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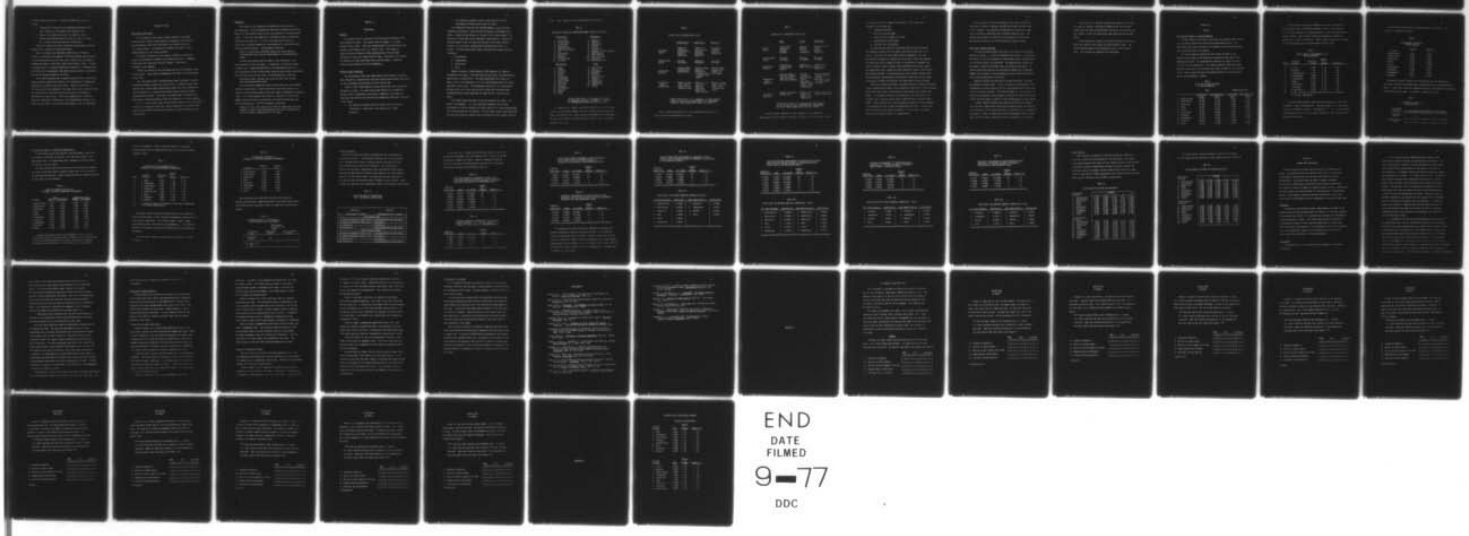

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BIAS IN PERFORMANCE EVALUATION: AN EXAMINATION OF THE RELATIONSHIP OF THE RATER TO THE RATEE

BY

GEORGE M. BEASON, M.S.

Center for Human Appraisal
Wichita State University
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The effects of personality variables on rating behavior were studied. The experienced rater showed more bias than non raters and it was related to their own personality characteristics and role preferences. Other bias was found favoring extroverts and derogating independents and neurotics. Rating factors were identified.

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CHAPTER 1

Introduction

Evaluation of the performance of one's peers, subordinates, and even superiors is an activity in which everyone engages. The comparisons of the behavior of one aquaintance to that of another, the assignment of grades to students, and the unspoken assessment of the courtesy and efficiency of a sales clerk all fit into the area of performance appraisal.

In most situations, these performance appraisals have at least two common characteristics; they are made without adequate information and will have no direct, immediate effect on the person being evaluated. However, people are often placed in a position where their evaluation of the performance of another will have a direct and immediate impact. In an organizational context, promotions, pay raises, even the individual's job may be effected by a system of performance evaluation.

Performance Evaluation: A Rating Process

In an increasing number of formal organizations, performance evaluation systems have been introduced as a systematic means of establishing the value of the individual members of the organization to the accomplishment of the goals of the organization. Of 462 companies surveyed by the National Industrial Conference Board (1954), 67% had performance appraisal systems in operation. The reasons given for the use of performance eval-

uation systems vary, but can generally be divided into two major categories: "administrative uses" and "self-improvement uses".

In the self-improvement category, the emphasis is placed on helping the employee understand his strengths and weaknesses relative to his position in the company. The interpretation of the performance evaluation reports are compared to the level of performance desired and expected from the employee at his current position and indicate the areas in which he must make improvement to satisfy the requirements of the position. The evaluations also point out areas of strength and are used in the promotion and placement process of the organization.

Some of the most important administrative uses of performance appraisal systems are identified by Tiffin and McCormick (1965):

1. Promotion; When the objective of a performance evaluation system is to establish who is best suited for promotion, the ratings should distinguish between the performance of an individual on his present job and his potential for performance on a higher job level.
2. Other personnel actions; This area includes transfers, layoffs, and discharges. In some cases, the action taken may be the result of performance appraisal on the present job. In other cases, the action may be the result of conditions over which the organization had no control and the performance appraisal provides information on the best people to retain and how best to utilize those people.
3. Wage and salary administration; In many companies, pay raises are tied to productivity and ability. The performance evaluations is often used as a running measure of the productivity of the employees.

4. Training; Individuals who are in need of training are identified by performance evaluation reports. The performance evaluation reports show areas of weakness of individual members of the organization and of the organization as a whole.

Rating systems vary a great deal between organizations, but they usually fall into one of four basic types (Tiffin and McCormick, 1965, Flippo, 1971, Strauss and Sayles 1972,). These types are differentiated by the manner in which the rating form is designed and filled out. The four basic types are:

1. Rating scales; The most widely used of the types of systems, the rating scale involves the rating of employees on each of a number of different traits or worker characteristics.
2. Employee comparison systems; This system may take the form of rank-order, paired comparison, or forced distribution. Rank-order or forced distribution is usually used when dealing with a large number of ratees.
3. Check list ratings; In this system, the evaluator is provided a list of descriptive statements and indicates whether the statements are or are not descriptive of the employee.
4. Critical incident technique; This system involves maintaining a file for each subordinate in which critical incidents are recorded. Critical incidents are any noteworthy actions on the part of the employee, good or bad.

Traditional rating system emphasizes two points. These points are the contribution made by the employee and the characteristics of the employee. The contributions of the employee are generally focused on productivity (the quantity and quality of work performed), lack of absenteeism,

knowledge of the job, and constructive suggestions. Employee characteristics usually considered are leadership (actual or potential), motivation, attitude (toward the job, his supervisors, and the organization), and how well the employee "fits in".

Some Problems in Performance Evaluation

Beach (1971) sees performance evaluation as "---a systematic evaluation of an individual with respect to his performance on the job and his potential for development." This definition implies that the individual is the receiver in the system and in part that is the case. Promotion, retention/seperation, job assignment, and pay raise decisions are made on the basis of the evaluation assigned to each employee. The physical distance between the decision makers and the individual being evaluated make the evaluation process a significant link in the organization's communication activity.

The organization is also effected by the performance evaluation process. By the use of performance evaluation systems, managers of an organization determine who is to be promoted to a position of authority and responsibility. Klores (1966) observed,"---the biases of (the) raters will, in large part, determine the philosophy of the organization." If the raters are subjective in their evaluations, their biases will be seen in the people who fill responsible positions in the organization.

Bias in Performance Evaluation Systems

That rater bias exists was pointed out by Thorndike (1920). Research has shown that if an individual rates another high on one specific

trait, there exists a tendency for the rater to rate the same individual high on other traits. This tendency is refered to as the "halo effect".

Another area of rater bias is the "constant error". Some raters tend to be more lenient than others, some more stringent than others in the evaluation process. This behavior seems to be tied up in several dimensions of personality and experience.

