The Predictive Index®: A Report on Reliability and Construct Validity

Validity Report 1983.09.01

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September, 1983

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The Predictive Index Organization Survey:

A Report on Reliability and Construct Validity

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Submitted September 25, 1983

SUMMARY

The following report was prepared at the request of Mr. A. S. Daniels of Praendex Inc. to determine the reliablity and validity of the Predictive Index Organization Survey (by A. S. Daniels, Praendex Inc., Wellesley Hills, MA, copyright 1955). The authors of this report, J. Christopher Perry, M.P.H., M.D., and Philip Lavori, Ph.D., are independently responsible for the design of the study and all aspects of the choice of procedures, statistical methods and the preparation of the data for presentation. Praendex Inc. of Wellesley Hills, Massachusetts was involved only in the process of data collection which was carried out under the present authors' direction.

The Predictive Index is a self-report, free-choice, inventory which measures four work-related personality traits. The format is a checklist of 86 adjectives whereby an individual is first asked to check those adjectives which describe how he believes he should behave in his work environment ("Self-Concept" scale). From a second and identical checklist he is then asked to check adjectives which he believes are descriptors of his personality ("Self" scale). A combination of these two scales yields a third measurement describing personality traits in the work environment ("Synthesis" scale).

The purpose of the present study was threefold: to test the reliability of the Predictive Index Factors; to determine their descriptive characteristics, and to test the construct validity of the Predictive Index Organization Survey in comparison to another instrument.

The reliability of the Predictive Index was studied in two ways. First, the internal consistency of all of the Predictive Index Factors was determined and then test-retest reliability was obtained.

The descriptive characteristics of the Predictive Index Factors (traits) were determined and the intercorrelations of these factors were calculated. In practice, the pattern of a subject's factor scores are considered as important as the subject's actual scores on the individual factors. Therefore, the descriptive characteristics of the different patterns that subjects can have on the Predictive Index were determined by examining the difference scores between each pair of factors ("Factor Combinations").

The final aspect of the study compares the Predictive Index Organization Survey with the Cattell 16 PF Form A (original copyright 1949) by the Institute for Personality and Ability Testing, 1602 Coronado Drive, Champaign, Illinois). Subjects filled out both the Predictive Index and the 16 PF. Correlations were calculated between the Predictive Index Factors and the 16 PF source traits and higher order factors. In order to determine the relationship between patterns of scores on the Predictive Index Organization Survey, correlations were also calculated between the difference scores (i.e., the difference between each pair of factor scores on the PI) and the 16 PF.

The authors assume total responsibility for all of the information contained in the present report. Final report submitted September 25, 1983.

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J. Christopher Perry obtained his M.D. from Duke Medical School and a Masters of Public Health in behavioral science from the Harvard School of Public Health. After finishing his residency in psychiatry at The Cambridge Hospital, he completed a two year research training fellowship in social and behavioral sciences at Harvard Medical School.

For the past five years Dr. Perry has focused his research efforts on personality disorders and is currently principal investigator of several research projects in this area. Some representative publications are noted below.

Perry, JC, and Klerman GL, "Clinical features of the borderline personality disorder" American Journal of Psychiatry 137: 165-173, 1980.

Vaillant, GE, and Perry, JC, "Chapter 22: Personality Disorders" in Kaplan, HI, Freedman, AH, Sadock, BS, Comprehensive Textbook of Psychiatry, Third Edition pp 1562-90, Williams & Wilkins Co., Baltimore, 1980.

Perry, JC, and Flannery, R. "Passive-Aggressive personality disorder: treatment implications of a clinical typology." Journal of Nervous and Mental Disease 170: 164-73, 1982.

Philip W. Lavori obtained his Ph.D. in mathematics from Cornell University. He taught in the Mathematics Department at M.I.T. for four years, and in the Electrical Engineering Department at M.I.T. for two years. He is currently on the staff of the Harvard Medical School and the Massachusetts General Hospital.

For the past five years Dr. Lavori has consulted on statistical matters to several institutions and corporations. For the past three years he has been the statistical consultant for the follow-up component of the National Institute of Mental Health Collaborative Study of Depression. Some of his representative publications are noted below.

Keller, MB, Lavori, PW et al. "Test-retest reliability of assessing psychiatrically ill patients in a multi-center design." Journal of Psychiatric Research 16: 231-228, 1981.

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A. RELIABILITY

The reliability of the Predictive Indices was assessed in the two most common ways. First we determined the internal consistency or homogeneity of each of the Predictive Index Scales. Secondly we determined the test-retest reliability (stability) of each of the scales.

1. **Internal Consistency.** The internal consistency or homogeneity of the scales refers to the degree to which all of the items in the scale tend to vary in the same direction as the total score of the scale itself. For this purpose the split-half reliability coefficients were calculated for each scale using the Spearman-Brown prophecy formula. Table A-1 shows these figures for the Self-Concept and the Self forms of the scales A through D (calculated on an n of 120). All of the scales have split-half reliability coefficients above .70 - the acceptable cut-off - while seven of the eight scales have reliabilities above .80 and are thus highly acceptable. There is some tendency for the PI scales A, B and C to be more reliable when measured on the Self form rather than on the Self-Concept form.

2. **Test-retest Reliability.** The test-retest reliability or stability of the Predictive Index Scales was determined on a sample of 258 subjects who completed a second PI form anywhere from 3 months to 8 years after their initial test administration. The reliabilities were calculated using the whole sample and then splitting the sample into three equal groups based on length of time that had elapsed between test administrations. These reliability coefficients (see Table A-2) were calculated using the intra-class R. Looking at the total sample (n = 258) all of the test-retest

reliability coefficients on both Self-Concept and Self forms are above .50, while the scale reliabilities on the Self form tend to be somewhat higher than those on the Self-Concept form. This is to be expected because the Self form taps several personality traits directly, while the Self-Concept measures an individual's belief of how to respond in the work environment. This latter measurement would be responsive to changes in the work environment and would, therefore, show lower correlations in a retest. As would be expected the scales on the Synthesis form have reliabilities that are generally somewhere in between those on the Self and Self-Concept forms.

Next the sample was split into three equal groups. The first group (n = 85) had their retest administered between 3 months and two years after the first administration. The other two groups had their test readministered either from two to four years or from four to eight years after initial administration. As would be expected the shortest time interval (three months to two years) was associated with the highest test-retest reliability coefficients for most scales. The coefficients of the A, C, and D Scales on the Self-Concept form rose substantially as did those same scales on the Self form. The Self form Scales A, B and D in fact show themselves to be highly reliable considering the length of the time interval. The mean figure for the Scales on the Self-Concept form was .57, while the mean for those on the Self form was .65. The mean for the Synthesis factors was somewhere in between, .63, as would be expected.

The decrement in stability as the length of the retest interval increases is modest for all of the scales. Looking at the Self-Concept form, Scale C appears to decline steadily with increasing time whereas factors A, B, and D appear to level off with the stability coefficient around .50 which is

quite remarkable given the length of the retest interval. On the Self form, the scales show more of a tendency toward a linear decrement with increasing retest time interval. On the Self form even at the four to eight year interval, however, the scales are somewhat more stable than those on the Self-Concept forms. As would be expected the Synthesis Scales fall somewhere in between.

Test-retest reliability coefficients were also calculated for the difference scores between each pair of scales on each form. The difference score for a pair of scales was calculated by measuring the distance on the form between the subject's scores on each scale. Reasonable reliability for the difference scores would indicate that the pattern of scale scores (i.e., which ones are high and which are low) would be stable over time. Table A-3 demonstrates that these reliability coefficients are moderately good. The difference scores on the Self Scales are generally somewhat more stable than those on the Self-Concept form, while the Synthesis form difference scores are generally in between the former two sets of difference scores. Again, there is a tendency for all of the difference scores to have lower stability as the interval from initial administration to retest increases.

Next an estimation was made of the "instantaneous reliability" of all of the Predictive Index Scales estimated from the coefficients presented in Table A-2. This yields an estimation of the test-retest reliability that would be obtained under very short retest interval (i.e., less than three months). Table A-4 shows these extrapolated test-retest reliability coefficients. As would be anticipated the estimated short-term test-retest reliabilities are generally higher for all 4 factors and for the norm M. These are in the same

range as the short-term stability coefficients of the 16-PF which we have used below.

The estimated short-term test-retest reliability coefficients were also calculated for the difference scores of each pair of scales. Again, the distance score for each pair of scales was calculated by measuring the actual distance between a subject's scores for each scale on the scoring sheet. The estimated short-term test-retest reliabilities are high except for a difference between Scale D and Scale C (D minus C) which is only moderate. The size of these correlations indicates that for Self-Concept, Self, and Synthesis forms, a subject's pattern of scale scores should be reasonably stable over time.

B. DESCRIPTIVE STATISTICS OF THE PREDICTIVE INDEX FACTORS

1. **Means and Standard Deviations.** Table B-1 presents the means and standard deviations for each of the Predictive Index scales calculated from a sample of 260. For both the Self-Concept and Self forms, the A and B scales are somewhat positively skewed. This means that most of the subjects tend to score very high. For both the Self-Concept and Self forms, the C and D Scales are normally distributed.

The mean scores for all of the Scales and for the norm, M are slightly higher for the Self form than for the Self-Concept form, although these differences are not statistically significant.

Table B-2 displays the mean size of the measured difference scores for each pair of Scales on all three forms. These scores are determined by measuring the length in millimeters between the scores on each pair of scales for each subject. The size of the standard deviations for each of these mean

difference scores is large enough to suggest that these mean scores would vary greatly from sample to sample. Therefore the patterns of differences in this sample should be interpreted cautiously. The plotted means on the PI Data Sheet (scoring form) are very close to demonstrating a vertical profile and are well within the sampling variation. The size of these standard deviations is due to variability of job types. This further emphasizes the value of specific job studies.

For the Self-Concept form, the largest difference scores were found for D minus A, D minus B, C minus A, and C minus B. This indicates that on this form subjects tend to score higher on D than on either A or B, and they tend to score higher on C than either A or B. This pattern is the same for the Self form except that on this latter form subjects tended to score lower on C than on A. Furthermore on the Self form, subjects tended to score higher on D than on C. On the Synthesis form, subjects still tended to score higher on D than either A, B or C, while other differences were much smaller.

For completeness, we have also included the means and standard deviations of the pair-wise difference scores calculated from the raw scale scores of the Self form (see Table B-3). For subsequent correlations and other statistical analyses we used the raw difference scores, rather than the measured difference scores.

The observed profile in this sample is consistent with the vertical profile (representation of normal distribution on PI scoring form) found in the population.

2. **Scale Scores and Difference Scores for Males and Females.** The descriptive statistics were next examined by sex of the subject. For these analyses subjects were grouped into two groups of 153 males and 102 females.

For each Scale on each form, the mean score and 95% confidence interval was calculated for males and females on the raw scores (see Table B-4). This information is presented graphically as well on Figures B-1 through B-4. T-tests were used to determine the significance of any differences between means on each scale.

On the Self Scales (Figure B-1) the mean Scale score for A is significantly higher for males than for females.

Examining the Self-Concept Scales (Figure B-2), it can be seen that the mean for males on factor A is significantly higher than for females ($p < .01$). Similarly the mean score for females is higher on factor C than for males ($p < .05$).

When examining the Synthesis form (Figure B-3), the pattern again remains the same as for the Self-Concept form. Men tend to score higher on Scale A than women, ($p < .01$) while women score higher than men on Scale C ($p < 05$).

Looking at the norm, M (Table B-4 Figure B-4) it can be seen that there are no significant differences on the mean score for males or females on all three forms.

Next, the difference scores on each pair of factors calculated in the manner described above were examined by sex for each form (See Table B-5).

Examining the measured Difference scores between scale pairs on the Self-Concept form, four significant differences emerged (Table B-5, Figure B-5). Females showed significantly larger mean difference scores on the following: C minus B, C minus A, and D minus B. Males demonstrated a larger mean difference score on D minus C only.

The same pattern of Difference scores was found on the Self form (Figure B-6).

When the Synthesis form was examined (Figure B-7), the same Difference score pattern was found in males versus females with one addition: females also demonstrated a greater Difference score on B minus A.

3. Secondary Analysis of Sex Differences—Controlling for Job Category.

The apparent sex differences in the means of some of the individual scales and the pairwise scale difference scores led us to further examination for the source of these findings. Because the Predictive Index Organization Survey was designed for use in personnel selection, the authors examined the sample for differences in the proportion of job categories represented for each sex. The job category of each subject was assigned a rank from 1 (highest) to 7 (lowest) using the employment category from the Hollingshead-Redlich Two-factor Index of Social Class. The distribution of job categories was then compared for the subsamples of men (n = 153) and women (n = 102).

An initial look at the distribution of job categories demonstrated that the men were over represented in the higher job categories in this sample (see Table B-6). This suggested that the apparent differences between the sexes on the PI scales and pair-wise difference scores are confounded by differences in the jobs held by men and women in this sample.

To tease apart the sex and job category differences, a subsample was taken from job categories 2, 3 and 4 which were more evenly represented for both sexes. The median score of each PI scale and pair-wise difference score on the Self form was calculated by sex for each of the three job categories (data not shown). Examination of effects due to sex versus job category led to the following conclusions:

a. When adjusted for job category, all four scales show small differences (circa 10%) between males and females. The effects due to job category were generally larger, however.

Scale A. Men scored about 10% higher than women when adjusted for job category. There was a substantial proportional effect due to job category with the A score dropping by about 25% for each drop in level of job category.

Scale B. The adjusted means for men and women were close. There was no change for men across job categories, but there was a dramatic drop (40%) for women from highest to lowest job category.

Scale C. The adjusted mean for women was about 10% higher than for men with about a 15% decrease in score from lowest to highest job category.

Scale D. The adjusted means for men and women were very close with women showing about a 10% decrease with each drop in job category.

Overall, the differences due to sex were minor. Looking at job category, Scale A also had a simple linear effect due to job category for both sexes. In Scales B, C, D the female scores changed much more than the males did with different levels of job category. This finding probably reflects the job differences even within the same level of job category between the sexes (e.g. car salesman versus secretary). It does dramatically point out that the most valid comparison of PI scales for a given person is with the norm for the exact type of job that he or she will be doing. Sex differences are much less important.

b. The pair-wise difference scores behaved like the individual scales when sex was examined controlling for job category. Noticeable sex differences were found in three of the six difference scores, while stronger

effects were found for job category for either or both sexes in all six difference scores. These are enumerated below.

B minus A. (Higher B - Lower A). Females had a sizeably larger mean value than males overall. There were no appreciable changes from lowest to highest job category for women, while there was a substantial decrease in B minus A with an increase in job category for men.

C minus B. (Higher C - Lower B). The mean value of this score was the same for both sexes. With increasing job category, the value remained the same for males but decreased substantially for females.

C minus A. (Higher C - Lower A). The mean value of this is higher for females than males overall. The value of C minus A decreases substantially as the level of job category rises for both females and males. The change for males is exceptionally large.

D minus A. (Higher D - Lower A). The mean values of both sexes are very close. The value of this difference score decreases substantially with increasing level of job category for both sexes, although the magnitude of the change is slightly greater for females.

D minus B. (Higher D - Lower B). This value is about 25% higher in males than in females. With increasing level of job category, the value rises substantially for females, while it remains constant for males.

D minus C. (Higher D - Lower C). The males were about 20% higher than females, after adjusting for job category. The change due to job category was about 10%, rising as job category falls.

The overall conclusion for the difference scores is similar to that of the individual scales. While sex differences were found in half the cases, effects due to level of job category were usually much greater in magnitude.

This suggests that the profile of scales may vary substantially between various job categories (e.g. executive officer, salesman, office manager, clerk, keypunch operator, etc.). Within job category there may be some sex differences, but these are smaller than the difference in profiles between job categories.

4. **Intercorrelations of the Predictive Index Factors.**

To determine the interrelationship of the Predictive Index Scales a Spearman correlation matrix was constructed on a sample of 260 subjects. Table C-1 shows the intercorrelation matrix of the scales for the Self-Concept, Self and Synthesis forms. Scales A and B correlate highly on both Self-Concept and Self forms (r_s = .66 and .62, respectively) and factors C and D correlate highly as well (r_s = .78 and .79, respectively). The Synthesis form shows the same pattern as well. This pattern of correlation suggests that factors A and B for both the Self-Concept and Self forms tend to be getting at a similar phenomenon that is most different from what factors C and D are tapping.

Next a Spearman correlation matrix was calculated comparing the Self-Concept Scales with the Self Scales (see Table C-2). In this 4 by 4 correlation matrix, the correlations on the diagonal represent each Scale from the Self-Concept form correlated with the same scale on the Self form. These are the highest correlations, as would be expected. The scales from one form share about 50% of the variance (i.e., the square of the correlation) with the identical scales on the other form. Beyond that, the scales from one form share about 25% of the variance with the remaining scales from the second form, apart from the identical scales.

