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ITEM SELECTION FOR TWO PERSONALITY SCALES: THE AFFECTIVE
AND ANALYTIC DIMENSIONS

Iowa State University

PH.D.

1979

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Item selection for two personality scales:

The affective and analytic dimensions

by

Rosemary Shea Croop

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Major: Psychology

Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

For the Major Department

Signature was redacted for privacy.

For the Graduate College

Iowa State University
Ames, Iowa

1979

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INTRODUCTION

Historically, psychological measurement is rooted in two separate traditions: (1) psychodynamic psychology originated by Freud and based on a medical model which emphasizes the necessity of accurate diagnosis to insure proper treatment and (2) the mental testing movement with emphasis on the value of accurate selection (Breger, 1968). Within both traditions, then, the primary function of psychological measurement has been to identify significant traits and characteristics so as to permit accurate prediction, be that of performance in a particular setting or of response to a particular form of therapy. When used in the context of clinical and counseling psychology, the function of personality assessment is to gather information about the patient or client that is relevant to treatment. The obvious inference being that this information will have some influence on the nature of the treatment given.

Over 10 years ago, it was noted that, in actual practice, differential categorization based on psychological tests was not resulting in differential psychotherapeutic treatment (Breger, 1968). In the same decade, the necessity was emphasized of exploring client and therapist characteristics in order to develop differential therapies and differential client-therapist matches (Kiesler, 1966). In a more recent review of the research literature and collection of theoretical papers (Goldstein & Stein, 1976), the necessity of thoroughly exploring differential therapies is again reiterated. However, the literature review indicates a disturbing paucity of adequately designed research and there is still

little evidence within clinical settings of differential psychotherapeutic treatment based on the results of personality assessment. One possible factor in the lack of significant progress in this area over the past decade might be found in the type of constructs that are typically assessed.

Within the field of personality, psychological measurement, particularly the use of self-report personality inventories and scales, has been associated with trait psychology. It shares with trait psychology the underlying assumption that there are consistencies in human behavior over time and across situations. The validity of this assumption has been vigorously challenged by the behaviorists who argued that behavior was environmentally determined and situation specific. As a result of the failure of both the trait and the behavioral models to account for a satisfactory amount of variance, a third model, interactionism, evolved. Interactionism emphasizes the interaction between person and situation variables. It has become accepted by both former trait and former behavioral psychologists and appears to be the most popular model at present (Bowers, 1973; Mischel, 1973).

Modern interactionism proposes a model which views behavior to be a function of a continuous multidirectional interaction between the individual and the environment. Individuals are seen as active agents who influence environmental events as well as who are influenced by the situations in which they find themselves. The important determining factor in the situation is the subjective meaning of that situation to the individual. The essential person variables in this interaction are the ways

in which the individual perceives, processes, and structures environmental information (Endler & Magnusson, 1976).

The acceptance of the interactionist model has definite implications for psychological measurement. Whereas assessment devices constructed assuming a trait model would ideally measure those characteristics which are most highly related to intra-individual consistency across situations, assessment devices constructed assuming an interactionist model would ideally measure those characteristics which were most highly related to inter-individual variability across situations.

A model which emphasizes the interaction between the individual and the situation is also considered to be of particular potential in exploring the therapeutic relationship. One implication of the acceptance of this model is the necessity of delineating characteristics related to differential responses of individuals to psychotherapeutic interventions and the construction of assessment devices to measure these characteristics.

Psychotherapeutic approaches vary on numerous dimensions. One of particular interest to the author is whether treatment is directed at the client's emotions or cognitions. Phenomenological theorists such as Rogers and the existentialist psychologists emphasize the role of the affective system in adjustment. In therapy the goal is to help the client recognize, accept, and experience fully the emotions. Cognitive psychologists such as Ellis and Beck, conversely, emphasize the role of cognitive variables in adjustment. The function of therapy is to identify and change those cognitions which are considered to be the source

of the client's discomfort.

Both orientations implicitly appear to assume that their models are appropriate for all clients, an assumption vigorously challenged by Kiesler (1966) and Goldstein and Stein (1976). It has been established that counseling theorists differ in their emphasis upon the respective roles of emotion and cognition in adaptation. It may well be that individuals differ in the extent to which they rely upon emotions and cognition in adapting to their environment. Identification of these individuals may be useful in the eventual prediction of differential responsiveness to therapy. The author was unable to locate any literature which dealt with the possibility of individual differences on these characteristics.

This research proposes the development of an instrument to measure the extent to which an individual relies upon the emotional processes as opposed to the cognitive processes when interacting with the environment. The construct, as originally conceived, was bipolar and had been labeled the affective-analytic dimensions. The defining characteristic of affective individuals was a tendency to rely upon emotional, intuitive processes in their interactions with the environment. Such individuals were hypothesized to be open and honest about their feelings, value warm interpersonal relationships, be very spontaneous and expressive, and value expressiveness in both themselves and others. The defining characteristic of analytic individuals was a tendency to rely upon the cognitive processes in their interactions with the environment. Such individuals were hypothesized to deal with difficulties by carefully and logically considering the alternatives, behave in a manner that they judge to be consistent and understandable, and enjoy tasks requiring objective, analytic thought.

Six widely used personality inventories for adults were surveyed for scales related to the affective-analytic dimension. The six inventories chosen were the Minnesota Multiphasic Personality Inventory (MMPI), California Psychological Inventory (CPI), Eysenck Personality Inventory (EPI), Edwards Personal Preference Schedule (EPPS), Personal Orientation Inventory (POI), and the Sixteen Personality Factor Questionnaire (16PF). In addition, two relatively newly developed inventories, the Comrey Personality Scales (CPS) and the Jackson Personality Inventory (JPI), were also surveyed. The latter instruments were included because the quality of their design makes them likely competitors of the currently popular instruments.

Of the eight inventories, four, the MMPI, CPI, EPI, and CPS, have no scales that resemble the affective-analytic dimension. Three of the inventories, EPPS, POI, and JPI, have one or more scales that appear to measure components of the affective-analytic dimension. One inventory, 16PF, contains a scale highly similar to that which is proposed in this paper. The relevant scales of the latter four inventories will be considered individually in relation to the proposed construct.

The EPPS contains two relevant scales, Affiliation and Succorance. The Affiliation scale assesses the need to make friends and form strong attachments. The Succorance scale was designed to measure the need for support from others when dealing with difficulties (Edwards, 1959). Both of these scales measure components of the social orientation of the affective-analytic dimension. No analogue to the reliance on cognitive, rational processes is included.

Three relevant scales, Feeling Reactivity, Spontaneity, and Capacity for Intimate Contact, are present in the POI. Feeling Reactivity refers to sensitivity and responsiveness to one's own feelings. Spontaneity measures the freedom to react spontaneously. Capacity for Intimate Contact was designed to assess the ability to develop intimate relationships with other people (Shostrom, 1966). As was the case with the EPPS, these scales measure specific social and affective dimensions. The cognitive, analytic component is not measured by any scale on the POI.

The JPI has one scale, Interpersonal Affect, which is highly similar to the affective-analytic dimension. The high scorer on the Interpersonal Affect scale is described as being emotional, sympathetic, and valuing close personal ties with others (Jackson, 1976). This is close to the description of the individual who would be expected to score on the affective end of the affective-analytic dimension. However, the Interpersonal Affect scale is not bipolar. The low scorer is simply an individual who is not sympathetic, emotional, or interested in close ties with others. As described above, the affective-analytic dimension, conversely, is bipolar.

The 16PF Factor I, Harria (tough-minded) vs. Premsia (tender-minded), appears to be almost identical to the affective-analytic construct. The tough-minded individual is described as being unsentimental, self-reliant, unartistic, unimaginative, acting on practical, logical evidence, and not dwelling on physical disabilities. The tender-minded individual seeks affection, help, and sympathy; is gentle, kindly, affected, theatrical, imaginative, flighty, and hypochondriacal; and acts on intuition

(Cattell, Eber, & Tatsouka, 1974). Although the two constructs differ in some of the specific characteristics, the underlying dimensions appear to be related.

There are six forms of the 16PF, the two longest and most popular being forms A and B. Factor I on both of these forms is composed of only 10 items. Even fewer items are contained in the remaining forms with forms C and D having six items each, and forms E and F, eight each.

The correlation between Factor I on forms A and B is .59 (Cattell et al., 1974). The equivalent form reliability is thus very low. The scales are too short to provide sensitive measurement and do not have satisfactory reliability coefficients. Therefore the 16PF Factor I is considered to be psychometrically inadequate.

Factor analytic studies of six of the eight surveyed inventories were reviewed as well. The ipsative nature of the EPPS precludes the statistically valid use of factor analysis. Studies involving this instrument are consequently not included. No factor analytic studies of the JPI were located.

The purpose of reviewing factor analytic studies was twofold. The primary objective was to determine the possible existence of a set of items which appear to measure the affective-analytic dimension in an instrument on which the construct is not scored. The second objective was to obtain information pertaining to the homogeneity of the proposed dimension. The results of studies on the 16PF were of particular interest in achieving this second goal.

A dimension similar to the affective-analytic dimension was not

obtained in a cluster analysis of the items of the POI (Silverstein & Fisher, 1975), or in a factor analysis of the POI scales (Tosi & Hoffman, 1972). Factor analyses of the MMPI scales (LaForge, 1962) and items (Hunter, Overall, & Butcher, 1974), CPI scales (Nichols & Schnell, 1963; Rogers & Shure, 1965; Schludermann & Schludermann, 1970; Springbob & Struening, 1964) and items (Lovegrove & Hammond, 1973), EPI items (Howarth, 1976; Howarth & Browne, 1972; Stanley & Watkins, 1972) and CPS scales (Ottomanelli, 1972) failed to yield a factor resembling the affective-analytic dimension. The dimension also failed to appear in the factor analytic studies of the item pool from which the CPS items were drawn (Comrey, 1961, 1962, 1964, 1965; Comrey & Duffy, 1968; Comrey & Jamison, 1966; Comrey, Jamison, & King, 1968; Comrey & Schlesinger, 1962; Comrey & Soufi, 1960, 1961). However, in a factor analysis of the 16PF items, a factor composed of the Harria vs. Premsia items was extracted (Burdal & Vaughn, 1974).

On the basis of these results, it would appear that the 16PF analogue of the affective-analytic dimension is a homogeneous scale. There is no evidence that the dimension exists as a factor in the remaining instruments. However, factor analytic methods only permit the identification of variance which is common to two or more of the analyzed items or scales. If a source of variance is specific to an item or scale, it will not be extracted as a factor. Consequently, if a source of variance is specific to or measured by only one scale of an inventory, it will not be extracted as a factor in a factor analysis of the scales of that inventory. Similarly, if a homogeneous dimension is measured by only a small number

of items in a large set of items, the dimension may not account for enough variance to be extracted as a factor. Instead it will be included in the error variance.

