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GRADUATE SCHOOL OF BUSINESS

STANFORD UNIVERSITY

PERCEPTION OF LEADERSHIP IN SMALL GROUPS

Thomas W. Harrell, Principal Investigator

Technical Report Number 2

Correlation Between Peer Ratings and Behavior Patterns

May 10, 1963

Hans E. Lee and Lucy E. Burnham

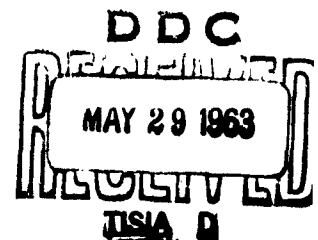
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## TECHNICAL REPORT NUMBER 2

Correlations Between Peer Ratings and Behavior Patterns

## Abstract

Multiple correlation analyses have been carried out with 44 variables, 43 of which were selected from scales of the Strong Vocational Interest Blank, the MMPI, the TAT, the Guilford-Zimmerman Temperament Survey, the Leadership Opinion Questionnaire, the Ghiselli Self-Description Inventory, the F Scale, and tests of Personnel Problems, Practical Judgment, and Imaginary Events; grade point average was the other variable. The study was designed to assess whether or not these variables were related to the subject's being rated as desirable or as undesirable to have as a boss. 135 men who were candidates for the Masters in Business Administration degree were used as subjects.

The most predictable of three criteria was the number of positive boss ratings received. The best and only stable predictor of the number of times a student is rated by his peers as desirable to have as a boss is the grade point average earned in the two year MBA program. When this was tested on a different sample of subjects, the predicted number of positive boss ratings received correlated + 0.50 with those received.

## Problem

Technical Report Number 1, Prediction of Leadership in Small Groups (Harrell, Rice, and Burnham, 1963), discusses criteria of small group leadership which will be used in later studies. This present report studies criteria of leadership derived from peer ratings.

Although the analysis in this report employs peer ratings as the criteria to be predicted, in the future peer ratings will be studied as predictors for each of the criteria of small group leadership as described in Technical Report Number 1. At the present it is thought that the most satisfactory way to incorporate peer ratings is to consider them as a variable on which each member of the group will be ranked within his group. Later, within the groups, rank order correlations will be done with the peer ratings and the ranks received on each of the criteria of small group leadership.

This paper presents an examination of the correlations between a number of behavior patterns and peer ratings as potential boss. The goal of the analysis was to obtain a multiple regression equation to predict the peer ratings.

#### Method

##### Population

The population studied consisted of the members of one entering class at a graduate school of business who were pursuing a two-year program for the Masters of Business Administration degree. All of the 197 students who were enrolled in a required first-year course were requested to cooperate. Towards the end of the second year of the MBA program, this number was reduced to 169 by requiring that each student included in the study fulfill the following limits: (1) he entered in 1960 with the class of 1962; (2) he was planning to graduate with the class of 1962, that is, had spent 5 consecutive quarters with his classmates, and (3) he had participated in behavior pattern tests which constitute the predictors. The names of the 169 students who fulfilled these three requirements

were used to construct a peer rating roster. While 169 men were included in the peer rating roster and were invited to rate their peers, only 135 of these men had completed their battery of behavior tests. Hence this study is limited to the results of these 135 men.

#### Peer Ratings

A copy of the peer rating form is shown in Figure 1. When the peer ratings were obtained from a previous class it was found that the names in the first half of the roster were rated more frequently than those in the last half. In that study a single alphabetically arranged roster was distributed with the peer rating form which was identical to the form used for the 1962 MBA class. In order to minimize this biasing two rosters were employed in this present study. In the first roster, the names of the 169 subjects were randomly listed. The second one was obtained by inverting the order of the first roster. Students were asked to make their ratings independently and to cross off the names that they did not recognize or did not feel they knew well enough to rate. All students were initially contacted within a two-week period and were requested to return the ratings within ten days.

