01	-.13	.50	-.05	.03	-.15	.04	.03	.34	-.01	.408
25.	.11	-.04	.58	-.12	.05	-.07	.10	-.13	.33	.08	.508
26.	.01	-.07	.64	-.05	-.07	-.06	.05	.10	.27	.06	.510
27.	.34	-.03	.09	-.10	.22	.07	.03	-.30	-.12	-.32	.394
28.	.75	-.06	.02	.10	.04	-.04	.02	.02	.01	-.01	.582
29.	.71	-.10	.06	.06	.06	-.07	-.01	-.05	.00	.00	.530
30.	.71	-.01	.00	.09	.03	.09	.05	.22	-.03	-.09	.587
31.	.44	-.05	-.08	.07	-.03	.44	-.04	.04	-.21	-.02	.447
32.	.40	-.20	.01	.16	.01	.53	-.07	.12	-.11	.06	.550
33.	.62	-.04	.06	-.02	.01	.15	.12	-.09	-.12	-.11	.462
34.	.12	-.43	.01	.13	.14	.12	.02	.07	.04	-.45	.464
35.	.17	-.57	.06	.24	-.04	-.05	-.14	.12	.01	-.36	.586
36.	.17	-.66	.06	.22	-.13	-.12	-.17	.06	-.07	-.16	.603
37.	.10	-.68	.02	.09	.08	-.04	.00	.07	.07	-.27	.571
38.	-.01	-.79	.10	.02	.12	.17	.11	-.05	.00	.11	.702
39.	.07	-.70	.02	.06	.14	.11	.23	-.14	.00	.13	.618
40.	.00	-.69	.06	-.10	.07	.14	.19	-.03	.09	.10	.572

DIFFERENCES IN RATINGS AS A FUNCTION OF SEX

Male Raters				Female Raters				Differences			
Male Ratees	Female Ratees	Comp. Score	Diff. M-F	Male Ratees	Female Ratees	Comp. Score	Diff. M-F	Male Male	Female Female	Comp. Comp.	Diff. Diff.
95	99	194	-04	84	81	165	+03	+11	+18	+29	-07
95	100	195	-05	92	97	189	-05	+03	+03	+06	00
97	99	196	-02	100	85	185	+15	-03	+14	+11	-17
116	88	204	+28	90	89	179	+01	+26	-01	+25	+27
113	102	215	+11	99	101	200	-02	+14	+01	+15	+13
85	95	180	-10	102	106	208	-04	-17	-11	-28	-06
88	93	181	-05	91	91	182	00	-03	+02	-01	-05
93	88	181	+05	85	81	166	+04	+08	+07	+15	+01
95	101	196	-06	102	104	206	-02	-07	-03	-10	-04
92	92	184	00	98	103	201	-05	-06	-11	-17	+05
91	87	178	+04	94	87	181	+07	-03	00	-03	-03
97	89	186	+08	104	95	199	+09	-07	-06	-13	-01
92	101	193	-09	68	87	155	-19	+24	+14	+38	+10
99	97	196	+02	73	94	167	-21	+26	+03	+29	+23
81	87	168	-06	94	87	181	+07	-13	00	-13	-13
80	84	164	-04	94	90	184	+04	-14	-06	-20	-08
106	111	217	-05	82	82	164	00	+24	+29	+53	-05
84	95	179	-11	84	88	172	-04	00	+07	+07	-07
99	96	195	+03	85	96	181	-11	+14	00	+14	+14
80	84	164	-04	70	73	143	-03	+10	+11	+21	-01
99	106	205	-07	103	88	191	+15	-04	+18	+14	-22
93	93	186	00	83	95	178	-12	+10	-02	+08	+12
83	92	175	-09	82	102	184	-20	+01	-10	-09	+11
82	100	182	-18	85	88	173	-03	-03	+12	+09	-15
107	111	218	-04	93	107	200	-14	+14	+04	+18	+10
93	93	186	00	104	110	214	-06	-11	-17	-28	+06
73	86	159	-13	91	90	181	+01	-18	-04	-22	-14
92	96	188	-04	79	74	153	+05	+13	+22	+35	-09
85	112	197	-27	83	90	173	-07	+02	+22	+24	-20
90	88	178	+02	95	94	189	+01	-05	-06	-11	+01

