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# Recurrent Personality Factors Based on Trait Ratings

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ON TRAIT RATINGS

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Project 7717, Task 17110

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#### ABSTRACT

Intercorrelations among ratings on 35 personality traits, selected as representative of the personality domain, were obtained for eight samples. These samples differed in length of acquaintanceship from three days to more than a year; in kind of acquaintanceship from assessment programs in a military training course to a fraternity house situation; in type of subject from airmen with only a high school education to male and female undergraduate students to first-year graduate students; and in type of rater from very naive persons to clinical psychologists and psychiatrists with years of experience in the evaluation of personality. Centroid or multiple-group factors were extracted and rotated orthogonally to simple structure. For one study, an independent solution was obtained in which analytic rotations were accomplished on an IBM 650 computer using Kaiser's normal varimax criterion. Five fairly strong and recurrent factors emerged from each analysis labeled as (1) Surgency, (2) Agreeableness, (3) Dependability, (4) Emotional Stability, and (5) Culture.

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## RECURRENT PERSONALITY FACTORS BASED ON TRAIT RATINGS<sup>1</sup>

### INTRODUCTION

The measurement of personality by means of trait ratings has a history of at least fifty years, dating back to the investigations of Heymans & Wiersma (1909) in which 400 physicians rated over 2500 individuals. After a brief surge of interest in the area in the 1920's, few research studies were carried out on trait ratings until fairly recently. Several early investigators reported findings indicating that ratings of personality traits were quite unreliable, and thus not very useful measurements. At the same time, the increasing popularity of the Gestalt and Dynamic Psychology theories with their view that man must be studied as a whole person in action did little to stimulate interest in trait measurement. However, the concept of the "whole person," although it may ultimately lead to greatest accuracy of description and prediction, is unmanageable from a measurement point of view and will likely remain so for some time to come. Furthermore, as Cattell (1946) has pointed out, the trait concept does not preclude the concept of the whole person, since any person can be uniquely and adequately described by a combination of a number of independent traits or factors. Although early studies indicated personality trait ratings to be unreliable (low rater agreement<sup>1</sup>, unstable (specific to the rating situation), and contaminated by a large general factor (halo), Symonds (1931) and Allport (1937) concluded that such deficiencies might be overcome by the use of fairly large groups of raters who have observed the subject's day-to-day behavior over a considerable period of time, and by requiring the rating of several subjects on one trait at a time, rather than the rating of each subject on several traits at a time.

Several recent studies have born out Symonds' and Allport's conclusions. Results from the Veterans Administration Research Program on the Selection of Clinical Psychologists as reported by Kelly & Fiske (1951) tentatively indicated that ratings on personality traits were predictive of future behavior. Tupes (1957, 1959) in studies using Air Force officer candidates and senior Air Force officers as subjects found peer ratings on personality traits to be predictive of later performance as second lieutenants in the case of the officer candidates, and to be related to concurrent but independent measures of officer performance in the latter group. Furthermore, the profiles of the correlations between personality traits and officer performance were quite similar in the two groups. All three of these studies, as well as one by Mays (1954), indicated that even though personality trait ratings by a single rater may be quite unreliable (about .2 to .3), ratings obtained from a group of raters (10 to 20 raters) when summed yielded scores whose reliabilities were quite satisfactory (.8 to .9). In general, it may be concluded that ratings on personality traits are useful predictors of future behavior and that such ratings yield sufficiently reliable individual differences to be useful in themselves, either for the study of individual differences in personality or as criteria against which other types of personality measures (for example, paper-and-pencil tests) may be validated.

As indicated by Eysenck (1953) and French (1955), many studies have been reported concerning the factor structure underlying personality trait rating variables. In spite of this fact the domain has not been at all clearly defined. Cattell (1945, 1947, 1948) has published two factor analyses of men and one of women, each based on ratings of 35 personality traits selected to represent the entire personality area. In each he found 11 or 12 factors which he has identified as similar in the three analyses. For many of these factors, however, the factor loadings are so small that some factor analysts would hesitate to try to interpret them at all. Fiske (1949) analyzed ratings of 22 of the

<sup>1</sup> Manuscript released by the author for publication as an ASD Technical Report in April 1961.

same or highly similar variables using beginning graduate students in clinical psychology for his sample. He obtained about the same factorial structure from ratings of the students by themselves (self-ratings), by their peers, and by clinical psychologists. However, a comparison of the factors isolated by Fiske with those defined by Cattell is quite difficult, in spite of the fact that the variables used by Fiske in the main corresponded quite closely with those used by Cattell. Some similarities can be noted between the Cattell and Fiske factors, but it is difficult to tell whether the differences observed are a function of divergent extraction and rotational philosophies, the nature of the samples rated, the nature of the rater groups, or the omission of 13 of the trait variables from the Fiske study. Attempts to compare the results of either the Fiske or Cattell analyses with those found by other investigators are generally futile, since it is rarely possible to determine from the studies whether all, some, or for that matter, any of the variables used are similar from one study to another. When what might be recurrent factors are found (e.g., extroversion-introversion, emotionality-stability, and conformity-independence), differences in the nature of variables identifying these factors are such as to make impossible any but subjective judgments as to their possible similarities.

The present study was designed to help clarify the personality trait-rating domain. The goal was to isolate meaningful and relatively independent trait-rating factors which are universal enough to appear in a variety of samples, and which are not unduly sensitive to the rating conditions or situations.

#### METHOD

Eight intercorrelation matrices were factored and rotated orthogonally to approximate simple structure.<sup>2</sup> The matrices were selected in such a way that differences due to the traits rated would be minimized, while differences in the type of subjects, raters, and situations would be maximized. None of the analyses were carried out "blind" (without identification of the variables), nor were they made independently of one another. The goal was to rotate the separate factor matrices into similar structure while at the same time following accepted principles of rotation and arriving at simple structure.

For comparison purposes, one of the solutions was redetermined in a completely objective manner by subjecting the centroid factors to a varimax rotational program on an IBM 650 computer.

The trait variables entering into each analysis were among the 35 developed by Cattell (1947), who used as a basis the comprehensive list of adjectives originally identified by Allport & Odbert (1936) as describing human behavior. Each trait is bipolar, with each pole defined by a short group of adjectives or phrases. These traits are believed especially appropriate for an investigation of the trait-rating domain since the method by which they were developed led to some assurance that they are representative of the entire personality area. The bipolar names of these traits appear in Tables 1-6, below. For their defining adjectives or phrases the reader is referred to Cattell (1947), Fiske (1949), or Tupes (1947).

Three of the intercorrelation matrices are based on Air Force Officer Candidate School subjects who rated each other in various sized groups. One analysis is based on Air Force field grade officers (majors and a few lieutenant colonels) who rated each other while students at the Air Force Command and Staff School. Two analyses are rerotations of analyses published by Cattell (1947, 1948) in which the subjects are male and female college students. The two final analyses are based on two of Fiske's (1949) intercorrelation matrices of ratings of first-year graduate students in clinical psychology. In the first of these, ratings were obtained from peers; in the second, ratings were obtained from experienced clinical psychologists and psychiatrists.

<sup>2</sup> Six of these analyses appear in an earlier report (Tupes & Christol, 1958).

All groups of subjects and raters are described below. Briefly, they differ in length of acquaintanceship from three days to a year or more; in kind of acquaintanceship from assessment programs to a military training course to a fraternity house situation; in type of subject from airmen with only a high school education to male and female undergraduate students to first-year graduate students; and in type of rater from very naive persons to clinical psychologists or psychiatrists with years of experience in the evaluation of personality. It would appear that any factors common to all of these groups would have a wide range of generality both in terms of type of subject and type of rating situation.

## DESCRIPTION OF THE EIGHT STUDIES

### STUDY A. OCS 790-CASE SAMPLE

The subjects were 790 male graduates of OCS Classes 49B, 50A, 50B, 50C, 51B, and 51D. The earliest class, 49B, was graduated in December 1949; the latest, 51D, was graduated in December 1951. All candidates in each class had been selected from a much larger number of applicants (selection ratio about ten applicants for each vacancy) on the basis of a board interview, a biographical inventory designed to measure leadership characteristics, and differential credit for completion of more than the required minimum of two years of college. For applicants on active duty in an enlisted status, an evaluation form completed by the applicant's commanding officer was also considered. The average age was 23.6 years, with a standard deviation of 1.5 and a range of from 20.5 to 26.5 years. The average education was 3.6 years of college, with a standard deviation of 0.6 and a range of from 2 to 6 years. Distributions on both variables were decidedly skewed toward the lower end. Slightly over half of each class came from an enlisted status, with the others selected for OCS directly from civilian life.

Each OCS class was divided at the start of training into flights of from 25 to 30 candidates each. Each flight lived together in one dormitory, ate as a flight, and attended classes and drill as a flight. In fact, nearly all of each candidate's time was spent with his flight, and he soon became intimately acquainted with each of his fellow flight members. It was the well-organized OCS flight which constituted the rating group in the present study. Each candidate rated all his fellow flight members and was in turn rated by all his fellow flight members on 30 of the 35 Cattell traits. Each rater was required to pick one-third of the group as best described by the definition at each end of each bipolar trait.

Lengths of acquaintanceship at time of rating varied from as little as three weeks for one class to one year in another (this class rated each other six months after graduation from OCS at the end of an on-the-job training period at Lackland Air Force Base).

Product-moment intercorrelation matrices of the 30 traits were computed for each class separately. A final matrix was then obtained by taking the median correlation between each pair of traits in the separate class matrices. Eight factors were extracted from this matrix using the complete centroid method, and rotated to orthogonal simple structure.

### STUDY B. OCS3-DAY ASSESSMENT SAMPLE

The subjects were 125 male officer candidates in OCS Class 55B, whose ages ranged from 20½ through 27. A little more than half had no college training; about a fifth had some college; and about a fifth were college graduates. All had some previous Air Force enlisted service ranging from one year to seven, with a median of 2½ years. The majority were planning on an Air Force career and all had been required to sign a contract for three years of commissioned service after graduation from OCS. All had been screened on a measure of general learning ability--the Officer Quality composite of the Air Force Officer Qualifying Test. Eighty-five per cent of the class had OQ scores as high as the upper 10% of the general population of young males and as the upper 40% of college freshmen.

Ratings were obtained at the end of a three-day assessment program just prior to the start of OCS. Rating groups consisted of 12 candidates, six of whom had observed each other in an intensive series of group and individual performance tests, and six of whom had only shared a barrack floor and dining table with the other six. Each rater was required to pick the four subjects who were best described by each end of the bipolar trait.

Five multiple group factors (corresponding to the five found in Study A) were extracted, along with three centroids. All eight factors were rotated to simple structure.

#### STUDY C. OCS END-OF-TRAINING ASSESSMENT SAMPLE

These are the same subjects who were used in Study B. At the end of the assessment, the groups were re-formed into OCS flights of from 15 to 20 candidates each. No two flight members had been members of the same assessment group. Near the end of the six-months OCS course, members of each flight rated each other on the 30 traits. Raters were asked to pick the third who were best described by each end of each bipolar trait. These ratings, although based on the same subjects, were entirely independent of the ratings analyzed in Study B.

Five multiple-group and three centroid factors were extracted from these data and rotated to simple structure.

#### STUDY D. COMMAND AND STAFF SCHOOL SAMPLE

The subjects were 500 students in the Air Force Command and Staff School Class of 1958. These officers had been screened originally on about the same basis as the OCS samples. However, at the time the trait ratings were obtained the average Command and Staff School officer was about 15 years older and had approximately 15 more years of military experience than the average OCS subject. Nearly all of the officers rated held the rank of major, although the sample included a few holding the rank of lieutenant colonel.

Ratings on 30 of the bipolar traits were obtained on these subjects after they had been in attendance at the Command and Staff School about two months. Each rating group was composed of from 12 to 14 officers who attended all classes as a unit. Only a third of each group served as raters; these rated all members of the group by selecting the four subjects in their seminar group who were best described by each pole of each trait.

Only five multiple-group factors (and no centroids) were extracted and rotated to simple structure. However, at a later time factors were extracted from the intercorrelation matrix by the complete centroid method and rotated on an IBM 650 computer using the varimax program.

#### STUDY E. CATTELL'S MALE UNIVERSITY SAMPLE

Subjects were 133 male university students with an average age of 20 years. Some were returning veterans. Ratings on 35 bipolar traits were obtained in groups of 17 men, all of whom lived together in fraternity houses or dormitories. Each rater rated all members of his group on each trait as below average, average, or above average on each trait, with a suggested distribution of  $\frac{1}{4}$ ,  $\frac{1}{2}$ , and  $\frac{1}{4}$  for the three categories. For a complete description of this sample see Cattell (1947).

The intercorrelation matrix<sup>3</sup> was factored and rotated twice. In one instance, eight centroid factors were extracted and rotated; in the second case, five multiple-group factors and three centroid factors extracted from the resulting residual matrix were rotated. Only the latter solution is reported, since the solution based upon the centroid extractions was discovered to contain errors introduced by the graphic rotational process.

<sup>3</sup> Made available through the courtesy of Professor Raymond B. Cattell and reproduced in the Appendix, Table E1, with his permission.

#### STUDY F. CATTELL'S FEMALE UNIVERSITY SAMPLE

The subjects were 140 female university students. Ratings on these students were collected from their peers (all women) at the same time and in the same manner as in Study E. This sample is more completely described by Cattell (1948).