#### Peer Rating Criteria

The answers to the questions (1) "Which man in the group would you most like to have as your boss?" and (2) "Which man would you least like to have as your boss?" obtained from the peer rating form, were used to construct three distinct criteria variables for multiple regression analyses. The first of these, labelled the boss score, was obtained by weighting a first choice to question (1) as +3, a second choice as +2, and a third choice as +1; by weighting

a last choice to question (2) as -3, a next to last choice as -2, and a third from last choice as -1; and then summing these weighted responses for each individual over all the raters.

Two additional criteria were obtained from the responses to these questions. The number of positive boss ratings was obtained by counting the number of times that subject's name appeared as a response to question (1), ignoring the distinctions in response indicated by first, second, and third choices. The last criterion, the number of negative boss ratings, analogously, is the frequency of ratings received by a subject from raters answering question (2).

#### Behavior Patterns

Eleven tests of behavior patterns, listed in Table 1 together with the scales from these tests which were used as predictors, were selected on the basis of a survey of the literature (Harrell, 1961) and of results of current research. These tests were self administered and returned within a month. A copy of the instructions which accompanied each set of tests is shown in Figure 2.

#### Multiple Regression

For this study of the peer ratings collected from the MBA class of 1962, each of the three criteria; boss score, number of positive boss ratings, and number of negative boss ratings, was used as the variable to be predicted by a multiple regression equation. A total of 44 separate predictors were subjected to repeated multiple regression analyses. The GSB-GPA is the average of the numerical grade points accumulated over the two-year program. The correlation of the predictors with each of the three criteria is reported in Table 2.

The research strategy employed in analyzing the data was designed to assess the relative importance of the predictors in accounting for the variability in the criterion measure as well as to assess the degree of confidence to be placed in the results. The latter consideration suggested that the subjects be randomly divided into two groups of almost equal size. Thus the division into groups resulted in one group, the regression group, of 68 subjects and the other group, the test group, of 67 subjects. The regression group was submitted to repeated regression analyses using the BIMD Program 29 for multiple linear regression analysis and the facilities of the Western Data Processing Center, Graduate School of Business Administration, University of California, Los Angeles (BIMD 29, 1961).

In order to assess the relative importance of the predictors, the measures for all the predictors were standardized, i.e., transformed such that they all had the same mean and the same standard deviation. This allowed the regression coefficients for the predictors to be interpreted as indicators of the relative importance of the variables for predicting the criterion.

For each of the three criteria the same method of analysis was employed. The analysis employing the number of positive boss ratings as the criterion will be described as an example. The number of positive boss ratings received was treated as the variable to be predicted. That is, the observed value for the  $i^{\text{th}}$  subject was represented by  $Y_i$  in the following equation:

$$Y_i = B_1 X_{i1} + B_2 X_{i2} + \dots + B_m X_{im} + A$$

where A represents the Y-intercept and  $X_{im}$  represents the score of the  $i^{\text{th}}$  subject



on the  $m^{\text{th}}$  predictor. As a part of the analysis, scatter plots were made for each of the 44 predictors against each of the criteria. A good reference for the mathematical background of multiple regression analysis is found in McNemar (1962, Chapter 11).

## Results

### Reliability of Peer Ratings

An estimate of inter-rater agreement had been obtained from similar peer ratings collected from the MBA candidates in the Class of 1961. There were 36 raters for whom completed ratings sheets were available. These raters were randomly divided into two groups. Two separate boss scores were computed for each subject; one score from one group of raters, the other score from the other group of raters. The correlation between these two sets of boss scores yielded a product moment  $r$  of +0.51. A similar analysis was made for the 90 raters of the Class of 1962. This measure of inter-rater agreement on the criterion, number of positive boss ratings, was +0.71.

### Analysis of Peer Ratings

Although 90 students actually returned both the completed rating forms and the rating rosters, inadvertently not all of the returned rating rosters were retained. For the 62 rosters which were retained, the mean number of names crossed off by each rater was 49 and the standard deviation was 25.0. This indicated that raters felt unqualified to rate about one-third of their classmates. On the other hand, the mean number of times each of the 169 names were crossed off is 18 and the standard deviation is 9.6. The frequency distribution of such crossoffs is recorded in Figure 3 which shows that there is

a considerable variability in the degree to which a student is known by a rater. Some students were known by all the 62 raters while others were known by fewer than 28 per cent of the raters.