DIFFERENCES IN RATINGS AS A FUNCTION OF AGE

Young Raters				Old Raters				Differences			
Young Ratees	Old Ratees	Comp. Score	Diff. Y-O	Young Ratees	Old Ratees	Comp. Score	Diff. Y-O	Young Young	Old Old	Comp. Comp.	Diff. Diff.
87	78	165	+09	111	86	197	+25	-24	-08	-32	-16
110	76	186	+34	88	60	148	+28	+22	+16	+38	+06
96	77	173	+19	80	75	155	+05	+16	+02	+18	+14
125	120	245	+05	94	84	178	+10	+31	+36	+67	-05
102	83	185	+19	98	88	186	+10	+04	-05	-01	+09
92	87	179	+05	101	87	188	+14	-09	00	-09	-09
106	79	185	+27	82	92	174	-10	+24	-13	+11	+37
96	92	188	+04	90	88	178	+02	+06	+04	+10	+02
107	80	187	+27	101	88	189	+13	+06	-08	-02	+14
91	75	166	+16	107	101	208	+06	-16	-26	-42	+10
104	87	191	+17	79	98	177	-19	+25	-11	+14	+36
84	71	155	+13	92	84	176	+08	-08	-13	-21	+05
109	87	196	+22	89	52	141	+37	+20	+35	+55	-15
102	83	185	+19	103	97	200	+06	-01	-14	-15	+13
87	77	164	+10	100	86	186	+14	-13	-09	-22	-04
95	89	184	+06	115	88	203	+27	-20	+01	-19	-21
88	76	164	+12	94	95	189	-01	-06	-19	-25	+13
101	71	172	+30	91	80	171	+11	+10	-09	+01	+19
103	78	181	+25	103	104	207	-01	00	-26	-26	+26
110	85	195	+25	109	103	212	+06	+01	-18	-17	+19
106	86	192	+20	100	77	177	+23	+06	+09	+15	-03
97	77	174	+20	97	71	168	+26	00	+06	+06	-06
72	71	143	+01	102	82	184	+20	-30	-11	-41	-19
87	48	135	+39	106	86	192	+20	-19	-38	-57	+19
87	97	184	-10	89	75	164	+14	-02	+22	+20	-24
80	89	169	-09	105	80	185	+25	-25	+09	-16	-34
97	75	172	+22	92	89	181	+03	+05	-14	-09	+19
98	75	173	+23	88	65	153	+23	+10	+10	+20	00
83	72	155	+11	100	88	188	+12	-17	-16	-33	-01
99	97	196	+02	86	86	172	00	+13	+11	+24	+02