5. **Intercorrelations of the Pair-wise Difference Scores**

A Spearman correlation matrix of the six pair-wise raw difference scores was calculated (Table C-3). The highest correlations were obtained for D-B x D-A; C-A x D-A; C-B x D-B; and C-B x C-A. This pattern reflects the effect of the high correlations of A with B and C with D which in turn reflect the underlying proactive and reactive drives.

6. **Analysis of the Variation and Co-variation of the Raw Scales and Difference Scales used in the Interpretation of the Praendex Predictive Index Organization Survey.**

The manual of instructions and interpretations that accompanies the PI describes the scales and provides guides for the interpretation of the patterns of scores presented on the graphic portion of the scoresheet. These descriptions involve two levels of scoring: the "raw" scores on each factor (A through D), and the patterns of differences in scores on pairs of factors (e.g. "High A - Low B"). These scores have both individual variation and pair-wise co-variation (or "correlation"), and the psychometric structure of the Predictive Index is a function of these variations and co-variations.

In interpreting the individual scales, the reader is invited to consider "high" versus "low" scores as meaningful indicators of personality type. In the course of our analysis, we have been able to make estimates of the variability of the scales, and thus give a statistical interpretation of "high" versus "low" scores on each factor. We find (Table B-1) that the Self-Concept and Self scales have standard deviations between about 3 and about 5.6. This yields a way to interpret an "unusually" high or low score in terms of the proportion of the population with scores that are as extreme or more extreme. For instance, we would expect to see a score of Self-Concept A as high as 14 very seldom, perhaps only once in one hundred times.

The individual scale scores are also rather highly correlated (Table C-1), which indicates that there is some "redundancy" in the nature of the underlying factors. In this case it is not a weakness of the instrument, but simply a reflection of the fact that many aspects of ordinary, and describable personality are not "independent", but are overlapping and correlated. It is arguable that there may be underlying "independent", ideal, latent factors that would "explain" both the individual variation and co-variation of the PI scales that measure these perceived types. However, there is no guarantee that such latent factors would be describable, except as complex combinations of individual measured types. One is certainly better off with a few well-chosen, overlapping variables with simple, intuitive interpretations than with hybridized constructs whose sole claim is that they satisfy the psychometric ideal of independence.

A familiar example of the above point is that the verbal and mathematics SAT scores are highly correlated, or that children's grades in several different subjects are usually correlated. There are two crucial pieces of information in such cases; the general level (i.e., high or low SAT's, or good or poor grades in general) and the differences in subtest level (e.g. high verbal scores in non-mathematical individuals, or excellent grades in math and science in someone who is just getting by in English and French). The PI accomplishes the latter goal by reporting and interpreting the patterns of <u>pairs</u> of scores, in a manner that is functionally equivalent to analyzing the <u>difference</u> scores. Thus, someone who is "High A - Low B" may be described by a large "A minus B" score.

It is possible to analyze the typical variation in this pair-wise difference score, and since the difference score is actually somewhat more

symmetrically distributed, we can have even more confidence in statements about the natural variability of these scores. For example, we would only expect to see a difference between A and B (Self-Concept) scores as large as 7 (in either direction) about 5% of the time, while a difference as large as 9 would occur less than 1% of the time. The standard deviation of the difference scores turns out to be about as large as the standard deviations of the constituent scales. This may seem natural, but it is in fact a special consequence of the positive correlation between the scores; that is, the A and B scores of one individual are, on average, less far apart than one should expect by chance variation if they were totally independent traits. If that were the case - that A and B have the same individual variation and were independent - one would expect about 40% more variation in the difference score than in the individual scores. In the PI, the difference scores have very nearly the same standard deviations as the individual scores, making it particularly easy to shift one's frame of reference from the individual scale scores to their pair-wise differences, without losing the sense of what is a "large" score or difference.

There are six difference scores (A-B, A-C, A-D, B-C, B-D, C-D), but as it turns out, algebraic dependencies among the scores reduce the total sources of variation to just three pairs that account for all the variance in the difference scores. The three pairs can be thought of as C minus B, B minus A, and D minus C on the Self scale. The discussion of the patterns of pairs of individual scores in the PI manual is thus a substantively useful complement to the discussion of the meaning of the individual scores. In this way, the PI analysis moves through the logical process of describing an individual's (overlapping) pattern of "drives" as a necessary preliminary,

and then focuses on the pattern of differences among the basic drives as the next step in the development.

Although the nature of the pair patterns (e.g. High A - Low B) is not explicit in the text of the manual, it is clear that their interpretation is equivalent to ours based on the pair-wise difference scores (e.g. A minus B, or B minus A, for example).

It may be easier for the readers of the manual to focus on the meaning of patterns described by combinations of factors (such as "High A - Low B") rather than on our equivalent analytic presentation in terms of the difference scores (such as A minus B). For the purpose of analysis it is more natural to discuss the calculated difference, just as it is easier to describe the length of a day by its quantified duration (e.g.: 14 hours) rather than by referring to "early sunrise - late sunset" days.

C. CONSTRUCT VALIDITY OF THE PREDICTIVE INDEX FACTORS (SCALES) COMPARED TO THE 16 PF.

The Predictive Index Scales were next compared to the 16 PF. A sample of 179 subjects from various industries and businesses filled out the Predictive Indices at the time of hiring and also filled out the 16 PF somewhat later. The 16 PF is a well standardized paper and pencil test which has been in use for several decades. Its characteristics are well known and it purports to tap many of the same traits that are inherent in the Predictive Indices. It is a longer test taking about 1 hour to fill out.

As noted above in the description of the scale intercorrelations the structure of the Self-Concept and Self Scales are highly similar. Therefore, for the present analysis, we chose only to compare the scales on the Self form

of the Predictive Indices with the 16 PF. The same pattern should be evident for the Self-Concept Scales which are therefore not shown. Spearman correlations were run on the sample (n = 179) between the Predictive Indices raw scores and the Sten scores supplied by computer scoring of the 16 PF forms for each subject. The analysis was carried out in two ways. First, the correlations with the 16 PF scales and second order factors from the 16 PF were calculated for each of the Predictive Index Scales on the Self form. Secondly, the Predictive Indices difference scores were correlated with the 16 PF. This latter procedure allows some comparison of Predictive Index Scale patterns or profiles with the 16 PF, apart from the individual scale scores.

1. **Correlations between Predictive Index Scales (Self) with the 16 PF Sten** scores. The data is presented in two ways. First, the Spearman correlations between the Predictive Index factor and the 16 PF are shown in pictorial form where the size of the bar is equivalent to the size of the correlation (Figures D-1 through D-5). In these figures only correlations above .15 are shown and the direction of the correlations is indicated below the figure by the underlined words in each of the bipolar scales. For instance, looking at Scale A in Table D-1, there is a correlation of .23 between Scale A and 16 PF factor B, indicating that a High A factor score correlates with being an "abstract thinker".* The data are also presented for all of these correlations in table form in which all of the correlations and the respective significance levels are printed (see Tables D-1 through D-5). Correlations in the left hand column are significant whereas those in the right hand column are not significant.

*For definitions of 16 PF constructs see Appendix 11.

Scale A. Dominance, Ascendance, Aggressiveness. This scale demonstrates correlations with the 16 PF as shown in Figure D-1 and Table D-1. People who score high on Scale A on the Predictive Index show the following pattern on the 16 PF in descending order of the magnitude of the correlations. High A is associated with being independent, assertive, imaginative, extroverted, venturesome, being low on neuroticism and high on leadership. In addition, high factor A people correlate with being placid (adequately secure), happy-go-lucky, more intelligent, low in anxiety, high creativity, tough poised, forthright and experimenting.

Scale B, Extroversion, Sociability.

In descending order of importance subjects who score high on Scale B are described on the 16 PF as follows (see Figure D-2 and Table D-2). High B subjects correlate with being extroverted, happy-go-lucky, venturesome, outgoing, assertive and high in leadership. They also are low in neuroticism, independent, and tender-minded. Finally, they also are correlated with being imaginative, placid (adequately secure), group dependent in decision making, suspicious, experimenting, relaxed and low in anxiety.

Scale C, Emotional Adjustment, Stability.

Figure D-3 and Table D-3 show the correlations of people who are high on Scale C in comparison with the 16 PF. In descending order of the size of the correlations, high C individuals are seen as being tender-minded, subdued, humble, conservative, and relaxed.

Scale D, Conformity, Dependence, Blame Avoidance.

Figure D-4 and Table D-4 show the correlations with the 16 PF for Scale D. Subjects high on this factor are described on the 16 PF as being

conscientious, tender-minded, conservative, and showing tender-minded emotionality.

The Norm, M of the Predictive Index is the sum of all of the items checked as positive by the subjects. It is therefore not independent of the first four Scales. The correlations with the M score and the 16 PF are shown, and in descending order of the size of the correlations high M is associated with being tender-minded, extroverted, outgoing, happy-go-lucky, high in leadership, conscientious, relaxed and low in neuroticism. As expected, because of the large number of correlations shown by Scales A and B, the norm, M reflects mostly characteristics of those two Scales. On the Self-Concept and Synthesis forms, the Norm M shows fewer correlations with the 16 PF (see Figures F-1 and F-2, and Tables F-1 and F-2.)

2. **Correlations Between Predictive Index Scale Difference Scores and the 16 PF.**

The difference scores on the Predictive Indices were calculated as described earlier in this report. Spearman correlations were calculated between the subject's difference score on each pair of scales using the Self form with the 16 PF Sten scores. This yields an indication of whether patterns or profiles of Predictive Index scores correlate with the 16 PF.

Scale B minus Scale A (Higher B - Lower A).

Both Table and Figure E-1 show the relationship between the 16 PF and the Difference score Scale B minus Scale A. In descending order of the magnitude of the correlations subjects with high Difference scores B minus A were described as being happy-go-lucky, low in creativity, group-dependent in decision making, outgoing, extroverted, suspicious, tender-minded, and having some degree of undisciplined self-conflict.

Scale C minus Scale B (Higher C - Lower B).

The magnitude of the Difference score C minus B correlated on the 16 PF as follows. Higher C - Lower B subjects were described as humble, introverted, subdued, shy, sober (not happy-go-lucky), trusting, practical, conservative, somewhat high in neuroticism, shrewd, reserved, low in leadership, somewhat apprehensive, tender-minded in emotionality, and somewhat controlled.

Scale D minus Scale C (Higher D - Lower C).

Table and Figure E-3 show the correlation between the Difference score D minus C and the 16 PF. Only two correlations were found. Subjects with a positive Difference score D minus C correlated with being sober (not happy-go-lucky) and somewhat tense.

Scale C minus Scale A (Higher C - Lower A).

Figure and Table E-4 show the correlation of the Difference Score C minus A with the 16 PF. Fourteen significant correlations emerged. Subjects with a large difference on C minus A correlated most highly with being humble and subdued. Next they were described as being practical, conservative, tender-minded in emotionality, shy, introverted, low in creativity, somewhat apprehensive, shrewd, somewhat high on neuroticism and low on leadership. They were also somewhat trusting and considered tender-minded.

Scale D minus Scale A (Higher D - Lower A).

Table and Figure E-5 show the correlations between the Difference score Scale D minus Scale A in the 16 PF. Fifteen significant correlations were found. These are noted in descending order of magnitude. Foremost, subjects with a large Difference score D minus A were described as being subdued, and humble. Next, they were seen to be shy, introverted, practically-minded,

conservative, tender-minded in emotionality and high in neuroticism. They were also noted to be low in creativity and low in leadership, somewhat apprehensive, but also shrewd and somewhat high in anxiety, while being sober (not happy-go-lucky) and having slightly less intelligence.

Scale D minus Scale B (Higher D - Lower B).

Table and Figure E-6 present the correlations between the Difference score Scale D minus Scale B and the 16 PF Sten scores. Sixteen significant correlations emerged and are presented in descending order of magnitude. Subjects with large differences in D minus B were primarily described on the 16 PF as being introverted, sober, shy, humble, and subdued. Next, they scored higher on neuroticism and lower on leadership while also being conservative. Finally, they were seen as reserved, shrewd, trusting and practical while also scoring as being apprehensive, controlled, somewhat high in anxiety, but tender-minded in their emotionality.

TABLE A-1

The Predictive Index

Split-Half Reliability (Intraclass R) on Raw Factor Scores

n = 120

	Self-Concept	Self
Factor A	.86	.87
Factor B	.82	.84
Factor C	.77	.82
Factor D	.88	.86

Factor A: Dominance, Ascendance, Aggressiveness
Factor B: Extroversion, Sociability
Factor C: Emotional Adjustment, Stability, Passive Immobility
Factor D: Conformity, Dependence, "Blame-avoidance"

TABLE A-2

Test-Retest Reliability on Predictive Index Factors

Intraclass R's on Total Sample and Grouped by Length of Time

	TOTAL SAMPLE	GROUPED BY LENGTH OF TIME BETWEEN ADMINISTRATIONS		
	n = 258	n = 85	n = 87	n = 86
		3 mos. - 2 yrs.	2 - 4 yrs.	4 - 8 yrs.
Self				
Factor A	.58	.71	.53	.49
Factor B	.61	.67	.57	.56
Factor C	.55	.54	.58	.52
Factor D	.62	.70	.61	.56
Factor M	.59	.63	.59	.53
Self-Concept				
Factor A	.52	.56	.45	.47
Factor B	.50	.48	.47	.50
Factor C	.51	.60	.51	.44
Factor D	.54	.66	.46	.47
Factor M	.53	.56	.49	.47
Synthesis				
Factor A	.59	.67	.55	.52
Factor B	.58	.60	.55	.56
Factor C	.56	.61	.60	.49
Factor D	.61	.69	.59	.54
Factor M	.57	.60	.57	.51

Factor A: Dominance, Ascendance, Aggressiveness
Factor B: Extroversion, Sociability
Factor C: Emotional Adjustment, Stability, Passive Immobility
Factor D: Conformity, Dependence, "Blame-avoidance"
Factor M: Norm

TABLE A-3

Test-Retest Reliability on Predictive Index Measured Difference Scores

Intraclass R's on Total Sample and Grouped by Length of Time

	TOTAL SAMPLE	GROUPED BY LENGTH OF TIME BETWEEN ADMINISTRATIONS		
	n = 258	n = 85	n = 87	n = 86
		3 mos. - 2 yrs.	2 - 4 yrs.	4 - 8 yrs.
Self				
Factor B minus A	.51	.55	.54	.46
Factor C Minus B	.67	.67	.67	.66
Factor D Minus C	.35	.41	.40	.24
Factor C Minus A	.64	.70	.68	.56
Factor D Minus A	.55	.71	.40	.53
Factor D Minus B	.62	.66	.52	.67
Self-Concept				
Factor B Minus A	.35	.38	.36	.32
Factor C Minus B	.51	.61	.45	.47
Factor D Minus C	.38	.44	.42	.35
Factor C Minus A	.53	.65	.48	.47
Factor D Minus A	.51	.62	.50	.42
Factor D Minus B	.50	.54	.43	.48
Synthesis				
Factor B Minus A	.50	.55	.52	.46
Factor C Minus B	.65	.72	.55	.66
Factor D Minus C	.37	.40	.36	.38
Factor C Minus A	.65	.77	.62	.57
Factor D Minus A	.58	.69	.54	.52
Factor D Minus B	.60	.61	.51	.65

TABLE A-4

Estimated Short-Term Test-Retest Reliability

	Self	Self-Concept	Synthesis
Raw Scores			
Factor A	.99	.68	.84
Factor B	.66	.48	.65
Factor C	.53	.76	.68
Factor D	.84	.94	.84
Factor M	.71	.65	.67
Measured Difference Scores			
Factor B Minus A	.61	.42	.62
Factor C Minus B	.68	.81	.86
Factor D Minus C	.53	.51	.43
Factor C Minus A	.79	.89	.99
Factor D Minus A	.99	.84	.90
Factor D Minus B	.73	.65	.64

Factor A: Dominance, Ascendance, Aggressiveness
Factor B: Extroversion, Sociability
Factor C: Emotional Adjustment, Stability, Passive Immobility
Factor D: Conformity, Dependence, "Blame-avoidance"
Factor M: Norm

TABLE B-1

Means and Standard Deviations of Predictive Index Factors

n = 260

	MEAN	STANDARD DEVIATION
Self		
Factor A	6.01	3.41
Factor B	7.28	4.53
Factor C	7.97	3.88
Factor D	15.55	5.60
Factor M	37.25	14.39
Self-Concept		
Factor A	4.91	3.23
Factor B	7.07	4.38
Factor C	6.16	2.98
Factor D	13.77	5.28
Factor M	36.22	14.40
Synthesis		
Factor A	10.92	6.28
Factor B	14.39	8.41
Factor C	14.12	6.51
Factor D	29.33	10.45
Factor M	73.31	28.04

Factor A: Dominance, Ascendance, Aggressiveness
Factor B: Extroversion, Sociability
Factor C: Emotional Adjustment, Stability, Passive Immobility
Factor D: Conformity, Dependence, "Blame-avoidance"
Factor M: Norm