On the basis of these considerations, it is possible that items measuring the affective-analytic dimension do exist in inventories other than the 16PF, but have not been extracted as a factor because they are too few in number or are contained on one scale only. If this is the case, the dimension should be extracted as a factor if these inventories are factored with an inventory from which the relevant factor has been extracted. Consequently, studies were reviewed which have factored the 16PF with any of the other surveyed inventories.

No factor similar to the affective-analytic dimension was extracted in a factor analysis of the 16PF and EPI (Skinner & Howarth, 1973). In a factor analysis of the scales of the 16PF and the CPI, a factor was extracted which was defined primarily by the 16PF scale Harria vs. Premsia, but which was also loaded by CPI scales (Mitchell, 1963). Three studies which factored the MMPI and 16PF were located. In two of these studies (O'Dell & Karson, 1969; Williams, Dudley, & Overall, 1972), both of which factored the scales of the inventories, a factor similar to the proposed dimension was not extracted. The third study factored 16PF scales with parcels of MMPI items (Cattell & Bolton, 1969). A factor, labeled tender-mindedness, which resembled the Harria vs. Premsia scale, was extracted. The factor was loaded both by 16PF scales and MMPI item parcels.

Thus, it would appear that the 16PF Factor I, Harria vs. Premsia is homogeneous and can account for some of the variance in the CPI scales.

The relationship between Factor I and the variance within the MMPI is unclear and the evidence contradictory.

Although several scales have been discussed which measure components of the affective-analytic dimension, only one scale, the 16PF Factor I, a scale considered psychometrically inadequate, was found which combined both the affective and the cognitive elements. When the 16PF was factor analyzed with other inventories, evidence was found that Factor I could account for some of the variance in the CPI scales. No clear evidence that the construct exists as a homogeneous factor in any of the remaining reviewed scales was found.

Because the only evidence for homogeneity was found using a psychometrically inadequate instrument, the results of the literature search raised the question of the advisability of combining the affective and analytic components into a single bipolar construct. It was considered preferable to split the construct into two unipolar constructs, the affective and the analytic dimensions, and to attempt to develop separate instruments to measure each. This approach would permit the eventual empirical evaluation of the correlation between the measures and subsequent combination of the instruments should the correlations be too substantial to justify considering the constructs as separate and distinct.

The purpose of this research then was to select items on the basis of item intercorrelations for eventual inclusion on the two proposed scales. Investigation of external validity will not be pursued until internally consistent sets of items have been developed.

The item intercorrelations were investigated through separate factor

analyses of the two item pools. Because the research was exploratory, the four following techniques were used to permit evaluation of the stability of the factor structure across methods which varied in their statistical biases: principal axis rotated to a quartimax solution, principal axis rotated to a varimax solution, alpha analysis unrotated, and alpha analysis rotated to a quartimax solution.

The principal axis factor analytic procedure is frequently used in exploratory research because it condenses the greatest proportion of variance into the fewest possible factors. These factors are usually rotated to a more meaningful, interpretable solution. The quartimax rotation tends to yield a complex, general first factor with many major loadings. Varimax rotation, on the other hand, minimizes the tendency toward a general factor by maximizing the distribution of the variance across the factors. Alpha analysis maximizes the Kuder-Richardson reliabilities of the factors, the first extracted factor being that with the highest Kuder-Richardson reliability coefficient. The alpha analysis can also be rotated, but the rotated analysis does not retain the above characteristic (Gorsuch, 1974).

The rate of endorsement for each item was also calculated. Only items which were endorsed by between 25% and 75% of the subjects were retained in their original form. The purpose of this was to permit maximum differentiation among groups by the final instruments.

METHOD

Subjects

The subjects were 211 female and 165 male student volunteers recruited from undergraduate psychology classes at Iowa State University. The subjects received extra credit toward their grade in psychology for participation in the research.

Instrument

An 82-item questionnaire was constructed containing items for two prospective scales, the analytic and affective dimensions. The items were true-false statements reflecting either self-descriptions or personal attitudes. Items being screened for inclusion on the affective scale were alternated with those being screened for the analytic scale. The 21 true and 20 false affective items were randomly assigned to the odd-numbered positions on the questionnaire. The 20 true and 21 false analytic items were randomly assigned to the even-number positions. A copy of this questionnaire is given in Appendix A.

The affective items were chosen on the basis of two pilot studies on item interrelationships. In the first to these studies, questionnaires were distributed to students in undergraduate psychology classes. The items were intercorrelated. Those items were retained which showed the expected relationships with other items and which were endorsed by a satisfactory proportion of subjects. Items which did not meet these criteria were discarded or revised. The retained items, revised items, and

some newly constructed items comprised the questionnaire which was administered to a second sample of undergraduate psychology students. The data were factor analyzed using Kaiser's Little Jiffy. Items were retained which loaded in expected directions on relevant factors and which were endorsed by at least 25% and no more than 75% of the subjects. Items which failed to meet these criteria were either discarded or revised.

A small number of the analytic items were chosen on the basis of the results of the above pilot studies. However, the interrelationships among the majority of these items have not been previously investigated.

All items in the present research were also included in a study on the adequacy of each item in measuring the construct which it was designed to assess. In this study, two questionnaires were constructed each containing a description of one of the constructs, a list of items designed to measure the construct, and a scale on which the subjects were requested to rate each of the items on the adequacy with which it measured the construct.

The questionnaires were distributed to all counselors and interns in the Student Counseling Service at Iowa State University. Half of the subjects received the questionnaire containing the affective items; half, the questionnaire containing the analytic items. Eight of the former and six of the latter questionnaires were returned. Mean ratings were computed for each item and Spearman-Brown reliability coefficients were determined for both scales. The Spearman-Brown interitem reliability for the questionnaire containing the affective items was .94. The Spearman-

Brown interitem reliability of the questionnaire containing the analytic items was .88. These coefficients were considered to be adequate.

All items which failed to receive a mean rating of at least adequately measuring the construct were not retained for inclusion in this study. This left 46 affective and 41 analytic items remaining. All 41 analytic items were included in the present study. Five more items were eliminated from the affective items on the basis of the variance in the ratings of the individual items. Thus 41 items were retained from both sets. To determine if the elimination of items affected the reliability of the adequacy rating, Spearman-Brown reliability coefficients were calculated for the shortened sets of items. That of the affective items was .95; that of the analytic items was .87. These are quite similar to those computed on the original lists of items. Several items were reworded to obtain equal numbers of items scored for "true" and "false".

Procedure

The subjects were tested in groups. After the subjects were seated in the testing room, the questionnaires and answer sheets were distributed. The subjects were requested to indicate their sex on the answer sheet and to complete the questionnaire indicating whether each item was true or false as applied to themselves. All responses were anonymous.

The data were subjected to four analyses: principal axis factor analysis with varimax rotation, principal axis analysis with quartimax rotation, unrotated alpha analysis, and alpha analysis with quartimax rotation. Separate analyses were done across sex and across scales

such that four different data sets were formed: affective items - male subjects, affective items - female subjects, analytic items - male subjects, analytic items - female subjects. The percentage of subjects endorsing each item was also calculated within each data set.

RESULTS

In the data obtained from male subjects, 15 factors were extracted from the affective items using the principal axis analysis. When these factors were rotated to a varimax solution, the following factors were identified: Factor 1: Tendency toward emotional openness; Factor 2: Tendency to rely upon emotions in decision-making; Factor 3: Tendency to value emotional control; Factor 4: Tendency to cry; Factor 5: Intensity of emotional experience; Factor 6: Defined by item #45; Factor 7: Tendency to dislike requesting help; Factor 8: Defined by item #79; Factor 9: Tendency to equate dependency with weakness; Factor 10: Tendency to maintain emotional control; Factor 11: Tendency to hide feelings; Factor 12: Defined by item #47; Factor 13: Tendency to initiate warm physical contact; Factor 14: Defined by item #7; Factor 15: Defined by item #1. The items loading on each of these factors are given in Appendix B.

The following factors were identified when the factors extracted from the responses of the male sample to the affective items were rotated to a quartimax solution: Factor 1: Tendency toward emotional openness; Factor 2: Tendency to rely upon emotions in decision-making; Factor 3: Tendency to value emotional control; Factor 4: Tendency to cry; Factor 5: Intensity of emotional experience; Factor 6: Defined by item #45; Factor 7: Tendency to dislike requesting help; Factor 8: Defined by item #79; Factor 9: Tendency to equate dependency with weakness; Factor 10: Tendency to maintain emotional control; Factor 11: Defined by item #57; Factor 12: Defined by item #47; Factor 13: Tendency to initiate warm

physical contact; Factor 14: Defined by item #7; Factor 15: Defined by item #1. The items loading on each of these factors are given in Appendix C.

In the data obtained from male subjects, 15 factors were extracted from the affective items using the alpha analysis. The items loading on the first unrotated factor are given in Table 1. The following factors were identified when all of those extracted using the alpha analysis were rotated to a quartimax solution: Factor 1: Tendency toward emotional openness; Factor 2: Intensity of emotional experience; Factor 3: Tendency to value emotional control; Factor 4: Tendency to rely upon emotions in decision-making; Factor 5: Tendency to cry; Factor 6: Defined by item #79; Factor 7: Defined by item #21; Factor 8: Tendency to dislike requesting help; Factor 9: Tendency to equate dependency with weakness; Factor 10: Tendency to maintain emotional control; Factor 11: Defined by item #57; Factor 12: Defined by item #47; Factor 13: Defined by item #3; Factor 14: Defined by item #7; Factor 15: Defined by item #1. The items loading on each of these factors are given in Appendix D.

There were four affective items, #19, #29, #35, and #37, which were endorsed by at least 75% of the male sample. There were no affective items which were endorsed by 25% or less of the male sample. The percentage of male subjects endorsing each of the affective items is given in Appendix E.