Since this was the only female sample studied, it was considered desirable to include several more factors in the analysis than might reasonably be expected to exist. Therefore 12 factors were rotated to simple structure; five of these were orthogonalized multiple-group factors and the other seven were centroids extracted from the residual matrix.<sup>4</sup>

#### STUDY G. FISKE'S TEAMMATES' RATINGS OF GRADUATE STUDENTS

The subjects were 128 male graduate students in clinical psychology who participated in an intensive assessment program during the summer before they started their graduate training. Their median age was 26, nearly all were veterans, and nearly all had World War II experience as military psychologists. During the week-long assessment, they ate, roomed, and took their recreation together. Twenty-four trainees were assessed each week and were split arbitrarily into groups of four who participated in a series of situational tests. At the end of the week, each subject rated himself and the other three members of his group on a series of variables, including 22 bipolar personality traits. Ratings were made on an eight-point scale. The three ratings made on each subject by his three teammates were summed to obtain the rating scores used in this study. For a complete description of the sample, the variables, and the rating procedure, see Fiske (1949).

Five multiple-group factors and three centroid factors were extracted from the correlation matrix.

#### STUDY H. FISKE'S STAFF MEMBERS' RATINGS OF GRADUATE STUDENTS

These subjects were the same as those of Study G. The same rating variables and rating scales were used except that staff members were asked to normally distribute their ratings on each trait. The raters were three assessment staff members assigned to each group of four subjects, and the rating scores were the sum of the ratings made by these individuals. Each staff member was a clinical psychologist (a few were psychiatrists) with years of experience. The raters had not only intensively observed each subject during a period of one week but in addition had the results of ten objective tests, four projective tests, a biographical inventory, an autobiography, and the write-ups of three interviewers. The staff ratings were made without knowledge of the teammates' ratings.

Five multiple-group and three centroid factors were extracted and rotated to approximate orthogonal simple structure.

### RESULTS

In each analysis five fairly strong rotated factors emerged. In the four studies involving Air Force samples and the two Fiske samples, all but the five strong factors were residualized (e.g., none of the residualized factors had loadings on any trait variable above an arbitrary .30 level). In the analysis of Cattell's male sample, two factors were residualized, and a weak factor involving primarily an intelligence test was defined. In Cattell's female sample, what had been identified as the fifth factor in the other analyses split into two factors. Both of these factors are reported for comparison purposes.

<sup>4</sup> It is the authors' opinion that introduction of the additional factors into the rotational process reduced the clarity of the final solution and greatly increased the effort necessary to arrive at a reasonably good simple structure. It also led to excessively high communalities, undoubtedly as a result of the error variance reflected in the excess factors.

The five factors are reported in Tables 1 through 5. To save space and to make comparisons easier, each factor loading is presented to only one decimal space (e.g., .6).<sup>5</sup> In each table, the trait rating variables are listed in the first column, grouped together in accordance with the factor to which they make the highest contribution. Thus the first group are those variables defining Factor I, the second group are those defining Factor II, etc. Each of the other columns shows the loadings of each variable on the appropriate factor in each of the eight studies. These columns are labeled A through H to correspond with the letters assigned to each sample above. Traits not rated in any particular study are so indicated by an X in the appropriate column.

#### FACTOR I: SURGENCY

Factor I appears to be that labeled by Cattell (1947, 1948) and French (1953) as Surgency and by many other investigators as Extroversion. It is best defined by the traits Talkativeness, Frankness, Adventurousness, Assertiveness, Sociability, Energetic, Composed, Interest in Opposite Sex, and Cheerfulness. It appears to be a true bipolar factor with negative loadings (.3 or greater) obtained for the traits of Emotional Maturity, Mildness, Kindliness, Conventionality, and Calmness.

TABLE 1. Loadings on Recurrent Factor I from Eight Analyses

Trait Variable No. Name	Analysis	A	B	C	D	E	F	G	H
14 Silent vs Talkative		.8	.7	.7	.8	.8	.8	.9	.9
28 Secretive vs Frank		.8	.7	.8	.8	.7	.7	.8	.5
16 Cautious vs Adventurous		.8	.7	.8	.8	.7	.7	.7	.6
3 Submissive vs Assertive		.7	.7	.8	.7	.4	.6	.7	.8
29 Self-contained vs Sociable		.7	.7	.6	.5	.7	.7	X	X
7 Languid, Slow vs Energetic		.7	.7	.7	.7	.5	.9	.8	.7
33 Shy, Bashful vs Composed		X	X	X	X	.6	.7	X	X
35 Slight vs Marked Interest in Opposite Sex		X	X	X	X	.5	.4	.6	.4
32 Depressed vs Cheerful		X	X	X	X	.5	.6	.7	.6
10 Spiteful vs Goodnatured		-.1	.0	-.1	-.1	-.1	-.1	.0	.0
20 Jealous vs Not So		-.1	-.1	-.1	-.1	-.2	-.1	X	X
22 Demanding vs Emotionally Mature		-.1	-.5	-.1	-.4	-.3	-.1	X	X
13 Self-willed vs Mild		-.3	-.5	-.2	-.5	-.3	-.2	X	X
1 Obstructive vs Cooperative		.2	-.1	-.1	-.2	.4	.4	.2	-.1
9 Suspicious vs Trustful		-.1	-.1	.2	-.1	.0	-.1	-.1	.0
21 Rigid vs Adaptable		.2	.2	.4	-.1	.3	.2	.3	.3
17 Hard, Stern vs Kindly		-.3	-.5	-.6	-.3	-.1	-.1	X	X
5 Cool, Aloof vs Attentive to People		.5	.4	.3	.4	.5	.7	.5	.6
31 Attention Getting vs Self-sufficient		X	X	X	X	-.5	-.5	X	X
18 Releaxed, Laidback vs Inattentively Orderly		-.2	-.1	-.2	-.2	-.1	-.1	X	X
4 Frivolous vs Responsible		.0	.0	.0	.1	-.1	.0	-.4	-.3
25 Unscrupulous vs Conscientious		-.2	-.2	-.2	-.2	-.3	-.2	-.4	-.3
15 Quitting vs Persevering		-.1	.2	.3	-.1	-.2	-.1	X	X
21 Unconventional vs Conventional		.4	-.5	-.4	-.4	-.3	-.3	X	X
26 Nervetic vs Not So		.2	.1	.4	.2	.0	.0	X	X
24 Worrying, Anxious vs Placid		-.1	.0	.3	.1	-.1	.0	-.2	-.1
6 Easily Upset vs Poised, Tough		.3	.5	.5	.4	.0	.2	.0	.3
12 Hypochondriacal vs Not So		-.1	-.1	.3	.2	.0	-.1	X	X
11 Emotional vs Calm		-.3	-.3	.0	-.5	-.4	-.4	X	X
7 Changeable vs Emotionally Stable		.0	-.1	.1	-.2	-.3	.0	.1	-.2
17 Dependent vs Self-sufficient		X	X	X	X	X	X	-.1	.2
8 Bourish vs Intellectual, Cultured		.0	-.1	.2	-.1	.6	.0	.2	.2
27 Lacking Artistic Feeling vs Esthetically Fastidious		.0	-.1	.1	X	.2	.0	X	X
34 Practical, Logical vs Imaginative		X	X	X	-.1	-.1	-.1	.3	.3
19 Clumsy, Awkward vs Polished		-.1	.0	.2	.0	.0	.0	.0	-.1
20 Immature vs Independent-Minded		.4	.6	.6	.4	-.1	-.1	.3	.3

Note.—A null entry of X denotes variable not used in study.

<sup>5</sup>The intercorrelation matrices, communality estimates, and both original and final rotated factor matrices are presented in Appendix A-H.

FACTOR II: AGREEABLENESS

This factor corresponds quite closely to that called Agreeableness by French (1953). It, too, is a bipolar factor, defined on the positive end by the variables Goodnatured, Not Jealous, Emotionally Mature, Mildness, Cooperativeness, Trustfulness, Adaptability, Kindliness, Attentiveness to People, and Self-sufficiency (as opposed to Attention-Getting). Traits loaded negatively on Factor II include Assertiveness and to a lesser extent Talkativeness and Orderliness.

TABLE 2. Loadings on Recurrent Factor II from Eight Analyses

Trait Variable		A	B	C	D	E	F	G	H
14 Silent vs Talkative		.0	-.2	-.1	-.2	-.1	-.1	-.2	.1
28 Secretive vs Frank		.1	.1	.3	.0	-.2	-.2	.2	.5
16 Cautious vs Adventurous		.1	.0	.1	-.2	.1	.0	.1	.2
3 Submissive vs Assertive		-.4	-.4	-.3	-.4	-.6	-.5	-.4	-.4
29 Self-contained vs Sociable		.2	.1	.2	.1	.0	.1	X	X
7 Languid, Slow vs Energetic		.0	.0	.0	.0	.2	.1	.0	.1
33 Shy, Bashful vs Composed		X	X	X	X	-.1	.0	X	X
35 Slight vs Marked Interest in Opposite Sex		X	X	X	X	.0	-.1	.0	.2
32 Depressed vs Cheerful		X	X	X	X	.3	.4	.3	.4
10 Spiteful vs Goodnatured		.8	.7	.8	.7	.7	.8	.7	.8
20 Jealous vs Not So		.8	.7	.8	.6	.6	.8	X	X
22 Demanding vs Emotionally Mature		.8	.6	.8	.6	.7	.8	X	X
13 Self-willed vs Mild		.7	.6	.7	.6	.6	.8	X	X
1 Obstructive vs Cooperative		.7	.5	.7	.6	.6	.6	.6	.7
9 Suspicious vs Trustful		.6	.5	.7	.6	.6	.7	.6	.7
21 Rigid vs Adaptable		.6	.4	.7	.4	.6	.6	.4	.7
17 Hard, Stern vs Kindly		.6	.4	.5	.5	.7	.7	X	X
5 Cold, Aloof vs Attentive to People		.7	.5	.6	.5	.3	.7	.4	.5
31 Attention Getting vs Self-sufficient		X	X	X	X	.4	.6	X	X
18 Relaxed, Indolent vs Insistently Orderly		-.3	-.2	-.2	-.1	-.1	-.1	X	X
4 Fretful vs Responsible		.3	.5	.4	.2	.3	.4	.0	.2
25 Inaccapulous vs Conscientious		.5	.5	.6	.4	.4	.6	.3	.4
15 Quitting vs Persevering		.3	.2	.4	.0	-.1	.0	X	X
23 Unconventional vs Conventional		.2	.3	.4	.3	.2	.3	X	X
26 Neurotic vs Not So		.3	.1	.4	.3	.2	.3	X	X
24 Barring, Anxious vs Placid		.3	.3	.5	.1	.0	.2	.5	.3
6 Easy, Upset vs Poised, Tough		.1	-.1	.2	.0	.0	-.1	.1	.1
12 Hypochondriacal vs Not So		.4	.1	.4	.2	.1	.4	X	X
11 Emotional vs Calm		.4	.3	.6	.3	.2	.4	X	X
2 Changeable vs Emotionally Stable		.5	.6	.6	.3	.2	.6	.4	.2
17 Dependent vs Self-sufficient		X	X	X	X	X	X	.2	.0
8 Boorish vs Intellectual, Cultured		.2	.2	.3	.1	.1	.3	.0	.1
27 Lacking Artistic Feeling vs Ethetically Fastidious		.1	.0	.0	X	.0	-.1	X	X
24 Practical, Logical vs Imaginative		X	X	X	.0	.1	.1	.1	.0
19 Clumsy, Awkward vs Polished		.2	.2	.3	.3	.1	.3	.3	.2
30 Immature vs Independent-Minded		.1	-.1	.1	-.1	.0	.1	-.1	-.3

Note.—A cell entry of X denotes variable not used in study.



FACTOR III: DEPENDABILITY.

The primary definers of this factor are Orderliness, Responsibility, Conscientiousness, Perseverance, and Conventionality, with several other variables (Cooperativeness, Mildness, and Emotional Stability) having positive loadings above .3. Practically all definers of Factor I are loaded negatively on this factor, as are Trustfulness, and Imaginative. The factor in many respects is like that labeled by French (1953) as Dependability or by Fiske (1949) as Conformity. It appears to be quite similar to the old "w" or Will factor found by Webb (1915).

TABLE 3. Loadings on Recurrent Factor III from Eight Analyses

Trait Variable		A	B	C	D	E	F	G	H
No.	Name	Analysis							
14	Silent vs Talkative	-.2	-.3	-.2	-.2	-.3	-.3	-.0	-.1
28	Secretive vs Frank	-.2	-.3	.0	-.1	-.1	-.2	.0	-.2
16	Cautious vs Adventurous	-.4	-.1	-.7	-.2	-.4	-.5	-.4	-.1
3	Submissive vs Assertive	-.1	-.3	-.2	-.1	-.1	.0	.0	-.1
29	Self-contained vs Sociable	-.4	-.4	-.2	-.4	-.4	-.3	X	X
7	Languid, Slow vs Energetic	.3	.0	.1	-.1	-.2	.0	-.1	.0
33	Shy, Bashful vs Composed	X	X	X	X	-.3	-.2	X	X
35	Slight vs Marked Interest in Opposite Sex	X	X	X	X	-.2	-.3	-.4	-.4
32	Depressed vs Cheerful	X	X	X	X	-.4	-.3	-.1	.0
10	Spiteful vs Goodnatured	.0	.0	.3	.0	.1	-.2	.0	.4
20	Jealous vs Not So	.0	.0	.2	.1	.0	.0	X	X
22	Demanding vs Emotionally Mature	-.2	.1	.3	.2	.2	.2	X	X
13	Self-willed vs Mild	-.2	.1	.4	.3	.3	.1	X	X
1	Obstructive vs Cooperative	.4	.5	.5	.2	.3	.3	.2	.3
9	Suspicious vs Trustful	.1	.2	.1	.2	.0	.0	.1	.3
21	Rigid vs Adaptable	-.3	-.2	-.2	-.2	-.3	-.3	-.1	.1
17	Hard, Stern vs Kindly	.0	-.1	.2	.1	.1	-.1	X	X
5	Cool, Aloof vs Attentive to People	.1	-.1	.5	.1	.0	.0	.2	.1
31	Attention Getting vs Self-sufficient	X	X	X	X	.4	.1	X	X
18	Relaxed, Indolent vs Insistently Orderly	.7	.4	.5	.5	.6	.7	X	X
4	Frivolous vs Responsible	.6	.4	.6	.6	.6	.6	.7	.7
25	Unscrupulous vs Conscientious	.5	.5	.6	.6	.4	.3	.6	.7
15	Quitting vs Persevering	.6	.3	.4	.5	.4	.7	X	X
23	Unconventional vs Conventional	.6	.4	.6	.4	.5	.5	X	X
26	Neurotic vs Not So	.1	.0	.3	.1	.0	.1	X	X
24	Worrying, Anxious vs Placid	-.1	.0	-.1	-.1	-.2	-.1	.0	-.1
6	Easily Upset vs Poised, Tough	.0	-.1	-.1	.0	-.1	.1	.1	.1
12	Hypochondriacal vs Not So	.1	.1	.0	.0	.1	.0	X	X
11	Emotional vs Calm	.2	.2	.1	.3	.2	.2	X	X
2	Changeable vs Emotionally Stable	.2	.3	.3	.3	.2	.4	.4	.4
17	Dependent vs Self-sufficient	X	X	X	X	X	X	.1	.2
8	Boorish vs Intellectual, Cultured	.1	.0	.0	.0	.3	.1	.3	.0
27	Lacking Artistic Feeling vs Esthetically Fastidious	.1	.1	.2	.1	.0	.1	X	X
34	Practical, Logical vs Imaginative	X	X	X	-.4	-.1	-.5	.1	.0
19	Clumsy, Awkward vs Polished	.1	.2	.1	.1	.1	.3	.2	.2
30	Immature vs Independent-Minded	.0	.0	.2	.1	.0	.1	.2	.2

Note.—A cell entry of X denotes variable not used in study.