#### Multiple Regression Analysis

From the results of regression analysis of the standardized data, five variables were selected which contributed the most to accounting for the variance in the number of positive boss ratings received. These results are recorded in Table 3 and Table 4. In order to appraise the stability of the regression coefficients, the regression was performed on the data for the test group ( $N = 67$ ) where these data were also standardized. The results of this regression are reported in Tables 5 and 6. The analysis of variance for both regressions yields an F value which is statistically significant. The fact of statistical significance for the regression group should, of course, be qualified because the variables have been subjected to previous screening and selection (McNemar, 1962, p. 185). Statistical results for each of the three criteria using the regression group are presented in Tables 3 and 4, 7 and 8, 9 and 10. A study of the analysis of variance tables for the regression group using the three criteria, Tables 3, 7, and 9, shows that the effect due to regression reached the 10 per cent level required for statistical significance. Tables 5 and 6, 11 and 12, and 13 and 14 record the results for the test group for each of the three criteria. Except for the criterion, boss score, the regressions remained significant on this test group. For the criterion, number of positive boss ratings received, this may be viewed as a successful replication of the significant results found in the regression group. The same method

was in turn applied to each of the other criteria, completing the initial analysis of the data.

In order to increase the accuracy of obtainable prediction of the number of positive boss ratings received, a final analysis was performed employing a single predictor, grade point average, again using the regression group (N = 68). The single predictor, GPA, was chosen because it accounted for about 29 per cent of the explained variance of this criterion on the previous analysis while its closest competitor accounted for only about 5 per cent. The prediction equation obtained is:

$$Y_{\underline{i}} = -10.44027 + 4.24612 X_{\underline{i}}$$

where  $Y_{\underline{i}}$  = the predicted number of positive boss ratings received by the  $\underline{i}$ <sup>th</sup> subject, and  $X_{\underline{i}}$  = the unstandardized grade point average for the  $\underline{i}$ <sup>th</sup> subject.

The above equation was applied to the grade point average of each subject in the test sample to obtain his predicted number of positive boss ratings received. Table 15 records these actual and predicted values. A correlation between these predicted number of positive boss ratings and the actual number of positive boss ratings received was found to be +0.50, a statistically significant value. This indicates that the GPA is indeed related to the number of positive boss ratings received.

The most predictable of the three criteria is the number of positive boss ratings received and the best prediction equation for this criterion employs the single predictor, GPA.

As can be seen in Table 10, the proportion of variance explained by any one of the five predictors of the criterion, number of negative boss ratings

received, was 10 per cent or lower. As each of the five predictors explained about the same proportion of the variance, it was not believed worthwhile to attempt to perform another regression analysis, using fewer predictors, on this criterion.

The regression on the number of negative boss ratings was statistically significant. An examination of the proportion of variance explained by each of the predictors shows that the five variables taken together account for a total of about 33 per cent of the variance; but the variable explaining the largest proportion of the variance, MMPI-Pt, accounted for only 10 per cent of the variance in the number of negative boss ratings received. In the investigation of the predictability of the number of positive boss ratings, additional variables were added to the basic equation consisting of the single variable, grade point average. The next variable added, MMPI-Es, explained 6 per cent of the variance. The new equation thus formed decreased the obtained correlation between the predicted and the actual number of positive boss ratings received. In view of this experience and the fact that the proportion of explained variance for each variable on the criterion, number of negative boss ratings, was 10 per cent or lower, it may be inferred that an attempt to compute a prediction equation for this criterion and subsequently to apply such an equation to the test sample would not yield a significant result. Finally, the non-significant regressions on the criterion, boss score, indicates that this criterion also cannot be predicted from the examined variables.

### Discussion

It seems plausible that prediction was lessened by the varying degrees of acquaintanceship among the members of the class. Moreover, those students with high grade point averages probably took part to a greater degree in class participation. Also, it is well known which students have earned the top 10 grade point averages because their names are posted on a plaque. This may create the impression among the raters that the individual with the higher GPA is the one who would make the better boss even in the absence of much personal acquaintance outside of class.