TABLE B-2

The Predictive Index

Means and Standard Deviations of Measured Difference Scores

(Measurements in Millimeters)

n = 260

	MEAN	STANDARD DEVIATION
Self		
Factor B Minus A	-6.97	27.57
Factor C Minus B	2.35	32.77
Factor D Minus C	12.50	18.85
Factor C Minus A	-4.62	36.00
Factor D Minus A	7.88	29.99
Factor D Minus B	14.84	29.97
Self-Concept		
Factor B Minus A	.93	26.87
Factor C Minus B	6.96	33.43
Factor D Minus C	3.58	21.80
Factor C Minus A	7.88	38.28
Factor D Minus A	11.47	27.71
Factor D Minus B	10.54	27.33
Synthesis		
Factor B Minus A	-.28	24.03
Factor C Minus B	-1.03	31.11
Factor D Minus C	9.93	19.93
Factor C Minus A	-1.32	34.91
Factor D Minus A	8.62	26.40
Factor D Minus B	8.90	26.38

TABLE B-3

The Predictive Index

Means and Standard Deviations of Raw Difference Scores

Page 2 - Self

n = 260

Raw Difference Scores - Self	MEAN	STANDARD DEVIATION
Factor B Minus A	1.27	3.51
Factor C Minus B	0.69	4.28
Factor D Minus C	7.58	3.51
Factor C Minus A	1.96	4.48
Factor D Minus A	9.54	5.33
Factor D Minus B	8.27	4.91

TABLE B-4

THE PREDICTIVE INDEX

Descriptive Statistics on Raw Factor Scores, Grouped by Sex

	Males (n = 153)			Females (n = 102)		
	Mean	Standard Deviation	95% Confidence Intervals ( )	Mean	Standard Deviation	95% Confidence Intervals ( )
Self						
Factor A**	6.58	3.41	.55	5.32	3.22	.64
Factor B	7.63	4.49	.72	7.01	4.49	.89
Factor C	7.68	3.98	.64	8.58	3.71	.73
Factor D	15.71	5.75	.93	15.50	5.38	1.06
Factor M	38.07	15.23	2.46	36.79	12.74	2.52
Self-Concept						
Factor A**	5.39	3.42	.55	4.27	2.79	.55
Factor B	7.31	4.51	.73	6.93	4.13	.82
Factor C*	5.91	3.02	.49	6.66	2.88	.57
Factor D	14.05	5.42	.88	13.59	5.02	.99
Factor M	36.90	15.22	2.46	35.97	12.85	2.54
Synthesis						
Factor A**	11.95	6.53	1.05	9.61	5.53	1.09
Factor B	14.94	8.52	1.38	14.05	8.06	1.60
Factor C*	13.55	6.63	1.07	15.25	6.25	1.24
Factor D	29.76	10.79	1.74	29.09	9.88	1.96
Factor M	74.84	29.76	4.81	72.55	24.73	4.90

*Differences between the sexes are significant at $p<.05$.
**Differences between the sexes are significant at $p<.01$.

TABLE B-5

THE PREDICTIVE INDEX

Descriptive Statistics on Raw Factor Scores, Grouped by Sex

(Measurements in Millimeters)

	Males (n = 153)			Females (n = 102)		
	Mean	Standard Deviation	95% Confidence Intervals (±)	Mean	Standard Deviation	95% Confidence Intervals (±)
Self						
Factor B Minus A	-9.25	27.56	4.45	-3.25	27.79	5.50
Factor C Minus B**	-2.48	30.26	4.89	9.01	35.57	7.04
Factor D Minus C**	15.61	16.81	2.72	7.31	20.78	4.11
Factor C Minus A**	-11.73	33.90	5.48	5.75	36.91	7.30
Factor D Minus A*	3.88	27.72	4.48	13.07	32.42	6.42
Factor D Minus B	13.14	27.04	4.37	16.32	33.94	6.72
Self-Concept						
Factor B Minus A	-1.18	28.46	1.21	5.07	23.80	4.71
Factor C Minus B**	1.97	31.78	5.14	13.72	35.21	6.97
Factor D Minus C**	7.67	21.72	3.51	-2.83	20.87	4.13
Factor C Minus A**	.78	38.56	6.24	18.78	35.61	7.05
Factor D Minus A*	8.45	26.49	4.28	15.96	29.13	5.77
Factor D Minus B	9.63	26.24	4.24	10.89	29.20	5.78
Synthesis						
Factor B Minus A*	-2.58	24.65	3.98	3.93	22.58	4.47
Factor C Minus B**	-5.86	28.69	4.64	5.60	33.75	6.68
Factor D Minus C**	13.08	20.22	3.27	4.68	18.59	3.68
Factor C Minus A**	-8.44	33.76	5.46	9.53	34.20	6.77
Factor D Minus A**	4.63	25.15	4.06	14.21	27.47	5.44
Factor D Minus B	7.22	25.15	4.06	10.27	28.12	5.57

*Differences between the sexes are significant at $p<.05$.
**Differences between the sexes are significant at $p<.01$.

TABLE B-6

Job Levels	Example	Males (n = 153)	Females (n = 102)
1	Executives, major professionals, proprietors of large concerns.	7	2
2	Business managers, proprietors of medium concerns, lesser professionals.	33	17
3	Administrative personnel, small independent businesses, minor professionals.	51	25
4	Clerical and sales workers, technicians, owners of little businesses	18	50
5	Skilled manual employees	9	1
6	Machine operators, and semi-skilled employees	31	4
7	Unskilled employees	3	1

*

*Individual subjects in job levels two, three and four were included in the analysis of sex and job level effects on the individual scales and pair-wise difference scores.

From Hollingshead-Redlich Two-Factor Index of Social Position.