ERRATUM

**Tupes, E.C. & Christel, R.E.** *Recurrent personality factors based on trait ratings.*  
Lackland Air Force Base, Texas: Personnel Laboratory, Aeronautical Systems  
Division, May 1961. (Technical Report ASD-TR-61-97)

Page 8, line 5

**For** . . . loaded negatively on this factor, as are **Trustfulness**, and  
**Imaginative**.

**Read** . . . loaded negatively on this factor, as are **Adaptability** and  
**Imaginative**.

FACTOR IV: EMOTIONAL STABILITY

The inverse of this factor seems to be that listed by French (1953) as Emotionality. It is loaded highest by Not Neurotic, Placid, Poised, Not Hypochondriacal, Calm, Emotionally Stable, and Self-sufficient (as opposed to Dependent). Secondary definers of the factor are Lack of Jealousy, Emotional Maturity, Cooperativeness, Trustfulness, Adaptability, Responsibility, Perseverance, and Independent-Mindedness. Kindliness has a significant negative loading on this factor.

TABLE 4. Loadings on Recurrent Factor IV from Eight Analyses

Trait Variable No. Name	Analysis	A	B	C	D	E	F	G	H
14 Silent vs Talkative		-.2	-.1	-.4	-.1	.0	-.2	.2	.0
28 Secretive vs Frank		.1	.1	-.1	.0	-.1	.0	.0	.0
16 Cautious vs Adventurous		.2	.4	.1	.1	.1	.2	.2	.2
3 Submissive vs Assertive		.2	.4	.1	.2	.1	.2	.1	.2
29 Self-contained vs Sociable		-.1	.1	-.2	-.1	-.1	-.3	X	X
7 Languid, Slow vs Energetic		.3	.2	.1	.1	.4	.1	-.2	-.4
33 Shy, Bashful vs Composed		X	X	X	X	.2	.2	X	X
35 Slight vs Marked Interest in Opposite Sex		X	X	X	X	-.1	-.1	.2	.3
32 Depressed vs Cheerful		X	X	X	X	.1	.0	.3	.4
10 Spiteful vs Goodnatured		.2	.2	.2	.1	.0	-.2	.1	.1
20 Jealous vs Not So		.5	.3	.4	.3	.4	.1	X	X
22 Demanding vs Emotionally Mature		.4	.3	.2	.2	.3	.1	X	X
13 Self-willed vs Mild		.3	.1	.2	.0	.1	-.2	X	X
1 Obstructive vs Cooperative		.3	.4	.3	.1	.1	-.1	.1	.1
9 Suspicious vs Trustful		.6	.5	.4	.5	.4	.3	.1	.3
21 Rigid vs Adaptable		.4	.4	.3	.0	.2	.1	.3	.3
17 Hard, Stern vs Kindly		-.4	-.3	-.4	-.4	-.3	-.5	X	X
5 Cool, Aloof vs Attentive to People		.1	.0	-.1	-.1	-.1	-.1	.0	.1
31 Attention Getting vs Self-sufficient		X	X	X	X	.4	.1	X	X
18 Relaxed, Indolent vs Insistently Orderly		.0	.0	.0	-.1	.3	.0	X	X
4 Frivolous vs Responsible		.5	.2	.4	.2	.3	.1	.0	.0
25 Unscrupulous vs Conscientious		.2	.2	.2	.1	.0	-.2	.0	-.1
15 Quitting vs Persevering		.4	.5	.4	.2	.4	.2	X	X
23 Unconventional vs Conventional		.1	-.2	.0	-.1	.0	-.4	X	X
26 Neurotic vs Not So		.7	.7	.5	.6	.7	.5	X	X
24 Worrying, Anxious vs Placid		.7	.7	.6	.7	.6	.8	.7	.8
6 Easily Upset vs Poised, Tough		.7	.5	.6	.5	.8	.7	.7	.8
12 Hypochondriacal vs Not So		.7	.6	.6	.5	.5	.5	X	X
11 Emotional vs Calm		.6	.5	.6	.4	.4	.5	X	X
2 Changeable vs Emotionally Stable		.6	.4	.6	.4	.4	.4	.2	.4
17 Dependent vs Self-sufficient		X	X	X	X	X	X	.4	.6
8 Boorish vs Intellectual, Cultured		.2	.1	.2	.2	.3	.1	.2	.1
27 Lacking Artistic Feeling vs Esthetically Fastidious		.1	.1	.0	X	-.1	.0	X	X
14 Practical, Logical vs Imaginative		X	X	X	.1	-.3	-.4	.0	.0
19 Clumsy, Awkward vs Polished		.2	.1	.2	.2	.3	.0	.3	.6
30 Immature vs Independent-Minded		.5	.4	.5	.4	.5	.4	.3	.3

Note: A cell entry of X denotes variable not used in study.

FACTOR V: CULTURE

Factor V is the least clear of the five factors identified by the eight analyses. It appears to be similar to the factor labeled by French (1953) as Culture and by Fiske (1949) as the Inquiring Intellect. It is defined by the variables, Cultured, Esthetically Fastidious, Imaginative, Socially Polished, and Independent-Minded, with secondary loadings by Energetic, Poise, Emotional Stability, and all the variables in Factor III. It will be noted that loadings for two factors are shown under Column F. This is the analysis of the female college students, and in this sample only, Factor V split into two quite distinct subfactors. The first of these has a pattern of loadings quite similar to the Factor V found recurring throughout the studies. The second of these is defined by the variables Esthetically Fastidious, Socially Polished, and Interest in the Opposite Sex.

TABLE 5. Loadings on Recurrent Factor V from Eight Analyses

Trait Variable No. Name	Analysis	A	B	C	D	E	F		G	H
							V	VI		
14 Silent vs Talkative		.0	-.2	-.2	.2	.0	-.1	-.1	.2	.1
28 Secretive vs Frank		-.1	-.2	.0	.0	.2	.0	-.1	.2	.1
16 Cautious vs Adventurous		.1	-.2	-.1	-.1	-.1	.0	.1	.4	.1
3 Submissive vs Assertive		.3	-.1	.0	.3	.2	.3	.1	.2	.2
29 Self-contained vs Sociable		-.1	-.1	.0	.0	.1	-.2	.2	X	X
7 Languid, Slow vs Energetic		.5	.2	.4	.4	.3	.1	.1	-.1	.1
33 Shy, Bashful vs Composed		X	X	X	X	.4	.3	.2	X	X
25 Slight vs Marked Interest in Opposite Sex		X	X	X	X	.0	-.2	.4	.2	.0
32 Depressed vs Cheerful		X	X	X	X	.1	-.2	.2	.1	-.1
10 Spiteful vs Goodnatured		.0	.0	.2	-.1	.1	.0	.0	.2	.0
20 Jealous vs Not So		.0	.0	.2	.0	-.2	.1	.0	X	X
22 Demanding vs Emotionally Mature		.1	.0	.2	.0	.1	.1	-.1	X	X
13 Self-willed vs Mild		.0	.1	.2	-.1	.1	.0	-.1	X	X
1 Obstructive vs Cooperative		-.1	.3	.3	.2	.3	.2	.1	.2	.0
9 Suspicious vs Trustful		.2	.2	.4	.0	.0	.0	.2	.2	-.2
21 Rigid vs Adaptable		.0	-.1	.1	-.1	-.2	-.2	.2	.5	.4
17 Hard, Stern vs Kindly		-.2	.0	.1	-.2	-.1	.0	.0	X	X
5 Cool, Aloof vs Attentive to People		.2	.0	.3	.1	.4	-.1	-.2	.3	.0
31 Attention Getting vs Self-sufficient		X	X	X	X	-.2	.0	-.1	X	X
18 Relaxed, indolent vs Insistently Orderly		.3	.6	.6	.3	.4	.2	.0	X	X
4 Frivolous vs Responsible		.3	.4	.3	.4	.2	.5	-.1	.0	.2
25 Unscrupulous vs Conscientious		.3	.4	.4	.3	.3	.3	-.2	.2	.1
15 Quitting vs Persevering		.4	.2	.4	.5	.4	.5	-.1	X	X
23 Unconventional vs Conventional		.1	.2	.3	.0	-.3	-.1	.0	X	X
26 Neurotic vs Not So		.1	.1	.2	.1	-.2	-.2	.0	X	X
24 Worrying, Anxious vs Placid		.1	-.1	.1	.0	.0	.0	.1	.1	.0
6 Easily Upset vs Poised, Tough		.4	.2	.3	.4	.0	.4	.1	.1	.1
12 Hypochondriacal vs Not So		.1	.0	.1	-.2	-.1	-.1	.0	X	X
11 Emotional vs Calm		.1	.2	.3	.1	.1	.1	.1	X	X
2 Changeable vs Emotionally Stable		.2	.3	.3	.5	.5	.3	.0	-.2	-.3
37 Dependent vs Self-sufficient		X	X	X	X	X	X	X	.4	.3
8 Boorish vs Intellectual, Cultured		.8	.8	.7	.8	.6	.8	-.1	.6	.8
27 Lacking Artistic Feeling vs Esthetically Fastidious		.8	.8	.9	X	.5	.1	.6	X	X
34 Practical, Logical vs Imaginative		X	X	X	.5	.5	.2	.2	.7	.7
19 Clumsy, Awkward vs Polished		.8	.8	.8	.6	.6	.5	.5	.6	.4
30 Immature vs Independent-Minded		.5	.4	.4	.6	.5	.8	-.1	.4	.6

Note.—A cell entry of X denotes variable not used in study.

## DISCUSSION

The results of these analyses clearly indicate that differences in samples, situations, raters, and lengths and kinds of acquaintanceship have little effect on the factor structure underlying ratings of personality traits. Statistical tests are not needed to indicate the similarity of corresponding factors from one analysis to another. There can be no doubt that the five factors found throughout all eight analyses are recurrent.

In evaluating the results of a series of factor solutions, such as those presented in Tables 1 through 5, it is natural for the reader to wonder to what extent the results might reflect biases on the part of the authors. There is little doubt but that the words "simple structure" have been used very loosely by many analysts, and it is also undoubtedly true that a preconceived solution can be fabricated through a little "forcing" during the rotational process.

The first factors rotated were those from the 790-case OCS sample described in Study A. While these rotations were not made blind, they were made with no preconceived notions as to how the final solution should appear. Even so, there were certain "choice points" during the rotational process at which somewhat arbitrary decisions were made. These are the same types of decisions which are familiar to all who have participated in orthogonal graphical rotations. In the main they are of two types: (a) those concerning final positioning of reference axes when there was a choice of favoring one or the other of two factors or of balancing the two; and (b) those concerning whether to attempt the buildup or residualization of weak factors introduced into the rotational system. The rules of simple structure do not provide clear guidance in either event, and the rotator is generally left with the job of imposing some subjectivity in deciding which alternatives best fit the criteria.

The choice on final positioning of the reference axes is probably not too critical, since it generally affects only the relative magnitude of the loadings on the two factors considered and does not greatly affect the pattern of factor definers. The decision concerning the buildup or residualization of weak factors is considerably more serious, and whether the choice goes one way or the other can affect both the number and nature of factors reported.

Individuals seem to arrive at their decisions in many different ways. Generally the final positioning of reference axes is subjective, although it many times is tempered with reason. In regard to the rotation of weak factors, some prefer to be guided by one or more of the twenty odd mathematical criteria which propose to estimate the true rank of the original intercorrelation matrix. Unfortunately, the various criteria often do not agree, even when the beginning communality estimates are identical. Other individuals prefer to over extract and fight the battle on the rotation board. If a weak factor can be built up into something they interpret as meaningful they accept it; otherwise they make a strong attempt at residualization.