In the data obtained from female subjects, 14 factors were extracted from the affective items using the principal axis analysis. When these factors were rotated to a varimax solution, the following factors were

Table 1. Item loadings on the first unrotated alpha factor extracted from responses of male subjects to affective items

Item	Factor loadings in parentheses
63. I am very open about how I feel.	(-.73)
33. I am a very expressive person.	(-.63)
53. I rarely show my feelings.	(.61)
71. I frequently confide in others about my problems.	(-.59)
17. I readily talk about my feelings.	(-.54)
73. I feel unable to tell anyone all about myself.	(.51)
3. I rarely hug people spontaneously.	(.50)
15. I usually let people know how I feel about things.	(-.49)
25. When upset, I try to hide it.	(.49)
59. Very few people really know me well.	(.49)
75. I have many strong emotional ties.	(-.47)
69. It is easy to get to know me.	(-.46)
11. I am very emotional.	(-.44)
9. It is not unusual for me to touch a person with whom I am speaking.	(-.42)
13. I am uncomfortable when people express strong emotions in public.	(.41)
7. Emotions should be developed to their full potential.	(-.40)
31. I dislike asking others for help.	(.38)
55. Truly strong people are not emotionally dependent on other people.	(.37)
19. I rarely cry.	(.36)
41. I hide my feelings so well that people sometimes hurt me without knowing it.	(.34)
45. Emotional appeals are usually successful in influencing me to change my opinion.	(-.31)
77. It is hard for me to ask for help even when I can return the favor.	(.30)
39. I seldom tell people when I'm not feeling well.	(.33)

identified: Factor 1: Tendency to reveal oneself to others; Factor 2: Defined by item #45; Factor 3: Tendency to cry; Factor 4: Tendency to equate dependency with weakness; Factor 5: Tendency toward emotional openness; Factor 6: Tendency to initiate warm physical contact; Factor 7: Tendency to maintain emotional control; Factor 8: Defined by item #1; Factor 9: Defined by item #23; Factor 10: Tendency to misrepresent feelings; Factor 11: Tendency to dislike requesting help; Factor 12: Defined by item #57; Factor 13: Attitude toward expression of intense emotions; Factor 14: Defined by item #47. The items loading on each of these factors is given in Appendix F.

The following factors were identified when the factors extracted from the responses of the female sample to the affective items were rotated to a quartimax solution: Factor 1: Tendency toward emotional openness; Factor 2: Intensity of emotional experience; Factor 3: Tendency to cry; Factor 4: Tendency to equate dependency with weakness; Factor 5: Attitude toward expression of intense emotions; Factor 6: Tendency to initiate warm physical contact; Factor 7: Tendency to maintain emotional control; Factor 8: Defined by item 29; Factor 9: Defined by item #23; Factor 10: Defined by item #1; Factor 11: Tendency to dislike requesting help; Factor 12: Tendency to misrepresent feelings; Factor 13: Tendency to reveal oneself to others; Factor 14: Defined by item #43. The items loading on each of these factors are given in Appendix G.

In the data obtained from the female subjects, 14 factors were extracted from the affective items using the alpha analysis. The items loading on the first unrotated factor are given in Table 2. The following

Table 2. Item loadings on the first unrotated alpha factor extracted from responses of female subjects to affective items

Item	Factor loadings in parentheses
63. I am very open about how I feel.	(-.70)
53. I rarely show my feelings.	(.66)
33. I am a very expressive person.	(-.60)
11. I am very emotional.	(-.57)
19. I rarely cry.	(.50)
17. I readily talk about my feelings.	(-.48)
41. I hide my feelings so well that people sometimes hurt me without knowing it.	(.47)
59. Very few people really know me well.	(.44)
39. I seldom tell people when I'm not feeling well.	(.43)
31. I dislike asking others for help.	(.43)
71. I frequently confide in others about my problems.	(-.43)
15. I usually let people know how I feel about things.	(-.42)
25. When upset, I try to hide it.	(.42)
77. It is hard for me to ask for help even when I can return the favor.	(.41)
3. I rarely hug people spontaneously.	(.40)
75. I have many strong emotional ties.	(-.40)
73. I feel unable to tell anyone all about myself.	(.39)
9. It is not unusual for me to touch a person with whom I am speaking.	(-.36)
79. I usually react to things spontaneously.	(-.36)
69. It is easy to get to know me.	(-.34)
49. When disappointed, I feel like crying.	(-.33)
67. Dependency is a form of weakness.	(.31)

factors were identified when all of those extracted using the alpha analysis were rotated to a quartimax solution: Factor 1: Tendency toward emotional openness; Factor 2: Intensity of emotional experience; Factor 3: Tendency to maintain emotional control; Factor 4: Tendency to equate dependency with weakness; Factor 5: Defined by item #57; Factor 6: Tendency to initiate warm physical contact; Factor 7: Defined by item #23; Factor 8: Tendency to misrepresent feelings; Factor 9: Defined by item #1; Factor 10: Tendency to dislike requesting help; Factor 11: Tendency to cry; Factor 12: Attitude toward expression of strong emotions; Factor 13: Tendency to reveal oneself to others; Factor 14: Defined by item #71. The items loading on each of these factors are given in Appendix H.

There were seven affective items, #5, #29, #35, #37, #43, #49, and #81, which were endorsed by at least 75% of the female sample. There were no affective items which were endorsed by 25% or less of the female sample. The percentage of female subjects endorsing each of the affective items is given in Appendix I.

In the data obtained from male subjects, 14 factors were extracted from the analytic items using the principal axis analysis. When these factors were rotated to a varimax solution, the following factors were identified: Factor 1: Attitude toward philosophy; Factor 2: Tendency to behave logically; Factor 3: Attitude toward science; Factor 4: Attitude toward puzzles; Factor 5: Disinclination toward reading; Factor 6: Attitude toward engaging in sustained problem-solving activity; Factor 7: Undefined; Factor 8: Affinity for chess; Factor 9: Defined by items #6 and #82; Factor 10: Defined by item #30; Factor 11: Practical versus

theoretical interests; Factor 12: Defined by item #42; Factor 13: Breadth of intellectual interests; Factor 14: Undefined. The items loading on each of these factors are given in Appendix J.

The following factors were identified when the factors extracted from the responses of the male sample to the analytic items were rotated to a quartimax solution: Factor 1: Attitude toward philosophy; Factor 2: Tendency to behave logically; Factor 3: Attitude toward science; Factor 4: Attitude toward puzzles; Factor 5: Disinclination toward reading; Factor 6: Attitude toward engaging in sustained problem-solving activity; Factor 7: Undefined; Factor 8: Affinity for chess; Factor 9: Defined by items #6 and #82; Factor 10: Defined by item #30; Factor 11: Practical versus theoretical interests; Factor 12: Defined by item #42; Factor 13: Breadth of intellectual interests; Factor 14: Undefined. The items loading on each of these factors are given in Appendix K.

In the data obtained from the male subjects, 14 factors were extracted from the analytic items using the alpha analysis. The items loading on the first unrotated factor are given in Table 3. The following factors were identified when all of those extracted using the alpha analysis were rotated to a quartimax solution: Factor 1: Attitude toward science; Factor 2: Tendency to behave logically; Factor 3: Attitude toward puzzles; Factor 4: Attitude toward philosophy; Factor 5: Attitude toward engaging in sustained problem-solving activity; Factor 6: Disinclination toward reading; Factor 7: Undefined; Factor 8: Defined by items #6 and #82; Factor 9: Affinity for chess; Factor 10: Defined by item #30; Factor 11: Undefined; Factor 12: Practical versus

Table 3. Item loadings on the first unrotated alpha factor extracted from responses of male subjects to analytic items

Item	Factor loadings in parentheses
76. I am intellectually curious about things in general.	(-.58)
20. I enjoy working on challenging problems that require deep thought.	(-.57)
44. I enjoy philosophical discussions with friends.	(-.57)
58. I become bored rapidly with long, complex discussions.	(.57)
4. I have little interest in theoretical problems.	(.52)
42. I rarely enjoy attempting to solve a problem.	(.47)
62. I know very little about modern science.	(.45)
50. I often make decisions without carefully thinking out the alternatives.	(.44)
22. I become impatient with philosophical discussions.	(.42)
70. I dislike reading scientific articles.	(.42)
72. I solve problems by listing all the possible solutions I can.	(-.42)
8. I am logical in the way I plan my work.	(-.41)
48. I would enjoy being a famous scientist.	(-.41)
54. I rarely go to lectures simply because I enjoy them.	(.41)
68. I think I would dislike the life of a scientist.	(.41)
32. I attempt to be well-informed on a wide variety of subjects.	(-.40)
38. I find philosophy boring.	(.40)
34. I would like to make an important contribution to science.	(-.39)
74. I dislike working on mathematical problems.	(.39)
16. I have an inquiring mind.	(-.37)
28. I like to explore new ideas even though it may be a total waste of time.	(-.36)
52. I dislike being given a puzzle or problem to solve.	(.36)
60. My behavior is based on reason and logic.	(-.34)
64. I am more interested in practical than theoretical matters.	(.31)

theoretical interests; Factor 13: Breadth of intellectual interests; Factor 14: Defined by item #42. The items loading on each of these factors are given in Appendix L.

There were seven analytic items, #10, #16, #28, #32, #36, #64, and #76, which were endorsed by at least 75% of the male sample. There were four analytic items, #6, #42, #52, and #66, which were endorsed by 25% or less of the male sample. The percentage of male subjects endorsing each of the analytic items is given in Appendix M.

In the data obtained from female subjects, 15 factors were extracted from the analytic items using the principal axis analysis. When these factors were rotated to a varimax solution, the following factors were identified: Factor 1: Attitude toward puzzles; Factor 2: Attitude toward science; Factor 3: Disinclination toward reading; Factor 4: Defined by item #76; Factor 5: Attitude toward philosophy; Factor 6: Tendency to behave logically; Factor 7: Affinity for chess; Factor 8: Practical versus theoretical interests; Factor 9: Attitude toward engaging in sustained problem-solving activity; Factor 10: Defined by item #74; Factor 11: Tendency toward impulsive, impractical thinking; Factor 12: Undefined; Factor 13: Tendency to value intellectualism; Factor 14: Defined by item #28; Factor 15: Defined by item #82. The items loading on each of these factors are given in Appendix N.

The following factors were identified when the factors extracted from the responses of the female sample to the analytic items were rotated to a quartimax solution: Factor 1: Attitude toward puzzles; Factor 2: Attitude toward science; Factor 3: Tendency to behave logically; Factor

4: Disinclination toward reading; Factor 5: Attitude toward philosophy; Factor 6: Affinity for chess; Factor 7: Defined by item #76; Factor 8: Attitude toward engaging in sustained problem-solving activity; Factor 9: Practical versus theoretical interests; Factor 10: Defined by item #74; Factor 11: Tendency toward impulsive, impractical thinking; Factor 12: Undefined; Factor 13: Tendency to value intellectualism; Factor 14: Defined by item #28; Factor 15: Defined by item #82. The items loading on each of these factors are given in Appendix O.

In the data obtained from the female subjects, 15 factors were extracted from the analytic items using the alpha analysis. The items loading on the first unrotated factor are given in Table 4. The following factors were identified when all of those extracted using the alpha analysis were rotated to a quartimax solution: Factor 1: Attitude toward puzzles; Factor 2: Tendency to behave logically; Factor 3: Attitude toward science; Factor 4: Practical versus theoretical interests; Factor 5: Attitude toward philosophy; Factor 6: Defined by item #82; Factor 7: Affinity for chess; Factor 8: Disinclination toward reading; Factor 9: Undefined; Factor 10: Attitude toward engaging in sustained problem-solving activity; Factor 11: Tendency toward impulsive, impractical thinking; Factor 12: Defined by item #74; Factor 13: Tendency to value intellectualism; Factor 14: Defined by item #28; Factor 15: Defined by item #76. The items loading on each of these factors are given in Appendix P.