An inspection of the scatter plots shows that in general, the assumption of linearity cannot be strongly supported, although for a few of the variables, including GPA, there was a definite linear plot.

It appears that number of positive boss ratings is not exactly the opposite of the number of negative boss ratings. The number of negative boss ratings correlates positively with GPA, +0.25. The number of positive boss ratings correlates positively with GPA, +0.52. This would suggest that people with high grade point averages become visible, some with high GPA are liked while others are disliked. It would be interesting to know why.

### Summary

This paper has described an extensive statistical analysis of 44 variables, 43 of which are selected scales from such psychological tests as the Strong Vocational Interest Blank, The MMPI, the TAT, and one of which was the grade point average of the subjects who were students in a two-year program leading to the Masters of Business Administration. The study was designed to assess

whether or not these variables were related to the subject's being rated as desirable or as undesirable to have as a boss. These evaluations were made by the classmates of each student and are referred to as the peer ratings.

The conclusion of the study is that of all the 44 variables examined, the best and only stable predictor of the number of times a student is rated by his peers as desirable to have as a boss is that student's grade point average earned in the two-year period.

When this conclusion was tested on a different sample of subjects, the predicted number of positive boss ratings received correlated +0.50 with those actually received by these subjects, thus substantiating this finding of the study.

FOOTNOTES

<sup>1</sup> The authors wish to make the following acknowledgements:

In addition to support from the Office of Naval Research, a major portion of the analysis of these data was done from funds provided by a grant from the Western Management Science Institute; appreciation also goes to Dean Arbuckle and the Graduate School of Business, Stanford University for Ford Foundation funds which made possible the collection of the data; and to Western Data Processing Center for computer services in carrying out the statistical analyses.

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Table 1

## Variables Used in Peer Rating Study

Strong Vocational Interest Blank (SVIB)	7 scales
Engineer (Eng)	
Production Manager (Prod)	
Personnel Director (Pers)	
Accountant (Acc)	
Sales Manager (Sales)	
President of Manufacturing Concern (Mfg)	
Masculinity-Femininity (Mf)	
Minnesota Multiphasic Personality Inventory (MMPI)	13 scales
K	
Hs	
D	
Hy	
Pd	
Mf	
Pa	
Pt	
Sc	
Ma	
Si	
Ego Strength (Es)	
Dominance (Do)	

(Table continued on next page)

Guilford-Zimmerman Temperament Survey (GZ)	10 scales
General Activity (G)	
Restraint (R)	
Ascendance (A)	
Social Interest (S)	
Emotional Stability (E)	
Objectivity (O)	
Friendliness (F)	
Thoughtfulness (T)	
Personal Relations (P)	
Masculinity (M)	
Leadership Opinion Questionnaire (LOQ)	2 scales
Consideration (C)	
Initiating Structure (S)	
Ghiselli Self-Description Inventory (GSDI)	4 scales
Supervisory Qualities (SQ)	
Initiative (I)	
Self-Assurance (SA)	
Decision-Making (DM)	
Test of Imagination (TAT)	3 scales
n Achievement (nAch)	
n Affiliation (nAff)	
n Power (nPow)	
Personnel Problems	1 scale
Public Opinion Questionnaire (F Scale)	1 scale
Practical Judgment	1 scale

(Table continued on next page)

Table 1 :

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Imaginary Events

1 scale

Graduate School of Business

Total Grade Point Average (GSB - GPA)

1 scale

Boss Score

1 scale

Number of Positive Boss Ratings Received

1 scale

Number of Negative Boss Ratings Received

1 scale

Table 2

Correlations of the Predictors With Each of the  
Three Criteria (N = 135)<sup>1</sup>