In the current study the final positioning of reference axes in Study A was made arbitrarily within the general bounds of acceptable simple structure. Once these decisions had been made, the tendency was to make choices in the same direction in later analyses--still staying within the bounds of simple structure. A variety of criteria were considered in making decisions concerning the introduction and rotation of weak factors. These included several statistical criteria relating to matrix rank, the results reported by past investigators analyzing the same data, the results of attempted buildup and residualizations of such factors, and, admittedly, a little subjective judgment. The actual number of factors rotated varied from only five in the Command and Staff School analysis to 12 in the rotation of the Cattell women's sample. In every sample except one there appeared to be five relatively strong and recurrent personality factors and nothing more of any consequence. In the Cattell women's sample, the fifth factor appears to have split into two related factors.

Subsequent to completion of all eight analyses, a program became available for accomplishing analytic rotations by means of the IBM 550 computer using the normal varimax criterion (Kaiser, 1958). There are good indications that this completely objective analytical rotational procedure will

not only save many hours of labor, but will bring considerably more rigor to what has thus far been a rather loose area. Perhaps the most encouraging note is that the normal varimax solution appears to be invariant under changes in the composition of a test battery. Thus submitting one or more of the analyses in the current paper for analytic rotation using the normal varimax criterion would serve at least two purposes: (a) it would remove (or confirm) any doubts the reader (or authors) might have concerning the biases involved in the reported solutions, and (b) it would produce factors likely to be invariant under changes in the composition of the trait-rating battery.

The Command and Staff School sample (Study D) was selected for analytic rotation because in the authors' judgment it was the one most subject to criticism. This is because all the factors were extracted by the multiple-group method and only five factors were introduced into the rotational process.

In order to maximize the independence of the new solution, only the intercorrelation matrix was sent to the statistical services section, with instructions to extract eight centroid factors and obtain a normal varimax solution. The variables in this matrix were not identified. It was the decision of the consultants in the statistical services section to rotate only six factors, the last of which was residualized by the analytic procedure.<sup>6</sup> The five identifiable factors are reported in Table 6 along with the corresponding solution obtained via graphic rotations. It can be seen that the two solutions are for all practical purposes identical. In every instance the loadings for the defining variables are exactly the same or differ by only .1. No loading differs by more than .2, even among the nondefining variables.

In many ways it seems remarkable that such stability should be found in an area which to date has granted anything but consistent results. Undoubtedly the consistency has always been there, but it has been hidden by inconsistency of factorial techniques and philosophies, the lack of replication using identical variables, and disagreement among analysts as to factor titles. None of the factors identified in this study are new. They have been identified many times in previous analyses, although they have not always been called by the same names.

Even so, it might surprise some to find the same factors emerging from such a wide variety of samples and conditions. One interpretation is that there are only five fundamental concepts running through the 35 trait names used in these studies. If the common variance in these 35 bipolar traits reflect only five fundamental meaning concepts, then it is reasonable to expect these concepts to correspond to the factors identified in any sample to which the 35 traits are applied.

It should be noted that there may exist little relationship between the magnitude of intercorrelations obtained among trait-rating variables and the level of inter-rater agreement concerning which traits apply to given individuals being rated. Thus it would be possible to identify very strong trait-rating factors having no practical utility. As indicated above, however, trait ratings based on the variables included in this study not only grant satisfactory inter-rater agreement coefficients, but are related to later meaningful criteria.

It is unlikely that the five factors identified are the only fundamental personality factors. There are quite likely other fundamental concepts involved among the Allport-Odbert adjectives on which the variables used in the present study were based. The 35 traits (or more accurately trait clusters) used in the present study represent the distillate drawn by Cattell from the interrelationships among some 175 traits which in turn were selected as representative of the Allport-Odbert adjectives. The communalities of the trait-rating variables in the various samples studied are on the whole quite sizable (averaging .60 to .85); however, for some traits they are as low as .4 or .5. Thus many of the traits have specific variances greatly in excess of their common variance. In many cases these specific variances would become common variances were other variables to be included in the analyses. Thus it is likely that other fundamental factors may be identified in future studies.

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<sup>6</sup>One variable had a loading of .24 on the sixth factor; all other variables had loadings below .20.

TABLE 6. Comparison of Normal Varimax Solution  
with that Obtained using Graphic Rotations

Trait Variable		I		II		III		IV		V	
No.	Name	V	G	V	G	V	G	V	G	V	G
14	Silent vs Talkative	.9	.8	-.1	-.2	.0	-.2	.0	-.1	.1	.2
28	Secretive vs Frank	.8	.8	.1	.0	.0	-.1	.1	.0	.0	.0
16	Cautious vs Adventurous	.9	.8	-.1	-.2	-.1	-.2	.2	.1	.0	.1
3	Submissive vs Assertive	.7	.7	-.4	-.4	.0	-.1	.1	.2	.2	.3
29	Self-contained vs Sociable	.6	.5	.2	.1	-.4	-.4	-.1	-.1	.1	.0
7	Languid, Slow vs Energetic	.7	.7	.0	.0	.1	.1	.2	.1	.3	.4
10	Spiteful vs Goodnatured	-.1	.1	.8	.7	.0	.0	.2	.1	.0	-.1
20	Jealous vs Not So	-.2	-.1	.6	.6	.1	.1	.4	.3	.1	.0
22	Demanding vs Emotionally Mature	-.5	-.4	.5	.6	.1	.2	.3	.2	.1	.0
13	Self-willed vs Mild	-.6	-.5	.5	.6	.3	.3	.0	.0	-.1	-.1
1	Obstructive vs Cooperative	-.3	-.2	.7	.6	.1	.2	.1	.1	.3	.2
9	Suspicious vs Trustful	.0	.1	.5	.6	.1	.2	.5	.5	.2	.0
21	Rigid vs Adaptable	.0	.1	.5	.4	-.4	-.2	.1	.0	.1	-.1
17	Hard, Stern vs Kindly	-.3	-.3	.6	.5	.0	.1	-.3	-.4	-.2	-.2
5	Cool, Aloof vs Attentive to People	.3	.4	.6	.5	.1	.1	.0	-.1	.0	.1
18	Relaxed, Indolent vs Insistently Orderly	-.1	-.2	-.1	-.1	.5	.5	-.3	-.1	.4	.3
4	Frivolous vs Responsible	-.2	-.1	.2	.2	.7	.6	.2	.2	.3	.4
25	Unscrupulous vs Conscientious	-.2	-.2	.3	.4	.6	.6	.1	.1	.2	.3
15	Quitting vs Persevering	.1	.1	.0	.0	.6	.5	.1	.2	.4	.5
23	Unconventional vs Conventional	-.5	-.4	.2	.3	.4	.4	-.1	-.1	.0	.0
26	Neurotic vs Not So	.1	.2	.2	.3	.1	.1	.6	.6	.1	.1
24	Worrying, Anxious vs Placid	.0	.1	.0	.1	-.1	-.1	.7	.7	.2	.0
6	Easily Upset vs Poised, Tough	.3	.4	-.1	.0	.1	.0	.5	.5	.4	.4
12	Hypochondriacal vs Not So	.1	.2	.2	.2	.0	.0	.6	.5	-.1	-.2
11	Emotional vs Calm	-.6	-.5	.2	.3	.2	.3	.3	.4	.2	.1
2	Changeable vs Emotionally Stable	-.2	-.2	.2	.3	.3	.3	.4	.4	.5	.5
8	Boorish vs Intellectual, Cultured	.2	.1	.0	.1	.3	.2	.1	.2	.7	.8
34	Practical, Logical vs Imaginative	.1	-.1	.0	.0	.1	.0	.0	.1	.5	.5
19	Clumsy, Awkward vs Polished	.0	.0	.2	.3	.2	.1	.2	.2	.6	.6
30	Immature vs Independent-Minded	.4	.4	-.2	-.1	.3	.1	.3	.4	.5	.6

Note.—V - Varimax Solution, G - Graphic Rotations.

#### SUMMARY

The present study was designed to help clarify the personality trait-rating domain. The goal was to isolate meaningful and relatively independent trait-rating factors which are universal enough to appear in a variety of samples, and which are not unduly sensitive to the rating conditions or situations.

A total of 35 personality traits were selected as representative of the personality domain. Inter-correlations among these traits were obtained for eight samples. These samples differed in length of acquaintance from three days to a year or more; in kind of acquaintanceship from assessment

programs in a military training course to a fraternity house situation; in type of subject from airmen with only a high school education to male and female undergraduate students to first-year graduate students; and in type of rater from very naive persons to clinical psychologists and psychiatrists with years of experience in the evaluation of personality. Centroid or multiple-group factors were extracted from the intercorrelations and rotated orthogonally to simple structure. For one of the studies an independent solution was obtained in which analytic rotations were accomplished by an IBM 650 computer using Kaiser's normal varimax criterion.

In all solutions except one there appeared to be five relatively strong and recurrent factors and nothing more of any consequence. In one solution, based upon data from undergraduate women, the fifth factor split into two highly related factors. The solution obtained by analytic rotations using the normal varimax criterion was for all practical purposes identical to the corresponding solution obtained via graphic rotations to the simple structure criterion.

The five recurrent factors were labeled as (1) *Surgency*, (2) *Agreeableness*, (3) *Dependability*, (4) *Emotional Stability*, and (5) *Culture*.

While no claim is made by the authors that the five factors identified are the only personality dimensions, reasons are given in support of their fundamental nature and probable invariance.

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APPENDIX A (Continued)  
 TABLE A2. Loadings on Nine Centroid Factors from 790 Male Officer Candidates

Trait Variable	No.	Name	I	II	III	IV	V	VI	VII	VIII	IX	X
14. Silent vs Talkative	133		185	-179	217	-048	068	072	-055	792		
15. Secretive vs Frank	313	485	-134	165	-157	025	208	-084	-094	766		
16. Cautious vs Adventurous	407	548	108	131	043	106	-042	031	031	852		
17. Submissive vs Assertive	312	-786	174	229	-158	174	073	090	157	851		
18. Self-contained vs Sociable	288	-522	606	-124	035	061	-129	163	050	795		
19. Languid, Slow vs Energetic	716	-464	-317	336	310	048	036	113	113	979		
20. Spiteful vs Goodnatured	612	371	-185	-085	-111	-051	-048	077	077	805		
21. Jealous vs Not So	625	513	332	051	-157	025	-062	-070	-070	803		
22. Demanding vs Emotionally Mature	663	550	188	-114	-103	047	033	033	033	836		
23. Self-willed vs Mild	498	670	106	-219	-219	-114	102	102	102	812		
1. Destructive vs Cooperative	763	330	111	-281	135	-114	-086	-017	060	866		
2. Suspicious vs Trustful	830	281	181	098	038	071	-068	071	016	827		
3. Rigid vs Adaptable	532	135	140	-178	169	026	-103	-106	018	711		
4. Harsh, Stern vs Kindly	-111	490	381	-433	-211	075	-139	-106	-047	667		
5. Cool, Aloof vs Attentive to People	716	-083	365	-388	044	-175	045	-070	114	857		
18. Relaxed, Indolent vs Insistently Orderly	089	076	-713	-224	245	066	055	174	-205	755		
19. Frivolous vs Responsible	734	223	-392	-098	163	-059	093	-205	108	652		
20. Unscrupulous vs Conscientious	600	471	-298	-275	-043	-115	052	-056	-040	769		
21. Quitting vs Persevering	767	115	-410	-111	152	-217	113	-113	-112	888		
22. Unconventional vs Conventional	185	341	-381	-266	132	218	-387	085	116	639		
26. Neurotic vs Not So	732	133	145	250	138	133	126	050	-035	701		
27. Worried, Anxious vs Placid	647	096	172	426	082	065	065	130	164	698		
28. Easily Upset vs Poised, Tough	767	-209	-058	380	-055	-127	086	106	086	826		
29. Hypochondriacal vs Not So	712	218	121	298	054	113	058	074	-088	689		
30. Emotional vs Calm	520	598	-127	255	-169	-104	100	101	169	808		
31. Changeable vs Emotionally Stable	850	334	-072	089	017	-042	-066	023	039	855		
8. Boorish vs Intellectual, Cultured	655	-178	-306	-133	-413	118	066	-120	-056	779		
9. Lacking Artistic Feeling, vs Esthetically Fastidious	474	-218	-356	-231	-373	228	065	131	-119	679		
10. Clumsy, Awkward vs Polished	725	-139	-217	-176	-363	126	039	142	065	797		
11. Immature vs Independent-Minded	728	-330	-142	-214	-085	160	160	-190	130	804		

APPENDIX A (Continued)

TABLE A3 Loadings on Nine Rotated Factors for 780 Male Officer Candidates

Factor	I	II	III	IV	V	VI	VII	VIII	IX	b <sup>2</sup>
10	124	635	019	225	-025	185	045	068	077	606
11	-076	750	016	474	013	089	092	-039	-070	816
12	-097	770	199	404	117	049	068	117	117	811
13	-113	737	188	262	050	136	-035	167	-051	800
14	171	644	199	272	136	146	065	065	060	862
15	141	570	168	545	149	245	150	115	016	833
16	190	559	-111	405	028	063	207	-107	018	705
17	-280	503	-015	-350	-184	046	218	-117	-047	671
18	528	665	135	071	207	181	-073	-025	114	838
19	-133	-290	673	-006	284	001	-009	116	-295	726
20	004	268	574	156	329	227	-131	-179	108	858
21	-005	510	540	250	290	134	-145	-076	-040	782
22	124	253	579	445	435	202	-199	-083	-117	832
23	-405	190	506	057	091	096	253	021	118	644
24	250	347	120	674	122	077	147	043	-045	703
25	127	498	-122	798	139	057	075	159	124	733
26	119	135	-033	071	379	126	-196	000	094	814
27	114	370	072	889	121	165	131	093	-081	811
28	-160	439	195	605	094	-093	-237	133	169	801
29	010	502	293	603	250	269	-035	113	033	816
30	049	227	065	236	786	071	-093	-122	-055	787
31	022	103	114	070	777	-047	070	060	-119	659
32	111	325	106	239	763	046	020	112	065	790
33	362	040	007	543	512	117	-210	-233	120	758