FIGURE B-1

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

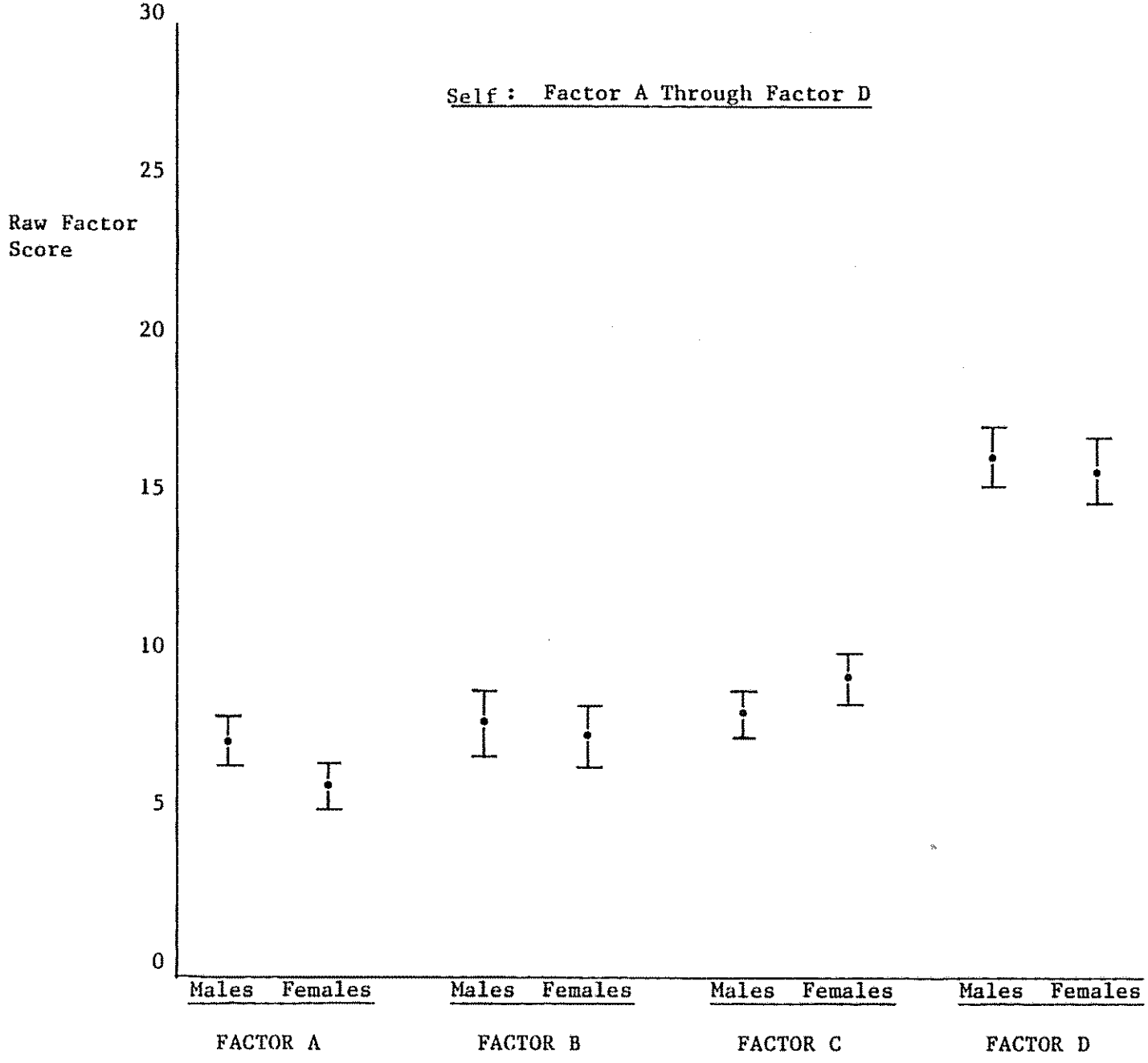


FIGURE B-2

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

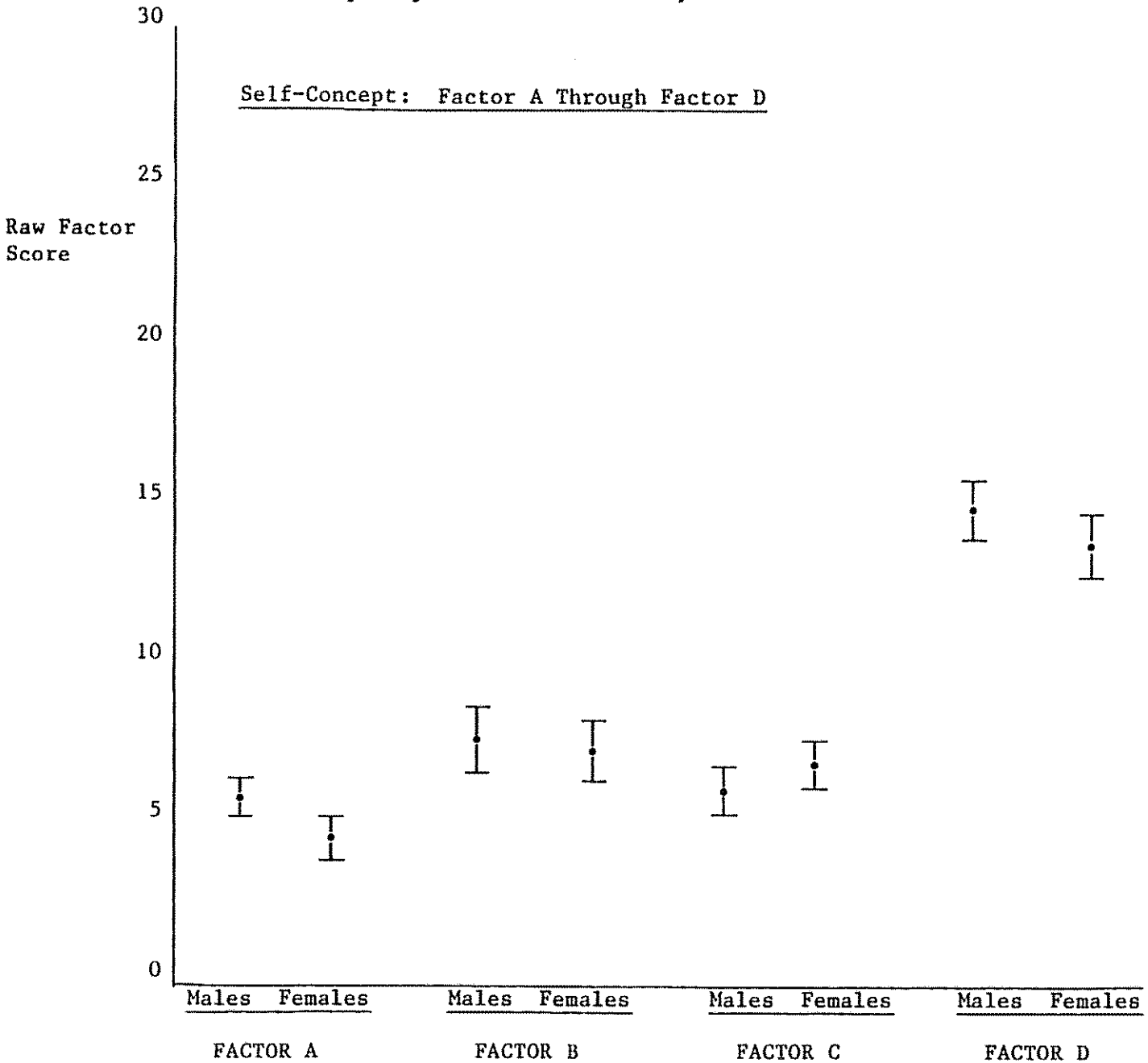


FIGURE B-3

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

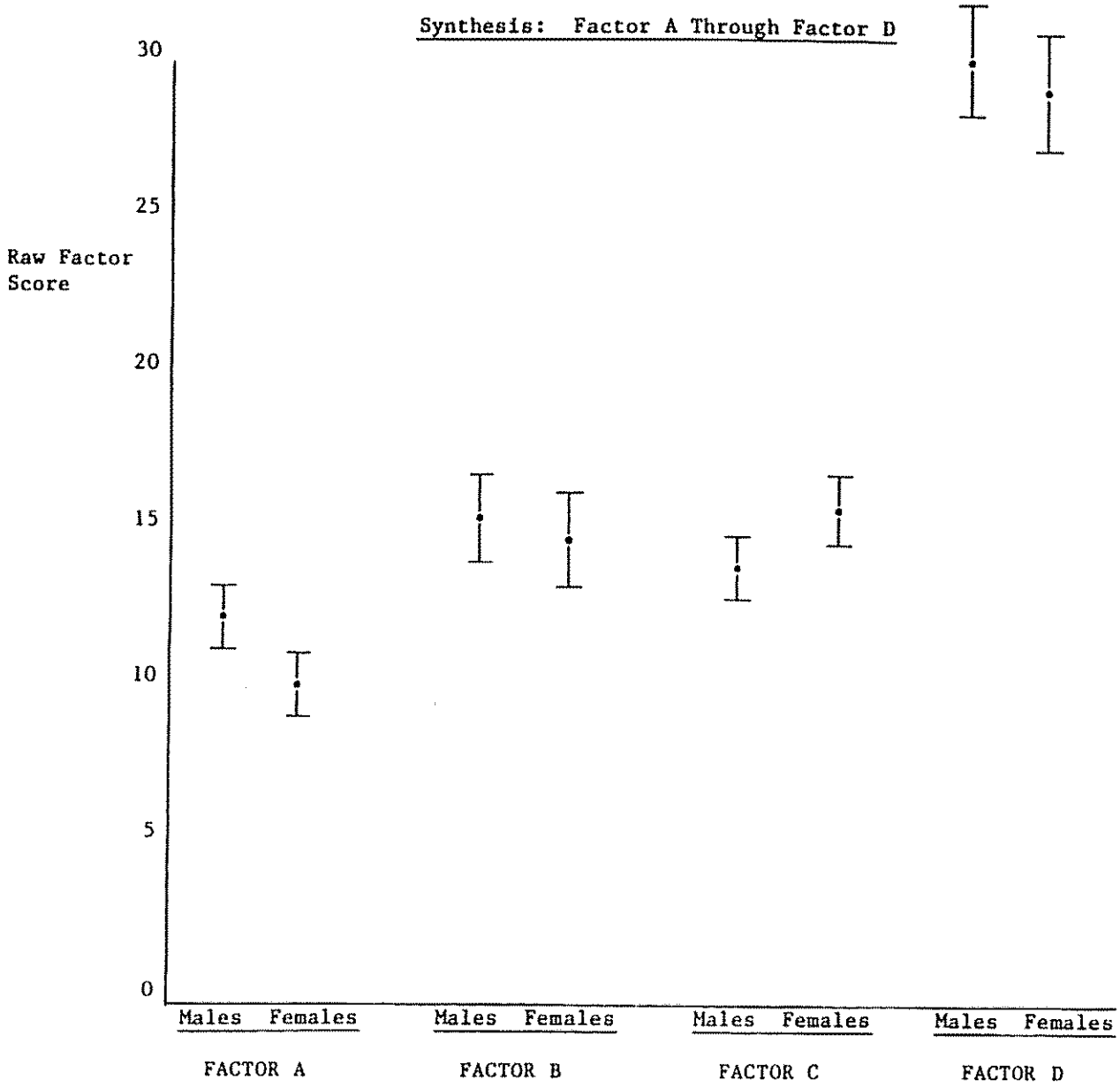


FIGURE B-4

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

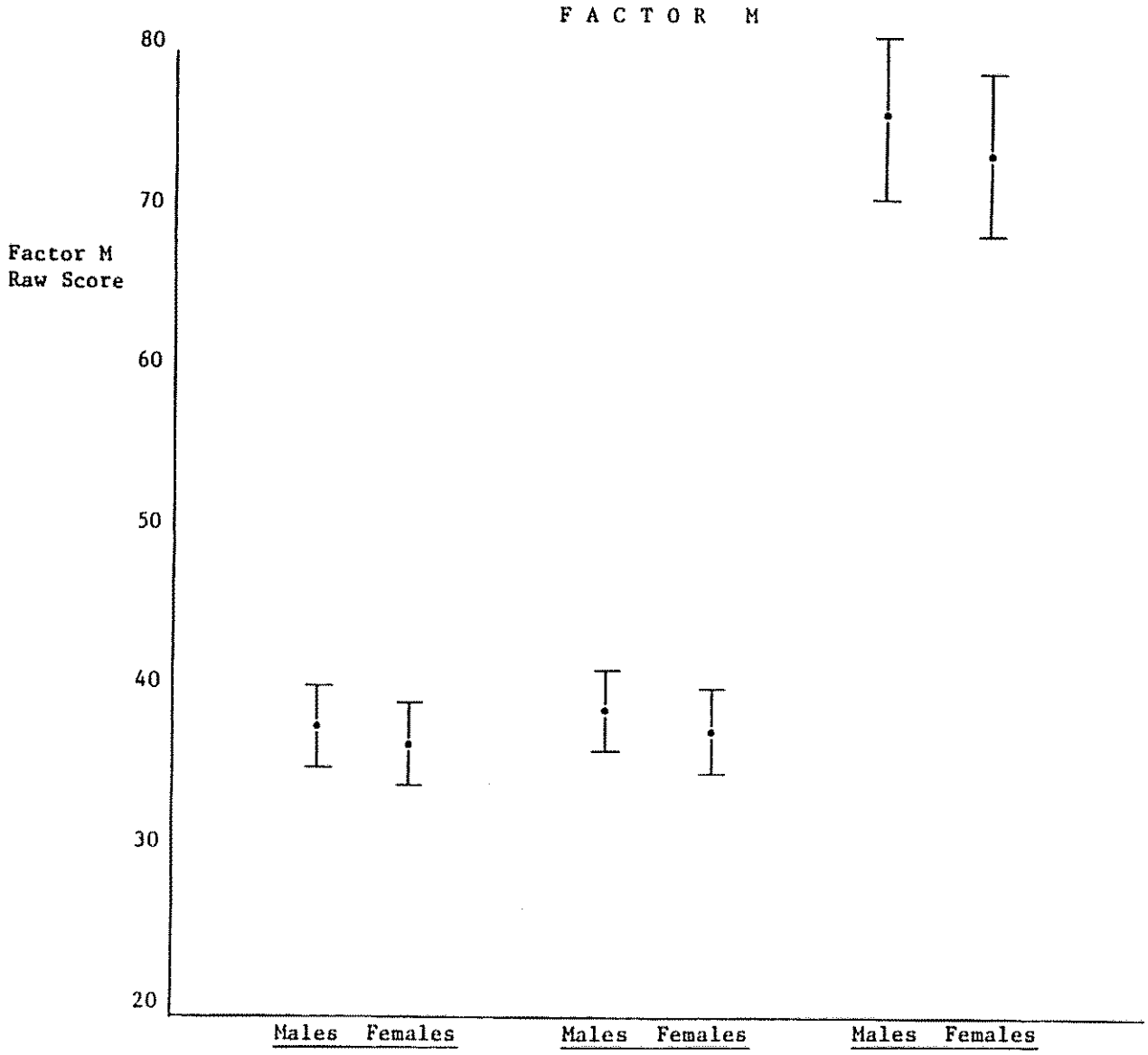


FIGURE B-5

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

Self-Concept

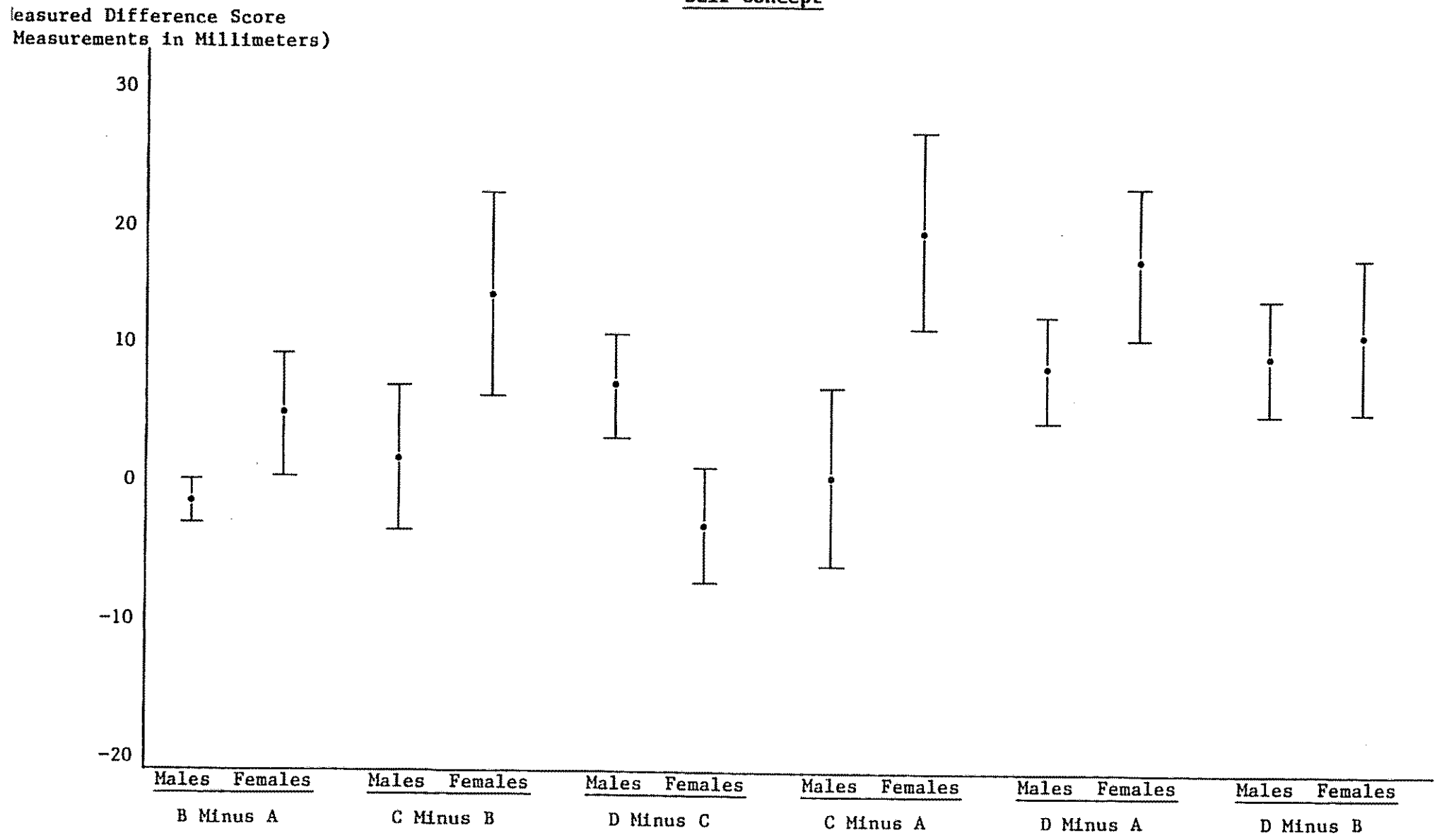


FIGURE B-6

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

Self

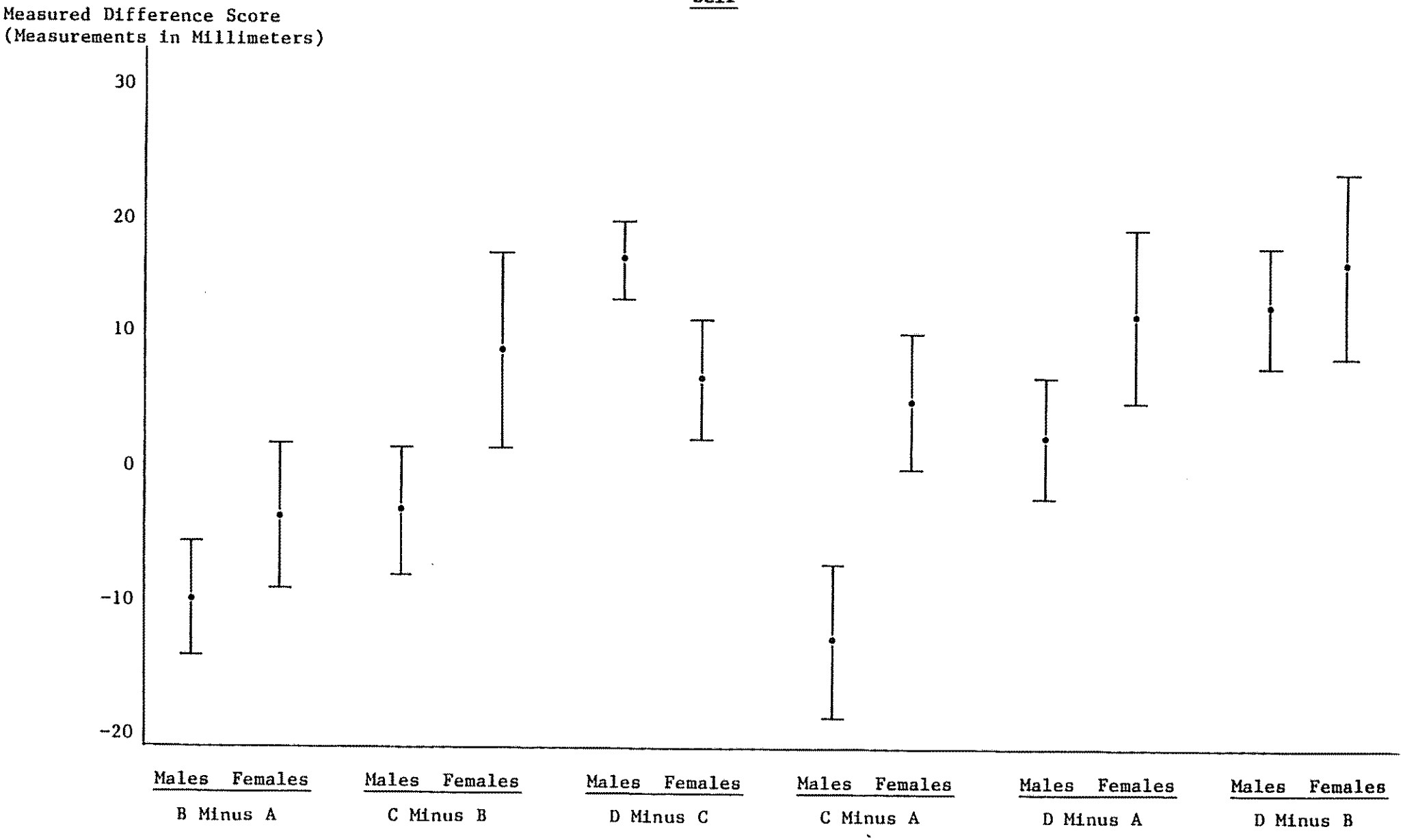


FIGURE B-7

THE PREDICTIVE INDEX

Means and 95% Confidence Intervals on Raw Factor Scores

Grouped by Sex: Male n = 153, Female n = 102

Synthesis

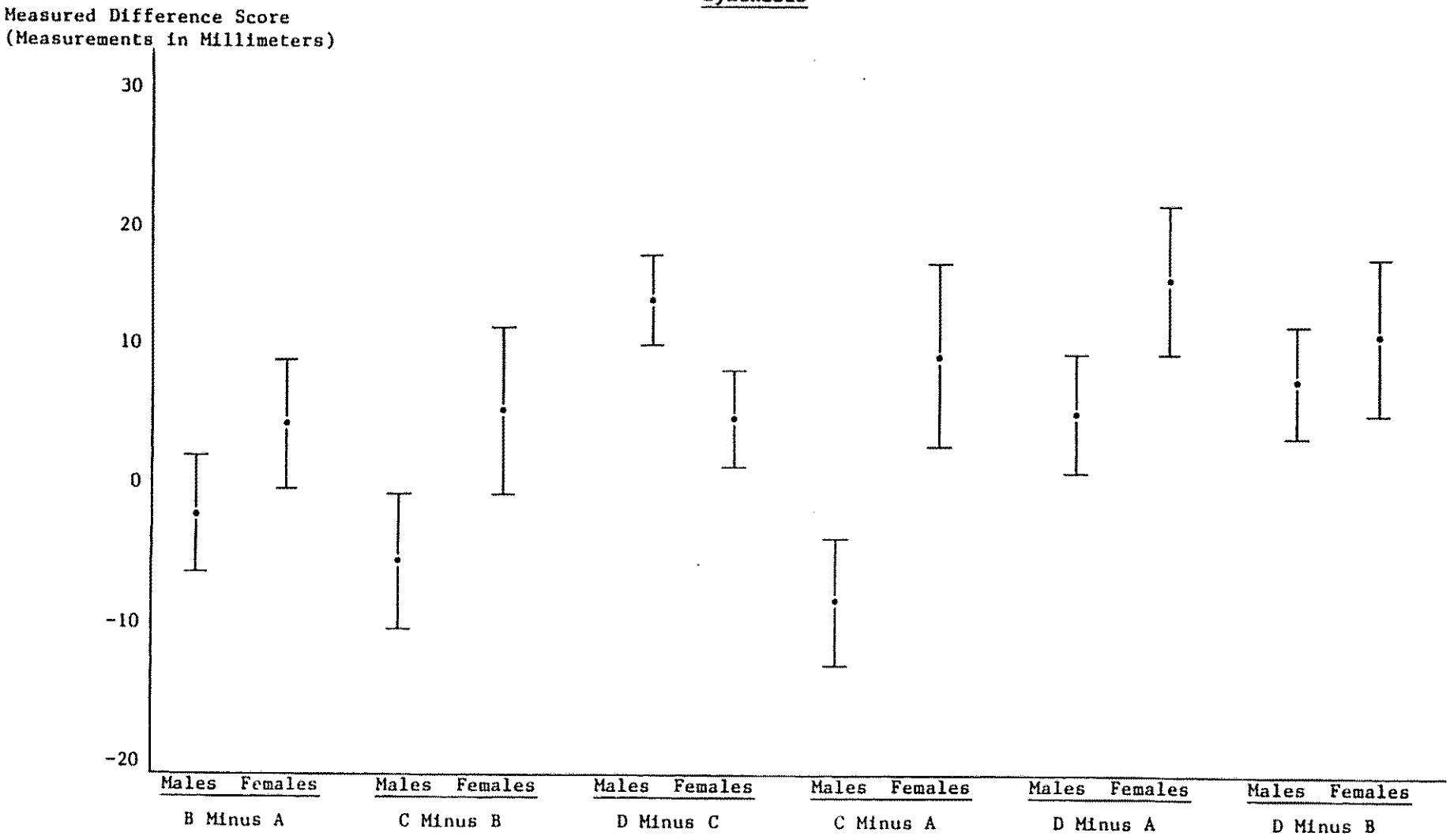


TABLE C-1

Spearman Correlation Matrix of Predictive Index Factors

All correlations are significant at p = .0001.

n = 260

Self

Factors:	A	B	C	D
A		.62	.24	.39
B			.50	.54
C				.79
D				

Self-Concept

Factors:	A	B	C	D
A		.66	.30	.49
B			.52	.61
C				.78
D				

Synthesis

Factors:	A	B	C	D
A		.67	.30	.48
B			.55	.62
C				.83
D				

TABLE C-2

Spearman Correlation Matrix of Predictive Index Factors

Self-Concept Versus Self

All correlations are significant at p = .0001, except as shown

n = 260

Self-Concept	Self			
Factors:	A	B	C	D
A	.76	.57	.34	.50
B	.50	.74	.50	.58
C	.16*	.39	.79	.70
D	.35	.48	.73	.84

* p = .01.

TABLE C-3

Spearman Correlation Matrix of Raw Difference Scores

Page 2 - Self

n = 260

All correlations are significant at p = .0001, except as shown.

Raw Difference Scores - Self	B-A	C-B	D-C	C-A	D-A	D-B
Factor B Minus A		-.32	.06***	.44	.38	-.24
Factor C Minus B			-.18*	.67	.46	.71
Factor D Minus C				-.12**	.53	.52
Factor C Minus A					.74	.48
Factor D Minus A						.77
Factor D Minus B						

* p = .005
** p = .05
*** n.s.