Bias introduced into the rating process by the subjectivity of the rater was examined at the Conference on Performance Appraisal and Review (1958). Some of the findings include a tendency for ratings to bunch at the "good" end of the scale, and the appearance that the rating process supplied more information about the rater than the ratee. The lack of discriminability among ratees from ratings bunched at one end of the scale was interpreted as reluctance on the part of the rater to assign "bad" ratings to an individual for fear they might do serious harm to the individual's career. It was also suggested that the raters felt that their superiors might evaluate them on the basis of the ratings they gave to their subordinates.

Review of Previous Research

Performance evaluation systems, if they are not used carefully, can be detrimental to the organization. Studies of appraisal systems (French, Kay, and Meyers, 1966)show that evaluation by a superior can be seen as a threat by the person being evaluated. The more frequent the evaluation, the more the person being evaluated may perceive the process as being threatening. Evaluatees with low self esteem tend to perform at a less satisfactory level when they are evaluated frequently.

Much of the threat perceived by the person being evaluated stems from the fact that the evaluator's perception of the requirements of the job in question may be entirely different from the job design or the way the employee percieves the job (Barrett, 1968). The perception the evaluator has as to the successful completion of the job lends some bias to the evaluation he makes of the employee. The resultant dissonance between the evaluator and the person being evaluated increases the probability that the evaluation process will be seen as threatening.

To minimize the perceived threat in a performance evaluation system, the process must be made as objective as possible. In an examination of the objectivity of supervisors' evaluation behavior, Thompson (1970) compared the ratings given 71 employees by a group of psychologists and trained, professional managers to the ratings given the same employees by first line supervisors over a period of from six months to two years. The results of the comparisons showed no significant correlation between the two sets of ratings Thompson interpreted this as the first line supervisors' inability to discriminate on the performance dimensions selected by the psychologists and managers. The supervisors did, however, make some sort of discrimination and rate the employees. Since the ratings given by the supervisors did not conform to the expected ratings, there must have been some bias introduced into the system. The source of this bias should come from the rating form used or the subjectivity of the raters.

In a study of rating forms and their formats, Blumberg (1966) had subjects rate well known names on a variety of traits, using a nine-point scale. His findings showed no appreciable difference in ratings when

different formats were used. A variety of formats were used, including:

1. The good end of the scale was alternately presented at the left, right, top, and bottom of the response scale.
2. Graphic scales were used as well as numerical scales.
3. Ratings were made one name at a time, one trait at a time, or in a matrix with free choice of rating order.

Contrary to rating scale lore, individual rating behavior did not appear to be a function of rating form design.

There is evidence that sociometric preference or friendship choice is a function of the degree of similarity between two individuals in such characteristics as sex, age, race, religion, and intelligence (Goodnow and Taguiri, 1952; Mann, 1958; and Richardson, 1939). It might be assumed that in a superior/subordinate relationship, friendship based on similarities in demographic characteristics may results in a positive bias of the ratings assigned by the rater.

Quinn (1969) suggested that a possible source of bias in the rating process might be examined by looking at the relationship of demographic characteristics between raters and ratees. Data on 31,500 male U.S. Air Force Captains was compared to the same data on their raters and there was found to be no significant positive bias when the demographic characteristics were similar. Quinn also suggested that rating bias might be a function of similarities in the psychological make-up of the raters and the ratees. His study did not, however, test this hypothesis.

Purpose of Study

Operational Definitions

For the purpose of this study, several terms must be defined. "Rating process" refers to any process of assigning an evaluation to the performance of any other individual's job related activities in a formal context. This definition includes such terms as "performance appraisal", and "job evaluation".

The "rater" referred to in this study is defined as the person making the evaluation of another's job related activities. Synonomous terms under this description include "foreman", "crew chief", "supervisor" and "manager".

"Ratees" are defined as the individuals who are the receivers in the rating process. Under normal circumstances, the ratee is the subordinate of the rater.

The "experienced rater"-"non-experienced rater" dychotomy is used to distinguish between subjects who are currently in a formal position that requires them to rate others (experienced raters) from those subjects who are not currently in a position that requires them to perform ratings. (non-experienced raters). There was no allowance made for subjects who had previous rating experience but were not currently in a rating capacity.

"Bias", in this study, refers to any criteria used by a rater to assign a rating to a ratee other than that criteria specified by the rating form. Bias has been referred to in previous studies as "rater subjectivity" and "rating error".

Hypotheses

The purpose of this study was to examine the rating process on two dimensions. The first examination consisted of comparing the rating behavior of experienced raters to the rating behavior of non-experienced raters. It was felt that experience in assigning ratings to others may contribute to rating bias. If this is the case, there should be a significant difference between the rating behavior of experienced raters and non-experienced raters. The hypothesis tested was:

> There is a significant difference between the rating behavior of experienced raters and the rating behavior of non-experienced raters.

A second area examined was the nature of the difference in the rating behavior of the two groups. If experience in assigning ratings to others has a "contaminating" effect on the experienced raters, the bias introduced into the rating process should be more strongly associated with the rater than with the ratee. A second hypothesis tested was:

> Experienced raters introduce more bias into the rating process than do non-experienced raters.

The relationship between the raters and the ratee was also examined. Previous studies found no identifiable bias in the rating process as a function of similarities between raters and ratees on demographic characteristics. This study examines rating bias as a function of similarities between raters and ratees on personality and superior/subordinate role style characteristics. The third hypothesis tested was:

> Raters will bias their evaluation in favor of subordinates who have personality and/or superior/subordinate role style characteristics similar to those characteristics of the rater.

CHAPTER II

Methodology

Subjects

The subjects of this study were 57 officers and enlisted men of the United States Air Force. The subjects were all members of a single Squadron within a Wing. There was representation of each rank within the Squadron, from Airman (E-2) to Lt. Colonel (O-5). This method of subject selection allowed for some representation of the personnel structure of a basic unit within the Air Force. The process also insured the selection of both experienced raters and non-raters, a condition crucial to the testing of the first hypothesis.

Method of Data Collection

Two psychological tests were administered to the subjects to measure their personality characteristics and their superior/subordinate role styles. The two instruments selected were the 16 PF and the RPM.

Cattell's 16PF (1970) measures sixteen primary and seven second order personality factors. The seven second order factors are extroversion, anxiety, poise, independence, neuroticism, leadership, and creativity. There were two criteria for selecting the personality dimensions to be used in this study:

1. The dimensions selected should be highly visible and easily identified by a supervisor in the course of his normal activities.

2. The dimensions selected should be such that their use in performance evaluation would result in "bias".

The leadership factor was not selected because it was felt that leadership constitutes a valid criteria for making a performance evaluation. Creativity was omitted as a factor in this study because it is often not a visible part of an individual's work behavior. Anxiety was omitted because it was felt that pure anxiety is not highly visible, or that it is not easily distinguished from neuroticism when it is visible. The four second order factors from the 16PF selected for this study were:

1. Extroversion
2. Independence
3. Neuroticism
4. Poise

Sweney's Response to Power Measure (1972) measures six superior/subordinate role styles. The three superior role styles are authoritarian, equalitarian, and permissive. The three subordinate role styles are rebel, critic, and ingratiator. All six superior/subordinate role styles were used in this study. The subordinate role style of the ratee would be very visible to a rater, and at the E-4 level the ratee would have had opportunities to have developed and made visible a superior role style.