Variable	Peer Rating Criteria		
	Boss Score	Number of Positive Boss Ratings Received	Number of Negative Boss Ratings Received
SVIB - Engineer	-06	-13	-02
SVIB - Production Manager	-02	-06	-03
SVIB - Personnel Director	11	09	-08
SVIB - Accountant	04	01	-04
SVIB - Sales Manager	06	02	-10
SVIB - President Mfg. Concern	03	-04	-06
SVIB - Masculinity Femininity	-06	-09	-04
MMPI - K	10	05	-10
MMPI - Hs	07	13	03
MMPI - D	-02	-04	01
MMPI - Hy	15	19	-04
MMPI - Pd	06	17	08
MMPI - Mf	02	16	15
MMPI - Pa	06	11	00
MMPI - Pt	13	24	05
MMPI - Sc	02	10	06
MMPI - Ma	00	13	05
MMPI - S1	-13	-15	08
MMPI - Ego Strength	-03	-14	-12
MMPI - Dominance	12	07	-07

(Table continued on next page)

Variable	Peer Rating Criteria		
	Boss Score	Number of Positive Boss Ratings Received	Number of Negative Boss Ratings Received
GSE - GPA	19	52	25
Boss Score	--	65	-69
No. of Pos. Boss Ratings	65	--	05
No. of Neg. Boss Ratings	-69	05	--
GZ - General Activity	12	20	04
GZ - Restraint	12	07	-07
GZ - Ascendance	12	17	-02
GZ - Social Interest	17	18	-09
GZ - Emotional Stability	12	-03	-21
GZ - Objectivity	12	05	-15
GZ - Friendliness	17	08	-15
GZ - Thoughtfulness	16	13	-10
GZ - Personal Relations	21	19	-12
GZ - Masculinity	12	-01	-16
LOQ - C	26	32	-07
LOQ - S	-03	-01	05
GSDI - Supervisory Qualities	01	00	02
GSDI - Initiative	08	08	02
GSDI - Self-Assurance	04	06	05
GSDI - Decision-Making	08	16	08
Personnel Problems	-08	-02	13
F Scale	-09	-05	05

(Table continued on next page)

Variable	Peer Rating Criteria		
	Boss Score	Number of Positive Boss Ratings Received	Number of Negative Boss Ratings Received
Practical Judgment	-01	-05	-04
TAT - nAch	01	13	11
TAT - nAff	-14	-10	08
TAT - nPow	-03	00	08
Imaginary Events	-01	-06	-03

<sup>1</sup>Note.--Due to the fact that all possible intercorrelations were examined, tests of significance were not deemed appropriate. Decimal points have been omitted.

Table 3

Analysis of Variance  
 For the Multiple Regression of Five Variables on the  
 Criterion, "Number of Positive Boss Ratings Received" (N = 68)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	293.81923	58.76384	12.73620
Deviation About Regression	62	286.06313	4.61392	
Total	67	579.88235		

$$F_{0.10; 5, 62} \approx 1.95$$

Table 4

Results for the Multiple Regression of Five Variables  
 on the Criterion, "Number of Positive Boss Ratings Received "  
 Standardized Data (N = 68)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
GSB - GPA	1.02	0.49	0.29
MMPI - Es	-0.64	-0.33	0.06
TAT - nAff	-0.65	-0.35	0.05
SVIB - Mf	-0.61	-0.33	0.05
GZ - P	0.80	0.39	0.05

Intercept (A Value) is 6.02270



Table 5

## Analysis of Variance

For the Multiple Regression of Five Variables on the  
Criterion, "Number of Positive Boss Ratings Received" (N = 67)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	74.28199	14.85640	4.66234
Deviation About Regression	61	194.37473	3.18647	
Total	66	268.65672		

$F_{0.10; 5, 61} \approx 1.95$

Table 6.

Results for the Multiple Regression of Five Variables  
on the Criterion "Number of Positive Boss Ratings Received"

Standardized Data (N = 67)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
GSB - GPA	0.85	0.51	0.25
MMPI - Es	0.16	0.10	0.01
GZ - P	0.15	0.11	0.01
TAT - nAff	0.05	0.03	0.00
SVIB - Mf	0.02	0.01	0.00

Intercept (A Value) is -60.02838

Table 7

Analysis of Variance  
 For the Multiple Regression of Five Variables on the  
 Criterion, "Boss Score" (N = 68)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	1331.70706	266.34141	6.74736
Deviation About Regression	62	2447.35175	39.47341	
Total	67	3779.05881		

$$F_{0.10; 5, 62} \approx 1.95$$

Table 8

Results for the Multiple Regression of Five Variables  
 on the Criterion, "Boss Score"  
 Standardized Data (N = 68)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
MMPI - Pt	3.09	0.48	0.22
GSB - GPA	1.19	0.23	0.04
MMPI - Mf	-1.14	-0.20	0.04
TAT - nAch	1.25	0.23	0.03
TAT - nPow	-1.32	-0.24	0.02