TABLE D-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor A: Dominance, Ascendance, Aggressiveness

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		.14
Less - More Intelligent	B	.23 (.002)	
Emotionally Unstable - Stable	C		.09
Humble - Assertive	E	.44 (.0001)	
Sober - Happy-Go-Lucky	F	.23 (.002)	
Expedient - Conscientious	G		.11
Shy - Venturesome	H	.32 (.0001)	
Tough - Tender-Minded	I		.05
Trusting - Suspicious	L		.05
Practical - Imaginative	M	.35 (.0001)	
Forthright - Shrewd	N	-.20 (.01)	
Placid - Apprehensive	O	-.28 (.0001)	
Conservative - Experimenting	Q_1	.20 (.01)	
Group-Dependent - Self-Sufficient	Q_2		.04
Undisciplined Self-Conflict - Controlled	Q_3		-.02
Relaxed - Tense	Q_4		-.10

Second-Order Factors

Introversion - Extroversion	I	.35 (.0001)
Low - High Anxiety	II	-.23 (.002)
Tender-minded Emotionality - Tough Poise	III	.22 (.003)
Subduedness - Independence	IV	.45 (.0001)
Low - High Neuroticism	V	-.31 (.0001)
Low - High Leadership	VI	.30 (.0001)
Low - High Creativity	VII	.23 (.002)

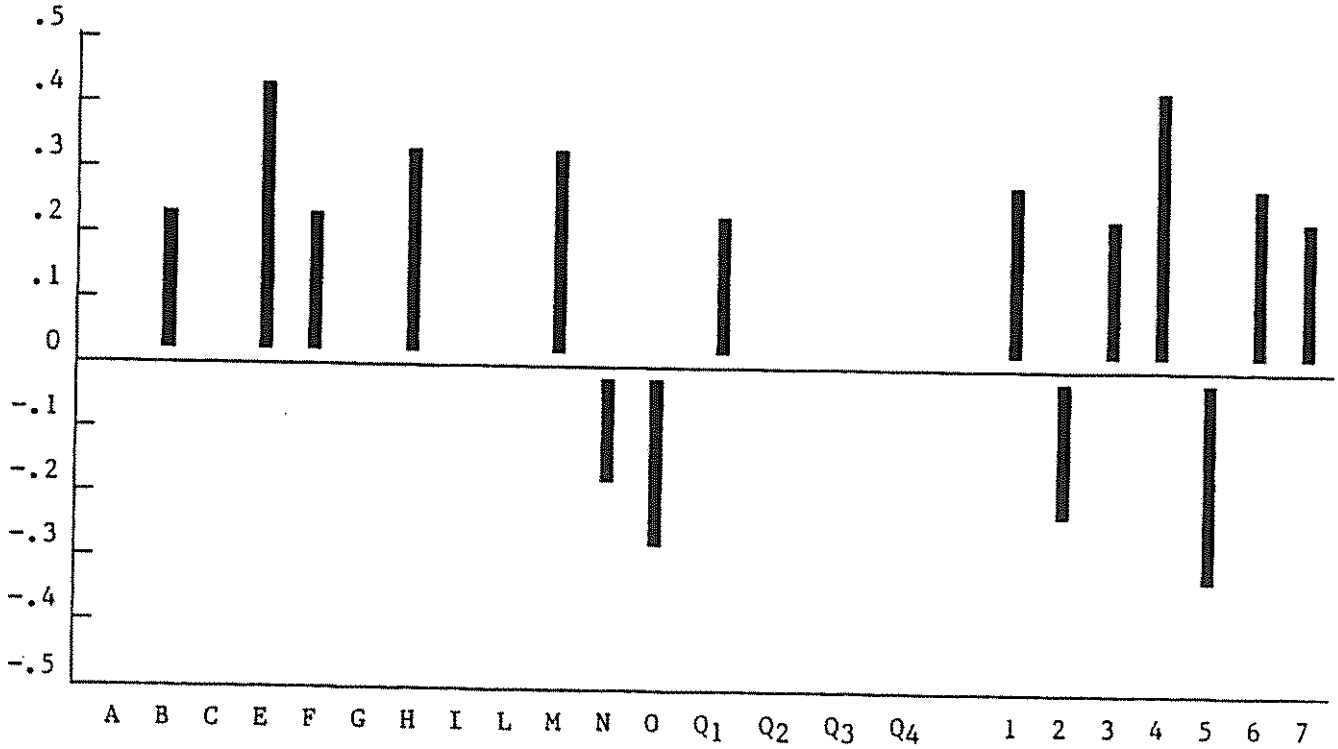
FIGURE D-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor A: Dominance, Ascendance, Aggressiveness



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE D-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor B: Extroversion, Sociability

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	.32 (.0001)	
Less - More Intelligent	B		.10
Emotionally Unstable - Stable	C		.03
Humble - Assertive	E	.31 (.0001)	
Sober - Happy-Go-Lucky	F	.43 (.0001)	
Expedient - Conscientious	G		.08
Shy - Venturesome	H	.35 (.0001)	
Tough - Tender-Minded	I	.22 (.004)	
Trusting - Suspicious	L	.16 (.03)	
Practical - Imaginative	M	.19 (.01)	
Forthright - Shrewd	N		-.14
Placid - Apprehensive	O	-.18 (.02)	
Conservative - Experimenting	Q_1	.15 (.05)	
Group-Dependent - Self-Sufficient	Q_2	-.17 (.03)	
Undisciplined Self-Conflict - Controlled	Q_3		-.09
Relaxed - Tense	Q_4	-.15 (.04)	

Second-Order Factors

Introversion - Extroversion	I	.45 (.0001)	
Low - High Anxiety	II	-.15 (.04)	
Tender-minded Emotionality - Tough Poise	III		.08
Subduedness - Independence	IV	.27 (.0003)	
Low - High Neuroticism	V	-.28 (.0001)	
Low - High Leadership	VI	.30 (.0001)	
Low - High Creativity	VII		-.05

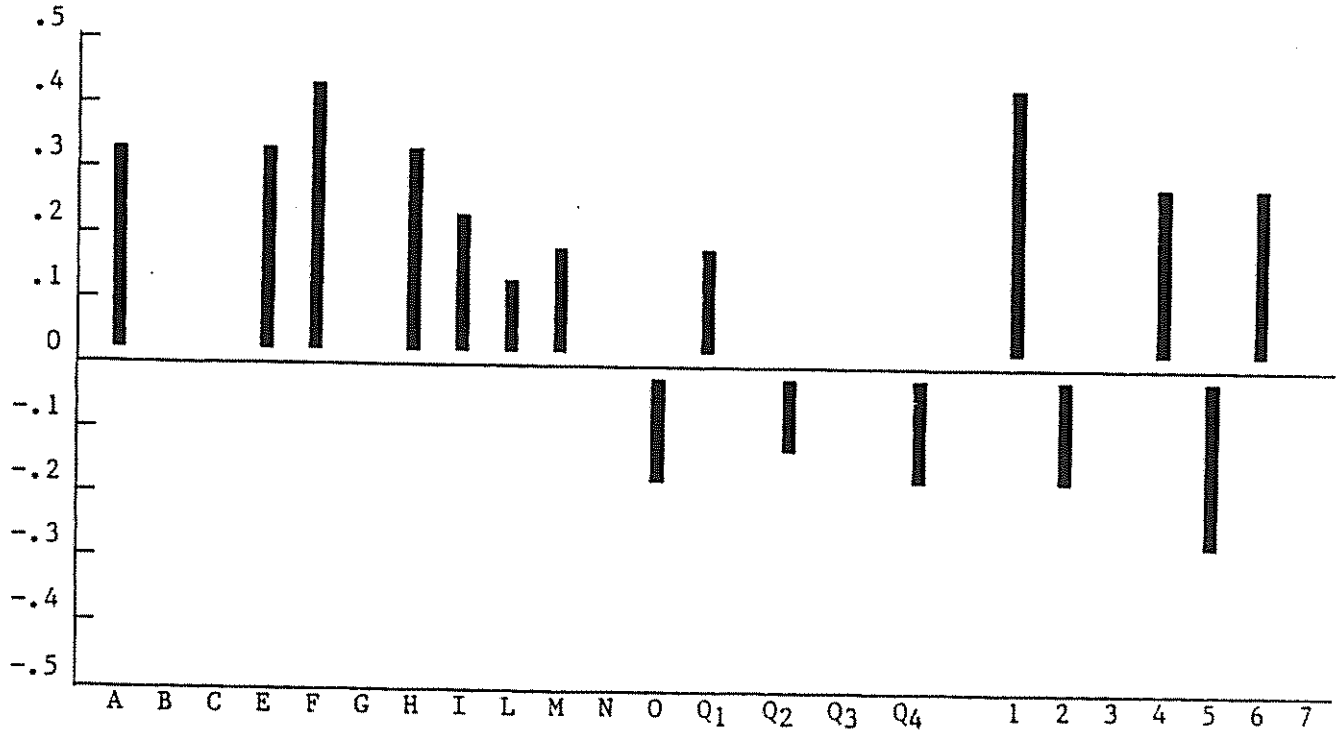
FIGURE D-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor B: Extroversion, Sociability



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE D-3

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor C: Emotional Adjustment, Stability, Passive Immobility

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		.11
Less - More Intelligent	B		.07
Emotionally Unstable - Stable	C		.05
Humble - Assertive	E	-.18 (.02)	
Sober - Happy-Go-Lucky	F		.10
Expedient - Conscientious	G		.10
Shy - Venturesome	H		-.02
Tough - Tender-Minded	I	.22 (.004)	
Trusting - Suspicious	L		-.10
Practical - Imaginative	M		-.08
Forthright - Shrewd	N		.12
Placid - Apprehensive	O		.02
Conservative - Experimenting	Q_1	-.17 (.02)	
Group-Dependent - Self-Sufficient	Q_2		-.10
Undisciplined Self-Conflict - Controlled	Q_3		.04
Relaxed - Tense	Q_4	-.17 (.02)	

Second-Order Factors

Introversion - Extroversion	I		.00
Low - High Anxiety	II		-.05
Tender-minded Emotionality - Tough Poise	III		-.13
Subduedness - Independence	IV	-.21 (.004)	
Low - High Neuroticism	V		-.03
Low - High Leadership	VI		.07
Low - High Creativity	VII		-.11

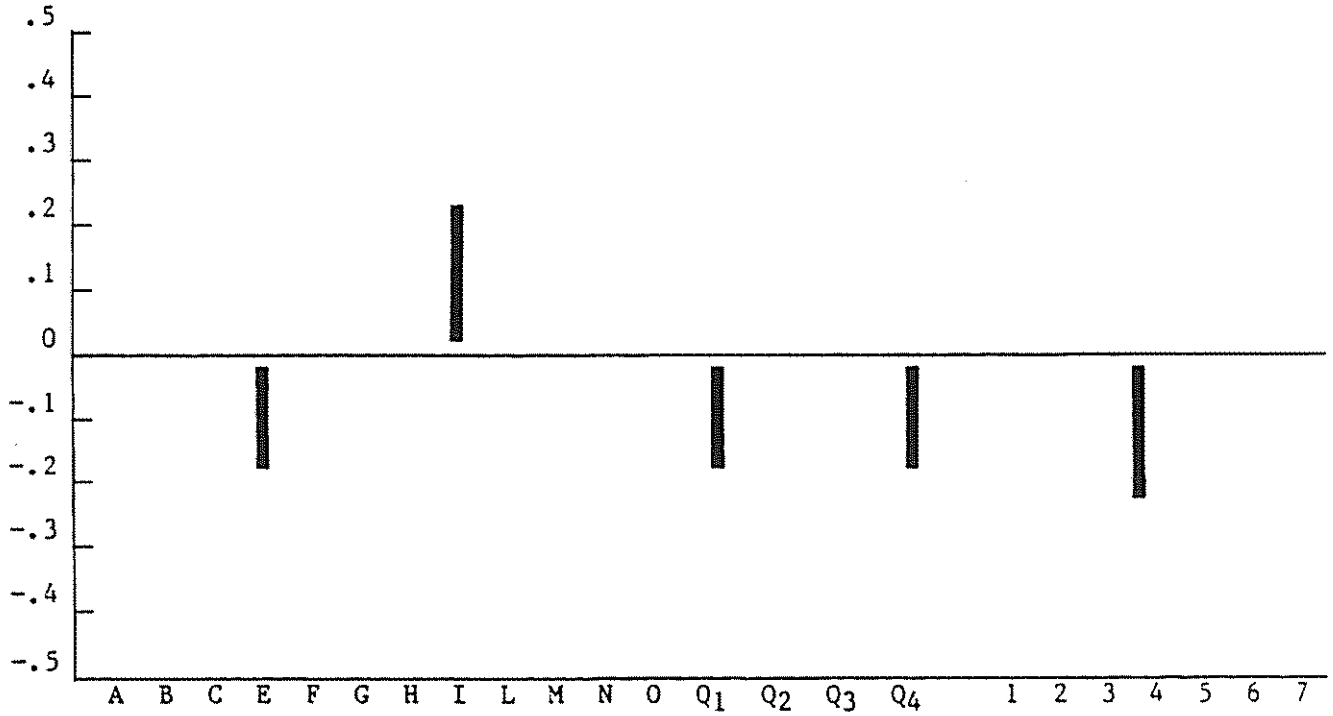
FIGURE D-3

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor C: Emotional Adjustment, Stability, Passive Immobility



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing

B: Less - More Intelligent

C: Emotionally Stable - Unstable

E: Humble - Assertive

F: Sober - Happy-Go-Lucky

G: Expedient - Conscientious

H: Shy - Venturesome

I: Tough - Tender-Minded

L: Trusting - Suspicious

M: Practical - Imaginative

N: Forthright - Shrewd

O: Placid - Apprehensive

Q_1: Conservative - Experimenting

Q_2: Group-Dependent - Self-Sufficient

Q_3: Undisciplined Self-Conflict - Controlled

Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion

2: Low - High Anxiety

3: Tender-minded Emotionality - Tough Poise

4: Subduedness - Independence

5: Low - High Neuroticism

6: Low - High Leadership

7: Low - High Creativity

TABLE D-4

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor D: Conformity, Dependence, "Blame-avoidance"

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		.12
Less - More Intelligent	B		.05
Emotionally Unstable - Stable	C		-.03
Humble - Assertive	E		-.10
Sober - Happy-Go-Lucky	F		-.02
Expedient - Conscientious	G	.21 (.004)	
Shy - Venturesome	H		-.09
Tough - Tender-Minded	I	.19 (.01)	
Trusting - Suspicious	L		-.02
Practical - Imaginative	M		.04
Forthright - Shrewd	N		.06
Placid - Apprehensive	O		-.03
Conservative - Experimenting	Q_1	-.17 (.02)	
Group-Dependent - Self-Sufficient	Q_2		-.09
Undisciplined Self-Conflict - Controlled	Q_3		.08
Relaxed - Tense	Q_4		-.07
Second-Order Factors			
Introversion - Extroversion	I		-.01
Low - High Anxiety	II		.02
Tender-minded Emotionality - Tough Poise	III	-.15 (.05)	
Subduedness - Independence	IV		-.14
Low - High Neuroticism	V		.02
Low - High Leadership	VI		.05
Low - High Creativity	VII		-.07

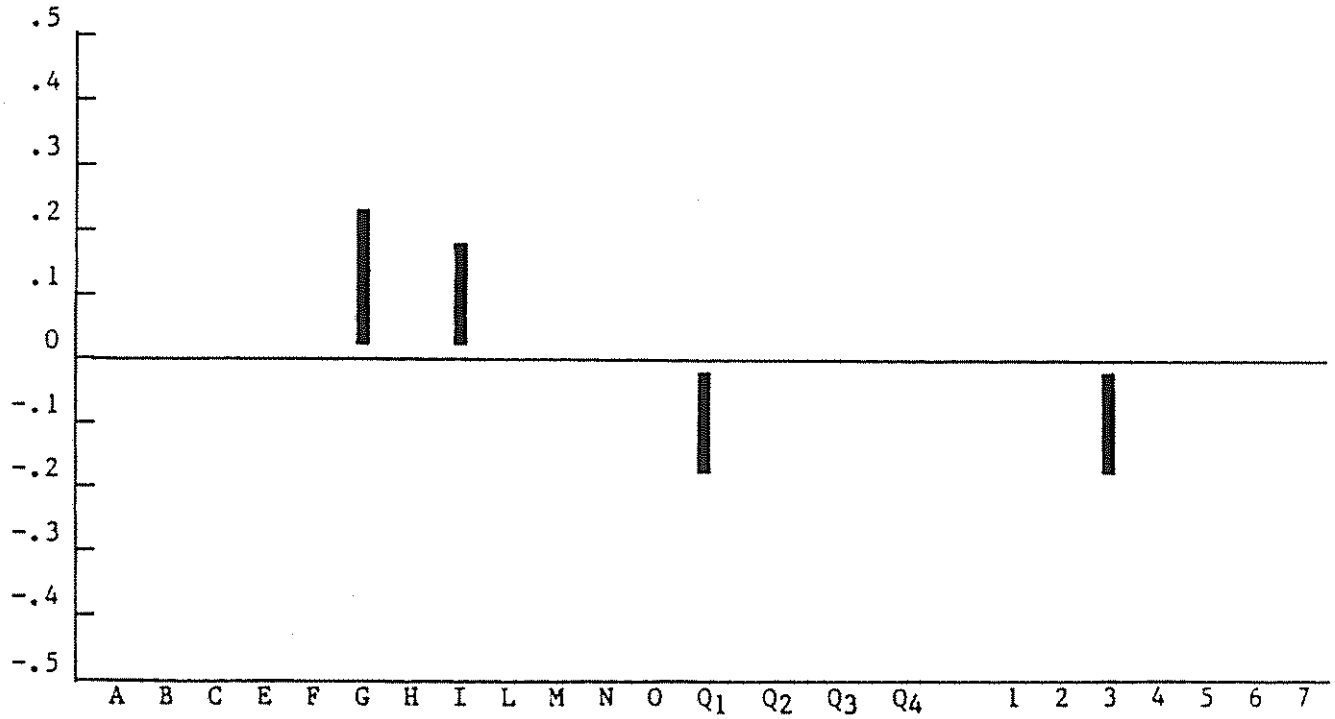
FIGURE D-4

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor D: Conformity, Dependence, "Blame-avoidance"