The subjects were then asked to rate ten hypothetical Airmen. The "ratees" (See Appendix A) were constructs generated from written descriptions of the four personality factors and the six superior/subordinate role styles measured on the subjects. Four of these "ratees" were identified utilizing the adjectives Cattell uses to describe the four factors from the

16 PF. Table 1 shows a list of these descriptive adjectives.

TABLE 1

DESCRIPTIVE ADJECTIVES FROM SECOND ORDER FACTORS OF THE 16PF

Extrovertion

1. Venturesome
2. Socially bold
3. Uninhibited
4. Spontaneous
5. Happy-go-lucky
6. Impulsively lively
7. Gay
8. Enthusiastic
9. Assertive
10. Stubborn
11. Participating
12. A joiner

Independent

1. Aggressive
2. Stubborn
3. Competetive
4. Reserved
5. Critical
6. Imaginative
7. Wrapped in inner urgencies
8. Experimenting
9. Free thinking
10. Self sufficient
11. Resourceful
12. Disregards rules

Neuroticism

1. Sober
2. Prudent
3. Taciturn
4. Serious
5. Tense
6. Frustrated
7. Overwrought
8. Easily upset
9. Emotional
10. Sensitive
11. Clinging
12. Apprehensive
13. Worrying
14. Humble
15. Timid

Poise

1. Self reliant
2. Realistic
3. No Nonsense
4. Reserved
5. Critical
6. Faces reality
7. Stubborn
8. Enthusiastic
9. Imaginative
10. Penetrating
11. Shrewd

Adapted from Cattell, R.B., Handbook for The 16 Personality Factors, (Champaign: Institute for Personality and Ability Testing, 1970)

The remaining six 'ratees" were identified by the use of five very visible characteristics adapted from the six superior/subordinate role styles from Sweney's RPM. Table 2 shows the characteristics selected as the most visible and their resulting description of each of the three superior role styles.

TABLE 2

DESCRIPTION OF SUPERIOR ROLE STYLES

	Authoritarian	Equalitarian	Permissive
Management Styles	Theory "X" Autocratic Paternalistic Coercive Subjective	Theory "Y" Participative Rational Motivative Objective	Missionary Indulgent Seductive Subjective
Communication Styles	No-sayer Yes-seeker	Objective Assessment	Yes-sayer No-seeker
Frustration Reaction	Problem seeker Extrapunitive Blames others	Solution seeker Impunitive Frustration directed toward situation, not people	Problem seeker Intropunitive Blames self and system
Assumptions about Subordinates	People are bad, lazy, stupid People must be forced to work	People are intelligent People are motivated People know their job best	People are weak People need love People repay kindness with work

Adapted from Sweney, A.B., Responses to Power Measure, A Test of Superior and Subordinate Role Preferences, (Wichita: Test Systems Inc., 1972, pp. 44-46)

Table 3 shows the description of the selected characteristics of each of the three subordinate role styles.

TABLE 3

DESCRIPTION OF SUBORDINATE ROLE STYLES

	Rebel	Critic	Ingratiator
Worker Styles	Trouble maker Complainer Protester Mutineer	Idea man Honestly critical Co-operator	Organization man Pleaser Yes-man Submissive
Communication Styles	No-sayer Yes-seeker	Not pre-programed	Yes-sayer No-seeker
Frustration Reaction	Extrapunitive Blames others Sadistic	Impunitive Seeks solutions	Intropunitive Blames self Masochistic
Assumptions about Superiors	They are greedy They are unintelligent and wrong They cause problems	They are reasonable They want the truth They reward workers accordingly to real contribution	They are threatened and must be humored They have a right to avoid personal blame
Sociometric Behaviors	Accepts few people Rejects many	Accepts people moderately Rejects people moderately	Accepts many people Rejects few people

Adapted from Sweney, A.B., Response to Power Measure, A Test of Superior and Subordinate Role Preferences, (Wichita: Test Systems Inc., 1972, pp. 44-46)

The rating process undertaken by the subjects of the hypothetical ratees consisted of assigning a numerical evaluation to each of the ten ratees

on a scale of one to ten (poor to excellent). The ratings were assigned on five dimensions:

1. Leadership potential
2. Ability to follow orders
3. Ability to hold respect of his men
4. Communication effectiveness
5. Attitude, military bearing

The subjects were asked to assume that there existed an opening for promotion of one of the ten ratees from the enlisted rank of E-4 to E-5. Only one of the ten ratees could be promoted at this time and the task assigned the subjects was to get their "best" man promoted. The ratees were to be assumed as equal in all aspects of promotability (time in service, time in present rank, qualifying test scores, awards and decorations, etc.) except that they differed in terms of the written description provided. The description was to be treated as notes taken by the subjects from observation and personal interviews with the ratees. On the basis of these descriptions, the raters were to assign ratings.

The use of written description of behavior patterns served two purposes. First it enabled the research to be conducted on the behavior of the subjects when rating "pure types" of personalities and superior/subordinate role styles. In an actual situation, no one person is all extrovert or all neurotic, nor is any one person totally authoritarian or totally ingratiator. These characteristics can be measured in people but the assessment of the personality and/or superior/subordinate role style is made on the basis of dominant characteristic patterns. In this study "pure types" were used to reduce ambiguity in interpretation.

Also, the use of written description of the ratees enabled the researcher to control extraneous variable which were not under study in this research. Such possible contributors to rating bias as age, race, and physical appearance were eliminated from the study. The subjects were placed in a position of being required to make their evaluations on the basis of the characteristics being studied.

Statistical Methods Employed

The data collected lended itself well to at least three seperate methods of analysis. To test the hypothesis that there is a significant difference in the rating behavior of experienced raters, and non-raters, a discriminat analysis was performed. The subjects were divided into two groups; fifteen experienced raters and forty-two non-raters. A second discriminant analysis was performed to examine the differences between the two groups on the measurements of their personalities and their superior/subordinate role styles.

Canonical analysis was applied to the data collected. The data was analysed at three levels. First, an analysis was performed of the relationship of the personality and the superior/subordinate role styles of all fifty-seven subjects. The format followed at this level was to treat the measurements of the subjects on the two instruments as the predictors and the subject's behavior in the rating process as the criteria.

A second canonical analysis was applied by dividing the subjects into two groups (experienced raters and non-rating raters) and examining the relationship of the rating behavior of each group to it's respective measurement. Again, the predictors were the measurement taken of each group, and the criteria consisted of the rating behavior of the group.

A third series of canonical analyses were applied to the data. This level of analysis consisted of examining the four possible combinations and superior/subordinate role styles of the raters and the "ratees" in both the experienced rater group and the non-rater group.

Factor analysis was applied to the data to generate constructs which help identify rater types and rating behavior types. The experienced/non-experienced dychotomy was used in this analysis, also. Five factors were generated for each group.

CHAPTER III

RESULTS

Discriminant Analysis of Rating Behavior

For the purpose of this part of the study, the subjects were divided into two groups; experienced raters and non-experienced raters. The experienced rater group consisted of 15 subjects and the non-experienced rater group consisted of 42 subjects.

The rating behavior examined was the ratings assigned by the members of each group to the hypothetical constructs described in the methodology section. Each hypothetical construct was rated on a scale of 1 to 10 on five dimensions. The range of possible scores that could be given to any one of the constructs was from a minimum of 5 to a maximum of 50. Table 4 shows the mean and standard deviation of each group for each of the hypothetical "ratees".

TABLE 4

MEAN AND STANDARD DEVIATION OF RATING BEHAVIOR

	MEAN		STANDARD DEVIATION	
	Experienced Rater	Non-experienced Rater	Experienced Rater	Non-Experienced Rater
1. Authoritarian	12.666	15.733	6.580	7.372
2. Equalitarian	39.404	41.799	8.006	8.072
3. Permissive	27.309	28.799	9.182	8.735
4. Rebel	12.285	15.333	7.092	10.230
5. Critic	34.714	39.006	7.065	5.909
6. Ingratiator	30.880	28.666	7.945	7.687
7. Extrovert	34.095	34.466	9.610	8.943
8. Independent	25.214	25.200	9.513	8.359
9. Neurotic	25.875	23.133	8.068	7.130
10. Poise	36.166	38.399	8.812	6.905

A discriminant analysis was performed on the data to determine if the two groups were significantly different in their rating behavior. An F ratio was computed in a step-wise process to test the significance of the function. Each variable (ratee) was examined by adding one variable at a time to the function. Table 5 shows the analysis including the F ratio and the test of significance at the .05 level.