Intercept (A Value) is -152.22029

Table 9

## Analysis of Variance

For the Multiple Regression of Five Variables on the  
Criterion, "Number of Negative Boss Ratings Received" (N = 68)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	133.57190	26.71438	5.86844
Deviation About Regression	62	282.23693	4.55221	
Total	67	415.80882		

$$F_{0.10; 5, 62} \approx 1.95$$

Table 10

Results for the Multiple Regression of Five Variables  
 on the Criterion, "Number of Negative Boss Ratings"  
 Standardized Data (N = 68)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
MMPI - Pt	-0.91	-0.43	0.10
MMPI - Mf	0.72	0.34	0.09
MMPI - Do	0.43	0.23	0.06
GSB - GPA	0.43	0.24	0.04
TAT - nPow	0.37	0.21	0.03

Intercept (A Value) is -50.83347

Table 11

Analysis of Variance  
 For the Multiple Regression of Five Variables on the  
 Criterion, "Boss Score" (N = 67)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	376.94134	75.38827	1.46663
Deviation About Regression	61	3135.53625	51.40223	
Total	66	3512.47760		

$$F_{0.10; 5, 61} \approx 1.95$$

Table 12

Results for the Multiple Regression of Five Variables  
 on the Criterion, "Boss Score"  
 Standardized Data (N = 67)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
MMPI - Pt	-1.42	-0.21	0.03
TAT - nPow	0.96	0.16	0.03
TAT - nAch	-1.04	-0.18	0.03
GSA - GPA	0.77	0.13	0.02
MMPI - Mf	0.33	0.05	0.00

Intercept (A Value) is 20.06525



Table 13

## Analysis of Variance

For the Multiple Regression of Five Variables on the  
Criterion, "Number of Negative Boss Ratings Received" (N = 67)

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Value
Due to Regression	5	121.87701	24.37540	3.71002
Deviation About Regression	61	400.77970	6.57016	
Total	66	522.65672		

$$F_{0.10; 5, 61} \approx 1.95$$

Table 14

Results for the Multiple Regression of Five Variables  
on the Criterion, "Number of Negative Boss Ratings"

Standardized Data (N = 67)

Variable	Regression Coefficient	Partial Correlation Coefficient	Proportion of Variance
MMPI - Pt	0.34	0.14	0.11
GSB - GPA	0.60	0.28	0.05
MMPI - Do	-0.58	-0.27	0.05
TAT - nPow	-0.36	-0.17	0.02
MMPI - Mf	0.21	0.09	0.01

Intercept (A Value) is -9.37093

Table 15

A Comparison of Actual with Predicted  
 Number of Positive Boss Ratings<sup>1</sup> (N = 67)

Subject Number	Actual NPBR	Predicted NPBR (rounded) <sup>2</sup>	Predicted NPBR (not rounded)
1	2	2	1.87
5	1	0	0.00
7	7	1	1.45
10	0	2	2.30
13	1	1	1.45
15	5	4	3.57
22	7	5	4.85
24	0	0	0.18
26	2	1	1.02
31	0	0	0.00
33	1	4	4.42
36	5	6	6.12
38	2	3	3.15
41	2	1	1.45
42	1	3	3.15
44	0	2	1.87
45	1	1	0.60
48	2	3	3.15
58	0	1	1.45
60	3	3	3.15

(Table continued on next page)

Subject Number	Actual NPBR	Predicted NPBR (rounded) <sup>2</sup>	Predicted NPBR (not rounded)
61	0	0	0.18
65	0	0	0.00
72	0	3	3.15
73	1	1	0.60
74	1	0	-0.00
75	1	0	0.00
82	1	1	1.45
84	1	1	0.60
85	0	1	1.45
87	0	0	0.00
88	5	1	1.45
89	0	1	1.45
90	1	1	0.60
91	7	2	2.30
98	0	1	1.02
100	5	3	3.15
101	2	2	1.87
105	3	3	3.15
106	6	4	4.00
108	0	1	0.60
109	0	1	1.02
113	0	0	0.00
115	2	3	3.15