There were six analytic items, #8, #10, #16, #28, #64, and #76, which were endorsed by at least 75% of the female sample. There were six analytic items, #6, #14, #42, #48, #66, and #82, which were endorsed

Table 4. Item loadings on the first unrotated alpha factor extracted from responses of female subjects to analytic items

Item	Factor loadings in parentheses
42. I rarely enjoy attempting to solve a problem.	(-.54)
52. I dislike being given a puzzle or problem to solve.	(-.54)
20. I enjoy working on challenging problems that require deep thought.	(.51)
4. I have little interest in theoretical problems.	(-.49)
44. I enjoy philosophical discussions with friends.	(.49)
70. I dislike reading scientific articles.	(-.49)
58. I become bored rapidly with long, complex discussions.	(-.48)
56. I rarely work on a problem longer than most people.	(-.46)
22. I become impatient with philosophical discussions.	(-.44)
34. I would like to make an important contribution to science.	(.43)
62. I know very little about modern science.	(-.43)
48. I would enjoy being a famous scientist.	(.41)
68. I think I would dislike the life of a scientist.	(-.39)
54. I rarely go to lectures simply because I enjoy them.	(-.38)
16. I have an inquiring mind.	(.37)
18. I don't like to work on puzzles.	(-.37)
38. I find philosophy boring.	(-.36)
26. I seldom read a book I do not have to read.	(-.35)
66. I never stay up late working on some problem in which I am interested.	(-.34)
2. I am very good at solving puzzles.	(.33)
32. I attempt to be well-informed on a wide variety of subjects.	(.32)
40. I am regarded by others as an intellectual.	(.30)
74. I dislike working on mathematical problems.	(-.30)

by 25% or less of the female samples. The percentage of female subjects endorsing each of the analytic items is given in Appendix Q.

DISCUSSION

Analyses of Affective Items

In the male sample, the structure of the following 12 factors remained similar across all three of the rotated analyses: tendency toward emotional openness, tendency to rely upon emotions for decisions, tendency to value emotional control, intensity of emotional experience, tendency to cry, item #79, tendency to dislike requesting help, tendency to equate dependency with weakness, tendency to maintain emotional control, item #47, item #7, and item #1. The order of extraction of each of these factors in the different analyses is given in Table 5. Tendency toward emotional openness, the factor accounting for the most variance across rotated analyses, is highly similar to the first unrotated alpha factor with respect to item loadings. No other rotated factor was similar to the first unrotated alpha factor. The first unrotated alpha factor was therefore defined as tendency toward emotional openness.

In the female sample, the structure of the following 11 factors remained similar across all three of the rotated analyses: tendency toward emotional openness, tendency to maintain emotional control, tendency to cry, tendency to equate dependency with weakness, tendency to initiate warm physical contact, attitude toward expression of intense emotions, item #23, item #1, tendency to misrepresent feelings, tendency to dislike requesting help, and tendency to reveal oneself to others. The order of extraction of each of these factors in the different analyses is given in Table 6. As in the male sample, the first unrotated alpha factor

Table 5: Order of extraction of factors from responses of male subjects to the affective items

Factor title	Alpha-quartimax	Principal axis-quartimax	Principal axis-varimax
Tendency toward emotional openness	Factor 1	Factor 1	Factor 1
Reliance upon emotions in decision-making	Factor 4	Factor 2	Factor 2
Tendency to value emotional control	Factor 3	Factor 3	Factor 3
Intensity of emotional experience	Factor 2	Factor 5	Factor 5
Tendency to cry	Factor 5	Factor 4	Factor 4
Defined by item #79	Factor 6	Factor 8	Factor 8
Tendency to dislike requesting help	Factor 8	Factor 7	Factor 7
Tendency to equate dependency with weakness	Factor 9	Factor 9	Factor 9
Tendency to maintain emotional control	Factor 10	Factor 10	Factor 10
Defined by item #47	Factor 12	Factor 12	Factor 12
Defined by item #7	Factor 14	Factor 14	Factor 14
Defined by item #1	Factor 15	Factor 15	Factor 15

Table 6. Order of extraction of factors from responses of female subjects to the affective items

Factor title	Alpha- quartimax	Principal axis- quartimax	Principal axis- varimax
Tendency toward emotional openness	Factor 1	Factor 1	Factor 5
Tendency to maintain emotional control	Factor 3	Factor 7	Factor 7
Tendency to cry	Factor 11	Factor 3	Factor 3
Tendency to equate dependency with weakness	Factor 4	Factor 4	Factor 4
Tendency to initiate warm physical contact	Factor 6	Factor 6	Factor 6
Attitude toward expression of intense emotions	Factor 12	Factor 5	Factor 13
Defined by item #23	Factor 7	Factor 9	Factor 9
Defined by item #1	Factor 9	Factor 10	Factor 8
Tendency to misrepresent feelings	Factor 8	Factor 12	Factor 10
Tendency to dislike requesting help	Factor 10	Factor 11	Factor 11
Tendency to reveal oneself to others	Factor 13	Factor 13	Factor 1

appeared highly similar to the factor labeled tendency toward emotional openness and bore little similarity to any other rotated factor. The first unrotated alpha factor was therefore defined as tendency toward emotional openness.

Although the factor structure of the affective items was relatively stable across analyses in both the male and female samples, the factor structure did not remain as stable across sex. Only six factors appeared in the results of all six rotated analyses. These six factors were: tendency toward emotional openness, tendency to dislike requesting help, tendency to equate dependency with weakness, tendency to maintain emotional control, tendency to cry, and item #1. Two additional factors appeared in five of the six rotated analyses. Intensity of emotional experience appeared in all three rotated analyses within the male sample and in two analyses performed on the responses of the female sample. Tendency to initiate warm physical contact appeared in all three analyses in the female sample and two analyses in the male sample.

There was no single factor which encompassed the characteristics as defined by the construct, the affective dimension. Instead, several specific factors were defined which appeared related to it. There were six factors which were considered central to the affective dimension and that were stable across analyses in the female sample. These six factors were: tendency toward emotional openness, tendency to maintain emotional control, intensity of emotional experience, attitude toward expression of intense emotions, tendency to reveal oneself to others, and tendency to misrepresent feelings. There were five factors which were considered

central to the affective dimension and which were stable across analyses in the male sample. These five factors were: tendency toward emotional openness, tendency to maintain emotional control, intensity of emotional experience, tendency to value emotional control, and tendency to rely upon emotions in decision-making. Only three of these factors, tendency toward emotional openness, tendency to maintain emotional control, and intensity of emotional experience, appear in the analyses for both sexes.

In considering the factors that appear to be central to the affective dimension, the structure is somewhat different across sex. The meaning of this is unclear. It is possible that a factor which was present in the responses of one sex might be present in the responses of the other but may not account for a large enough proportion of variance to have been extracted. The results may reflect a legitimate difference in the covariation of responses of males and females to this particular sample of items which might disappear given a different sample of similar items. The results could also reflect a legitimate difference in covariation of responses of males and females which would remain stable across samples of similar items.

The results of the analyses of the affective items then indicate that self-reports of several characteristics were uncorrelated with self-reports of other characteristics to which they had been hypothesized to be related. Furthermore, the factor pattern of these self-reports was not stable across sex in this study. The behavioral implications of this finding can be determined only through future research.

Analyses of Analytic Items

In the male sample, the factor structure of the analytic items was stable across rotated analyses. The following twelve factors were defined in all three of the rotated analyses: attitude toward philosophy, tendency to behave logically, attitude toward science, attitude toward puzzles, disinclination toward reading, attitude toward engaging in sustained problem-solving activity, affinity for chess, items #6 and #82, item #30, practical versus theoretical interests, item #42, and breadth of intellectual interests. There were two undefined factors which also had similar item loadings across analyses. The order of extraction of each of these factors in the different analyses is given in Table 7. The first unrotated alpha factor did not appear similar to any single rotated factor and was not easily interpretable. The first unrotated alpha factor was therefore not defined.

In the female sample, the factor structure of the analytic items was also stable across rotated analyses. The following 14 factors were defined in all three of the rotated analyses: attitude toward puzzles, tendency to behave logically, attitude toward science, practical versus theoretical interests, attitude toward philosophy, affinity for chess, item #76, item #82, disinclination toward reading, attitude toward engaging in sustained problem-solving activity, tendency toward impulsive, impractical thinking, item #74, tendency to value intellectualism, and item #28. There was one undefined factor which also had similar item loadings across all three analyses. The order of extraction of each of these factors is given in Table 8. As in the male sample, the first

Table 7. Order of extraction of factors from responses of male subjects to the analytic items

Factor title	Alpha-quartimax	Principal axis-quartimax	Principal axis-varimax
Attitude toward philosophy	Factor 4	Factor 1	Factor 1
Tendency to behave logically	Factor 2	Factor 2	Factor 2
Attitude toward science	Factor 1	Factor 3	Factor 3
Attitude toward puzzles	Factor 3	Factor 4	Factor 4
Disinclination toward reading	Factor 6	Factor 5	Factor 5
Attitude toward engaging in sustained problem-solving activity	Factor 5	Factor 6	Factor 6
Affinity for chess	Factor 9	Factor 8	Factor 8
Defined by items #6 and #82	Factor 8	Factor 9	Factor 9
Defined by item #30	Factor 10	Factor 10	Factor 10
Practical versus theoretical interests	Factor 12	Factor 11	Factor 11
Defined by item #42	Factor 14	Factor 12	Factor 12
Breadth of intellectual interests	Factor 13	Factor 13	Factor 13
Undefined (items #10, #56, #80, #40)	Factor 7	Factor 7	Factor 7
Undefined (items #36, #80, #24)	Factor 11	Factor 14	Factor 14

Table 8. Order of extraction of factors from responses of female subjects to the analytic items

Factor title	Alpha-quartimax	Principal axis-quartimax	Principal axis-varimax
Attitude toward puzzles	Factor 1	Factor 1	Factor 1
Tendency to behave logically	Factor 2	Factor 3	Factor 6
Attitude toward science	Factor 3	Factor 2	Factor 2
Practical versus theoretical interests	Factor 4	Factor 9	Factor 8
Attitude toward philosophy	Factor 5	Factor 5	Factor 5
Affinity for chess	Factor 7	Factor 6	Factor 7
Defined by item #76	Factor 15	Factor 7	Factor 4
Defined by item #82	Factor 6	Factor 15	Factor 15
Disinclination toward reading	Factor 8	Factor 4	Factor 3
Attitude toward engaging in sustained problem-solving activity	Factor 10	Factor 8	Factor 9
Tendency toward impulsive, impractical thinking	Factor 11	Factor 11	Factor 11
Defined by item #74	Factor 12	Factor 10	Factor 10
Tendency to value intellectualism	Factor 13	Factor 13	Factor 13
Defined by item #28	Factor 14	Factor 14	Factor 14
Undefined (items #54, #72, #10, #36, #30 #20)	Factor 9	Factor 12	Factor 12

unrotated alpha factor did not appear similar to any single rotated factor and was not easily interpretable. The first unrotated alpha factor was therefore not defined.