TABLE 5

SIGNIFICANCE OF DISCRIMINABILITY OF RATING BEHAVIOR

Step #	Variable Entered	Resulting F Value	Degrees of Freedom	Probability
1	5 Critic	4.541	1 55	< .05
2	9 Neurotic	4.177	2 54	< .05
3	1 Authoritarian	4.719	3 53	< .05
4	8 Independent	4.526	4 52	< .05
5	6 Ingratiator	4.031	5 51	< .05
6	4 Rebel	3.712	6 50	< .05
7	3 Permissive	3.494	7 49	< .05
8	7 Extrovert	3.016	8 48	< .05
9	2 Equalitarian	2.634	9 47	< .05
10	(F level for entry of variable #10 (Poise) was insufficient for further computation).			

The discriminant analysis shows that the two groups are distinctly different in their rating behavior. Variables number 5 and 1 add significantly to the discrimination. (See Appendix B) All of the variables taken together result in a significant difference in the rating behavior between the two groups.

A discriminant function was also generated from the analysis. This function is displayed in Table 6.

TABLE 6

DISCRIMINANT FUNCTION OF RATING BEHAVIOR

Variable	Function A	Function B
1 Authoritarian	0.023	0.145
2 Equalitarian	0.447	0.433
3 Permissive	0.026	0.112
4 Rebel	0.376	0.466
5 Critic	0.446	0.700
6 Ingratiator	0.174	0.070
7 Extrovert	0.056	0.077
8 Independent	-0.077	-0.196
9 Neurotic	0.075	-0.081

The analysis further involves the classification of each observation into one of the two pre-selected groups (experienced rater or non-experienced rater). A two by two matrix was generated to display the number of observations classified into each group. This matrix is shown in Table 7.

TABLE 7

DISCRIMINATION MATRIX OF RATING BEHAVIOR

Pre-selected Groups	Experienced Raters	Non-Experienced Raters
Experienced Raters	31	11
Non-Experienced Raters	3	12

Discriminant Analysis of Behavioral Measurements

A discriminant analysis was applied to the measurements taken from the subjects on the 16PF and the RPM. As in the above analysis, the experienced rater - non-experienced rater dichotomy was used to divide the subjects into two groups.

The score from the 16PF and the RPM were first converted to standard ten scores, making the range of possible scores from 1 to 10 on each of the ten measured dimensions. Table 8 shows the mean and standard deviation of each group for each dimension.

TABLE 8

MEAN AND STANDARD DEVIATION OF
PERSONALITY-SUPERIOR/SUBORDINATE MEASUREMENTS

Variable	Mean		Standard Deviation	
	Raters	Non-raters	Raters	Non-raters
1 Authoritarian	5.547	5.133	1.965	2.325
2 Equalitarian	5.500	5.533	1.928	1.684
3 Permissive	5.523	5.466	1.978	1.552
4 Rebel	5.904	4.600	2.009	2.028
5 Critic	5.928	6.066	2.234	1.162
6 Ingratiator	5.023	5.266	1.854	1.624
7 Extrovert	4.595	5.200	1.848	1.473
8 Independent	5.751	6.200	1.511	1.373
9 Neurotic	6.166	5.666	1.859	1.676
10 Poise	5.833	5.266	2.196	2.374

A second discriminant analysis was performed on the data to test the hypothesis that the two groups were different in their personalities and their superior/subordinate role styles. The step-wise analysis was used and the contribution of each variable to the discriminant

analysis was computed. Table 9 shows the analysis of behavioral measures between the two groups and the test of significance from the computed F ratio.

TABLE 9

SIGNIFICANCE OF DISCRIMINABILITY OF PERSONALITY-SUPERIOR/SUBORDINATE MEASUREMENTS

Step #	Variable Entered	Resulting Value	Degrees of Freedom	Probability
1	4 Rebel	4.636	1 55	< .05
2	8 Independent	4.037	2 54	< .05
3	2 Equalitarian	3.055	3 53	< .05
4	7 Extrovert	2.525	4 52	< .05
5	1 Authoritarian	2.156	5 51	> .05
6	10 Poise	1.836	6 50	> .05
7	3 Permissive	1.628	7 49	> .05
8	9 Neurotic	1.399	8 48	> .05
9	(F level for entry of variables # 5 and 6 were insufficient			
10	for further computations.)			

The analysis shows that the two groups are not significantly different from each other in their behavioral measurements beyond the first four variables considered. Only variable number 4 (rebel) added significantly to the discrimination (See Appendix B). When taken all together, the variables do not significantly discriminate between the two groups.

The discriminant function generated from this analysis is shown in Table 10.

TABLE 10

DISCRIMINANT FUNCTION OF
PERSONALITY-SUPERIOR/SUBORDINATE MEASUREMENTS

	Variable	Function A	Function B
1	Authoritarian	5.876	5.775
2	Equalitarian	7.149	6.806
3	Permissive	1.975	1.815
4	Rebel	0.915	0.386
7	Extrovert	8.856	9.102
8	Independent	6.454	6.977
9	Neurotic	13.293	13.350
10	Poise	1.457	1.312

Each observation was classified into one of the following two pre-selected groups (experienced raters or Non-experienced raters). The following two by two matrix (Table 11) shows this classification process.

TABLE 11

DISCRIMINATION MATRIX OF PERSONALITY-
SUPERIOR/SUBORDINATE MEASUREMENTS

	Observations Classified into Groups	
Pre-selected Groups	Experienced Raters	Non-experienced Raters
Experienced Raters	30	12
Non-Experienced Raters	4	11

Canonical Analysis

Since the discriminant analysis indicated that the rating behavior of experienced raters is significantly different than the rating behavior of non-experienced raters, canonical analysis was applied to the data to examine the nature of the difference. The subjects were divided into two groups, experienced raters and non-experienced raters, and eight separate canonical analysies were applied, using the subjects' scores on the 16PF and the RPM as the predictors and their behavior in the rating of the written descriptions ("Ratees") as the criteria. Table 12 shows the eight pair-wise combinations used for the canonical correlations.

TABLE 12

PREDICTOR-CRITERIA COMBINATIONS
USED FOR CANONICAL CORRELATIONS

Rc	PREDICTORS (Measurement of Rater)	CRITERIA (Characteristics of "Ratee")
	Experienced Rater	
1	Superior/subordinate Role Style	Superior/subordinate role style
2	Superior/subordinate Role Style	Personality
3	Personality	Personality
4	Personality	Superior/subordinate Role Style
	Non-experienced Rater	
5	Superior/subordinate Role Style	Superior/subordinate Role Style
6	Superior/subordinate Role Style	Personality
7	Personality	Personality
8	Personality	Superior/subordinate Role Style

Of the eight sets of canonical correlations computed, four failed to meet the requirements for significance at the .10 level as defined by Bartlett's lambda test (1941). Tables 13 through 16 show the results of the test of significance for the pair-wise correlations that did not satisfy the significance criterion.

TABLE 13

SUPERIOR/SUBORDINATE MEASUREMENT OF EXPERIENCED RATER CORRELATED WITH RATINGS ASSIGNED TO SUPERIOR/ SUBORDINATE DESCRIPTIONS BY EXPERIENCED RATERS.