(Table continued on next page)

Subject Number	Actual NPBR	Predicted NPBR (rounded)	Predicted NPBR (not rounded)
116	0	4	4.00
119	0	2	1.87
121	7	4	4.00
124	3	4	3.57
125	1	1	0.60
133	1	3	2.72
134	0	0	0.18
135	0	0	0.00
139	1	1	0.60
145	0	4	4.00
146	0	0	0.18
153	0	0	0.18
157	3	1	1.45
159	1	1	1.45
160	1	1	1.45
163	3	0	0.18
166	0	1	0.60
167	0	4	3.57
168	0	0	0.00
171	1	1	1.02
174	0	0	-0.25
177	1	1	0.60
181	2	1	1.45
184	0	3	2.72

$r = +0.50$

## Peer Ratings

Name \_\_\_\_\_

Local Address \_\_\_\_\_

- 1) Which man in the group would you most like to have as your boss?

First choice \_\_\_\_\_

Second choice \_\_\_\_\_

Third choice \_\_\_\_\_

- 2) Which man would you least like to have as your boss?

Last choice \_\_\_\_\_

Next to last choice \_\_\_\_\_

Third from last choice \_\_\_\_\_

- 3) Which man in the group exhibits the greatest degree of emotional maturity?

First choice \_\_\_\_\_

Second choice \_\_\_\_\_

Third choice \_\_\_\_\_

- 4) Which man exhibits the least emotional maturity?

Last choice \_\_\_\_\_

Next to last choice \_\_\_\_\_

Third from last choice \_\_\_\_\_

- 5) Which man would you most like to have as a friend and associate?

First choice \_\_\_\_\_

Second choice \_\_\_\_\_

Third choice \_\_\_\_\_

- 6) Which man would you least like to have as a friend and associate?

Last choice \_\_\_\_\_

Next to last choice \_\_\_\_\_

Third from last choice \_\_\_\_\_

1. On the roster of students in this class attached to the peer rating form, cross through all names that you do not recognize or that you feel you do not know well enough to rate.
2. Note that the rating form contains three principal characteristics on which ratings are to be made and that each of these is divided into an a part where the three men highest in this characteristic are to be listed and a b part where the three men lowest in this characteristic are to be listed.
3. Each of the three characteristics should be rated entirely independently of the others.
4. For each characteristic to be rated, first examine the entire list (after you have crossed off those you do not know well enough to rate) and pick the man who is highest. Write this name in the proper space on the rating sheet. Then examine the list and pick the man lowest in this characteristic. Next pick the man second highest; then the man next to lowest. Continue in this way in rating all the characteristics.
5. When you turn in your rating sheets, be sure that the roster which you have marked is included.
6. Careful and considered answers on your part will greatly improve the accuracy of the data obtained. Please be assured that all replies will be kept in strictest confidence.
7. Do not include yourself in this rating. Be sure to cross your name off the list before beginning the rating. Please note that several of your class mates have been omitted from the class roster. This is because they were not participants in the original testing, please do not include them in your rating.

Figure 2. Instructions and Peer Rating Roster.

## INSTRUCTIONS

Included in this envelope are the following materials:

The Imaginary Events Test  
 The Individual Background Survey  
 A Leadership Opinion Questionnaire  
 The Personnel Problems Test  
 A Public Opinion Questionnaire  
 The Practical Judgment Test  
 A Self-Description Inventory  
 A Test of Imagination

and

\*The Guilford Zimmerman Temperament Survey  
 The Minnesota Multiphasic Personality Inventory  
 The Strong Vocational Interest Blank

\*The last three tests have answer sheets provided;  
 PLEASE DO NOT WRITE IN THE TEST BOOKLETS

Please check to see that all material is present in your envelope. Report any omissions immediately. You are requested to fill in the questionnaires, inventories and tests outside of class. These should be completed by \_\_\_\_\_. As soon as you have completed all the tests, and no later than \_\_\_\_\_, put all answer sheets, completed blanks and test booklets in the envelope and leave in Dr. Harrell's report box by Room 122.