Although the factor structure of the analytic items was stable across analyses in both the male and the female sample, only 8 factors were stable across sex. These 8 factors were: attitude toward philosophy, tendency to behave logically, attitude toward science, attitude toward puzzles, disinclination toward reading, attitude toward engaging in sustained problem-solving activity, affinity for chess, and practical versus theoretical interests. The majority of factors which did not generalize across sex were either defined by single items or were undefined.

There was no single general factor which encompassed the characteristics as defined by the construct, the analytic dimension. Instead, there were two specific factors which were considered central to the construct and which were stable across sex. These factors were tendency to behave logically and attitude toward engaging in sustained problem-solving activity. There was one factor, tendency toward impulsive, impractical thinking, which was considered central to the construct and which was extracted only from the responses of the female sample. The remaining factors, for the most part, were either related to specific interests such as philosophy, chess, and reading or were defined by specific items.

The results of the analyses on the analytic items indicated that the analytic item pool was factorially complex and that the factor pattern was not stable across sex. However, most of the rotated factors were

related to specific interests or were defined by individual items and were not considered central to the construct. Similarly, the discrepancy across sex was primarily found in undefined factors and in factors defined by single items. There was somewhat less discrepancy across sex in those factors considered central to the analytic dimension.

Implications for Future Research

No general factor was extracted which encompassed all of the primary characteristics defined by either the affective or the analytic dimension. Instead, both sets of items appeared to be factorially complex. Rather than to attempt to combine factors which appeared central to one of the constructs into a single scale, it was decided to attempt to develop each of the factors of interest into a separate scale. This decision was made for a variety of reasons. From a psychometric perspective, higher internal consistency reliability coefficients would be expected in a homogeneous scale as opposed to a factorially complex scale. From a clinical perspective, homogeneous scales are more easily interpretable than complex scales. Construction of a set of homogeneous scales also permits the possibility of developing weighting systems for prediction of specific behaviors in a variety of settings. This flexibility would not be permitted with a single complex scale. From a research perspective, development of homogeneous scales would permit greater simplicity and clarity of constructs. It would also permit future exploration of the relationships among those characteristics. Because of the exploratory nature of the present research, factors which were stable across

analyses in only one of the subject samples will be retained for future research as well as those factors which were stable across sex.

Items were retained for future research for each factor on the basis of two criteria: a loading of at least .30 on the factor in at least half of the analyses in which the factor appeared and an endorsement rate greater than .25 but less than .75. Items which fulfilled the former criterion but not the latter will be revised and further analyzed. The items which were retained for inclusion and revision on each factor are given in Table 9.

The future development of these proposed scales will proceed along lines similar to that of the present study. Items that have been retained on each factor will be used as marker items in future correlational and factor analytic studies. Items which had significant loadings on a factor but which had an unsatisfactory endorsement rate will be revised and new items will be written for each factor. Items which correlate with the marker items in future studies will be retained. All analyses will be done separately for males and females. Because of the sex differences that have emerged in this research, the necessity of conducting separate analyses across sex in future research on these items must be emphasized.

The described research will continue until between 20 and 30 homogeneous items have been selected for each proposed scale. At that time, the scales will be considered ready for external validity studies. It must be emphasized that no external validity studies have been conducted on these items to date. The titles which have been given to the proposed scales have been selected on the basis of the results of factor analytic

Table 9. Items retained for factors considered central to the affective and the analytic dimensions

Factor names	Items
Tendency toward emotional openness	<p>3. I rarely hug people spontaneously.</p> <p>9. It is not unusual for me to touch a person with whom I am speaking.</p> <p>15. I usually let people know how I feel about things.</p> <p>17. I readily talk about my feelings.</p> <p>25. When upset, I try to hide it.</p> <p>33. I am a very expressive person.</p> <p>39. I seldom tell people when I'm not feeling well.</p> <p>41. I hide my feelings so well that people sometimes hurt me without knowing it.</p> <p>53. I rarely show my feelings.</p> <p>59. Very few people really know me well.</p> <p>63. I am very open about how I feel.</p> <p>69. It is easy to get to know me.</p> <p>71. I frequently confide in others about my problems.</p> <p>73. I feel unable to tell anyone all about myself.</p> <p>75. I have many strong emotional ties.</p>

Intensity of emotional experience

- 11. I am very emotional.
- 65. I feel things more intensely than most people.
- 5.^a I can sense what others are feeling more easily than most people.

Tendency to maintain emotional control

- 43.^a I love sentimental songs and stories.

Attitude toward expression of intense emotions

- 11. I am very emotional.
- 61. I am always in control of my temper.
- 37.^a I rarely lose control of myself.
- 7. Emotions should be developed to their full potential.
- 13. I am uncomfortable when people express strong emotion in public.

Tendency to reveal oneself to others

- 71. I frequently confide in others about my problems.
- 41. I hide my feelings so well that people sometimes hurt me without knowing it.
- 59. Very few people really know me well.
- 69. It is easy to get to know me.
- 71. I frequently confide in others about my problems.
- 73. I feel unable to tell anyone all about myself.
- 81.^a I tend to be cautious in my dealings with other persons.

^aItems which will be revised.

Table 9 (Continued)

Factor names	Items
Tendency to value emotional control	<p>13. I am uncomfortable when people express strong emotions in public.</p> <p>23. Children should be taught to control their emotions.</p> <p>27. I consider my ability to control my emotions an invaluable asset.</p>
Reliance upon emotions in decision-making	<p>5. I can sense what others are feeling more easily than most people.</p> <p>13. I am uncomfortable when people express strong emotions in public.</p> <p>51. I find it best to use my feelings as my guide.</p> <p>59. Very few people really know me well.</p> <p>75. I have many strong emotional ties.</p> <p>29.^a Many of my attitudes and opinions are based on my feelings.</p>
Tendency to behave logically	<p>24. It is extremely important to me to be able to see logical, rational reasons for my behavior.</p> <p>46. Some of my friends think my ideas are impractical, if not a bit wild.</p> <p>50. I often make decisions without carefully thinking out the alternatives.</p> <p>54. I rarely go to lectures simply because I enjoy them.</p>

Attitude toward engaging in sustained
problem-solving activity

Tendency toward impulsive, impractical
thinking

60. My behavior is based on reason and logic.

8.^a I am logical in the way I plan my work.

4. I have little interest in theoretical
problems.

20. I enjoy working on challenging problems
that require deep thought.

56. I rarely work on a problem longer than most
people.

58. I become bored rapidly with long, complex
discussions.

66.^a I never stay up late working on some problem
in which I am interested.

46. Some of my friends think my ideas are imprac-
tical, if not a bit wild.

50. I often make decisions without carefully
thinking out the alternatives.

36.^a I enjoy nothing more than a good discussion
about a problem in which I am interested.

studies of self-reports. The labeling of factors is an intuitive, not an empirical process. The behavioral correlates of the factors have yet to be determined. Until these correlates have been delineated through external validity studies, the proposed scales have no place in clinical settings.

REFERENCES

- Bowers, K. S. Situationism in psychology: An analysis and a critique. Psychological Review, 1973, 80, 307-335
- Breger, L. Psychological testing: Treatment and research implications. Journal of Consulting and Clinical Psychology, 1968, 32, 176-181.
- Burdsal, C. A., & Vaughn, D. S. A contrast of the personality structure of college students found in the questionnaire medium by items as compared to parcels. Journal of Genetic Psychology, 1974, 125, 219-224.
- Cattell, R. B., & Bolton, L. S. What pathological dimensions lie beyond the normal dimensions of the 16PF? A comparison of MMPI and 16PF factor domains. Journal of Consulting and Clinical Psychology, 1969, 33, 18-29.
- Cattell, R. B., Eber, H. W., & Tatsouka, M. M. Handbook for the Sixteen Personality Factor Questionnaire (16PF). Champaign: Institute for Personality and Ability Testing, 1974.
- Coates, S., Lord, M., & Jakabovics, E. Field dependence-independence, social-non-social play and sex differences in preschool children. Perceptual and Motor Skills, 1975, 40, 195-202.
- Comrey, A. L. Factored homogeneous item dimensions in personality research. Educational and Psychological Measurement, 1961, 21, 417-431.
- Comrey, A. L. A study of thirty-five personality dimensions. Educational and Psychological Measurement, 1962, 22, 543-552.
- Comrey, A. L. Personality factors compulsion, dependence, hostility, and neuroticism. Educational and Psychological Measurement, 1964, 24, 75-84.
- Comrey, A. L. Scales for measuring compulsion, hostility, neuroticism, and shyness. Psychological Reports, 1965, 16, 697-700.
- Comrey, A. L., & Duffy, K. E. Cattell and Eysenck factor scores related to Comrey personality factors. Multivariate Behavioral Research, 1968, 3, 379-392.
- Comrey, A. L., & Jamison, K. Verification of six personality factors. Educational and Psychological Measurement, 1966, 26, 945-953.

- Comrey, A. L., Jamison, K., & King, N. Integration of two personality factor systems. Multivariate Behavioral Research, 1968, 3, 147-160.
- Comrey, A. L., & Schlesinger, B. Verification and extension of a system of personality dimensions. Journal of Applied Psychology, 1962, 46, 257-262.
- Comrey, A. L., & Soufi, A. Further investigation of some factors found in MMPI items. Educational and Psychological Measurement, 1960, 20, 777-786.
- Comrey, A. L., & Soufi, A. Attempted verification of certain personality factors. Educational and Psychological Measurement, 1961, 21, 113-127.
- Edwards, A. L. Edwards Personal Preference Schedule. New York: Psychological Corporation, 1959.
- Endler, N., & Magnusson, D. Toward an interactional psychology of personality. Psychological Bulletin, 1976, 82, 956-974.
- Goldstein, A. P., & Stein, N. Prescriptive Psychotherapies. New York: Pergamon Press, Inc., 1976.
- Gorsuch, R. L. Factor Analysis. Philadelphia: W. B. Saunders, 1974.
- Howarth, E. A psychometric investigation of Eysenck's Personality Inventory. Journal of Personality Assessment, 1976, 40, 173-185.
- Howarth, E., & Browne, J. A. An item factor analysis of the Eysenck Personality Inventory. British Journal of Social and Clinical Psychology, 1972, 11, 162-174.
- Hunter, S., Overall, J. E., & Butcher, J. N. Factor structure of the MMPI in a psychiatric population. Multivariate Behavioral Research, 1974, 9, 283-301.
- Jackson, D. N. Jackson Personality Inventory Manual. Goshen, N.Y.: Research Psychologists Press, Inc., 1976.
- Kiesler, D. J. Some myths of psychotherapy research and the search for a paradigm. Psychological Bulletin, 1966, 65, 110-136.
- LaForge, F. A correlational study of two personality tests: The MMPI and the Cattell 16PF. Journal of Consulting Psychology, 1962, 26, 402-411.
- Lovegrove, S. A., & Hammond, S. B. A procedure for factoring an unlimited pool of items with results for the CPI using young Australian males. Australian Journal of Psychology, 1973, 25, 29-43.