100% Rotated



APPENDIX B (Continued)

TABLE B2. Loadings on Five Orthogonalized Multiple-Group and Three Centroid Factors from 3-Day Officer Candidate Ratings  
(OCS Class 508, N = 175)

Trait Variable	No.	Name	I	II	III	IV	V	VI	VII	h <sup>2</sup>
14	792	Silent vs Talkative	-0.95	-0.92	-0.92	-0.69	-0.22	0.76	-0.19	0.16
18	790	Secretive vs Frank	-0.82	-0.80	-0.80	-0.25	-0.19	-0.25	-0.19	0.16
24	828	Cautious vs Adventurous	0.13	0.13	0.13	0.38	0.10	0.58	0.10	0.72
16	785	Submissive vs Assertive	-0.25	-0.25	-0.25	-0.10	-0.12	0.65	-0.95	0.83
3	756	Self-contained vs Sociable	0.92	0.92	0.92	-0.11	0.25	0.59	-0.95	0.72
29	723	Laidly, Slow vs Energetic	-0.17	-0.17	-0.17	-0.11	0.25	0.72	0.19	0.71
7										
20	063	Spiteful vs Goodnatured	0.92	0.92	0.92	-0.69	0.18	-0.61	0.11	0.85
27	-0.18	Jealous vs Not So	-0.18	-0.18	-0.18	0.25	0.16	-0.10	-0.24	0.31
22	-363	Demanding vs Emotionally Mature	-0.97	-0.97	-0.97	0.34	0.10	0.43	0.17	0.65
13	-513	Self-willed vs Mild	-0.84	-0.84	-0.84	-0.38	0.25	0.29	0.19	0.75
1	069	Obstructive vs Cooperative	0.74	0.74	0.74	0.16	0.36	0.77	-0.77	0.49
9	164	Suspicious vs Trustful	0.42	0.42	0.42	0.16	0.36	0.72	0.10	0.35
21	359	Rigid vs Adaptable	-0.20	-0.20	-0.20	0.12	-0.75	0.19	-0.18	0.51
17	-556	Hard, Stern vs Kindly	-0.89	-0.89	-0.89	-0.20	0.06	-0.11	-0.17	0.64
5	129	Cool, Aloof vs Attentive to People	-0.15	-0.15	-0.15	-0.22	0.77	-0.79	0.93	0.10
18	-190	Relaxed, Indolent vs Insistently Orderly	0.83	0.83	0.83	0.01	0.53	0.93	0.97	0.37
4	500	Frivolous vs Responsible	0.71	0.71	0.71	-0.72	0.22	-0.66	-0.71	0.52
25	-270	Unscrupulous vs Conscientious	-0.32	-0.32	-0.32	-0.32	0.64	-0.84	-1.06	0.74
15	272	Quitting vs Persevering	0.38	0.38	0.38	0.03	0.60	0.82	0.95	0.58
23	-597	Unconventional vs Conventional	-0.52	-0.52	-0.52	-0.17	0.29	0.89	0.95	0.18
26	335	Neurotic vs Not So	0.98	0.98	0.98	0.34	0.17	0.11	0.27	0.73
24	199	Worrying, Anxious vs Placid	0.29	0.29	0.29	0.49	0.44	-0.10	0.43	0.38
6	624	Easily Upset vs Feigned, Tough	0.16	0.16	0.16	0.34	0.29	-0.89	0.87	0.72
12	208	Hypochondriacal vs Not So	-0.19	-0.19	-0.19	0.16	0.33	0.77	-0.17	0.48
11	-250	Emotional vs Calm	-0.32	-0.32	-0.32	0.16	0.16	-0.18	-0.11	0.71
2	117	Changeable vs Emotionally Stable	0.26	0.26	0.26	0.15	0.51	-0.17	0.15	0.70
8	089	Boorish vs Intellectual, Cultured	0.32	0.32	0.32	-0.25	0.68	-0.95	-0.95	0.63
27	-0.41	Lacking Artistic Feeling vs Esthetically Fastidious	-0.41	-0.41	-0.41	0.54	0.15	0.27	0.43	0.89
19	-0.48	Clumsy, Awkward vs Polished	-0.48	-0.48	-0.48	-0.30	0.82	0.86	0.95	0.11
30	641	Immature vs Independent-Minded	-0.68	-0.68	-0.68	0.18	0.39	0.20	0.13	0.63

APPENDIX B (Continued)  
 TABLE B3 Loadings on Eight Rotated Factors from 3-Day Officer Candidate Ratings  
 (CCS Class 45B, N = 122)

Factor	I	II	III	IV	V	VI	VII	VIII	R <sup>2</sup>
14 Silent vs Talkative	745	-158	-336	-055	-244	-020	228	-055	811
20 Secretive vs Frank	726	109	-304	117	-197	-028	108	-244	763
16 Cautious vs Adventurous	735	067	-111	355	-192	-064	153	105	760
18 Submissive vs Assertive	651	-399	-286	360	087	070	-121	219	874
24 Self-controlled vs Sociable	666	067	-428	031	-117	261	108	073	734
17 Languid, Slow vs Energetic	704	013	018	221	248	-165	324	125	757
15 Efficient vs Goodnatured	321	739	-028	177	000	063	059	-007	587
21 Jealous vs Not So	-792	691	023	324	019	142	-094	-017	625
22 Demanding vs Ambitiously Mature	-459	621	123	296	024	025	100	117	724
11 Self-reliant vs RIM	-531	648	134	076	146	040	104	-037	761
19 Outrigger vs Cooperative	097	460	185	392	265	217	11	-012	734
13 Suspicious vs Trustful	117	526	245	457	-099	174	061	097	626
21 Rigid vs Adaptable	177	445	-050	377	-136	222	194	-143	554
17 Harsh, Stern vs Kindly	-534	447	-056	-472	-013	041	115	-259	645
15 Cool, Aloof vs Attentive to People	424	335	-139	036	024	051	022	104	524
18 Polished, Indolent vs Insistently Orderly	-095	-187	375	-006	551	057	-029	202	534
14 Frivolous vs Responsible	-012	408	440	196	388	143	017	-052	644
25 Unscrupulous vs Conscientious	-181	465	185	171	438	160	-074	-080	743
15 Quitting vs Persevering	227	228	334	489	214	-117	281	-023	593
23 Unconventional vs Conventional	-462	309	398	-170	242	160	-025	200	625
26 Neurotic vs Not So	998	208	033	734	075	062	263	028	664
24 Hairy, Anxious vs Placid	023	-030	-030	712	-077	030	-150	000	637
6 Easily Upset vs Poised, Tough	591	-051	-085	538	234	012	-070	113	660
12 Hypochondriacal vs Not So	661	087	063	595	028	105	048	-227	451
11 Emotional vs Calm	-336	312	180	531	218	007	-329	087	687
2 Energetic vs Emotionally Stable	141	594	332	391	303	050	-135	098	752
8 Boorish vs Intellectual, Cultured	062	157	-021	079	775	000	019	-131	654
27 Lacking Artistic Feeling vs Essthetically Fastidious	-055	-026	141	124	734	-061	066	047	681
19 Clumsy, Awkward vs Polished	-045	153	171	110	779	054	103	102	696
10 Immature vs Independent-Minded	564	-105	-013	400	367	-025	-006	159	655





APPENDIX C (Continued)

TABLE C2 Loadings on Five Orthogonalized Multiple-Group and Three Centroid Factors from Ratings Obtained Late in OCS  
(OCS Class 558, N = 125)

Test Variable	I	II	III	IV	V	VI	VII	VIII	IX
14 Name	738	-157	-076	-295	-202	057	058	715	
28 Silent vs Talkative	128	304	050	-104	199	-082	041	684	
16 Secretive vs Frank	822	023	-104	209	209	-070	-091	772	
3 Cautious vs Adventurous	846	-290	130	238	030	112	055	911	
24 Self-contained vs Assertive	782	087	-106	-110	198	102	040	714	
7 Languid, Slow vs Energetic	606	063	164	009	455	-189	-165	612	
10 Spiteful vs Good-natured	003	776	-030	-028	416	-048	048	785	
20 Jealous vs Not So	-031	740	-084	185	482	050	056	831	
22 Demanding vs Emotionally Mature	-213	778	-101	-009	432	-082	024	857	
13 Self-willed vs Mild	-306	761	068	004	438	-078	-070	882	
1 Obstructive vs Cooperative	-025	712	203	002	601	-089	043	523	
9 Suspicious vs Trustful	046	598	086	284	645	096	121	899	
21 Rigid vs Adaptable	392	611	-248	222	286	111	121	744	
17 Hard, Stern vs Kindly	-580	359	-240	-534	120	107	020	877	
5 Cool, Aloof vs Attentive to People	180	524	190	-376	561	186	075	863	
18 Relaxed, Indolent vs Inconsistently Orderly	-396	-189	400	-206	540	-168	072	721	
4 Pretentious vs Respectable	-166	511	443	091	578	139	109	858	
25 Unscrupulous vs Conscientious	-152	585	232	-084	577	-067	078	873	
23 Quitting vs Persevering	141	410	366	199	675	084	043	832	
2 Unconventional vs Conventional	-504	136	228	-259	418	-051	071	769	
26 Neurotic vs Not So	296	510	255	348	511	-022	084	803	
24 Worrying, Anxious vs Placid	422	507	-054	533	382	018	046	871	
6 Easily Upset vs Poised, Tough	113	165	092	571	504	112	-035	801	
12 Hypochondriacal vs Not So	237	526	082	529	308	-102	051	772	
11 Emotional vs Calm	-125	559	026	446	559	056	-068	852	
2 Changeable vs Emotionally Stable	-011	646	162	316	581	069	-022	897	
8 Nourish vs Intellectual, Cultured	053	091	-055	063	839	151	-147	776	
27 Lacking Artistic Feeling vs Ethetically Fastidious	-044	-355	112	-122	851	-167	121	825	
19 Clumsy, Backward vs Polished	030	064	-058	059	900	022	050	834	
10 Immature vs Independent-minded	505	156	234	360	562	140	-122	846	

APPENDIX C (Continued)

TABLE C3. Loadings on Eight Rotated Factors from Ratings Late in OCS  
(OCS Class 558, N = 125)

Trait Variable	I	II	III	IV	V	VI	VII	VIII	I <sup>2</sup>
11 Silent vs Alkative	651	-210	-203	-111	-230	-005	-070	-031	715
12 Secretive vs Frank	751	313	036	-053	000	-068	-067	-031	684
13 Cautious vs Adventurous	810	095	-276	096	095	-082	061	-038	771
14 Submissive vs Assertive	834	-321	-227	138	-034	032	035	-111	911
15 Self-contained vs Sociable	778	182	-162	-158	038	123	046	-028	714
16 Languid, Slow vs Energetic	694	049	056	056	352	-185	-130	-038	675
17 Spiteful vs Goodnatured	092	794	277	169	160	010	058	066	785
18 Jealous vs Not So	053	770	173	362	225	029	063	-075	831
19 Nervous vs Emotionally Mature	-127	822	259	192	227	-071	053	022	857
20 Self-reliant vs Mild	-156	728	434	248	227	-015	-042	099	882
21 Obstructive vs Cooperative	138	692	468	289	236	-014	-048	085	923
22 Suspicious vs Trustful	154	670	088	449	405	063	079	-055	899
23 Rigid vs Adaptable	398	680	-156	273	068	-175	-082	-085	776
24 Hard, Stern vs Kindly	-578	507	219	-404	112	125	-095	005	873
25 Cool, Aloof vs Attentive to People	315	582	472	-133	310	264	-138	004	865
26 Relaxed, Indolent vs Insistently Orderly	-217	-17	511	-028	597	-022	-019	152	718
27 Frivolous vs Responsible	045	464	614	397	333	219	001	016	859
28 Unscrupulous vs Conscientious	-176	560	553	196	404	-038	046	-024	873
29 Quitting vs Persevering	311	355	433	436	432	113	028	-085	832
30 Unconventional vs Conventional	-356	411	583	-003	321	038	124	-094	769
31 Neurotic vs Not So	432	431	252	528	248	-028	-082	-058	803
32 Worrying, Anxious vs Placid	480	501	-108	598	125	009	023	-049	871
33 Easily Upset vs Poised, Tough	493	170	-028	620	305	168	053	-034	801
34 Hypochondriacal vs Not So	309	140	040	648	081	-114	-154	142	773
35 Emotional vs Calm	-008	555	144	626	340	049	056	-088	350
36 Changeable vs Emotionally Stable	139	598	315	556	322	-018	088	046	399
37 Boorish vs Intellectual, Cultured	181	302	043	156	715	283	-143	-002	776
38 Lacking Artistic Feeling vs Esthetically Fastidious	091	020	232	-002	856	-002	103	112	825
39 Clumsy, Awkward vs Polished	180	277	066	162	813	385	064	-092	834
40 Timid vs Independent-Minded	627	143	172	472	352	111	-152	-183	846

APPENDIX D: Study D Factor Analysis

TABLE D1. Intercorrelations Among Trait Ratings from 499 Command and Staff School Officers