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.91960	0.01103	38.30887	36	> .10
0.86499	0.07148	22.42567	25	> .10
0.75778	0.28389	10.70280	16	> .10
0.42185	0.66678	3.44506	9	> .10
0.37720	0.81112	1.77940	4	> .10
0.23310	0.94567	0.47486	1	> .10

TABLE 14

SUPERIOR/SUBORDINATE MEASUREMENT OF EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO PERSONALITY DESCRIPTIONS BY EXPERIENCED RATERS

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.88453	0.07048	25.19754	24	> .10
0.76964	0.32391	10.70936	15	> .10
0.40747	0.79458	2.13480	8	> .10
0.21734	0.95267	0.48971	3	> .10

TABLE 15

SUPERIOR/SUBORDINATE MEASUREMENT OF NON-EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO PERSONALITY DESCRIPTIONS BY NON-EXPERIENCED RATERS

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.58941	0.45105	29.06032	24	> .10
0.49189	0.69116	13.48254	15	> .10
0.28792	0.91177	3.37142	8	> .10
0.07623	0.99419	0.21273	3	> .10

TABLE 16

PERSONALITY MEASUREMENTS OF NON-EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO SUPERIOR/SUBORDINATE DESCRIPTIONS BY NON-EXPERIENCED RATERS.

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.62514	0.45866	28.45006	24	> .10
0.44143	0.75136	10.43410	15	> .10
0.24712	0.93321	2.52308	8	> .10
0.07805	0.99391	0.22305	3	> .10

The remaining four sets of canonical correlations produced two maximum correlations that were significant at the .10 level and two that were significant at the .05 level. Tables 17 through 20 show the results of the test of significance for those correlations that produced maximum canonical correlations which did meet the significance criterion, and display the canonical coefficients that indicate which variables contributed to the correlation.

TABLE 17

SUPERIOR/SUBORDINATE MEASUREMENTS OF EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO PERSONALITY DESCRIPTIONS BY NON-EXPERIENCED RATERS.

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES of FREEDOM	PROBABILITY
0.97363	0.01979	37.26547	24	< .05
0.69167	0.38016	9.18815	15	> .10
0.38766	0.72884	3.00489	8	> .10
0.37718	0.85773	1.45787	3	> .10

TABLE 17a

COEFFICIENTS FOR MAXIMUM CANONICAL CORRELATION 0.97363

LEFT HAND VARIABLES	COEFFICIENTS	RIGHT HAND VARIABLES	COEFFICIENTS
1. Authoritarian	-0.54399	1. Extrovert	0.76686
2. Equalitarian	0.09186	2. Independent	-0.52357
3. Permissive	0.02849	3. Neurotic	0.36266
4. Rebel	0.88398	4. Poise	0.07926
5. Critic	0.39019		
6. Ingratiator	0.59929		

TABLE 18

SUPERIOR/SUBORDINATE MEASUREMENTS OF NON-EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO SUPERIOR/SUBORDINATE DESCRIPTIONS BY NON-EXPERIENCED RATERS

CANONICAL CORRELATION	LAMBA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.63910	0.23519	51.38196	36	< .05
0.58277	0.39757	32.74438	25	> .10
0.53389	0.60204	18.01408	16	> .10
0.37625	0.84205	6.10284	9	> .10
0.12441	0.98091	0.68409	4	> .10
0.06054	0.99633	0.13036	1	> .10

****

TABLE 18a

COEFFICIENTS FOR MAXIMUM CANONICAL CORRELATION 0.63910

LEFT HAND VARIABLES	COEFFICIENTS	RAND HAND VARIABLES	COEFFICIENTS
1. Authoritarian	-0.08654	1. Authoritarian	0.68239
2. Equalitarian	-1.09058	2. Equalitarian	0.28363
3. Permissive	-0.30437	3. Permissive	-0.26250
4. Rebel	0.11400	4. Rebel	-0.18610
5. Critic	0.07736	5. Critic	0.52585
6. Ingratiator	0.37306	6. Ingratiator	0.27171

****

TABLE 19

PERSONALITY MEASUREMENTS OF EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO PERSONALITY DESCRIPTIONS BY EXPERIENCED RATERS.

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.85638	0.14741	20.10281	16	< .10
0.62823	0.55287	6.22256	9	> .10
0.04563	0.91336	0.95159	4	> .10
0.04297	0.95703	0.46118	1	> .10

TABLE 19a

COEFFICIENTS FOR MAXIMUM CANONICAL CORRELATION 0.85638

LEFT HAND VARIABLES	COEFFICIENTS	RIGHT HAND VARIABLES	COEFFICIENTS
1. Extrovert	0.52948	1. Extrovert	-0.12489
2. Independent	0.46355	2. Independent	0.48250
3. Neurtoic	0.46242	3. Neurotic	-0.24992
4. Poise	0.04501	4. Poise	0.83014

TABLE 20

PERSONALITY MEASUREMENTS OF NON-EXPERIENCED RATERS CORRELATED WITH RATINGS ASSIGNED TO PERSONALITY DESCRIPTIONS BY NON-EXPERIENCE RATERS.

CANONICAL CORRELATION	LAMBDA	CHI-SQUARE	DEGREES OF FREEDOM	PROBABILITY
0.61751	0.50327	25.74866	16	< .10
0.36938	0.81346	7.74236	9	> .10
0.22946	0.94198	2.24138	4	> .10
0.07526	0.99434	0.21300	1	> .10

TABLE 20a

COEFFICIENTS FOR MAXIMUM CANONICAL CORRELATION 0.61751

LEFT HAND VARIABLES	COEFFICIENTS	RIGHT HAND VARIABLES	COEFFICIENTS
1. Extrovert	-0.88666	1. Extrovert	0.01933
2. Independent	0.60176	2. Independent	-0.80778
3. Neurotic	-0.81891	3. Neurotic	-0.03691
4. Poise	-1.20361	4. Poise	0.58802

Factor Analysis

Factor analysis was applied to the data to generate constructs which help explain the rating behavior of the two groups. The personality-superior/subordinate scores and the ratings assigned to descriptions of personality-superior/subordinate characteristics were factored for each group using an orthogonal varimax rotated factor analysis process. Table 21 shows the five factors generated by this process for the non-rater group, and the loading of each variable in each factor.

TABLE 21

RATING BEHAVIOR FACTORS FOR NON-RATERS

Measurement Variable	FACTORS 1	2	3	4	5
1. Authoritarian	0.548	-0.098	-0.011	0.224	0.404
2. Equalitarian	-0.743	-0.299	-0.011	0.044	-0.002
3. Permissive	0.200	0.389	0.478	0.375	-0.287
4. Rebel	0.307	-0.001	-0.731	-0.103	0.031
5. Critic	0.239	-0.249	0.370	0.644	0.009
6. Ingratiator	0.165	-0.035	0.761	0.100	0.102
7. Extrovert	-0.152	-0.779	0.108	-0.044	-0.146
8. Independent	0.078	-0.403	-0.679	0.258	0.102
9. Neurotic	0.147	0.834	0.199	-0.074	-0.126
10. Poise	0.351	-0.549	-0.449	0.033	-0.104
Rating Behavior Variable					
11. Authoritarian	-0.003	0.005	0.193	-0.162	0.783
12. Equalitarian	0.671	-0.130	0.058	-0.301	-0.326
13. Permissive	0.553	-0.137	0.173	-0.157	0.301
14. Rebel	-0.029	0.401	-0.123	0.098	0.578
15. Critic	0.714	0.057	-0.143	-0.321	0.133
16. Ingratiator	0.289	-0.074	0.007	-0.675	0.240
17. Extrovert	0.132	-0.027	0.114	-0.777	-0.118
18. Independent	0.414	-0.113	-0.070	0.011	0.569
19. Neurotic	0.442	-0.076	0.524	-0.252	0.298
20. Poise	0.602	0.205	-0.038	0.148	0.009

The rating behavior factors generated for the non-rater group and the loadings of each variable in each factor are shown in Table 22.