- Mischel, W. Toward a cognitive social learning reconceptualization of personality. Psychological Review, 1973, 80, 252-283.
- Mitchell, J. V. A comparison of the first and second order dimensions of the 16PF and CPI inventories. Journal of Social Psychology, 1963, 61, 151-166.
- Nichols, R. C., & Schnell, R. R. Factor scores for the California Psychological Inventory. Journal of Consulting Psychology, 1963, 27, 228-235.
- O'Dell, J. W., & Karson, S. Some relationships between the MMPI and the 16PF. Journal of Clinical Psychology, 1969, 25, 279-283.
- Ottomanelli, G. Second order analysis of Comrey's eleven factor solution. Multivariate Behavioral Research, 1972, 7, 299-304.
- Rogers, M. S., & Shure, G. H. An empirical evaluation of the effect of item overlap on factorial stability. Journal of Psychology, 1965, 60, 221-233.
- Schludermann, S., & Schludermann, E. Generalizability of California Psychological Inventory factors. Journal of Psychology, 1970, 74, 43-50.
- Shostrom, E. L. EITS Manual for the Personal Orientation Inventory. San Diego: Educational and Industrial Testing Service, 1966.
- Silverstein, A. B., & Fisher, G. Brief report: Second-order cluster analysis of Personal Orientation Inventory items in a prison sample. Multivariate Behavioral Research, 1975, 10, 503-506.
- Skinner, N. F., & Howarth, E. Cross-media independence of questionnaire-test personality factors. Multivariate Behavioral Research, 1973, 8, 23-40.
- Springbob, H. K., & Struening, E. L. A factor analysis of the California Psychological Inventory in a high school population. Journal of Counseling Psychology, 1964, 11, 173-179.
- Stanley, G., & Watkins, D. A factorial study of Eysenck's psychoticism, extraversion, and neuroticism scales. Australian Psychologist, 1972, 7, 26-32.
- Tosi, D. J., & Hoffman, S. A factor analysis of Personal Orientation Inventory. Journal of Humanistic Psychology, 1972, 12, 86-93.
- Williams, J. D., Dudley, H. K., & Overall, J. E. Validity of the 16PF and the MMPI in a mental hospital setting. Journal of Abnormal Psychology, 1972, 80, 261-270.

ACKNOWLEDGMENTS

I would like to express my gratitude to Dr. Wilbur Layton for his support, suggestions, and patient sharing of his expertise throughout the planning and execution of this research. I would also like to thank Dr. Arnold Kahn, Dr. Judith Krulewitz, Dr. Martin Miller, and Dr. Gary Phye for their suggestions and comments on the design of the research and the preparation of this manuscript.

The experimental procedure and method of recruiting subjects in this project were approved by the Research on Human Subjects Committee.

APPENDIX A

DIRECTIONS

On the answer sheet that has been provided, please indicate your sex in the appropriate column by blackening the circle marked M if male and F if female. Do not put your name or any other identifying information on the answer sheet.

On the following pages you will find a series of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you. Please indicate your answers on the answer sheet. If you agree with a statement or decide that it describes you, indicate TRUE by blackening the circle marked A. If you disagree with a statement or feel that it is not descriptive of you, indicate FALSE by blackening the circle marked B.

In marking your answers on the answer sheet, be sure that the number of the statement you have just read is the same as the number on the answer sheet. Answer every statement true or false, even if you are not completely sure of your answer.

Please do not make any marks in the questionnaire.

1. Sensitivity to others' feelings may impede one's progress.
2. I am very good at solving puzzles.
3. I rarely hug people spontaneously.
4. I have little interest in theoretical problems.
5. I can sense what others are feeling more easily than most people.
6. The value of individuals lies primarily in their intellectual accomplishments.
7. Emotions should be developed to their full potential.
8. I am logical in the way I plan my work.
9. It is not unusual for me to touch a person with whom I am speaking.
10. Problems are best approached using thought and logic.
11. I am very emotional.
12. I am widely read.
13. I am uncomfortable when people express strong emotions in public.
14. I play chess well.
15. I usually let people know how I feel about things.
16. I have an inquiring mind.
17. I readily talk about my feelings.
18. I don't like to work on puzzles.
19. I rarely cry.
20. I enjoy working on challenging problems that require deep thought.
21. I often pretend to feel sorrier about something than I really am.
22. I become impatient with philosophical discussions.
23. Children should be taught to control their emotions.
24. It is extremely important to me to be able to see logical, rational reasons for my behavior.

25. When upset, I try to hide it.
26. I seldom read a book I do not have to read.
27. I consider my ability to control my emotions an invaluable asset.
28. I like to explore new ideas, even though it may be a total waste of time.
29. Many of my attitudes and opinions are based on my feelings.
30. I rarely write down possible solutions to problems.
31. I dislike asking others for help.
32. I attempt to be well informed on a wide variety of subjects.
33. I am a very expressive person.
34. I would like to make an important contribution to science.
35. I don't hide behind a facade.
36. I enjoy nothing more than a good discussion about a problem in which I am interested.
37. I rarely lose control of myself.
38. I find philosophy boring.
39. I seldom tell people when I'm not feeling well.
40. I am regarded by others as an intellectual.
41. I hide my feelings so well that people sometimes hurt me without knowing it.
42. I rarely enjoy attempting to solve a problem.
43. I love sentimental songs and stories.
44. I enjoy philosophical discussions with friends.
45. Emotional appeals are usually successful in influencing me to change my opinion.
46. Some of my friends think my ideas are impractical, if not a bit wild.
47. Love is the most important thing in life.
48. I would enjoy being a famous scientist.

49. When disappointed, I feel like crying.
50. I often make decisions without carefully thinking out the alternatives.
51. I find it best to use my feelings as my guide.
52. I dislike being given a puzzle or problem to solve.
53. I rarely show my feelings.
54. I rarely go to lectures simply because I enjoy them.
55. Truly strong people are not emotionally dependent on other people.
56. I rarely work on a problem longer than most people.
57. The happy person tends to be poised and emotionally controlled.
58. I become bored rapidly with long, complex discussions.
59. Very few people really know me well.
60. My behavior is based on reason and logic.
61. I am always in control of my temper.
62. I know very little about modern science.
63. I am very open about how I feel.
64. I am more interested in practical than theoretical matters.
65. I feel things more intensely than most people.
66. I never stay up late working on some problem in which I am interested.
67. Dependency is a form of weakness.
68. I think I would dislike the life of a scientist.
69. It is easy to get to know me.
70. I dislike reading scientific articles.
71. I frequently confide in others about my problems.
72. I solve problems by listing all the possible solutions I can.

- 73. I feel unable to tell anyone all about myself.
- 74. I dislike working on mathematical problems.
- 75. I have many strong emotional ties.
- 76. I am intellectually curious about things in general.
- 77. It is hard for me to ask for help even when I can return the favor.
- 78. I don't like to play chess.
- 79. I usually react to things spontaneously.
- 80. Scientific research is of little value unless it has practical applications.
- 81. I tend to be cautious in my dealings with other persons.
- 82. I am not satisfied with simple solutions to complex problems.

APPENDIX B

Item Loadings on Factors Extracted from Responses of Male Subjects to
Affective Items Using a Principal Axis Analysis and Rotated to a
Varimax Solution

Factor 1: Tendency toward emotional openness

- 15. I usually let people know how I feel about things. (.78)
- 25. When upset, I try to hide it. (-.64)
- 63. I am very open about how I feel. (.60)
- 53. I rarely show my feelings. (-.60)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (-.44)
- 17. I readily talk about my feelings. (.43)
- 33. I am a very expressive person. (.41)
- 35. I don't hide behind a facade. (.38)
- 69. It is easy to get to know me. (.31)

Factor 2: Tendency to rely upon emotions for decision-making

- 29. Many of my attitudes and opinions are based on my feelings. (.71)
- 59. Very few people really know me well. (-.59)
- 51. I find it best to use my feelings as my guide. (.50)
- 75. I have many strong emotional ties. (.43)
- 5. I can sense what others are feeling more easily than most people. (.35)
- 13. I am uncomfortable when people express strong emotions in public. (-.31)

Factor 3: Tendency to value emotional control

- 27. I consider my ability to control my emotions an invaluable asset. (.73)
- 23. Children should be taught to control their emotions. (.51)
- 13. I am uncomfortable when people express strong emotions in public. (-.43)

Factor 4: Tendency to cry

- 49. When disappointed, I feel like crying. (.76)
- 19. I rarely cry. (-.71)
- 11. I am very emotional. (.40)

APPENDIX B (Continued)

Factor 5: Intensity of emotional experience

- 65. I feel things more intensely than most people. (.76)
- 43. I love sentimental songs and stories. (.66)
- 5. I can sense what others are feeling more easily than most people. (.49)
- 11. I am very emotional. (.41)
- 17. I readily talk about my feelings. (.32)

Factor 6: Defined by item #45

- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.75)
- 69. It is easy to get to know me. (.42)
- 21. I often pretend to feel sorrier about something than I really am. (.35)
- 59. Very few people really know me well. (-.35)

Factor 7: Tendency to dislike requesting help

- 31. I dislike asking others for help. (.84)
- 77. It is hard for me to ask for help even when I can return the favor. (.80)
- 71. I frequently confide in others about my problems. (-.41)

Factor 8: Defined by item #79

- 79. I usually react to things spontaneously. (.79)
- 21. I often pretend to feel sorrier about something than I really am. (.51)

Factor 9: Tendency to equate dependency with weakness

- 67. Dependency is a form of weakness. (.83)
- 55. Truly strong people are not emotionally dependent on other people. (.74)

Factor 10: Tendency to maintain emotional control

- 37. I rarely lose control of myself. (.74)
- 61. I am always in control of my temper. (.56)
- 11. I am very emotional. (-.44)

Factor 11: Tendency to hide feelings

- 39. I seldom tell people when I'm not feeling well. (.62)
- 57. The happy person tends to be poised and emotionally controlled. (.57)

APPENDIX B (Continued)

Factor 11 (Continued)

- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.55)
- 73. I feel unable to tell anyone all about myself. (.33)
- 13. I am uncomfortable when people express strong emotions in public. (.32)
- 55. Truly strong people are not emotionally dependent on other people. (.32)

Factor 12: Defined by item #47

- 47. Love is the most important thing in life. (.70)
- 35. I don't hide behind a facade. (.50)
- 21. I often pretend to feel sorrier about something than I really am. (-.39)
- 23. Children should be taught to control their emotions. (.35)