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE D-5

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index

n = 179

Factor M: Self (Page 2)

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	.21 (.005)	
Less - More Intelligent	B		.12
Emotionally Unstable - Stable	C		.02
Humble - Assertive	E		.11
Sober - Happy-Go-Lucky	F	.21 (.004)	
Expedient - Conscientious	G	.16 (.03)	
Shy - Venturesome	H		.14
Tough - Tender-Minded	I	.23 (.002)	
Trusting - Suspicious	L		.04
Practical - Imaginative	M		.14
Forthright - Shrewd	N		-.05
Placid - Apprehensive	O		-.12
Conservative - Experimenting	Q_1		-.02
Group-Dependent - Self-Sufficient	Q_2		-.12
Undisciplined Self-Conflict - Controlled	Q_3		.02
Relaxed - Tense	Q_4	-.16 (.03)	

Second-Order Factors

Introversion - Extroversion	I	.22 (.003)	
Low - High Anxiety	II		-.11
Tender-minded Emotionality - Tough Poise	III		-.03
Subduedness - Independence	IV		.08
Low - High Neuroticism	V	-.16 (.03)	
Low - High Leadership	VI	.20 (.01)	
Low - High Creativity	VII		-.03

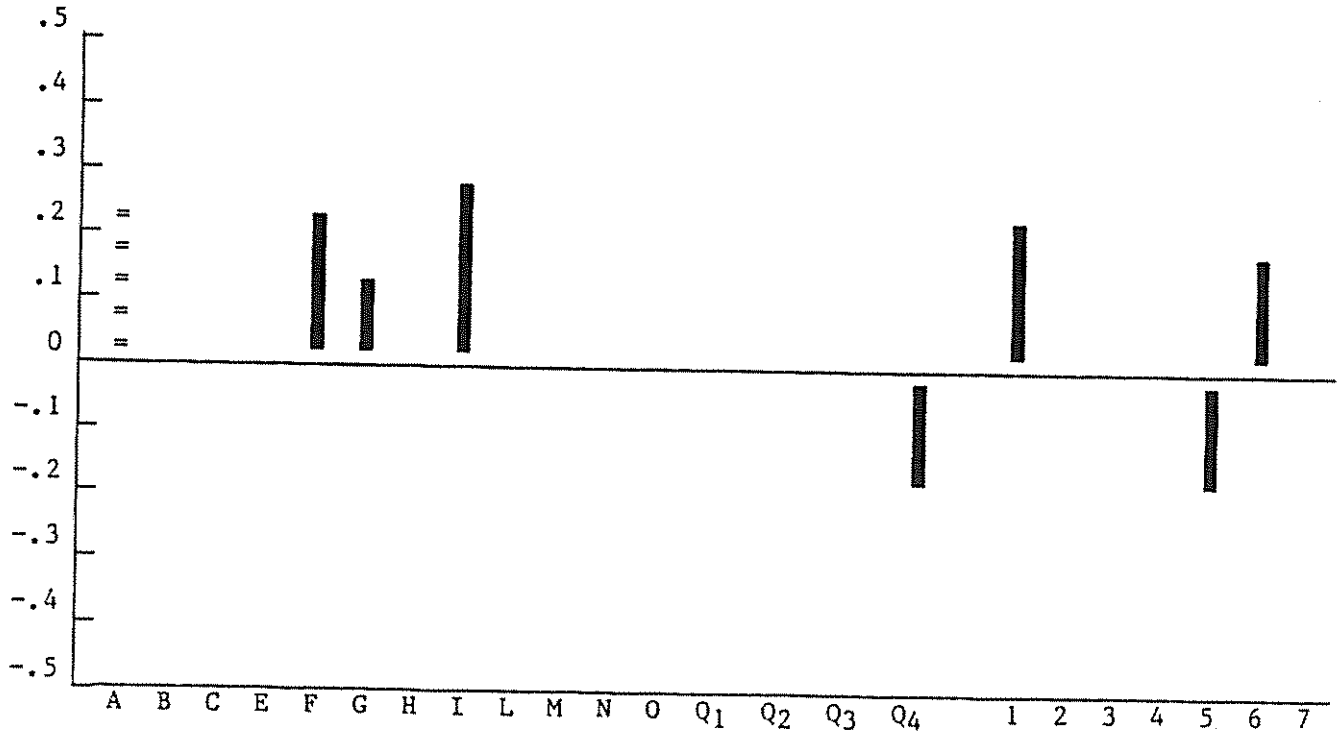
FIGURE D-5

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor M: Self (Page 2)



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor B Minus Factor A

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	.24 (.002)	
Less - More Intelligent	B		-.14
Emotionally Unstable - Stable	C		-.01
Humble - Assertive	E		-.04
Sober - Happy-Go-Lucky	F	.35 (.0001)	
Expedient - Conscientious	G		-.07
Shy - Venturesome	H		.12
Tough - Tender-Minded	I	.17 (.02)	
Trusting - Suspicious	L	.18 (.02)	
Practical - Imaginative	M		-.12
Forthright - Shrewd	N		-.01
Placid - Apprehensive	O		.05
Conservative - Experimenting	Q_1		.01
Group-Dependent - Self-Sufficient	Q_2	-.29 (.0001)	
Undisciplined Self-Conflict - Controlled	Q_3	-.15 (.04)	
Relaxed - Tense	Q_4		-.11

Second-Order Factors

Introversion - Extroversion	I	.23 (.002)	
Low - High Anxiety	II		.02
Tender-minded Emotionality - Tough Poise	III		-.09
Subduedness - Independence	IV		-.09
Low - High Neuroticism	V		-.10
Low - High Leadership	VI		.07
Low - High Creativity	VII	-.33 (.0001)	

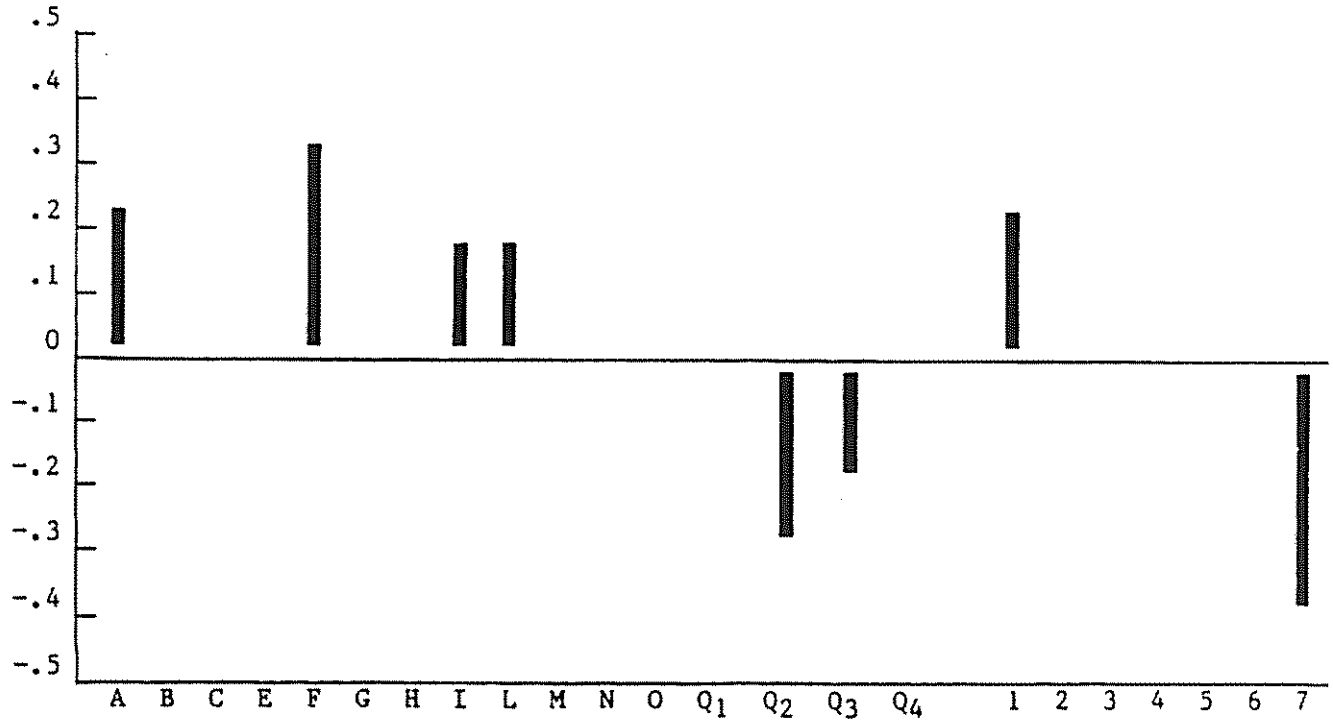
FIGURE E-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor B Minus Factor A



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor C Minus Factor B

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	-.23 (.002)	
Less - More Intelligent	B		-.03
Emotionally Unstable - Stable	C		.01
Humble - Assertive	E	-.48 (.0001)	
Sober - Happy-Go-Lucky	F	-.35 (.0001)	
Expedient - Conscientious	G		.03
Shy - Venturesome	H	-.38 (.0001)	
Tough - Tender-Minded	I		-.04
Trusting - Suspicious	L	-.26 (.001)	
Practical - Imaginative	M	-.26 (.0005)	
Forthright - Shrewd	N	.23 (.002)	
Placid - Apprehensive	O	.18 (.02)	
Conservative - Experimenting	Q_1	-.27 (.0002)	
Group-Dependent - Self-Sufficient	Q_2		.09
Undisciplined Self-Conflict - Controlled	Q_3	.15 (.05)	
Relaxed - Tense	Q_4		-.01

Second-Order Factors

Introversion - Extroversion	I	-.46 (.0001)	
Low - High Anxiety	II		.10
Tender-minded Emotionality - Tough Poise	III	-.18 (.01)	
Subduedness - Independence	IV	-.46 (.0001)	
Low - High Neuroticism	V	.25 (.001)	
Low - High Leadership	VI	-.23 (.002)	
Low - High Creativity	VII		-.04

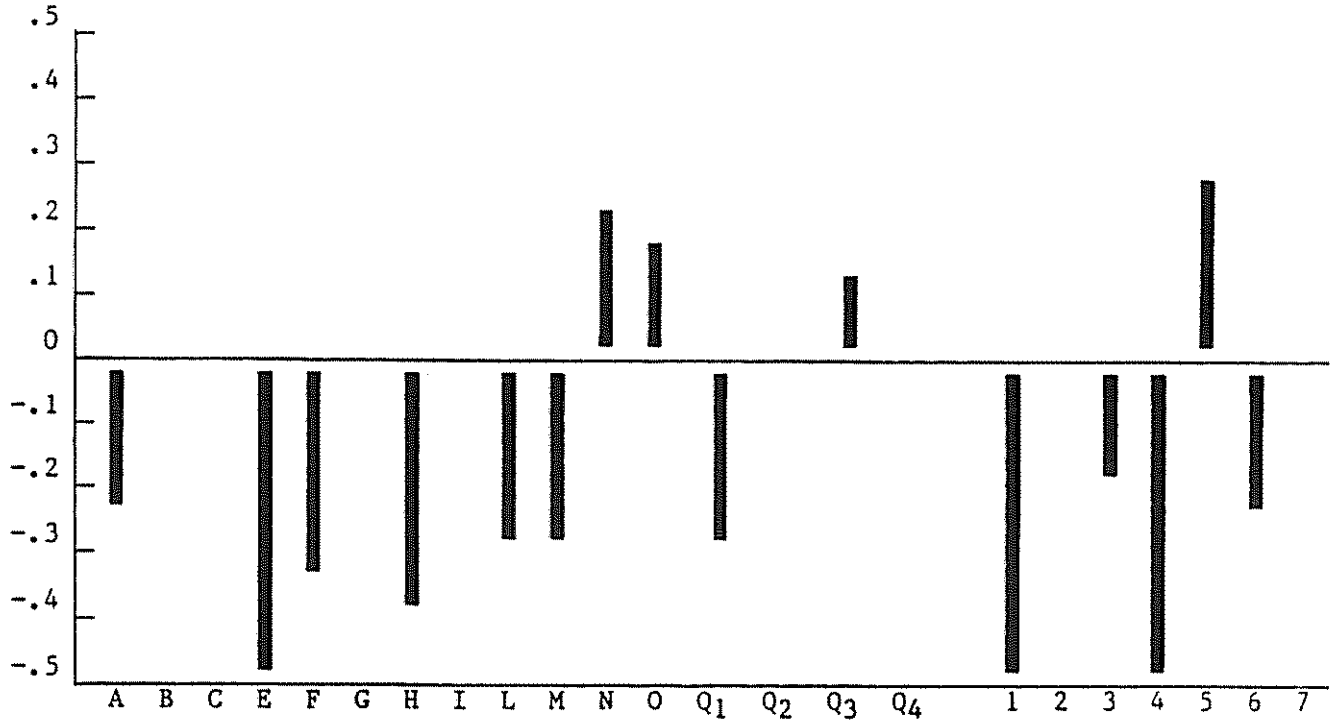
FIGURE E-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor C Minus Factor B



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-3

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor D Minus Factor C

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		-.10
Less - More Intelligent	B		-.07
Emotionally Unstable - Stable	C		-.12
Humble - Assertive	E		.05
Sober - Happy-Go-Lucky	F	-.22 (.004)	
Expedient - Conscientious	G		.10
Shy - Venturesome	H		-.13
Tough - Tender-Minded	I		-.12
Trusting - Suspicious	L		.12
Practical - Imaginative	M		.14
Forthright - Shrewd	N		-.03
Placid - Apprehensive	O		-.03
Conservative - Experimenting	Q_1		.02
Group-Dependent - Self-Sufficient	Q_2		.07
Undisciplined Self-Conflict - Controlled	Q_3		.11
Relaxed - Tense	Q_4	.15 (.04)	

Second-Order Factors

Introversion - Extroversion	I		-.10
Low - High Anxiety	II		.09
Tender-minded Emotionality - Tough Poise	III		.00
Subduedness - Independence	IV		.09
Low - High Neuroticism	V		.12
Low - High Leadership	VI		-.06
Low - High Creativity	VII		.08