Trait Variable No. Name	14	28	16	3	29	7	10	20	22	13	1	9	21	17	5	18	4	25	15	23	24	6	12	11	2	8	34	19	30		
14 Silent vs Talkative																															
28 Secretive vs Ffiar	.06																														
16 Cautious vs Adventurous	.26	.638																													
3 Submissive vs Assertive	.09	.575	.645																												
28 Self-contained vs Sociable	.548	.444	.511	.352																											
7 Longish, Slow vs Energetic	.665	.598	.670	.636	.438																										
10 Spontaneous vs Cautious	-.03	.005	-.112	-.295	.108	-.050																									
22 Jealous vs Not So	-.255	-.098	-.187	-.308	-.114	-.070	.537																								
22 Demanding vs Emotionally Mature	-.440	-.294	-.381	-.497	-.248	-.288	.520	.520																							
13 Self-willed vs Mild	-.562	-.421	.578	-.659	-.380	-.458	.595	.561	.595																						
1 Obstructive vs Cooperative	-.506	-.208	-.264	-.403	-.062	-.112	.540	.534	.561	.469																					
5 Substitutes vs Inattentive	-.027	-.101	.046	-.039	.021	.222	.413	.510	.380	.249	.469																				
21 Rigid vs Adaptable	.028	.117	.048	-.196	.278	.026	.426	.297	.264	.165	.342	.239																			
17 Hard, Stern vs Kindly	-.328	-.284	-.400	-.562	-.047	-.350	.381	.224	.315	.509	.385	.000	.232																		
5 Cool, Aloof vs Attentive to People	.209	.300	.163	.009	.291	.219	.434	.225	.241	.199	.320	.289	.252	.221																	
18 Relaxed, Inept vs Inconsistent, Orderly	-.124	-.163	-.209	.016	-.288	.027	-.157	-.334	-.015	.141	.142	-.038	-.331	-.012	-.093																
4 Frivolous vs Responsible	-.80	-.121	-.164	-.075	-.272	.079	.128	.240	.357	.325	.334	.319	-.057	.028	.178	.452															
25 Unscrupulous vs Conscientious	-.211	-.187	-.282	-.449	-.314	-.088	.260	.382	.419	.446	.453	.317	.003	.214	.195	.373	.654														
15 Quitting vs Persevering	.080	.136	.083	.208	-.149	.294	-.047	.080	.099	.041	.157	.242	-.216	-.215	.073	.437	.533	.419													
23 Unconventional vs Conventional	-.473	-.386	-.496	-.458	-.372	-.339	.228	.163	.382	.515	.353	.066	-.030	.358	.059	.272	.398	.431	.158												
26 Nervous vs Not So	.105	.159	.180	.141	.050	.236	.289	.341	.227	.105	.263	.473	.134	-.111	.231	-.057	.268	.228	.222	.001											
24 Worrying Anxious vs P. acid	-.031	.073	.116	.132	-.006	.125	.123	.271	.182	-.032	.110	.378	.149	-.294	.017	-.192	.101	.019	.116	-.120	.446										
6 Easily Upset vs Poles, Tough	.350	.353	.363	.470	.133	.477	.107	.106	.007	-.230	.043	.387	.013	-.427	.094	.070	.203	.078	.350	-.191	.446	.408									
12 Hypochondriacal vs Not So	.063	.155	.186	.052	.075	.202	.205	.504	.205	.038	.138	.341	.187	-.093	.182	.210	.077	.097	.017	-.060	.434	.339	.209								
11 Emotional vs Calm	-.521	-.416	-.432	-.385	-.416	-.302	.247	.382	.499	.494	.425	.335	.140	-.011	.207	.421	.415	.172	.393	.225	.283	.123	.121								
2 Changeable vs Emotionally Stable	-.159	-.099	-.188	-.099	-.247	.076	.238	.400	.422	.315	.436	.483	.064	-.353	.098	.262	.502	.474	.410	.230	.388	.265	.380	.166	.485						
8 Boring vs Intellectual, Cultured	.194	.164	.161	.290	-.007	.385	.016	.173	.082	-.044	.209	.322	-.071	-.215	.108	.395	.449	.367	.519	.005	.260	.157	.477	.012	.192	.521					
34 Practical, Logical vs Imaginative	.156	-.111	.133	.164	.095	.272	-.030	.030	.004	-.052	.125	-.123	.021	-.130	.026	-.216	.149	.083	.226	-.028	.131	.037	.218	-.024	.027	.269	.471				
19 Clumsy, Awkward vs Polished	.044	.018	-.011	.081	.072	.286	.156	.247	.246	.142	.382	.364	.108	-.731	.217	.288	.376	.302	.317	.117	.307	.302	.302	.048	.279	.453	.567	.363			
30 Inactive vs Independent-Minded	.401	.360	.427	.552	.063	.553	-.103	.027	-.104	-.328	-.080	.235	-.112	-.483	.032	.243	.336	.146	.535	-.154	.304	.283	.591	.125	.012	.341	.624	.331	.361		

APPENDIX D (Continued)

TABLE D2. Loadings on Five Orthogonalized Multiple-Group Factors from 499 Command and Staff School Officers

Trait Variable No.	Name	I	II	III	IV	V	$h^2$
14	Silent vs Talkative	850	-114	138	-054	042	810
26	Secretive vs Frank	784	064	074	036	-176	654
16	Cautious vs Adventurous	829	-066	013	144	007	713
3	Submissive vs Assertive	734	-338	225	269	103	787
29	Self-contained vs Sociable	619	137	-223	-135	127	487
7	Languid, Slow vs Energetic	762	034	318	149	168	733
10	Spitfire vs Goodnatured	033	752	-069	-096	-111	593
20	Jealous vs Not So	-204	682	060	168	-012	539
22	Demanding vs Emotionally Mature	-438	631	064	087	-008	602
13	Self-willed vs Mild	-617	525	091	-151	-079	694
1	Obstructive vs Cooperative	-270	705	203	-074	116	630
9	Suspicious vs Trustful	-016	606	161	394	-073	554
21	Mild vs Adaptable	151	535	-259	-084	014	383
17	Hard, Stern vs Kindly	-340	389	-113	-526	-112	569
5	Cool, Aloof vs Attentive to People	310	520	153	-193	-089	435
18	Relaxed, Incipient vs Insistently Orderly	-252	-130	565	-100	033	426
4	Frivolous vs Responsible	-237	246	750	118	011	693
25	Unscrupulous vs Conscientious	-319	382	627	-016	-046	643
15	Quitting vs Persevering	042	035	725	171	099	565
23	Unconventional vs Conventional	-543	194	294	-147	-083	453
26	Nervetic vs Not So	159	418	195	547	-011	537
24	Worried, Anxious vs Placid	049	265	-077	624	048	470
6	Easily Upset vs Poised, Tough	365	150	304	490	169	533
12	Hypochondriacal vs Not So	154	446	-031	402	-205	348
11	Emotional vs Calm	-574	442	219	335	060	610
2	Charitable vs Emotionally Stable	-232	416	444	349	276	622
8	Sober vs Intellectual, Cultured	164	163	654	163	427	747
34	Practical, Lirical vs Imaginative	063	066	029	101	654	451
19	Clumsy, Awkward vs Polished	040	354	422	119	452	532
30	Lawless vs Independent-Minded	402	-015	544	392	284	692

APPENDIX D (Continued)

TABLE D-1 Loadings of Five Rotated Factors from 199 Command and Staff School Officers

Trait Variable	No.	Name	I	II	III	IV	V	h <sup>2</sup>
Silent vs Talkative	14		827	-161	-164	-115	242	809
Secretive vs Frank	23		807	-022	-062	003	018	656
Cautious vs Adventurous	16		765	-152	-226	083	127	711
Submissive vs Assertive	3		680	-134	-092	161	320	788
Self-contained vs Sociable	29		527	127	-418	-134	043	488
Larguid, Slow vs Energetic	7		727	-050	-065	114	432	735
Spiteful vs Goodnatured	10			749	001	067	-125	593
Jealous vs Not So	20		110	639	110	322	000	539
Demanding vs Emotionally Mature	22		-120	624	177	245	-026	603
Self-willed vs Mild	13		-350	583	289	003	-088	695
Obstructive vs Cooperative	1		-513	721	165	089	179	623
Suspicious vs Trustful	9		-190	500	170	514	342	553
Rigid vs Adaptable	21		091	532	-250	032	-130	380
Hard, Stern vs Kindly	17		130	517	072	-411	-203	569
Cool, Alcool vs Attentive to People	5		-295	524	082	-094	070	435
			374					
Relaxed, Indolent vs Insistently Orderly	18			-141	486	-132	313	422
Frivolous vs Responsible	4		-175	222	637	176	444	693
Unscrupulous vs Conscientious	25		-100	390	598	078	312	643
Quitting vs Persevering	15		-172	-012	488	168	533	565
Unconventional vs Conventional	23		119	254	428	-076	044	454
			-446					
Neurotic vs Not So	26			273	112	614	135	538
Ferrying, Anxious vs Placid	24		236	118	-100	664	-004	470
Easily upset vs Poised, Tough	6		069	012	031	496	374	523
Hypochondriacal vs Not So	12		365	233	048	471	-158	345
Emotional vs Calm	11		226	297	295	431	104	611
Chargeable vs Emotionally Stable	2		-489	344	251	443	460	625
			-189					
Boorish vs Intellectual, Cultured	8			115	178	188	805	746
Practical, Logical vs Imaginative	34		126	049	-378	118	534	452
Clumsy, Awkward vs Polished	19		-085	321	062	195	624	534
Immature vs Independent-Minded	30		003	-128	142	358	613	692
			349					



APPENDIX I (Continued)

TABLE 12. Orthogonalized Multiple Gr-up and Three Centroid Factors from Cattell's Male College Students.  
(N = 133)

Factor	I	II	III	IV	V	VI	VII	VIII	$\Sigma$
14	785	-280	054	-158	023	154	-142	-139	792
15	651	-119	062	-041	085	-387	-066	135	649
16	749	-113	-229	092	-005	201	144	093	713
17	418	-540	161	292	276	-304	-180	-040	813
18	736	-157	-249	-244	032	104	176	130	753
19	575	019	202	060	486	277	-052	-216	752
20	685	-190	-194	-048	449	075	-156	112	806
21	498	-106	-060	305	011	-089	133	148	806
22	610	104	-080	-138	070	312	-063	-214	574
23	190	737	-175	-263	151	-090	056	136	721
24	-012	643	032	267	-035	400	-100	066	718
25	-105	788	-002	247	180	155	-169	051	751
26	-323	750	-102	-060	206	-158	-038	045	755
27	330	559	248	302	302	-372	273	-295	874
28	094	586	-050	250	179	359	079	086	592
29	445	518	-159	071	006	277	217	-123	674
30	112	527	033	-464	-126	200	223	-089	659
31	556	294	085	-309	345	-230	045	-053	685
32	-559	597	120	278	011	185	-085	172	833
33	-314	067	131	163	173	-252	-124	-153	611
34	-281	133	180	090	431	184	-151	-034	663
35	-338	561	140	-284	360	-162	-081	156	716
36	-256	214	169	207	524	-277	-221	152	714
37	-414	257	109	031	-128	196	259	070	532
38	136	329	088	698	-049	120	-133	-173	688
39	055	116	-307	627	082	-116	-029	-092	543
40	104	061	-119	611	283	234	-175	-045	570
41	080	179	318	577	098	054	187	196	558
42	-458	173	-335	351	184	-198	-087	-167	777
43	-221	171	072	244	536	-238	-144	205	744
44	-051	091	130	079	719	070	-196	064	598
45	135	-104	-109	-131	548	-128	238	-368	433
46	079	-059	-481	-564	325	-074	-149	-169	721
47	-074	013	-020	052	078	070	-070	-228	536
48	055	069	305	405	571	-088	-411	213	812

Other variables were grouped as shown and named over. Others did not enter into the original groupings.

APPENDIX E (Continued)

TABLE E.3 Loadings on Five Related Multivariate-Group Factors and Three Additional Centroid Factors from Cattell's Male College Students

(N = 133)

Triall Variable	I	II	III	IV	V	VI	VII	VIII	$h^2$
14 Shiest vs Talkative	732	-026	-039	-119	-045	085	-155	250	639
15 Assertive vs Passive	713	-132	-071	087	-058	-303	-122	126	662
16 Cautious vs Adventurous	605	112	-585	054	029	111	128	-080	773
17 Submissive vs Assertive	564	-123	-191	230	250	-221	-209	127	776
29 Self-controlled vs Emotionally	708	000	-364	-111	-046	094	257	045	745
7 Language, Slow vs Energetic	523	-164	-203	110	153	230	-097	158	685
33 Dry, Humorous vs Compassionate	653	-072	-282	043	332	069	113	198	702
31 Blights vs Warmth Interest in	515	-055	-170	-079	-055	095	246	-188	398
32 Depressed vs Cheerful	424	372	-312	-192	116	170	365	-159	524
10 Spirited vs Goodnatured	172	704	269	011	-056	-116	166	113	662
20 Jovious vs Not So	-224	687	324	287	030	301	-135	035	715
22 Demanding vs Non-demanding Nature	-295	673	325	226	072	087	160	212	763
13 Self-willed vs Not	-265	514	547	147	006	-087	183	135	720
1 Constructive vs Destructive	433	471	554	125	-024	036	223	239	755
9 Suspicious vs Trustful	-006	650	029	217	140	325	-062	-066	613
21 Rigid vs Adaptable	337	649	-172	265	-106	255	132	-133	719
17 Warm, Warm vs Cold	655	589	139	-195	-247	189	053	036	626
5 Gentle, Assertive vs Self-sufficient	574	316	194	-195	124	-117	155	275	622
31 Attention Seeking vs Self-sufficient	-567	315	116	267	012	259	-120	-056	770
18 Relaxed, Impatient vs Impatiently Orderly	-104	-147	606	131	393	127	-248	206	707
6 Firmness vs Responsibility	-127	256	609	155	217	232	-313	061	737
25 Unscrupulous vs Conscientious	-247	103	530	-120	239	-269	-216	119	685
15 Quitted vs Persevering	-128	000	192	300	454	-157	-482	154	683
23 Unconventional vs Conventional	-313	397	388	-046	-194	354	-172	-200	512
26 Nervous vs Not So	-072	250	-065	647	015	268	-125	115	598
24 Worrying, Anxious vs Pleasant	-062	096	-133	687	084	-058	136	072	537
6 Shally Upset vs Not So	-025	-002	-089	616	317	131	103	044	693
14 Hypochondriacal vs Not So	-080	236	-008	406	131	138	-305	-137	570
11 Emotional vs Calm	-386	134	117	181	101	064	313	393	567
2 Changeable vs Emotionally Stable	-160	271	398	363	490	-159	-045	150	650
37 Dependent vs Self-sufficient									
8 American vs Intellectual, Cultured	083	117	292	031	712	049	-280	145	191
27 Lacking Artistic Feeling vs Esthetically Predisposed	303	006	109	-178	160	-097	136	076	303
36 Practical, Logical vs Imaginative	187	044	010	-381	223	-230	264	170	347
29 Family, Authoritative vs Philanthropic	083	-056	291	040	637	115	228	222	485
30 Humane vs Independent-minded	-002	117	104	387	613	-155	-241	159	603