	Small Raters				Large Raters				Differences		
Small Ratees	Large Ratees	Comp. Score	Diff. L-S	Small Ratees	Large Ratees	Comp. Score	Diff. L-S	Small Small	Large Large	Comp. Comp.	Diff. Diff.
75	78	153	-03	78	83	161	-05	-03	-05	-08	+02
71	60	131	+11	95	95	190	00	-24	-35	-59	+11
97	82	179	+15	65	92	157	-27	+32	-10	+22	+42
73	80	153	-07	101	102	203	-01	-28	-22	-50	-06
96	87	183	+09	71	81	152	-10	+25	+06	+31	+19
67	87	154	-20	91	94	185	-03	-24	-07	-31	-17
80	82	162	-02	77	105	182	-28	+03	-23	-20	+26
77	80	157	-03	94	101	195	-07	-17	-21	-38	+04
71	91	162	-20	72	85	157	-13	-01	+06	+05	-07
70	98	168	-28	83	88	171	-05	-13	+10	-03	-23
85	93	178	-08	87	83	170	+04	-02	+10	+08	-12
94	84	178	+10	77	95	172	-18	+17	-11	+06	+28
88	79	167	+09	91	92	183	-01	-03	-13	-16	+10
107	89	196	+18	97	95	192	+02	+10	-06	+04	+16
84	97	181	-13	84	71	155	+13	00	+26	+26	-26
99	88	187	+11	100	80	180	+20	-01	+08	+07	-09
79	100	179	-21	75	104	179	-29	+04	-04	00	+08
62	65	127	-03	78	78	156	00	-16	-13	-29	-03
76	82	158	-06	77	101	178	-24	-01	-19	-20	+18
63	89	152	-26	81	100	181	-19	-18	-11	-29	-07
75	89	164	-14	84	97	181	-13	-09	-08	-17	-01
83	81	164	+02	85	78	163	+07	-02	+03	+01	-05
80	76	156	+04	93	114	207	-21	-13	-38	-51	+25
97	83	180	+14	72	85	157	-13	+25	-02	+23	+27
74	85	159	-11	100	79	179	+21	-26	+06	-20	-32
80	91	171	-11	65	72	137	-07	+15	+19	+34	-04
72	70	142	+02	86	88	174	-02	-14	-18	-32	+04
84	84	168	00	90	82	172	+08	-06	+02	-04	-08
82	88	170	-06	71	73	144	-02	+11	+15	+26	-04
99	95	194	+04	103	75	178	+28	-04	+20	+16	-24

APPENDIX G_4

DIFFERENCES IN RATINGS AS A FUNCTION OF INTELLIGENCE

High Raters				Low Raters				Differences			
High Ratees	Low Ratees	Comp. Score	Diff. H-L	High Ratees	Low Ratees	Comp. Score	Diff. H-L	High High	Low Low	Comp. Comp.	Diff. Diff.
87	78	165	+09	109	91	200	+18	-22	-13	-35	-09
86	103	189	-17	110	104	214	+06	-24	-01	-25	-23
81	77	158	+04	96	75	171	+21	-15	+02	-13	-17
97	85	182	+12	99	85	184	+14	-02	00	-02	-02
111	108	219	+03	105	68	173	+37	+06	+40	+46	-34
96	90	186	+06	105	69	174	+36	-09	+21	+12	-30
110	76	186	+34	97	84	181	+13	+13	-08	+05	+21
111	86	197	+25	104	88	192	+16	+07	-02	+05	+09
88	60	148	+28	114	107	221	+07	-26	-47	-73	+21
106	105	211	+01	86	78	164	+08	+20	+27	+47	-07
104	89	193	+15	101	97	198	+04	+03	-08	-05	+11
80	75	155	+05	88	65	153	+23	-08	+10	+02	-18
97	80	177	+17	98	75	173	+23	-01	+05	+04	-06
91	76	167	+15	83	72	155	+11	+08	+04	+12	+04
99	85	184	+14	100	88	188	+12	-01	-03	-04	+02
94	84	178	+10	107	82	189	+25	-13	+02	-11	-15
83	97	180	-14	118	73	191	+45	-35	+24	-11	-59
98	88	186	+10	90	70	160	+20	+08	+18	+26	-10
96	77	173	+19	102	95	197	+07	-06	-18	-24	+12
108	81	189	+27	87	91	178	-04	+21	-10	+11	+31
109	82	191	+27	100	95	195	+05	+09	-13	-04	+22
88	92	180	-04	88	76	164	+12	00	+16	+16	-16
106	97	203	+09	106	89	195	+17	00	+08	+08	-08
89	102	191	-13	99	97	196	+02	-10	+05	-05	-15
85	81	186	+04	86	86	172	00	-01	-05	-06	+04
102	96	198	+06	101	75	176	+26	+01	+21	+22	-20