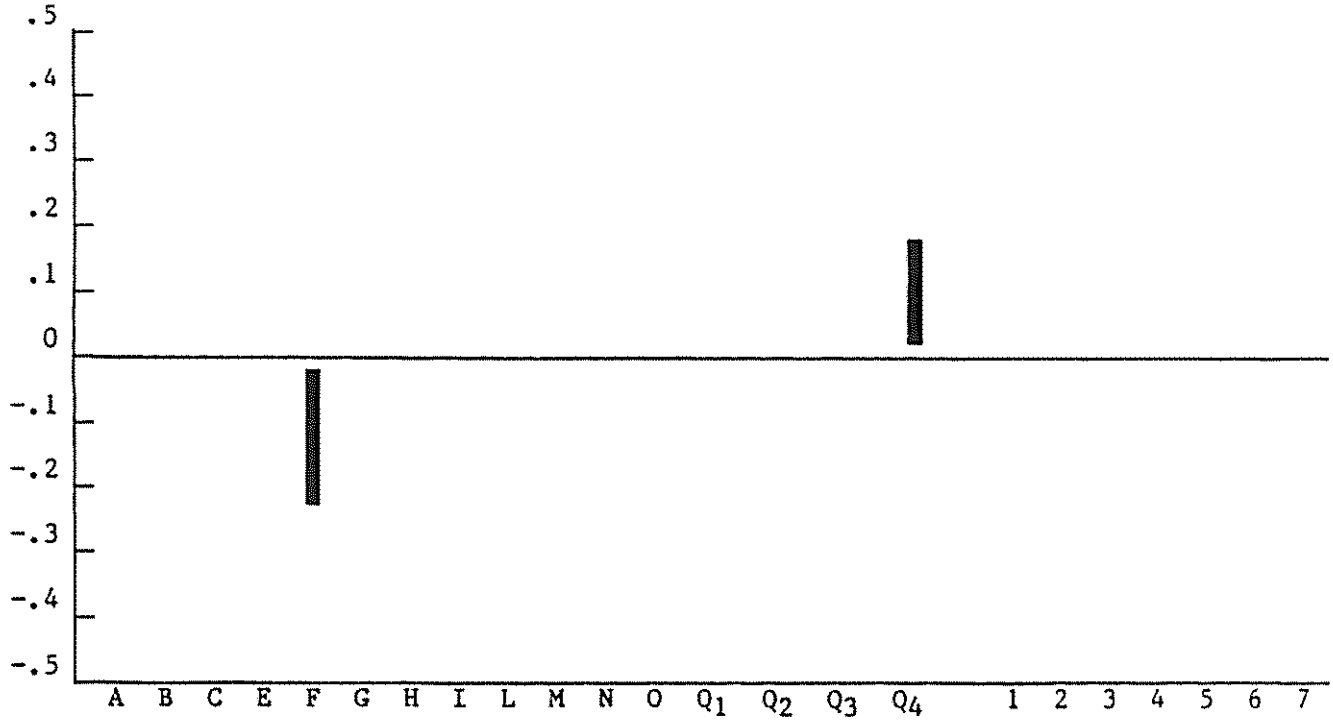
FIGURE E-3

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor D Minus Factor C



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-4

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor C Minus Factor A

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		.00
Less - More Intelligent	B		-.13
Emotionally Unstable - Stable	C		-.03
Humble - Assertive	E	-.50 (.0001)	
Sober - Happy-Go-Lucky	F		-.09
Expedient - Conscientious	G		-.04
Shy - Venturesome	H	-.27 (.0003)	
Tough - Tender-Minded	I	.15 (.05)	
Trusting - Suspicious	L	-.16 (.03)	
Practical - Imaginative	M	-.35 (.0001)	
Forthright - Shrewd	N	.21 (.005)	
Placid - Apprehensive	O	.23 (.002)	
Conservative - Experimenting	Q_1	-.29 (.0001)	
Group-Dependent - Self-Sufficient	Q_2		-.12
Undisciplined Self-Conflict - Controlled	Q_3		.02
Relaxed - Tense	Q_4		-.06

Second-Order Factors

Introversion - Extroversion	I	-.26 (.0005)	
Low - High Anxiety	II		.13
Tender-minded Emotionality - Tough Poise	III	-.28 (.0001)	
Subduedness - Independence	IV	-.54 (.0001)	
Low - High Neuroticism	V	.21 (.005)	
Low - High Leadership	VI	-.20 (.01)	
Low - High Creativity	VII	-.27 (.0002)	

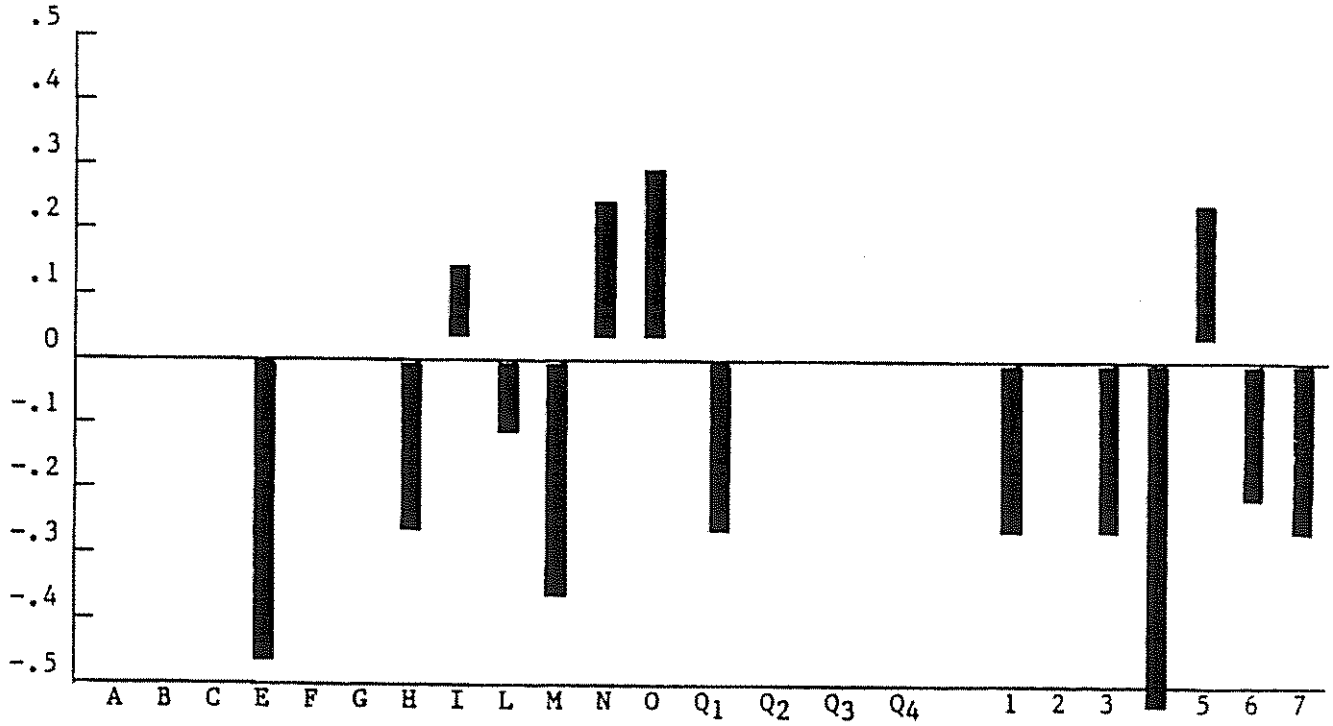
FIGURE E-4

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor C Minus Factor A



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-5

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor D Minus Factor A

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A		-.04
Less - More Intelligent	B	-.21 (.005)	
Emotionally Unstable - Stable	C		-.10
Humble - Assertive	E	-.55 (.0001)	
Sober - Happy-Go-Lucky	F	-.22 (.003)	
Expedient - Conscientious	G		-.01
Shy - Venturesome	H	-.39 (.0001)	
Tough - Tender-Minded	I		.11
Trusting - Suspicious	L		-.10
Practical - Imaginative	M	-.33 (.0001)	
Forthright - Shrewd	N	.25 (.001)	
Placid - Apprehensive	O	.26 (.0004)	
Conservative - Experimenting	Q_1	-.32 (.0001)	
Group-Dependent - Self-Sufficient	Q_2		-.09
Undisciplined Self-Conflict - Controlled	Q_3		.05
Relaxed - Tense	Q_4		.05

Second-Order Factors

Introversion - Extroversion	I	-.35 (.0001)
Low - High Anxiety	II	.23 (.002)
Tender-minded Emotionality - Tough Poise	III	-.32 (.0001)
Subduedness - Independence	IV	-.58 (.0001)
Low - High Neuroticism	V	.32 (.0001)
Low - High Leadership	VI	-.28 (.0002)
Low - High Creativity	VII	-.29 (.0001)

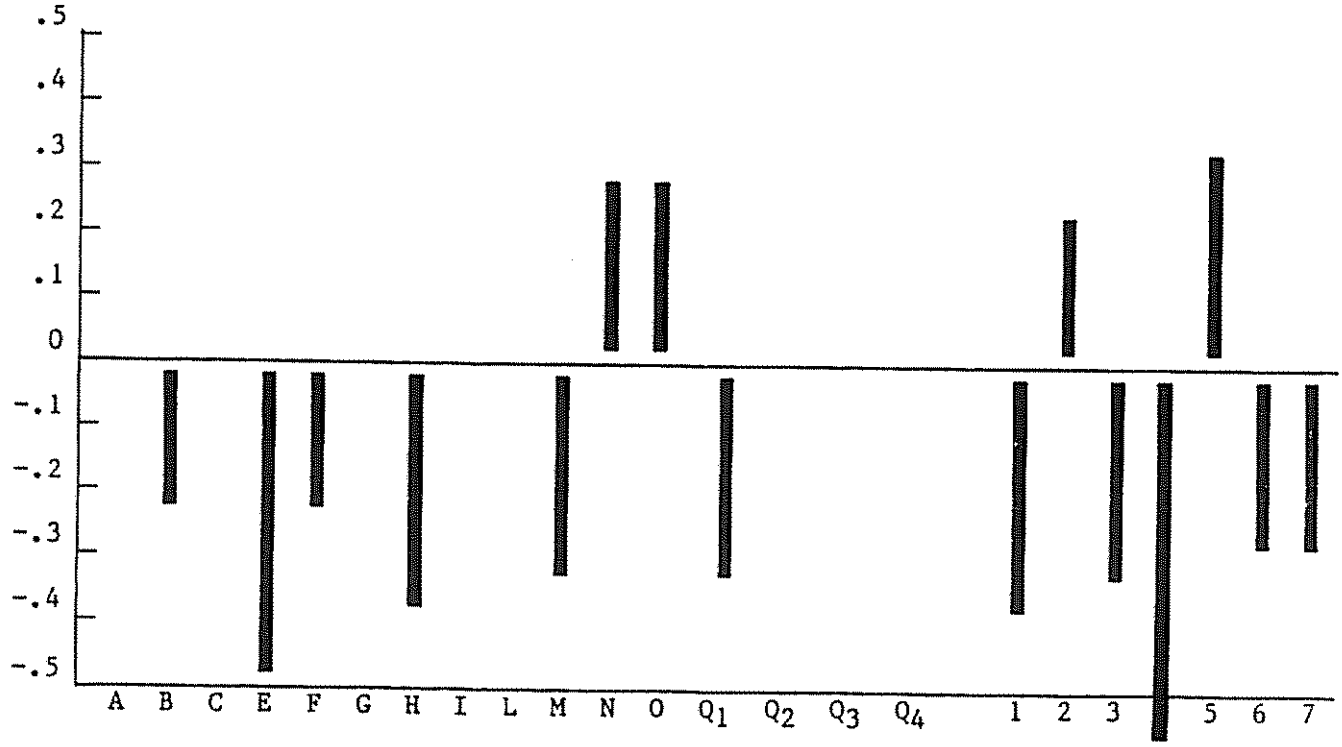
FIGURE E-5

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor D Minus Factor A



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE E-6

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

n = 179

Factor D Minus Factor B

16 PF Sten Scores: Low - High Scores		Significant	Not Significant
		(Significance Level in Parentheses)	
Reserved - Outgoing	A	-.28 (.0001)	
Less - More Intelligent	B		-.08
Emotionally Unstable - Stable	C		-.09
Humble - Assertive	E	-.46 (.0001)	
Sober - Happy-Go-Lucky	F	-.52 (.0001)	
Expedient - Conscientious	G		.07
Shy - Venturesome	H	-.49 (.0001)	
Tough - Tender-Minded	I		-.10
Trusting - Suspicious	L	-.20 (.01)	
Practical - Imaginative	M	-.20 (.01)	
Forthright - Shrewd	N	.24 (.002)	
Placid - Apprehensive	O	.19 (.01)	
Conservative - Experimenting	Q_1	-.31 (.0001)	
Group-Dependent - Self-Sufficient	Q_2		.14
Undisciplined Self-Conflict - Controlled	Q_3	.19 (.01)	
Relaxed - Tense	Q_4		.12

Second-Order Factors

Introversion - Extroversion	I	-.54 (.0001)	
Low - High Anxiety	II	.19 (.01)	
Tender-minded Emotionality - Tough Poise	III	-.19 (.01)	
Subduedness - Independence	IV	-.44 (.0001)	
Low - High Neuroticism	V	.37 (.0001)	
Low - High Leadership	VI	-.31 (.0001)	
Low - High Creativity	VII		.00

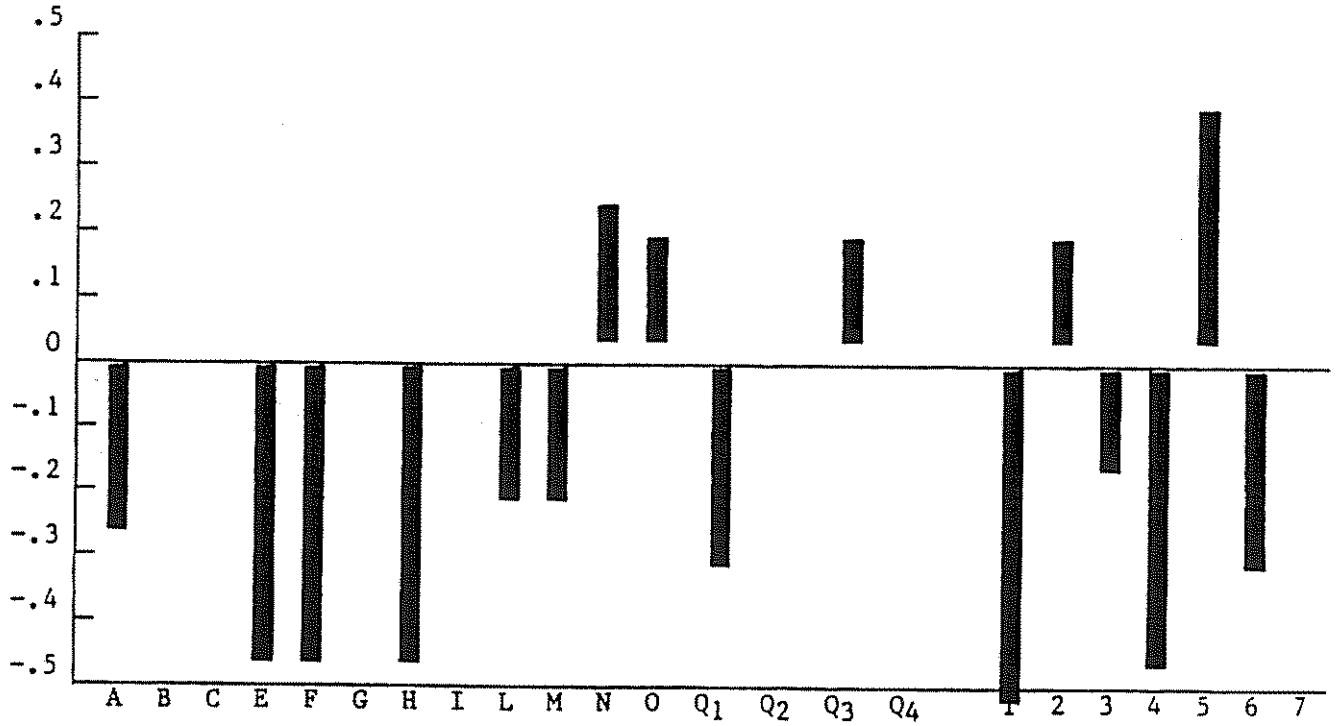
FIGURE E-6

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index Self (Page 2)

Correlations shown are greater than .15. n = 179

Factor D Minus Factor B



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE F-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index

n = 179

Factor M - Self-Concept (Page 1)

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	.17 (.03)	
Less - More Intelligent	B		.04
Emotionally Unstable - Stable	C		.04
Humble - Assertive	E		.03
Sober - Happy-Go-Lucky	F		.14
Expedient - Conscientious	G		.11
Shy - Venturesome	H		.07
Tough - Tender-Minded	I	.17 (.02)	
Trusting - Suspicious	L		-.06
Practical - Imaginative	M		.06
Forthright - Shrewd	N		-.02
Placid - Apprehensive	O		-.09
Conservative - Experimenting	Q_1		-.06
Group-Dependent - Self-Sufficient	Q_2		-.08
Undisciplined Self-Conflict - Controlled	Q_3		.04
Relaxed - Tense	Q_4	-.15 (.04)	

Second-Order Factors

Introversion - Extroversion	I	.15 (.04)	
Low - High Anxiety	II		-.10
Tender-minded Emotionality - Tough Poise	III		-.03
Subduedness - Independence	IV		-.02
Low - High Neuroticism	V		-.11
Low - High Leadership	VI		.14
Low - High Creativity	VII		-.07