TABLE 22

RATING BEHAVIOR FACTORS FOR EXPERIENCED RATERS

Measurement Variable	FACTORS 1	2	3	4	5
1. Authoritarian	0.121	0.799	0.168	0.351	-0.083
2. Equalitarian	-0.026	-0.276	-0.457	-0.714	0.230
3. Permissive	-0.164	0.772	0.256	-0.229	-0.147
4. Rebel	0.098	-0.304	0.013	0.712	-0.557
5. Critic	-0.032	-0.258	0.113	0.062	0.852
6. Ingratiator	0.072	0.033	0.505	-0.333	0.660
7. Extrovert	0.035	-0.224	-0.761	0.020	-0.205
8. Independent	0.103	-0.581	-0.388	-0.247	-0.308
9. Neurotic	-0.088	-0.041	0.915	0.261	0.111
10. Poise	0.222	0.027	-0.741	0.361	0.043
Rating Behavior Variables					
11. Authoritarian	0.745	-0.492	0.147	-0.048	0.121
12. Equalitarian	0.434	0.601	-0.190	-0.182	-0.218
13. Permissive	0.852	0.149	-0.299	-0.179	-0.101
14. Rebel	0.180	-0.922	-0.031	0.039	-0.098
15. Critic	0.375	0.702	-0.282	-0.202	-0.112
16. Ingratiator	0.614	-0.058	-0.484	0.101	0.132
17. Extrovert	0.643	0.463	0.214	0.220	-0.287
18. Independent	0.696	-0.232	0.256	-0.227	-0.502
19. Neurotic	0.908	0.088	-0.227	0.223	0.087
20. Poise	0.050	0.066	0.236	-0.745	-0.181

CHAPTER IV

SUMMARY AND CONCLUSIONS

Previous research has shown that bias exists in performance evaluation. The postulation that the source of this bias is similarities in demographic characteristics of the rater and ratee has not been substantiated. The present study has made an attempt to examine similarities or differences in personalities and superior/subordinate role styles of raters and ratees as a possible source of bias. Specifically, the study sought to establish whether the rating behavior of experienced raters is significantly different from that of non-raters, and if such similarities or differences could be interpreted as a source of rater bias.

Procedures

To accomplish the described purpose, measurements were taken of the personalities and superior/subordinate role styles of fifty-seven subjects using the 16PF and the RPM. The subjects also evaluated the "performance" of ten hypothetical "ratees". The ratees were written descriptions of the personality factors and the superior/subordinate role styles upon which the subjects were measured. An examination was made of the relationship of the measurements taken of the subjects and their behavior in rating the written description of these measurements.

Conclusions

An interpretation of the computed results produced the following conclusions.

1. The rating behavior of experienced raters appears to be significantly different from the rating behavior of non-raters. The discriminant analysis applied to the data indicates that significant discrimination can be made between the two groups on the basis of rating behavior. A computed F value for the ten variables as a group was significant at .05 level. ($F = 2.634$, df 9 47, $<.05$) The discriminant function indicates that experienced raters exhibit a rating behavior most different from the behavior of non-raters when rating critics. The non-rater, who is by definition a subordinate to the experienced rater, does not attach the value to the characteristics of the critic that the experienced rater does. In seven of the ten variables considered, the experienced rater appears to be introducing more bias into the rating process than the non-rater. That the two groups are different is supported by the discrimination matrix; 74% of the experienced raters meet the criteria for inclusion into the "Experienced Rater" group and 80% of the non-raters are classified into the "Non-rater" group.

2. The personalities and the superior/subordinate role styles of the experienced raters are not significantly different from the personalities and the superior/subordinate role styles of the non-raters. Discriminant analysis indicates that no significant discrimination can be made between experienced raters and non-raters on the basis of the personalities and the superior/subordinate role styles of the two groups. When all ten variables are considered, there is no significance to the discriminability between the two groups. A per-variable analysis indicates that discriminability exists up to and including the fourth variable in the step-wise progression. The discriminant function shows that the non-raters

scored higher on the rebel and the equalitarian scales while the experienced raters scored higher on the extrovert and the independent scales. The discrimination matrix shows slightly less support for discrimination between the two groups on their personality factors and their superior/subordinate role styles. Only 71% of the experienced raters meet the criteria for inclusion into the "Experienced Rater" group and only 73% of the non-raters are classified into the "Non-rater" group. This information, along with the computed F value, indicates that the two groups are different, but not significantly so.

3. Experienced raters introduce bias into the rating process as a function of the relationship of their superior/subordinate role styles and their personalities to the personalities of the ratee.

Two of the four significant canonical correlations show the bias of the experienced rater. The superior/subordinate role style of the experienced rater correlates significantly with the personality factors of the ratee at the .05 level (Table 17). The coefficients for this correlation (Table 17a) shows a strong subordinate orientation on the part of the rater. All three subordinate role styles have a coefficient larger than the arbit rarily assigned "significance" level of .350. The only superior role styles in excess of .350 is the authoritarian which is negative. An interpretation of these coefficients might be that the experienced rater who perceives himself to be a subordinate tends to make his performance evaluations on the basis of personality factors. The bias introduced is in favor of the extrovert (.767) and against the independent (-.524) and the neurotic (-.363).

The personality factors of the experienced rater correlates significantly with the personality factors of the ratee at the .10 level (Table 19). The

tendermindedness and introversion as being the result of his independence.

Discussion of Factor Analysis

A factor analysis was applied to the scores and rating behavior of the experienced raters and the non-experienced raters to generate constructs which help explain rating behavior as it relates to the personality and superior/subordinate role styles of the rater. Five factors were extracted for each group. Factor loadings of .350 or more were considered significant. In the following discussion, the scores of the rater are referred to as the "rater" and the rating behavior as the "ratee".

Factors for Non-Experienced Raters

Factor #1 consists of a tough-minded authoritarian who is not equalitarian favoring the critic-equalitarian toughminded ratee. There is also a tendency to favor the permissive-neurtoic-independent ratee. It appears that this factor describes the authoritarian rater who is somewhat defensive and therefor feels that the personality types and superior/subordinate role styles he favors are the least threatening. This factor might be termed the "Defensive Authoritarian Rater".

Factor #2 shows a neurotic introvert rater who is tenderminded and dependent. This rater tends to be permissive in his superior capacity and favors the rebel subordinate. This factor seems to describe the under-confident rater who admires the rebel. The rater may achieve some vicarious satisfaction from watching the rebel. The factor might be labled the "Frustrated Rater".

Factor #3 involves an ingratiator, non-rebel, critic who is

permissive. The rater is also dependent and tendermindec and favors the neurotic ratee. This factor seems to reflect a rater who is under confident but whc is resigned to his state. He favors the neurotic from a position of empathy. This factor might be called the "Frustrated but Resigned Rater".

Factor #4 consists of a critic rater who favors an introvert, non-ingratiator ratee. This interaction might be interpreted as the critic assigning valve to people who do not socialize on the job and stick to the business at hand. Previous research (Sweney and Beason, 1971) shows this to be a characteristic of the critic. Extroversion and ingratiation both rely on interpersonal interaction and the critic seems to seek to avoid non-productive interpersonal interaction.

Factor #5 shows a toughminded authoritarian ratee who favors the rebel, independent ratee. This construct might be explained as the self-confident rater who seeks interaction with his subordinates. The rebel-independent ratee will provide this interaction. The self-confidence of the rater makes this interaction a challenge. This factor might be called the "Self-confident Authoritarian Rater".

Factors for Experienced Raters

Factor #1 lists all but two of the ratee characteristics. The two characteristics ommitted are the rebel and the toughminded (poise). This appears to be a generalized ratee factor. There are no significant loadings from the rater characteristics.