Factor 13: Tendency to initiate warm physical contact

- 9. It is not unusual for me to touch a person with whom I am speaking. (.71)
- 3. I rarely hug people spontaneously. (-.69)
- 73. I feel unable to tell anyone all about myself. (-.46)
- 53. I rarely show my feelings. (-.41)
- 63. I am very open about how I feel. (.39)
- 71. I frequently confide in others about my problems. (.38)

Factor 14: Defined by item #7

- 7. Emotions should be developed to their full potential. (.77)
- 81. I tend to be cautious in my dealings with other persons. (-.59)
- 23. Children should be taught to control their emotions. (-.32)

Factor 15: Defined by item #1

- 1. Sensitivity to others' feelings may impede one's progress. (.80)
- 61. I am always in control of my temper. (-.30)

APPENDIX C

Item Loadings on Factors Extracted from Responses of Male Subjects to
Affective Items Using a Principal Axis Analysis and Rotated to a
Quartimax Solution

Factor 1: Tendency toward emotional openness

- 63. I am very open about how I feel. (.73)
- 15. I usually let people know how I feel about things. (.72)
- 53. I rarely show my feelings. (-.70)
- 25. When upset, I try to hide it. (-.68)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (-.53)
- 17. I readily talk about my feelings. (.52)
- 33. I am a very expressive person. (.51)
- 73. I feel unable to tell anyone all about myself. (-.47)
- 71. I frequently confide in others about my problems. (.42)
- 39. I seldom tell people when I'm not feeling well. (-.40)
- 59. Very few people really know me well. (-.38)
- 69. It is easy to get to know me. (-.38)
- 9. It is not unusual for me to touch a person with whom I am speaking. (.34)
- 35. I don't hide behind a facade. (.32)
- 75. I have many strong emotional ties. (.31)

Factor 2: Tendency to rely upon emotions for decision-making

- 29. Many of my attitudes and opinions are based on my feelings. (.71)
- 51. I find it best to use my feelings as my guide. (.51)
- 59. Very few people really know me well. (-.57)
- 75. I have many strong emotional ties. (.42)
- 5. I can sense what others are feeling more easily than most people. (.35)
- 13. I am uncomfortable when people express strong emotions in public. (-.31)

Factor 3: Tendency to value emotional control

- 27. I consider my ability to control my emotions an invaluable asset. (.72)
- 23. Children should be taught to control their emotions. (.54)
- 13. I am uncomfortable when people express strong emotions in public. (-.36)

APPENDIX C (Continued)

Factor 4: Tendency to cry

- 49. When disappointed, I feel like crying. (.81)
- 19. I rarely cry. (-.54)
- 13. I am uncomfortable when people express strong emotions in public. (.35)
- 11. I am very emotional. (.30)

Factor 5: Intensity of emotional experience

- 65. I feel things more intensely than most people. (.76)
- 43. I love sentimental songs and stories. (.67)
- 5. I can sense what others are feeling more easily than most people. (.47)
- 11. I am very emotional. (.40)
- 17. I readily talk about my feelings. (.30)

Factor 6: Defined by item #45

- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.74)
- 21. I often pretend to feel sorrier about something than I really am. (.38)
- 69. It is easy to get to know me. (.31)

Factor 7: Tendency to dislike requesting help

- 31. I dislike asking others for help. (.82)
- 77. It is hard for me to ask for help even when I can return the favor. (.78)
- 71. I frequently confide in others about my problems. (-.38)

Factor 8: Defined by item #79

- 79. I usually react to things spontaneously. (.79)
- 21. I often pretend to feel sorrier about something than I really am. (.53)

Factor 9: Tendency to equate dependency with weakness

- 67. Dependency is a form of weakness. (.83)
- 55. Truly strong people are not emotionally dependent on other people. (.72)

APPENDIX C (Continued)

Factor 10: Tendency to maintain emotional control

- 37. I rarely lose control of myself. (.74)
- 61. I am always in control of my temper. (.51)
- 11. I am very emotional. (-.47)

Factor 11: Defined by item #57

- 57. The happy person tends to be poised and emotionally controlled. (.70)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.43)
- 39. I seldom tell people when I'm not feeling well. (.40)
- 19. I rarely cry. (.37)
- 55. Truly strong people are not emotionally dependent on other people. (.35)
- 15. I usually let people know how I feel about things. (.30)

Factor 12: Defined by item #47

- 47. Love is the most important thing in life. (.73)
- 35. I don't hide behind a facade. (.46)
- 21. I often pretend to feel sorrier about something than I really am. (-.37)
- 23. Children should be taught to control their emotions. (.34)

Factor 13: Tendency to initiate warm physical contact

- 3. I rarely hug people spontaneously. (-.71)
- 9. It is not unusual for me to touch a person with whom I am speaking. (.62)
- 73. I feel unable to tell anyone all about myself. (-.34)
- 71. I frequently confide in others about my problems. (.31)
- 19. I rarely cry. (-.30)

Factor 14: Defined by item #7

- 7. Emotions should be developed to their full potential. (.74)
- 81. I tend to be cautious in my dealings with other persons. (-.60)

Factor 15: Defined by item #1

- 1. Sensitivity to others' feelings may impede one's progress. (.79)
- 61. I am always in control of my temper. (-.33)

APPENDIX D

Item Loadings on Factors Extracted from Responses of Male Subjects to
Affective Items Using Alpha Analysis and Rotated to a
Quartimax Solution

Factor 1: Tendency toward emotional openness

- 63. I am very open about how I feel. (.78)
- 53. I rarely show my feelings. (-.67)
- 15. I usually let people know how I feel about things. (.61)
- 25. When upset, I try to hide it. (-.57)
- 33. I am a very expressive person. (.56)
- 71. I frequently confide in others about my problems. (.56)
- 73. I feel unable to tell anyone all about myself. (-.56)
- 17. I readily talk about my feelings. (.49)
- 59. Very few people really know me well. (-.46)
- 69. It is easy to get to know me. (.44)
- 9. It is not unusual for me to touch a person with whom I am speaking. (.43)
- 3. I rarely hug people spontaneously. (-.42)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (-.41)
- 39. I seldom tell people when I'm not feeling well. (-.38)
- 75. I have many strong emotional ties. (.38)
- 31. I dislike asking others for help. (-.33)
- 13. I am uncomfortable when people express strong emotions in public. (-.32)

Factor 2: Intensity of emotional experience

- 65. I feel things more intensely than most people. (.70)
- 43. I love sentimental songs and stories. (.53)
- 11. I am very emotional. (.45)
- 5. I can sense what others are feeling more easily than most people. (.36)

Factor 3: Tendency to value emotional control

- 27. I consider my ability to control my emotions an invaluable asset. (.55)
- 23. Children should be taught to control their emotions. (.49)

APPENDIX D (Continued)

Factor 4: Tendency to rely upon emotions in decision-making

- 29. Many of my attitudes and opinions are based on my feelings. (.53)
- 59. Very few people really know me well. (-.47)
- 51. I find it best to use my feelings as a guide. (.40)

Factor 5: Tendency to cry

- 49. When disappointed, I feel like crying. (.73)
- 19. I rarely cry. (-.43)

Factor 6: Defined by item #79

- 79. I usually react to things spontaneously. (.58)
- 35. I don't hide behind a facade. (.32)

Factor 7: Defined by item #21

- 21. I often pretend to feel sorrier about something than I really am. (.57)
- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.32)

Factor 8: Tendency to dislike requesting help

- 31. I dislike asking others for help. (.87)
- 77. It is hard for me to ask for help even when I can return the favor. (.53)

Factor 9: Tendency to equate dependency with weakness

- 67. Dependency is a form of weakness. (.74)
- 55. Truly strong people are not emotionally dependent on other people. (.60)

Factor 10: Tendency to maintain emotional control

- 61. I am always in control of my temper. (.66)
- 37. I rarely lose control of myself. (.43)
- 11. I am very emotional. (-.30)

Factor 11: Defined by item #57

- 57. The happy person tends to be poised and emotionally controlled. (.49)
- 19. I rarely cry. (.35)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.33)

APPENDIX D (Continued)

Factor 11 (Continued)

- 55. Truly strong people are not emotionally dependent on other people. (.33)
- 39. I seldom tell people when I'm not feeling well. (.30)

Factor 12: Defined by item #47

- 47. Love is the most important thing in life. (.51)
- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.43)

Factor 13: Defined by item #3

- 3. I rarely hug people spontaneously. (.60)
- 15. I usually let people know how I feel about things. (.34)

Factor 14: Defined by item #7

- 7. Emotions should be developed to their full potential. (.65)
- 81. I tend to be cautious in my dealings with other persons. (-.31)

Factor 15: Defined by item #1

- 1. Sensitivity to others' feelings may impede one's progress. (.56)

APPENDIX E

Endorsement Rates of Male Subjects to Affective Items

<u>Item</u>	<u>Endorsement rate</u>	<u>Item</u>	<u>Endorsement rate</u>
1	66%	41	49%
3	67%	43	70%
5	70%	45	55%
7	62%	47	69%
9	39%	49	31%
11	41%	51	51%
13	46%	53	53%
15	66%	55	26%
17	44%	57	61%
19	83%	59	67%
21	36%	63	48%
23	37%	65	54%
25	55%	67	36%
27	48%	69	50%
29	88%	71	43%
31	49%	73	43%
33	49%	75	58%
35	79%	77	38%
37	89%	79	47%
39	51%	81	73%

APPENDIX F

Item Loadings on Factors Extracted from Responses of Female Subjects
to Affective Items Using Principal Axis Analysis and
Rotated to a Varimax Solution

Factor 1: Tendency to reveal oneself to others

- 59. Very few people really know me well. (.77)
- 69. It is easy to get to know me. (-.65)
- 71. I frequently confide in others about my problems. (-.52)
- 73. I feel unable to tell anyone all about myself. (.49)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.45)
- 63. I am very open about how I feel. (-.39)
- 81. I tend to be cautious in my dealings with other persons. (.34)
- 75. I have many strong emotional ties. (-.31)

Factor 2: Defined by item #45

- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.71)
- 65. I feel things more intensely than most people. (.58)
- 5. I can sense what others are feeling more easily than most people. (.39)
- 49. When disappointed, I feel like crying. (.38)
- 75. I have many strong emotional ties. (.30)

Factor 3: Tendency to cry

- 19. I rarely cry. (.74)
- 11. I am very emotional. (-.59)
- 49. When disappointed, I feel like crying. (-.52)
- 53. I rarely show my feelings. (.49)
- 39. I seldom tell people when I'm not feeling well. (.46)
- 43. I love sentimental songs and stories. (-.42)
- 25. When upset, I try to hide it. (.40)

Factor 4: Tendency to equate dependency with weakness

- 55. Truly strong people are not emotionally dependent on other people. (.78)
- 67. Dependency is a form of weakness. (.77)
- 79. I usually react to things spontaneously. (-.38)
- 3. I rarely hug people spontaneously. (.30)

APPENDIX F (Continued)