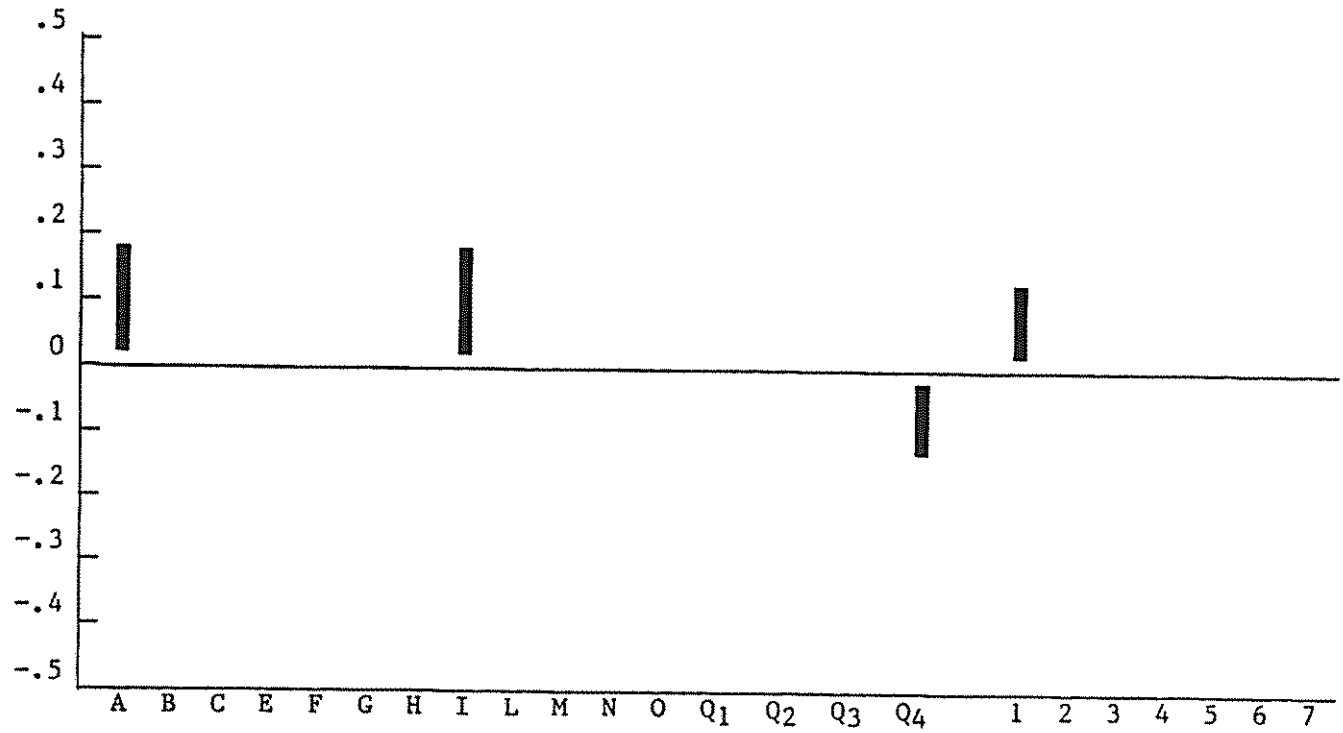
FIGURE F-1

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index

Correlations shown are greater than .15. n = 179

Factor M - Self-Concept (Page 1)



16 PF Sten Scores: Low - High Score

A: Reserved - Outgoing
B: Less - More Intelligent
C: Emotionally Stable - Unstable
E: Humble - Assertive
F: Sober - Happy-Go-Lucky
G: Expedient - Conscientious
H: Shy - Venturesome
I: Tough - Tender-Minded
L: Trusting - Suspicious
M: Practical - Imaginative
N: Forthright - Shrewd
O: Placid - Apprehensive

Q_1: Conservative - Experimenting
Q_2: Group-Dependent - Self-Sufficient
Q_3: Undisciplined Self-Conflict - Controlled
Q_4: Relaxed - Tense

Second-Order Factors

1: Introversion - Extroversion
2: Low - High Anxiety
3: Tender-minded Emotionality - Tough Poise
4: Subduedness - Independence
5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

TABLE F-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index

n = 179

Factor M - Synthesis

16 PF Sten Scores: Low - High Scores		Significant (Significance Level in Parentheses)	Not Significant
Reserved - Outgoing	A	.20 (.01)	
Less - More Intelligent	B		.08
Emotionally Unstable - Stable	C		.03
Humble - Assertive	E		.06
Sober - Happy-Go-Lucky	F	.18 (.02)	
Expedient - Conscientious	G	.15 (.05)	
Shy - Venturesome	H		.11
Tough - Tender-Minded	I	.21 (.005)	
Trusting - Suspicious	L		-.01
Practical - Imaginative	M		.10
Forthright - Shrewd	N		-.03
Placid - Apprehensive	O		-.09
Conservative - Experimenting	Q_1		-.06
Group-Dependent - Self-Sufficient	Q_2		-.11
Undisciplined Self-Conflict - Controlled	Q_3		.03
Relaxed - Tense	Q_4	-.16 (.03)	

Second-Order Factors

Introversion - Extroversion	I	.19 (.01)	
Low - High Anxiety	II		-.10
Tender-minded Emotionality - Tough Poise	III		-.04
Subduedness - Independence	IV		.02
Low - High Neuroticism	V		-.13
Low - High Leadership	VI	.17 (.02)	
Low - High Creativity	VII		-.06

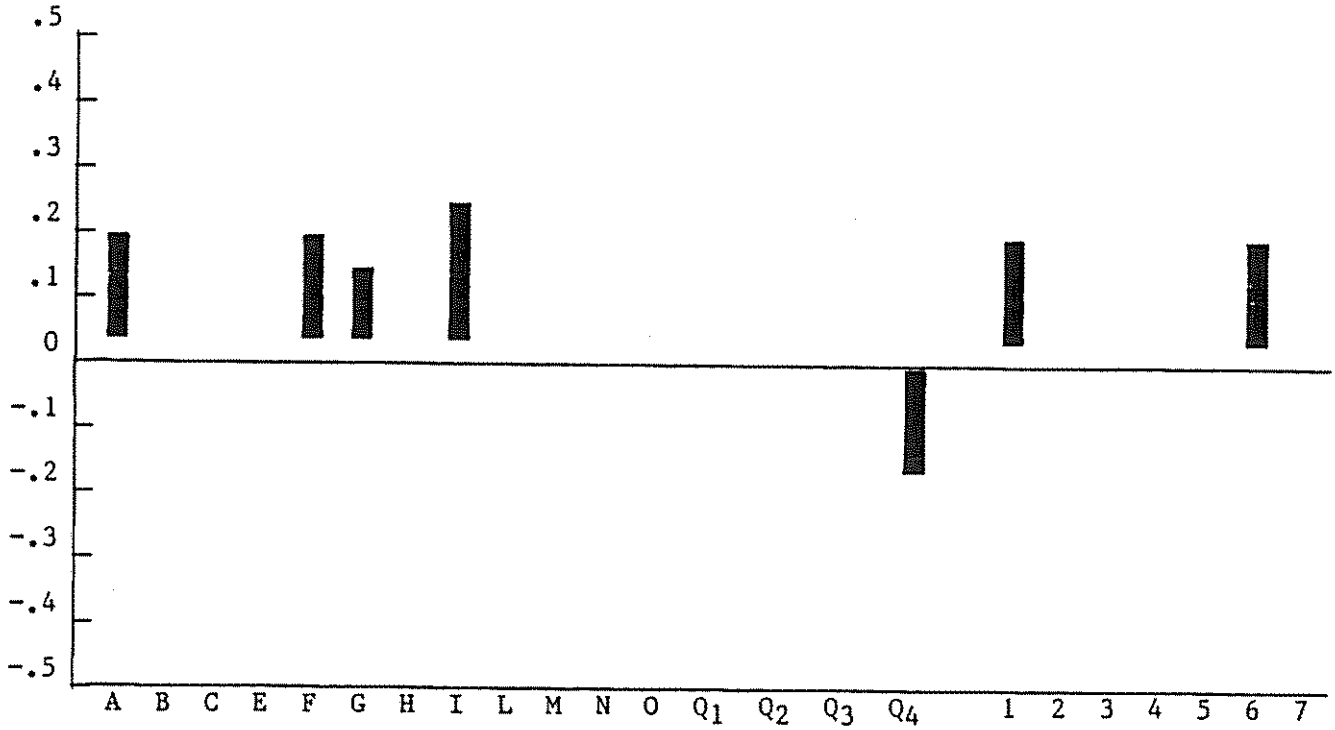
FIGURE F-2

Spearman Correlation of

16 PF Scale Sten Scores and Predictive Index

Correlations shown are greater than .15. n = 179

Factor M - Synthesis



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5: Low - High Neuroticism
6: Low - High Leadership
7: Low - High Creativity

APPENDIX I

PREDICTIVE INDEX TRAIT CLASSIFICATION

Factor A: Submissiveness - Dominance

(Humility - Assertiveness)*

Factor B: Introversion - Extroversion

(Reserved - Outgoing)*

Factor C: Tension - Passivity

(Tense - Relaxed)*

Factor D: Non-Conforming - Conforming

(Expedient - Conscientious)*

Self Pattern: Measurements of the individual's basic personality traits.

Self-Concept Pattern: Measurements of the individual's perceptions of the demands of his (work) environment.

Synthesis Pattern: Measurements of the individual's personality in the work environment.

* 16 PF

APPENDIX II

16 PF PERSONALITY TRAIT CLASSIFICATION

PRIMARY SOURCE TRAITS

FACTOR A

Low Score		High Score
SIZOTHYMIA, A- (Reserved, Detached, Critical Aloof, Stiff)	versus	AFFECTOTHYMIA, A+ (Warmhearted, Outgoing, Easygoing, Participating

FACTOR B

Low Score		High Score
LOW INTELLIGENCE, B- (Crystalized, Power Measure, Dull)	versus	HIGH INTELLIGENCE, B+ (Crystallized, Power Measure, Bright)

FACTOR C

Low Score		High Score
EMOTIONAL INSTABILITY or EGO WEAKNESS, C- (Affected by Feelings, Emotionally Less Stable, Easily Upset, Changeable)	versus	HIGHER EGO STRENGTH, C+ (Emotionally Stable, Mature, Faces Reality, Calm)

FACTOR E

Low Score		High Score
SUBMISSIVENESS, E- (Obedient, Mild, Easily Led, Docile, Accomodating)	versus	DOMINANCE OR ASCENDANCE, E+ (Assertive, Aggressive, Stubborn)

FACTOR F

Low Score		High Score
DESURGENCY, f- (Sober, Taciturn, Serious)	versus	SURGENCY, F+ (Enthusiastic, Heedless, Happy-Go-Lucky)

FACTOR G

Low Score		High Score
LOW SUPEREGO STRENGTH or LACK OF ACCEPTANCE OF GROUP MORAL STANDARDS, G- (Disregards Rules, Expedient)	versus	SUPEREGO STRENGTH or CHARACTER, G+ (Conscientious, Persistent, Moralistic, Staid)

FACTOR H

Low Score		High Score
THRECTIA, H- (Shy, Timid, Restrained, Threat-sensitive)	versus	PARMIA, H+ (Adventurous, "Thick Skinned", Socially Bold)

FACTOR I

Low Score		High Score
HARRIA, I- (Tough-minded, Rejects Illusions)	versus	PREMSIA, I+ (Tender-minded, Sensitive, Dependent, Overprotected)

FACTOR L

Low Score		High Score
ALAXIA, L- (Trusting, Accepting Conditions)	versus	PROTENSION, L+ (Suspecting, Jealous)

FACTOR M

Low Score		High Score
PRAXERNIA, M- (Practical, Has "Down to Earth" Concerns)	versus	AUTIA, M+ (Imaginative, Absent-minded)

FACTOR N

Low Score		High Score
NAIVETE, N- (Forthright, Unpretentious)		SHREWDNESS, N+ (Astute, Worldly)

FACTOR O

Low Score		High Score
UNTROUBLED ADEQUACY, O- (Self-assured, Placid, Secure, Complacent)	versus	GUILT PRONENESS, O+ (Apprehensive, Self-reproaching, Insecure, Worrying, Troubled)

FACTOR Q_1

Low Score		High Score
CONSERVATISM OF TEMPERAMENT, Q- (Conservative, Respecting Established Ideas, Tolerant of Traditional Difficulties)	versus	RADICALISM, Q_1+ (Experimenting, Liberal, Analytical, Free-thinking)

FACTOR Q_2

Low Score		High Score
GROUP DEPENDENCY, Q_2- (Sociably Group Dependent, A "Joiner" and Sound Follower)	versus	SELF-SUFFICIENCY, Q_2+ (Self-sufficient, Resourceful, Prefers Own Decisions)

FACTOR Q_3

Low Score		High Score
LOW SELF-SENTIMENT INTEGRATION, Q_3- (Uncontrolled, Lax, Follows Own Urges, Careless of Social Rules)	versus	HIGH STRENGTH OF SELF-SENTIMENT, Q_3+ (Controlled, Exacting, Will Power, Socially Precise, Compulsive, Following Self-image)

FACTOR Q_4

Low Score		High Score
LOW ERGIC TENSION, Q_4- (Relaxed, Tranquil, Torpid, Unfrustrated, Composed)	versus	HIGH ERGIC TENSION, Q_4+ (Tense, Frustrated, Overwrought, Fretful)

SECOND-STRATUM SOURCE TRAITS

The second-stratum factors may be viewed as broader influences or organizers contributing to the primary traits. There is a strong degree of intercorrelation between the primary and secondary traits.

Q_I

Low Score		High Score
INVIA (Introversion)	versus	EXVIA (Extroversion)

Q_{II}

Low Score		High Score
ADJUSTMENT (Low Anxiety)	versus	ANXIETY (High Anxiety)

Q_{III}

Low Score		High Score
PATHEMIA (Feeling, Tender-minded)	versus	CORTERTIA (Cognitive, Objective)

Q_{IV}

Low Score		High Score
SUBDUEDNESS (Subdued, Dependent)	versus	INDEPENDENCE (Independent, Radical)

Q_{V}

Low Score		High Score
NATURALNESS (Low Neuroticism)	versus	DISCREETNESS (High Neuroticism)

Not tolerably well-defined, and criterion associations have not yet been investigated.

Q_{VI}

Low Score		High Score
COOL REALISM (Low Leadership)	versus	PRODIGAL SUBJECTIVITY (High Leadership)

Criterion associations of this prodigal, sensitive subjectivity still need to be found.

Q_{VII}

Low Score LOW CREATIVITY	versus	High Score HIGH CREATIVITY

Composed of Primary Traits B and G

From the Handbook for the Sixteen Personality Factor Questionnaire (16PF) by Raymond B. Catell, Herbert W. Eber, Maurice M. Tatsuoka. Institute for Personality and Ability Testing, Inc., Champaign, Illinois, 1982.

APPENDIX III

Hollingshead-Redlich Two-Factor Index of Social Position

I. Introduction.

The Two-Factor Index of Social Position was developed to meet the needs for an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of our society. Its development was dependent both upon detailed knowledge of the lineate class position. It is premised upon three assumptions: (1) the existence of a status structure in the society; (2) positions in this structure are determined mainly by a few commonly accepted symbolic characteristics; and (3) the characteristics symbolic of status may be scaled and combined by the use of statistical procedures so that a researcher can quickly, reliably, and meaningfully stratify the population under study.

Occupation and education are the two factors utilized to determine social position. Occupation is presumed to reflect the skill and power individuals possess as they perform the many maintenance functions in the society. Education is believed to reflect not only knowledge, but also cultural tastes. The proper combination of these factors by the use of statistical techniques enable a researcher to determine within approximate limits the social position an individual occupies in the status structure of our society.

II. The Scale Scores.

To determine the social position of an individual or of a household two items are essential: (1) the precise occupational role the head of the household performs in the economy; and (2) the amount of formal schooling he has received. Each of these factors are then scaled according to the following system of scores.

A. The Occupational Scale.

1. Higher Executives, Proprietors of Large Concerns, and Major Professionals.

   a. Higher Executives.

   b. Large Proprietors.

   c. Major Professionals.

2. Business Managers, Proprietors of Medium Sized Businesses, and Lesser Professionals.

   a. Business Managers in Large Concerns.

b. Proprietors of Medium Businesses.

c. Lesser Professionals.

3. Administrative Personnel, Small Independent Businesses, and Minor Professionals.

a. Administrative Personnel.

b. Small Business Owners.

c. Semi-Professional.

d. Farmers.

4. Clerical and Sales Workers, Technicians, and Owners of Little Businesses.

a. Clerical and Sales Workers.

b. Technicians.

c. Owners of Little Businesses.

d. Farmers.

5. Skilled Manual Employees.

6. Machine Operators and Semi-Skilled Employees.

7. Unskilled Employees.

B. The Educational Scale.

(1) Graduate Professional Training.

(2) Standard College or University Graduation.

(3) Partial College Training.

(4) High School Graduates.

(5) Partial High School.

(6) Junior High School.

(7) Less Than Seven Years of School.

Integration of Two Factors.

The factors of Occupation and Education are combined by weighing the individual scores obtained from the scale positions. The weights for each factor were determined by multiple correlation techniques. The weight for each factor is:

Factor	Factor Weight
Occupation	7
Education	4

Source: August B. Hollingshead and Frederick R. Redlich, Social Class and Mental Illness, John Wiley and Sons, New York, 1958, pp. 398-407.