Factor #2 consists of an authoritarian permissive rater who is dependent and who favors the ratee who is a non-critic ingratiator and a non-authoritarian permissive. The rater also favors a ratee who is an

extrovert. This factor seems to describe a manipulative rater who is somewhat inclined to favor ratees who are more easily manipulated. He rejects the critic and authoritarian ratee because these role styles do not lend themselves to manipulation. This factor may be labeled the "Manipulative Rater".

Factor #3 describes a rater who is a neurotic tenderminded introvert and somewhat dependent. This rater is also and ingratiator and not permissive. He rejects the ingratiator ratee, possibly because he sees ingratiation as his own least desirable characteristics. He may perceive that his own ingratiation as necessary, but feels that it is not desirable. This factor can be identified as the "Reaction to Ingratiation" factor.

Factor #4 shows a toughminded authoritarian rebel who is not permissive favoring a tenderminded ratee. One explanation for this factor might be that the rater is "protecting" the tenderminded ratee. This factor might be called the "Paternalistic Authoritarian" factor.

Factor #5 consists of the critic-ingratiator rater who is not a rebel and who favors the dependent ratee. The critic-ingratiator may perceive himself to be dependent and thus favors the dependent from a position of empathy.

No conclusions are drawn from the factors presented above, they only help show some of the complexity of the rating process. It is possible to point out that there appears to be appreciably more predictability associated with the factor generated from the non-experienced raters than from the experienced raters. This indicates that with experience the rating process becomes more complex, and perhaps more "contaminated".

Limitations of the Study

In an attempt to provide "pure types" as ratees and to eliminate extraneous variables from the study, a certain amount of artificialality was introduced into the study. This was, however, a trade-off that the author chose to make.

In a previous study (Beason,1972) the experienced rater-non-experienced rater dychotomy was not used and no significant correlation was found between the characteristics of the ratee and the measurements of the rater. The present study shows that the behavior of the two groups is distinstly different. Some of the bias in the rating process has been shown to be a function of the relationship of the superior/subordinate role styles and the personality factors of the raters and the same dimensions of the ratees.

Future studies of bias as a function of superior/subordinate role styles and personalities might concern themselves with obtaining a larger sample size. A series of ratings might be performed by the subjects instead of one isolated rating task. An analysis of the conduct of this study leads to the hypothesis that the use of a series of rating tasks would be more beneficial since there would be more of a tendency for behavioral patterns to develope as a result of rating the same ratee several times.

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APPENDIX A

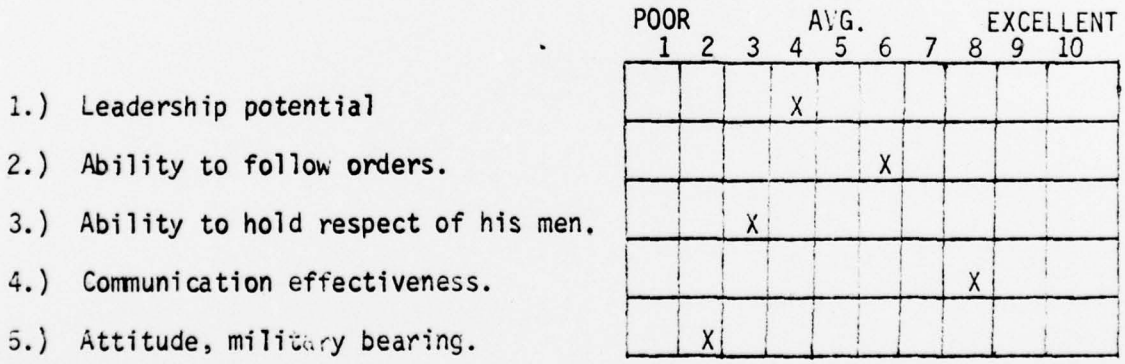
PERFORMANCE EVALUATION INDEX

This instrument is designed to allow you to evaluate the performance of ten individuals, based upon a verbal description of each. The object of this exercise is for you to try to give the most favorable rating to the individual that you would like to see promoted to the next rank. Only one of the ten can be promoted. The promotion will be from E-4 to E-5.

The ratees are presumed to be equal in all respects concerning promotability (time in grade, time in service, test scores, etc.) Since the ratees are alike in these aspects of promotability, you are asked to treat the verbal descriptions as notes you have taken from interviews with each of them and from observation of each of them. On the basis of these notes you are to rate each of the men on a scale of 1 to 10 on five items.

EXAMPLE

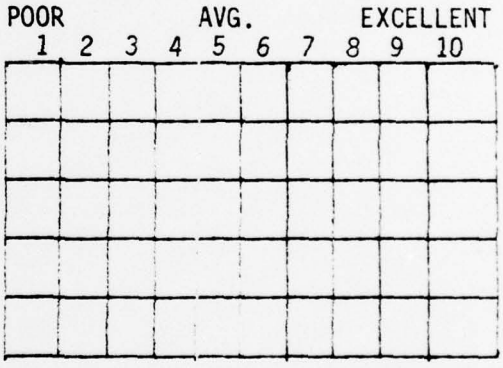
Airman "A" makes friends easily and does not seem to mind hard work. He is usually happy and energetic. He spends most of his time, when off duty, by himself. He does not like people who complain too much.



DESCRIPTION
OF RATEE*

Airman "A" knows what is best for other people. He often trys to force others to do things his way. He expects others to reject his ideas, but insists that his ideas are right. He looks for the person to blame when things go wrong. He knows that people won't work if he doesn't keep an eye on them. He seldom praises any of his co-workers.

*** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated.***



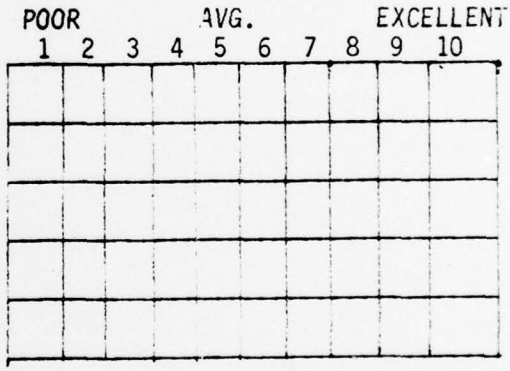
1.) Leadership potential.
2.) Ability to follow orders.
3.) Ability to hold respect of his men.
4.) Communication effectiveness.
5.) Attitude, military bearing.

*(Authoritarian)

DESCRIPTION
OF RATEE*

Airman "B" is sober and serious. He exercises caution when making decisions. Problems cause him to become tense and frustrated. He is emotional and easily upset. He is sensitive to criticism, but expects to be criticized. He is humble and timid towards his co-workers and his bosses.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****



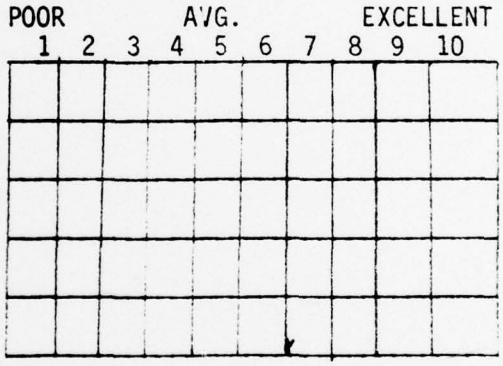
1) Leadership potential.
2) Ability to follow orders.
3) Ability to hold respect of his men.
4) Communication effectiveness.
5) Attitude, Military bearing

*(Neurotic)

DESCRIPTION
OF RATEE*

Airman "C" expects to be told "no" and gives in when he is told. He is kind to others and expects them to repay his kindness with loyalty. When things go wrong, he accepts the blame. He trys to talk people into doing what he wants to do. He trys to get along with everyone.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****



1) Leadership potential.
2) Ability to follow orders.
3) Ability to hold respect of his men.
4) Communication effectiveness.
5) Attitude, Military bearing.