APPENDIX E (Continued)

TABLE E4. Loadings on Eight Final Rotated Factors from Cattell's Male College Students  
(N = 133)

Trait Variable	No.	Name	I	II	III	IV	V	VI	VII	VIII	$h^2$
Silent vs Talkative	14		797	-094	-296	-003	034	143	-263	146	844
Secretive vs Frank	28		667	242	-075	-052	157	-285	-008	263	590
Cautious vs Adventurous	16		703	118	-439	093	-134	-027	-168	-141	776
Submissive vs Assertive	3		448	-629	-144	225	-280	-290	108	-024	778
Self-contained vs Sociable	29		712	017	-425	-121	053	057	111	-073	718
Languid, Slow vs Energetic	7		510	214	-166	394	320	156	-251	-126	694
Shy, Bashful vs Composed	33		606	-089	-309	186	431	071	-004	-064	700
Slight vs Marked Interest in Opposite Sex	35		480	-022	-21	-144	-007	-074	174	-244	391
Depressed vs Cheerful	32		460	336	-359	083	123	118	-192	-030	527
Spitfire vs Goodnatured	10		118	720	059	-028	139	-270	031	180	662
Jealous vs Not So	20		-159	634	031	447	-194	-063	-232	-022	724
Demanding vs Emotionally Mature	22		-303	718	169	303	087	-097	024	149	767
Self-willed vs Mild	13		-327	605	327	054	148	-196	192	167	714
Obstinate vs Cooperative	1		370	555	341	073	252	-209	302	118	779
Suspicious vs Trustful	9		008	594	-019	433	043	-117	-193	-210	637
Rigid vs Adaptable	21		343	601	-265	225	-204	-210	-039	-158	712
Hard, Stern vs Kindly	17		136	679	114	-306	-125	085	-135	-051	630
Cool, Aloof vs Attentive to People	5		505	349	028	-060	401	-133	078	166	593
Attention Getting vs Self-sufficient	31		-538	398	412	351	-172	-037	-063	-094	785
Relaxed, Indolent vs Insistently Orderly	18		-144	-110	636	311	397	074	-009	-024	698
Privileged vs Responsible	4		-139	310	634	343	173	-092	-199	-091	725
Unscrupulous vs Conscientious	25		-326	382	450	-031	341	-171	-238	175	688
Quitting vs Persevering	15		-235	-066	449	385	446	-215	-095	125	680
Unconventional vs Conventional	23		-272	192	460	007	-319	068	-060	-215	511
Neurotic vs Not So	26		-029	183	-024	699	-215	-121	073	111	602
Worrying, Anxious vs Placid	24		-105	018	-234	576	-049	-236	245	165	543
Easily (best) vs Poised, Tough	6		002	-036	-090	764	019	119	198	-214	693
Hypochondriacal vs Not So	12		-027	086	058	481	-111	-238	-089	-089	377
Emotional vs Calm	11		-440	229	217	401	075	-087	155	040	676
Changeable vs Emotionally Stable	2		-294	219	229	438	474	-260	-004	104	682
Boorish vs Intellectual, Cultured	8		-012	058	254	338	642	-012	-286	-121	651
Lacking Artistic Feeling vs Esthetically Fastidious	27		190	022	-037	-066	548	-012	-003	-106	354
Practical, Logical vs Imaginative	14		111	119	-149	-311	403	076	056	061	394
Clumsy, Awkward vs Polished	19		-007	064	130	253	626	174	160	-163	588
Immature vs Independent-Minded	30		-122	-013	049	540	485	-220	-227	087	652



APPENDIX F (Continued)  
 TABLE 17 Loadings on Five Orthogonalized Multiple-Group and Seven Centroid Factors from Cattell's Female College Students  
 (N = 240)

Item Variable	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI
14	069	-132	-047	-189	-128	-055	-040	-079	-064	049	-016	-032	081			
24	746	-192	092	-033	-170	-125	-021	-021	063	-032	-016	-032	081			
26	052	-044	-208	157	098	-086	-056	025	114	032	-096	056	081			
27	189	-572	387	167	171	-157	134	039	-057	033	-021	084	081			
28	632	023	-168	-228	-093	153	069	-089	-076	-088	115	070	084			
33	742	086	282	074	-021	094	-070	216	158	092	-065	098	084			
35	729	-068	192	205	322	-176	202	058	-212	-070	-060	137	084			
37	512	-182	-224	-045	095	193	314	157	-150	-128	069	137	084			
38	755	318	-113	016	-054	216	-120	131	038	028	049	-126	084			
10	225	011	-138	-118	040	-095	-054	-084	-051	-131	011	-070	157			
20	-047	018	-045	116	085	-001	-088	-060	070	061	-111	073	157			
21	-113	051	124	054	014	-016	-028	-049	-026	-111	-111	-032	157			
22	-213	043	-018	-151	066	-075	-099	069	056	-051	096	066	157			
23	212	042	160	-110	008	-041	138	069	055	-112	096	020	157			
24	261	707	-070	314	142	107	069	116	128	137	166	063	157			
25	391	617	-061	085	013	107	062	025	051	072	-077	048	157			
26	-032	754	-141	-106	111	071	-048	-037	-109	-138	223	-027	157			
27	143	031	109	-210	-301	-181	-137	220	-312	-110	079	122	157			
28	-518	595	128	157	-064	117	-137	-053	062	071	-056	067	157			
29	-403	-205	682	003	-110	193	079	077	-090	033	-081	116	157			
30	-183	1658	709	039	063	-089	058	-032	-035	022	-115	113	157			
31	-313	592	132	-181	040	034	-208	-240	-065	-081	085	110	157			
32	166	011	118	118	-029	-111	120	214	148	085	078	-125	157			
33	-370	299	179	-322	-112	346	153	-151	-100	193	231	190	157			
34	-012	150	034	583	-159	189	-117	077	-004	090	108	-069	157			
35	065	141	-036	834	-054	-105	053	-046	094	-115	-073	041	157			
36	140	-131	274	658	291	-200	218	-049	-112	117	-197	047	157			
37	018	118	062	566	-187	123	-190	098	175	074	115	-079	157			
38	-604	362	104	576	055	017	132	-102	-034	-099	-040	049	157			
39	-110	563	146	147	099	336	027	-098	065	092	-056	093	157			
40	-024	263	570	110	584	-227	-286	102	051	049	100	149	157			
41	-114	-094	195	030	344	311	228	254	096	-342	-134	115	157			
42	262	166	-117	-148	164	-169	208	193	-256	073	-074	151	157			
43	022	215	149	100	454	309	344	-160	257	-163	137	151	157			
44	210	017	568	361	194	-286	-123	072	-165	107	071	113	157			

APPENDIX F (Continued)

TABLE F3 Loadings on 12 Rotated Factors from Castell's Female College Students

(N = 240)

Factor	1	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	N
<b>Self-Variable</b>													
14 Silent vs Talkative	810	-089	-291	-178	-119	-067	-155	-040	-030	134	-052	-167	882
28 Secretive vs Frank	714	-161	-174	-032	-045	-079	-192	-105	113	-011	-160	-108	684
16 Cautious vs Adventurous	649	020	-178	124	-021	118	-096	039	128	162	-072	-227	851
3 Submissive vs Assertive	579	-532	025	195	346	078	-172	-077	-058	094	-001	078	837
29 Self-contained vs Sociable	683	103	-314	-278	-246	152	-186	-120	-014	074	058	-077	806
7 Laidback, Slow vs Energetic	770	086	038	079	076	144	-155	226	114	122	040	-285	820
33 Dry, Witty vs Composed	723	-016	-220	225	342	201	-016	-108	-193	115	-027	038	851
15 Alert vs Nervous Interest in Opposite Sex	425	-134	-259	-060	-173	427	007	-088	-204	104	133	026	560
12 Depressed vs Cheerful	612	405	-252	-208	-208	171	-147	185	097	133	104	-193	806
19 Spiteful vs Goodnatured	132	803	-178	-178	-026	-019	122	-036	-079	-063	-002	-184	788
22 Assertive vs Not So	-105	799	011	135	066	-012	117	049	102	039	-126	-156	738
22 Demanding vs Emotionally Mature	-094	802	163	053	103	-051	159	032	-046	-107	-121	-556	775
3 Self-willed vs Mild	-237	836	101	-186	034	-082	111	-154	084	-097	031	-118	875
4 Contrivance vs Cooperative	353	624	272	-100	239	059	113	-077	000	-141	112	-223	763
5 Suspicious vs Trustful	133	715	-050	310	023	196	001	003	107	134	202	-221	801
21 Rigid vs Adaptable	226	629	-266	079	-245	179	106	000	079	178	-057	-196	707
17 Kind, Warm vs Kindly	-074	737	-106	521	-005	-023	175	-040	-138	-034	162	-115	931
5 Cool, Aloof vs Attentive to People	682	655	-012	-147	-116	-240	221	341	034	-226	170	169	1125
31 Attention: Settling vs Self-sufficient	-504	571	321	119	024	-095	-050	111	104	-100	-094	014	749
16 Balanced, Indolent vs Industrious Orderly	-110	-133	738	-002	206	007	-101	128	-106	-174	-317	177	718
1 Prudent vs Responsible	023	416	585	064	483	-128	010	-021	-079	-091	-026	-036	787
2 Unconcerned vs Conscientious	-209	604	332	-244	339	-244	-110	010	003	-200	-036	054	869
15 Oblivious vs Remembering	110	047	704	206	654	-073	058	030	-019	-132	167	-197	853
23 Unconventional vs Conventional	-264	313	488	-354	-147	-002	-119	-154	013	093	136	219	686
24 Neurotic vs Not So	-025	469	120	546	-183	-012	-182	171	-084	-044	131	-100	667
24 Nervous, Anxious vs Flaccid	118	152	-130	812	033	055	-086	-100	-10	-201	-086	-080	787
6 Easily Upset vs Poised, Tough	-115	416	-049	514	-125	016	-168	170	-206	131	-171	115	787
12 Psychosomatic vs Not So	-044	376	198	537	130	082	-007	-113	-056	-238	-087	-265	638
11 Emotional vs Calm	-044	543	374	416	326	017	-130	-010	057	-040	-094	-070	703
2 Changeable vs Emotionally Stable													774
8 Boorish vs Intellectual, Cultured	041	269	147	104	845	-071	-012	179	068	091	135	036	830
27 Lacking Artistic Feeling vs Emotionally Fastidious	-026	-092	135	-038	780	618	035	139	014	-167	-004	142	558
14 Practical, Logical vs Imaginative	106	123	-531	-399	179	198	244	177	070	038	159	-228	700
19 Clean, Neat vs Polished	-004	259	319	-021	469	540	-272	-262	095	071	049	-046	861
30 Immature vs Independent-Minded	301	068	081	375	761	-098	-113	101	-078	129	098	162	913

APPENDIX G: Study G Factor Analysis

TABLE G1. Intercorrelations Among Trait Ratings from Fiske's Teammates<sup>a</sup>  
(N = 128 male first-year graduate students in clinical psychology)

Trait Variable No. Name	14	20	16	3	7	35	32	10	1	9	21	5	4	25	24	6	2	37	8	34	19	30	
14 Silent vs Talkat vs	61	71	64	71	64	71	54	66	-02	18	02	38	41	-24	-21	-01	14	03	09	33	35	15	33
28 Secretive vs Frank	61	50	46	54	57	61	17	30	22	39	55	-11	-10	-01	04	09	07	29	38	14	28		
16 Cautious vs Adventurous	71	50	54	59	58	56	14	24	20	54	37	-32	-24	10	19	01	19	39	49	30	39		
3 Submissive vs Assertive	64	46	54	53	47	35	22	00	-12	16	22	-15	-20	-15	11	-07	10	34	34	07	45		
7 Languid, Slow vs Energetic	71	54	59	53	50	54	04	17	08	25	36	-22	-18	-23	-17	02	-07	12	34	01	32		
35 Slight vs Marked Interest in Opposite Sex	54	57	58	47	50	52	07	08	18	37	28	-34	-30	08	09	-03	12	17	35	16	27		
32 Depressed vs Cheerful	66	61	58	35	54	52	28	38	26	52	50	-19	-09	23	24	13	19	19	38	25	26		
10 Spiteful vs Goodnatured	-02	17	14	-22	04	07	28	50	56	41	35	03	23	38	14	24	34	14	19	40	05		
1 Obstructive vs Cooperative	18	30	24	00	17	08	38	50	42	45	52	01	22	39	27	50	27	26	31	42	12		
9 Suspicious vs Trustful	02	22	20	-12	08	18	26	56	42	40	35	09	31	35	16	26	28	18	23	33	10		
21 Field vs Adaptable	38	38	54	16	25	37	52	41	45	40	47	-04	08	34	34	08	45	38	42	54	23		
5 Cool, Aloof vs Attentive to People	41	55	37	22	36	26	50	35	52	35	47	-01	10	16	17	31	21	32	39	46	18		
4 Frivolous vs Reasonable	-24	-11	-32	-15	-22	-34	-19	03	01	09	-04	-01	44	10	15	32	18	18	-02	14	15		
25 Unscrupulous vs Conscientious	-21	-10	-24	-20	-18	-30	-09	23	22	31	08	10	44	20	12	19	32	19	09	33	17		
14 Worrying, Anxious vs Placid	-01	-01	10	-15	-23	06	23	36	39	35	34	18	10	20	59	38	45	16	07	40	22		
6 Easily Upset vs Poised, Tough	14	04	19	11	-17	09	24	14	27	16	34	17	15	12	59	28	33	28	08	35	17		
2 Changeable vs Emotionally Stable	03	09	01	-07	02	-03	13	24	50	26	08	31	32	19	38	28	10	09	01	22	05		
37 Dependent vs Self-sufficient	09	07	19	10	-07	12	19	34	27	28	45	21	18	32	45	33	10	32	27	46	44		
8 Boorish vs Intellectual, Cultured	33	29	39	34	12	17	19	14	26	16	38	32	18	19	16	28	09	32	53	47	44		
34 Practical, Logical vs Imaginative	35	38	49	34	34	35	38	19	31	23	42	39	-02	09	07	08	01	27	53	46	40		
19 Clumsy, Awkward vs Polished	13	14	30	07	01	16	25	40	42	33	54	46	14	33	40	35	22	46	47	44	31		
30 Immature vs Independent-Minded	33	28	39	43	32	27	20	05	14	10	23	18	15	17	22	17	05	44	44	40	31		

<sup>a</sup> Made available through the courtesy of Dr. Donald W. Fiske and reproduced with his permission. Certain variables have been reflected from the original matrix. Decimals have been omitted.