DIFFERENCES IN RATINGS AS A FUNCTION OF POLITICAL AFFILIATIONS

Rep. Raters				Dem. Raters				Differences			
Rep. Ratees	Dem. Ratees	Comp. Score	Diff. R-D	Rep. Ratees	Dem. Ratees	Comp. Score	Diff. R-D	Rep. Rep.	Dem. Dem.	Comp. Comp.	Diff. Diff.
72	100	172	-28	72	78	150	-06	00	+22	+22	-22
60	82	142	-22	72	100	172	-28	-12	-18	-30	+06
84	75	159	+09	72	97	169	-25	+12	-22	-10	+34
66	79	145	-13	95	101	196	-06	-29	-22	-51	-07
66	75	141	-09	86	91	177	-05	-20	-16	-36	-04
73	82	155	-09	67	87	154	-20	+06	-05	+01	+11
100	99	199	+01	74	83	157	-09	+26	+16	+42	+10
83	83	166	00	71	83	154	-12	+12	00	+12	+12
77	103	180	-26	74	90	164	-16	+03	+13	+16	-10
91	94	185	-03	69	92	161	-23	+22	+02	+24	+20
86	57	143	+29	62	80	142	-18	+24	-23	+01	+47
89	102	191	-13	69	96	165	-27	+20	+06	+26	+14
84	73	157	+11	82	98	180	-16	+02	-25	-23	+27
62	96	158	-34	68	90	158	-22	-06	+06	00	-12
83	104	187	-21	62	64	126	-02	+21	+40	+61	-19
83	107	190	-24	53	86	139	-33	+30	+21	+51	+09

DIFFERENCES IN RATINGS AS A FUNCTION OF INTROVERSION-EXTROVERSION PERSONALITIES

Extroverted Raters				Introverted Raters				Differences			
Extro. Ratees	Intro. Ratees	Comp. Score	Diff. E-I	Extro. Ratees	Intro. Score	Comp. Score	Diff. I-E	Extro. Extro.	Intro. Intro.	Comp. Comp.	Diff. Diff.
68	100	168	-32	80	105	185	-25	-12	-05	-17	-07
98	75	173	+23	71	85	156	-14	+27	-10	+17	+37
77	90	167	-13	77	80	157	-03	00	+10	+10	-10
73	82	155	-09	77	83	160	-06	-04	-01	-05	-03
96	82	178	+14	81	92	173	-11	+15	-10	+05	+25
88	87	175	+01	84	80	164	+04	+04	+07	+11	-03
73	103	176	-30	82	93	175	-11	-09	+10	+01	-19
91	90	181	+01	75	83	158	-08	+16	+07	+23	+09
87	76	163	+11	88	93	181	-05	-01	-17	-18	+16
76	78	154	-02	87	95	182	-08	-11	-17	-28	+06
95	77	172	+18	97	81	178	+16	-02	-04	-06	+02
88	88	176	00	85	84	169	+01	+03	+04	+07	-01
87	91	178	-04	82	103	185	-21	+05	-12	-07	+17
86	98	184	-12	74	86	160	-12	+12	+12	+24	00
80	78	158	+02	87	87	174	00	-07	-09	-16	+02
87	88	175	-01	64	78	142	-14	+23	+10	+33	+13
82	93	175	-11	80	96	176	-16	+02	-03	-01	+05
76	69	145	+07	83	82	165	+01	-07	-13	-20	+06
66	89	155	-23	79	86	165	-07	-13	+03	-10	-16
103	66	169	+37	83	76	159	+07	+20	-10	+10	+30

VITA

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Candidate for the Degree of

Master of Science

Thesis: EFFECTS OF RATER-RATEE SIMILARITIES ON PERFORMANCE
EVALUATIONS

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Personal Data: Born in Omaha, Nebraska, January 15, 1932,
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Education: Attended grade school in Omaha, Nebraska, and
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