*(Permissive)

DESCRIPTION
OF RATEE*

Airman "D" is very self-reliant and is realistic in his approach to his work. He refrains from participating in any form of "non-sense". He takes situations as they arise and analyses them critically. Although he is enthusiastic, he is very stubborn when he thinks he is right. He frequently has new ideas that are well thought out.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****

	POOR				AVG.					EXCELLENT
	1	2	3	4	5	6	7	8	9	10
1) Leadership potential.										
2) Ability to follow orders.										
3) Ability to hold respect of his men.										
4) Communication effectiveness.										
5) Attitude, Military bearing.										

*(Poise)

DESCRIPTION
OF RATEE*

Airman "E" really accepts some of his co-workers, but he treats all of them as if he thinks they know what they are doing. When a problem arises, he directs his energies at finding a solution. He expects some good ideas from others and some not-so-good ideas. He works with people, sharing both the decisions, and the responsibility for the out-come.

***** Rate the Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****

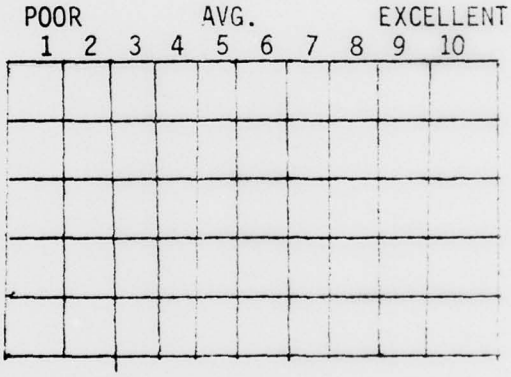
	POOR				A/G.					EXCELLENT
	1	2	3	4	5	6	7	8	9	10
1) Leadership potential										
2) Ability to follow orders										
3) Ability to hold respect of his men										
4) Communication effectiveness										
5) Attitude, Military bearing										

*(Equalitarian)

DESCRIPTION
OF RATEE*

Airman "F" frequently finds fault with his job, his boss, his working conditions, etc. He seldom agrees with anyone, he prefers his own ideas. He thinks that people are greedy and that they cause problems. He makes little effort to get along with people. He expects people to agree with him, but he will not compromise his ideas.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated.****



1) Leadership potential
2) Ability to follow orders
3) Ability to hold respect of his men
4) Communication effectiveness
5) Attitude, Military bearing

*(Rebel)

DESCRIPTION
OF RATEE*

Airman "G" is a lively, happy-go-lucky person. He says what he thinks and makes friends easily. He is very enthusiastic about everything. He clings to his group and stubbornly asserts the ideas of the group. He is willing to participate in any current activity that others enjoy.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****

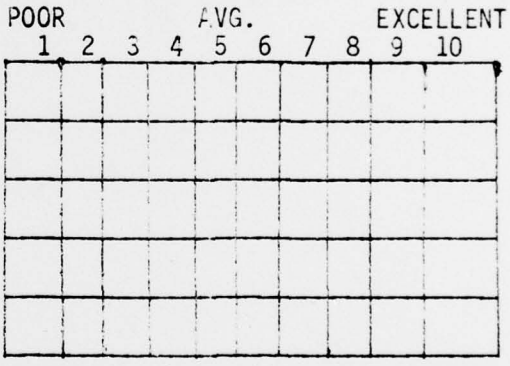
	POOR				AVG.					EXCELLENT
	1	2	3	4	5	6	7	8	9	10
1) Leadership potential.										
2) Ability to follow orders.										
3) Ability to hold respect of his men.										
4) Communication effectiveness.										
5) Attitude, Military bearing.										

*(Extrovert)

DESCRIPTION
OF RATEE*

Airman "H" is honestly critical of others; he "tells it like it is". He does not expect either agreement or disagreement with his ideas, he wants to have them seriously considered. In a problem situation, he directs his efforts towards finding a solution. He thinks he might be rewarded if he makes some real contribution. He thinks some of his co-workers are good men and some are not.

**** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****



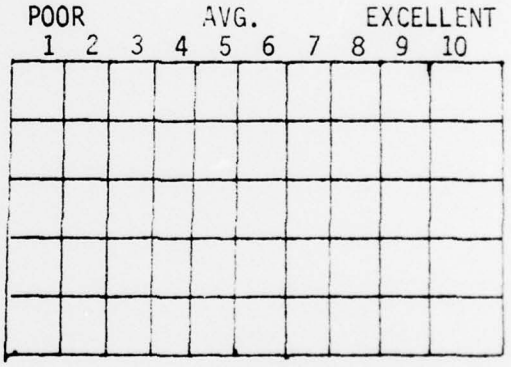
1) Leadership potential
2) Ability to follow orders
3) Ability to hold respect of his men
4) Communication effectiveness
5) Attitude, Military bearing

*(Critic)

DESCRIPTION
OF RATEE*

Airman "I" is aggressive and competetive in his relations with his co-workers. He is reserved and often critical of others. He is imaginative and stubborn about his own ideas. He often experiments, looking for a better way to do things. He is self-sufficient and resourceful, but is often wrapped up in inner-urgencies to the point that he disregards the rules.

***** Rate the Airman on the following scale. A rating of 1(one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****



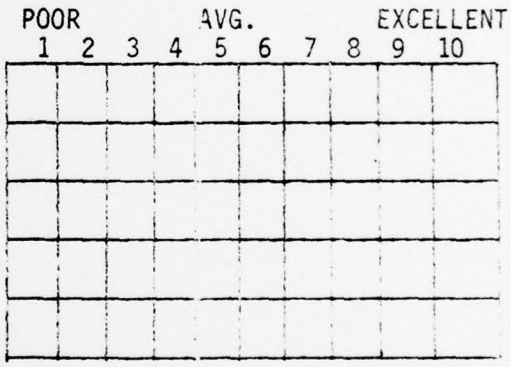
1) Leadership potential.
2) Ability to follow orders.
3) Ability to hold respect of his men.
4) Communication effectiveness.
5) Attitude, Military bearing.

*(Independent)

DESCRIPTION
OF RATEE*

Airman "J" trys hard to please other people. He is willing to accept others ideas over his own. He does not mind being told that he is wrong. He often blames himself for problems that arise. He feels that others should not be blamed for problems. He trys hard to be friendly with everyone.

***** Rate the above Airman on the following scale. A rating of 1 (one) indicates very poor and a rating of 10 (ten) indicates excellent. Make your rating by placing an X in the appropriate box after each of the five areas to be rated. ****



1) Leadership potential
2) Ability to follow orders
3) Ability to hold respect of his men
4) Communication effectiveness
5) Attitude, military bearing

*(Ingratiator)

APPENDIX B

CONTRIBUTION OF INDIVIDUAL VARIABLES

Behavioral Measurements

Variable Included	F Value	Degrees of Freedom	Probability
4. Rebel	4.6362	1 55	> .05
8. Independent	3.2475	1 54	< .05
3. Equalitarian	1.0794	1 53	< .05
7. Extrovert	0.9439	1 52	< .05
1. Authoritarian	0.7350	1 51	< .05
10. Poise	0.3720	1 50	< .05
3. Permissive	0.4909	1 49	< .05
9. Neurotic	0.0249	1 48	< .05

Variable Included	F Value	Degrees of Freedom	Probability
5. Critic	4.5417	1 55	> .05
9. Neurotic	3.5991	1 54	< .05
1. Authoritarian	5.1590	1 53	> .05
8. Independent	3.3281	1 52	< .05
6. Ingratiator	1.7793	1 51	< .05
4. Rebel	1.7999	1 50	< .05
3. Permissive	1.8203	1 49	< .05
7. Extrovert	0.1158	1 48	< .05
2. Equalitarian	0.0502	1 47	< .05