Please follow exactly instructions on the front of each test, and be sure that you write your name on each one of the answer sheets.

It is important that you do each of the tests independently. That is, answers should not be discussed with others in the class. Since these tests are done outside of class, you are placed on your honor to do the work independently and are asked to sign your name to the honor pledge at the bottom of this sheet and include this in the envelope. Please answer all questions as frankly and honestly as possible. Be assured that information you give will be held in strict confidence.

All of you will receive a report on test results in a group meeting, and will have the opportunity for a discussion of your test results (which may be of benefit in clarifying your educational and vocational goals) in an individual interview which may be arranged following attendance at a group meeting. Please note, however, that no written report can be sent to you concerning these tests.

In recognition of and in the spirit of the Honor Code, I certify that I will neither receive nor give unpermitted aid on this material and that I will report, to the best of my ability, all Honor Code violations observed by me.

Signed \_\_\_\_\_  
 (your name)

Figure 1. Instructions for test package.



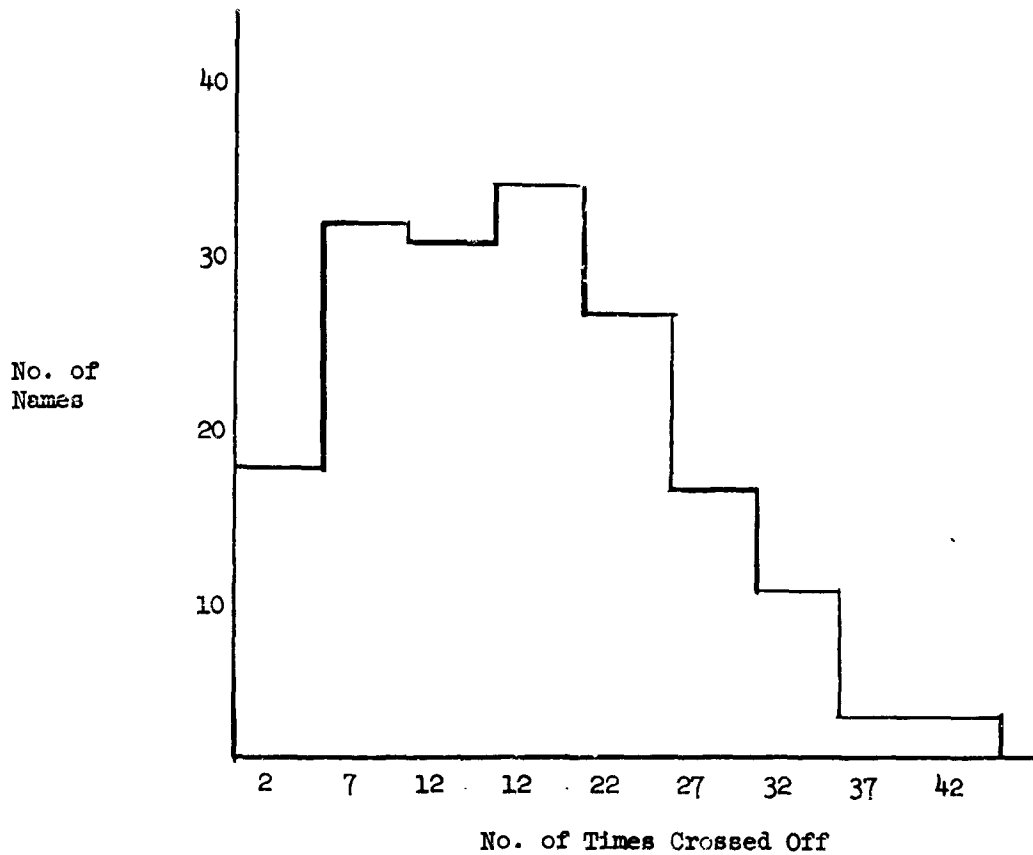


Figure 3. Number of times each name was crossed off the Peer Rating Roster.

100  
100