APPENDIX G (Continued)

TABLE G2. Loadings on Five Orthogonalized Multiple-Group and One Centroid Factor from Fiske's Teammates Ratings  
(N = 128 male first-year graduate students in clinical psychology)

Trait Variable	I	II	III	IV	V	VI	$\lambda^2$
14 Silent vs Talkative	764	-151	-206	130	390	279	896
28 Secretive vs Frank	633	139	-104	-094	381	224	634
16 Cautious vs Adventurous	604	-035	-438	105	555	-113	889
3 Submissive vs Assertive	560	-416	-128	087	353	172	688
7 Languid, Slow vs Energetic	776	019	-130	-270	221	155	766
35 Slight vs Marked Interest in Opposite Sex	625	-022	-415	109	320	-176	709
32 Depressed vs Cheerful	635	264	-186	198	386	126	711
10 Spiteful vs Goodnatured	-067	677	-055	-055	313	-146	608
1 Obstructive vs Cooperative	051	533	-053	076	466	265	582
9 Suspicious vs Trustful	020	587	110	-019	348	-157	503
21 Rigid vs Adaptable	208	295	-170	145	630	-115	91
5 Cool, Aloof vs Attentive to People	281	324	-077	-090	550	290	565
4 Frivolous vs Responsible	-427	-018	577	023	141	244	596
25 Inscrupulous vs Conscientious	-441	238	456	-097	287	098	560
24 Worrying, Anxious vs Flacid	-175	432	001	620	295	-108	702
6 Easily Upset vs Poised, Tough	-074	102	060	669	334	106	589
2 Changeable vs Emotionally Stable	-018	459	282	231	150	350	490
37 Dependent vs Self-sufficient	-129	177	161	258	494	-263	454
8 Boorish vs Intellectual, Cultured	002	-133	081	047	708	060	531
34 Practical, Logical vs Imaginative	161	-053	-128	-173	713	-023	584
19 Clumsy, Awkward vs Polished	-163	186	046	126	706	-060	581
30 Immature vs Independent-Minded	188	-198	180	148	511	-098	431

APPENDIX G (Continued)

TABLE G3 Loadings on Six Rotated Factors from Fiske's Teammates Ratings  
(N = 128 male first-year graduate students in clinical psychology)

Trait Variable	No.	Mean	I	II	III	IV	V	VI	$\lambda^2$
Silent vs Talkative	14	883	-115	-050	180	159	192	890	
Secretive vs Frank	28	751	178	336	-017	155	066	626	
Cautious vs Adventurous	16	703	057	-358	238	447	015	882	
Submissive vs Assertive	3	674	-368	-013	145	244	115	684	
Lamby, Slow vs Energetic	7	860	034	-060	-205	075	-054	760	
Slight vs Marked Interest in Opposite Sex	35	646	021	-434	202	216	-062	708	
Depressed vs Cheerful	32	720	293	-097	271	105	083	705	
Spiteful vs Goodnatured	10	-004	735	-023	055	217	-107	602	
Obstructive vs Cooperative	1	225	602	180	133	217	239	567	
Suspicious vs Trustful	9	058	631	098	115	181	-206	500	
Rigid vs Adaptable	21	331	396	-075	307	465	-026	582	
Cool, Aloof vs Attentive to People	5	478	444	175	001	324	193	573	
Frivolous vs Respectable	4	-357	-004	686	046	043	034	603	
Unscrupulous vs Conscientious	25	-350	287	555	-015	200	-053	556	
Worrying, Anxious vs Placid	24	-159	453	001	666	077	078	686	
Easily Upset vs Poised, Tough	6	-012	128	145	690	995	229	575	
Changeable vs Emotionally Stable	2	061	444	416	216	-154	188	480	
Dependent vs Self-sufficient	37	-089	219	134	421	376	-189	442	
Boorish vs Intellectual, Cultured	8	185	-001	274	213	605	054	524	
Practical, Logical vs Imaginative	34	349	094	059	007	678	-005	594	
Clumsy, Awkward vs Polished	19	-002	317	199	297	585	017	571	
Immature vs Independent-Minded	30	260	-121	207	316	418	-149	422	

APPENDIX H: Study H Factor Analysis

TABLE H1. Intercorrelations Among Trait Ratings from Fiske's Staff Ratings<sup>a</sup>  
(N = 128 male first-year graduate students in clinical psychology)

Trait Variable No. Name	14	28	16	3	7	35	32	10	1	9	21	5	4	25	24	6	2	37	8	34	19	30
14 Silent vs Talkative		49	50	68	66	38	64	-04	-07	05	34	61	-32	-31	18	30	-12	08	30	26	03	17
26 Secretive vs Frank		44	19	49	20	49	43	33	47	54	52	10	29	22	21	03	08	30	23	14	07	
16 Cautious vs Adventurous			40	37	35	51	34	09	03	51	48	-14	03	24	34	-07	39	31	26	08	32	
3 Submissive vs Assertive				45	41	36	-32	-33	-26	10	33	-23	-34	14	28	-18	32	36	29	03	48	
7 Languid, Slow vs Energetic					18	41	00	-05	02	20	48	-15	-06	-18	-13	-31	-11	25	26	-18	12	
35 Slight vs Marked Interest in Opposite Sex						40	00	04	03	25	38	-35	-33	35	36	-26	22	13	18	13	21	
32 Depressed vs Cheerful						30	30	41	55	59	-13	-04	54	46	17	31	18	12	24	14		
10 Spiteful vs Goodnatured								70	71	57	42	47	66	24	25	35	11	04	02	36	-10	
1 Obstructive vs Cooperative								57	44	35	44	54	26	24	42	10	06	34	33	-12		
9 Suspicious vs Trustful								52	35	30	51	37	32	39	13	-04	-13	23	-14			
21 Rigid vs Adaptable									50	13	26	47	47	15	40	45	37	45	25			
5 Cool, Aloof vs Attentive to People										02	12	30	39	13	09	21	43	25	03			
4 Fearful vs Responsive													75	-11	08	37	07	08	07	30	09	
2 Unscrupulous vs Conscientious														-08	01	30	04	93	02	23	-03	
24 Worrying, Anxious vs Placid															70	58	42	19	05	48	17	
5 Easily Upset vs Poised, Tough																23	55	31	17	58	34	
2 Changeable vs Emotionally Stable																	11	-17	-27	26	-17	
37 Dependent vs Self-sufficient																		38	23	41	59	
8 Boorish vs Intellectual, Cultured																			65	45	67	
34 Practical, Logical vs Imaginative																				31	57	
19 Clumsy, Awkward vs Polished																						26
30 Immature vs Independent-Minded																						

<sup>a</sup> Made available through the courtesy of Dr. Donald W. Fiske and reproduced with his permission. Certain variables have been reflected from the original matrix. Details have been omitted.



APPENDIX H (Continued)

TABLE H2. Loadings on Five Orthogonalized Multiple-Group and One Centroid Factor from Fiske's Staff Ratings  
(N = 128 male first-year graduate students in clinical psychology)

Trait Variable	No.	Name	I	II	III	IV	V	VI	$h^2$
	14	Silent vs Talkative	846	-073	-028	-068	268	056	801
	26	Secretive vs Frank	468	452	101	-169	304	184	595
	16	Cautious vs Adventurous	561	137	036	046	295	117	438
	3	Submissive vs Assertive	661	-431	293	282	309	090	891
	7	Inauid, Slow vs Energetic	672	-039	283	-454	150	121	765
	35	Slight vs Marked Interest in Opposite Sex	484	-007	-384	075	200	-222	477
	32	Depressed vs Cheerful	674	372	-194	155	245	153	738
	10	Spiteful vs Goodnatured	010	870	070	-384	191	080	810
	1	Obstructive vs Cooperative	-073	748	-007	-050	218	-114	636
	9	Suspicious vs Trustful	064	807	-063	134	027	184	712
	21	Rigid vs Adaptable	266	524	-217	-070	595	217	798
	5	Cool, Aloof vs Attentive to People	622	406	015	-036	313	-221	700
	4	Frivolous vs Responsible	-405	462	533	078	204	-064	714
	25	Unscrupulous vs Conscientious	-312	690	484	-078	127	064	834
	24	Worrying, Anxious vs Placid	201	303	-490	520	309	087	746
	6	Easily Upset vs Baised, Tough	233	248	-185	628	481	-086	783
	2	Changeable vs Emotionally Stable	-189	493	022	472	-082	104	506
	37	Dependent vs Self-sufficient	101	057	-036	439	463	228	474
	8	Roorish vs Intellectual, Cultured	066	-126	024	-125	836	194	774
	34	Practical, Logical vs Imaginative	078	-161	087	-214	733	-030	624
	19	Clumsy, Awkward vs Polished	-144	286	-111	340	633	-184	664
	30	Immature vs Independent-Minded	079	-271	199	192	681	245	680

APPENDIX H (Continued)

TABLE H3 Loadings on Six Rotated Factors from Fiske's Staff Ratings  
(N = 128 male first-year graduate students in clinical psychology)

Trait variable	No.	Name	I	II	III	IV	V	VI	$h^2$
	14	Silent vs Talkative	857	099	-138	048	077	071	777
	20	Secretive vs Frank	464	511	223	003	122	175	572
	16	Cautious vs Adventurous	573	193	076	160	096	110	418
	3	Submissive vs Assertive	772	-447	104	182	167	075	873
	7	Languid, Slow vs Energetic	713	143	035	-427	130	140	749
	35	Slight vs Marked Interest in Opposite Sex	440	170	-356	276	000	-207	468
	32	Depressed vs Cheerful	668	432	-015	366	-065	166	722
	10	Spiteful vs Goodnatured	-039	768	415	098	-029	-102	784
	1	Obstructive vs Cooperative	-112	680	315	143	027	-169	623
	9	Suspicious vs Trustful	-046	667	316	283	-204	186	703
	21	Rigid vs Adaptable	273	664	064	311	375	166	784
	5	Cool, Aloof vs Attentive to People	614	471	130	135	014	-223	684
	4	Frivolous vs Responsible	-322	185	735	-009	155	-128	719
	25	Unscrupulous vs Conscientious	-282	446	735	-105	064	020	834
	24	Worrying, Anxious vs Placid	127	296	-147	784	001	069	745
	6	Easily Upset vs Poised, Tough	251	144	130	804	117	-134	779
	2	Changeable vs Emotionally Stable	-228	211	353	447	-276	105	508
	37	Dependent vs Self-sufficient	157	-019	156	557	278	172	466
	8	Boorish vs Intellectual, Cultured	247	071	035	139	817	094	763
	34	Practical, Logical vs Imaginative	256	037	028	-006	729	-117	613
	19	Clumsy, Awkward vs Polished	-039	241	188	573	407	-273	665
	30	Immature vs Independent-Minded	260	-252	186	276	635	155	668

Div. 28 4. 23/1

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Aeronautical Systems Division, Personnel Laboratory,  
Langford Air Force Base, Texas. RECURRENT PERSONALITY  
FACTORS BASED ON TRAIT RATINGS. By  
Ernest C. Tupper and Raymond E. Christal. May 1961.  
vi + 49 p. (Project 777; Task 17110) (ASD-TM-61-97)  
Unclassified report

Intercorrelations among ratings on 35 personality traits,  
selected as representative of the personality domain, were  
obtained for eight samples. These samples differed in  
length of acquaintance from three days to more than a  
year; in kind of acquaintance from assessment programs  
in a military training course to a fraternity house situation,  
in type of subject from airman with only a high school  
education to male and female undergraduate students to  
first-year graduate students; and in type of rater from very

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native persons to clinical psychologists and psychiatrists  
with years of experience in the evaluation of personality.  
Centroid or multiple-group factors were extracted and  
rotated orthogonally to simple structure. For one study,  
an independent rotation was obtained in which analytic  
rotations were accomplished on an IBM 450 computer using  
Kaiser's normal variance criterion. Five fairly strong and  
recurrent factors emerged from each analysis, labeled as  
1) Surgency, 2) Agreeableness, 3) Dependability,  
(4) Emotional Stability, and (5) Culture.

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(4) Emotional Stability, and (5) Culture.

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