Factor 5: Tendency toward emotional openness

- 15. I usually let people know how I feel about things. (.70)
- 17. I readily talk about my feelings. (.65)
- 63. I am very open about how I feel. (.64)
- 53. I rarely show my feelings. (-.51)
- 33. I am a very expressive person. (.49)
- 25. When upset, I try to hide it. (-.44)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (-.38)
- 3. I rarely hug people spontaneously. (-.36)
- 71. I frequently confide in others about my problems. (.31)

Factor 6: Tendency to initiate warm physical contact

- 9. It is not unusual for me to touch a person with whom I am speaking. (.67)
- 75. I have many strong emotional ties. (.60)
- 81. I tend to be cautious in my dealings with other persons. (.46)
- 3. I rarely hug people spontaneously. (-.45)
- 33. I am a very expressive person. (.30)

Factor 7: Tendency to maintain emotional control

- 37. I rarely lose control of myself. (.70)
- 61. I am always in control of my temper. (.69)
- 69. It is easy to get to know me. (.32)
- 81. I tend to be cautious in my dealings with other persons. (.31)
- 29. Many of my attitudes and opinions are based on my feelings. (.30)

Factor 8: Defined by item #1

- 1. Sensitivity to others' feelings may impede one's progress. (.80)
- 79. I usually react to things spontaneously. (.42)

Factor 9: Defined by item #23

- 23. Children should be taught to control their emotions. (.79)
- 51. I find it best to use my feelings as my guide. (-.41)
- 79. I usually react to things spontaneously. (-.38)
- 27. I consider my ability to control my emotions an invaluable asset. (.36)

APPENDIX F (Continued)

Factor 10: Tendency to misrepresent feelings

- 35. I don't hide behind a facade. (-.74)
- 21. I often pretend to feel sorrier about something than I really am. (.68)

Factor 11: Tendency to dislike requesting help

- 31. I dislike asking others for help. (.82)
- 77. It is hard for me to ask for help even when I can return the favor. (.79)
- 27. I consider my ability to control my emotions an invaluable asset. (.33)

Factor 12: Defined by item #57

- 57. The happy person tends to be poised and emotionally controlled. (.77)
- 29. Many of my attitudes and opinions are based on my feelings. (-.37)
- 73. I feel unable to tell anyone all about myself. (.31)

Factor 13: Attitude toward expression of intense emotions

- 13. I am uncomfortable when people express strong emotions in public. (-.71)
- 7. Emotions should be developed to their full potential. (.60)
- 71. I frequently confide in others about my problems. (-.35)

Factor 14: Defined by item #47

- 47. Love is the most important thing in life. (.68)
- 51. I find it best to use my feelings as a guide. (.49)
- 5. I can sense what others are feeling more easily than most people. (.43)
- 43. I love sentimental songs and stories. (.37)
- 65. I feel things more intensely than most people. (.32)
- 7. Emotions should be developed to their full potential. (.31)

APPENDIX G

Item Loadings on Factors Extracted from Responses of Female Subjects to
Affective Items Using a Principal Axis Analysis and Rotated to a
Quartimax Solution

Factor 1: Tendency toward emotional openness

- 53. I rarely show my feelings. (.71)
- 63. I am very open about how I feel. (-.70)
- 15. I usually let people know how I feel about things. (-.63)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.58)
- 17. I readily talk about my feelings. (-.58)
- 25. When upset, I try to hide it. (.57)
- 33. I am a very expressive person. (-.49)
- 71. I frequently confide in others about my problems. (-.49)
- 39. I seldom tell people when I'm not feeling well. (.43)
- 3. I rarely hug people spontaneously. (.41)

Factor 2: Intensity of emotional experience

- 5. I can sense what others are feeling more easily than most people. (.66)
- 65. I feel things more intensely than most people. (.63)
- 47. Love is the most important thing in life. (.47)
- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.46)
- 7. Emotions should be developed to their full potential. (.45)
- 51. I find it best to use my feelings as my guide. (.40)
- 75. I have many strong emotional ties. (.33)

Factor 3: Tendency to cry

- 19. I rarely cry. (-.63)
- 49. When disappointed, I feel like crying. (.62)
- 11. I am very emotional. (.61)
- 39. I seldom tell people when I'm not feeling well. (-.41)
- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.41)
- 25. When upset, I try to hide it. (-.31)
- 43. I love sentimental songs and stories. (.30)

APPENDIX G (Continued)

Factor 4: Tendency to equate dependency with weakness

- 55. Truly strong people are not emotionally dependent on other people. (.79)
- 67. Dependency is a form of weakness. (.76)
- 79. I usually react to things spontaneously. (-.39)

Factor 5: Attitude toward expression of intense emotions

- 13. I am uncomfortable when people express strong emotions in public. (.75)
- 7. Emotions should be developed to their full potential. (-.54)
- 71. I frequently confide in others about my problems. (.34)

Factor 6: Tendency to initiate warm physical contact

- 9. It is not unusual for me to touch a person with whom I am speaking. (.76)
- 75. I have many strong emotional ties. (.59)
- 3. I rarely hug people spontaneously. (-.42)
- 57. The happy person tends to be poised and emotionally controlled. (-.35)
- 81. I tend to be cautious in my dealings with other persons. (.30)

Factor 7: Tendency to maintain emotional control

- 37. I rarely lose control of myself. (.68)
- 61. I am always in control of my temper. (.68)
- 69. It is easy to get to know me. (.49)

Factor 8: Defined by item #29

- 29. Many of my attitudes and opinions are based on my feelings. (.71)
- 57. The happy person tends to be poised and emotionally controlled. (-.40)
- 79. I usually react to things spontaneously. (.30)

Factor 9: Defined by item #23

- 23. Children should be taught to control their emotions. (.78)
- 27. I consider my ability to control my emotions an invaluable asset. (.45)
- 79. I usually react to things spontaneously. (-.39)
- 57. The happy person tends to be poised and emotionally controlled. (.32)
- 51. I find it best to use my feelings as my guide. (-.31)

APPENDIX G (Continued)

Factor 10: Defined by item #1

- 1. Sensitivity to others' feelings may impede one's progress. (.82)
- 79. I usually react to things spontaneously. (.35)

Factor 11: Tendency to dislike requesting help

- 31. I dislike asking others for help. (.81)
- 77. It is hard for me to ask for help even when I can return the favor. (.78)
- 27. I consider my ability to control my emotions an invaluable asset. (.31)

Factor 12: Tendency to misrepresent feelings

- 35. I don't hide behind a facade. (-.72)
- 21. I often pretend to feel sorrier about something than I really am. (.70)

Factor 13: Tendency to reveal oneself to others

- 73. I feel unable to tell anyone all about myself. (.65)
- 59. Very few people really know me well. (.58)
- 81. I tend to be cautious in my dealings with other people. (.53)
- 69. It is easy to get to know me. (-.40)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.31)
- 51. I find it best to use my feelings as my guide. (.31)

Factor 14: Defined by item #43

- 43. I love sentimental songs and stories. (.61)
- 47. Love is the most important thing in life. (.38)
- 71. I frequently confide in others about my problems. (.34)
- 51. I find it best to use my feelings as my guide. (.32)

APPENDIX H

Item Loadings on Factors Extracted from Responses of Female Subjects to
Affective Items Using an Alpha Analysis and
Rotated to a Quartimax Solution

Factor 1: Tendency toward emotional openness

- 53. I rarely show my feelings. (.71)
- 63. I am very open about how I feel. (-.69)
- 25. When upset, I try to hide it. (.55)
- 41. I hide my feelings so well that people sometimes hurt me without knowing it. (.55)
- 17. I readily talk about my feelings. (-.53)
- 15. I usually let people know how I feel about things. (-.51)
- 33. I am a very expressive person. (-.48)
- 39. I seldom tell people when I'm not feeling well. (.43)
- 71. I frequently confide in others about my problems. (-.38)
- 19. I rarely cry. (.37)
- 3. I rarely hug people spontaneously. (.36)
- 11. I am very emotional. (-.35)

Factor 2: Intensity of emotional experience

- 65. I feel things more intensely than most people. (.58)
- 5. I can sense what others are feeling more easily than most people. (.53)
- 47. Love is the most important thing in life. (.43)
- 51. I find it best to use my feelings as my guide. (.41)
- 7. Emotions should be developed to their full potential. (.40)
- 45. Emotional appeals are usually successful in influencing me to change my opinion. (.36)
- 33. I am a very expressive person. (.34)
- 79. I usually react to things spontaneously. (.34)

Factor 3: Tendency to maintain emotional control

- 61. I am always in control of my temper. (.56)
- 37. I rarely lose control of myself. (.55)

Factor 4: Tendency to equate dependency with weakness

- 67. Dependency is a form of weakness. (.71)
- 55. Truly strong people are not emotionally dependent on other people. (.64)
- 79. I usually react to things spontaneously. (-.31)

APPENDIX H (Continued)

Factor 5: Defined by item #57

57. The happy person tends to be poised and emotionally controlled. (.58)

Factor 6: Tendency to initiate warm physical contact.

9. It is not unusual for me to touch a person with whom I am speaking. (.60)
 75. I have many strong emotional ties. (.50)
 3. I rarely hug people spontaneously. (-.33)
 81. I tend to be cautious in my dealings with other persons. (.33)

Factor 7: Defined by item #23

23. Children should be taught to control their emotions. (.62)

Factor 8: Tendency to misrepresent feelings

21. I often pretend to feel sorrier about something than I really am. (.65)
 35. I don't hide behind a facade. (-.48)

Factor 9: Defined by item #1

1. Sensitivity to others' feelings may impede one's progress. (.55)
 79. I usually react to things spontaneously. (.34)

Factor 10: Tendency to dislike requesting help

31. I dislike asking others for help. (.69)
 77. It is hard for me to ask for help even when I can return the favor. (.68)

Factor 11: Tendency to cry

19. I rarely cry. (.60)
 11. I am very emotional. (-.45)
 49. When disappointed, I feel like crying. (-.39)
 43. I love sentimental songs and stories. (-.32)

Factor 12: Attitude toward expression of strong emotions

13. I am uncomfortable when people express strong emotions in public. (.49)
 7. Emotions should be developed to their full potential. (-.34)
 71. I frequently confide in others about my problems. (.34)

APPENDIX H (Continued)

Factor 13: Tendency to reveal oneself to others

- 59. Very few people really know me well. (.66)
- 69. It is easy to get to know me. (-.45)
- 71. I frequently confide in others about my problems. (-.38)
- 73. I feel unable to tell anyone all about myself. (.38)

Factor 14: Defined by item #71

- 71. I frequently confide in others about my problems. (-.38)

APPENDIX I

Endorsement Rates of Female Subjects to Affective Items

<u>Item</u>	<u>Endorsement rate</u>	<u>Item</u>	<u>Endorsement rate</u>
1	54%	41	53%
3	50%	43	90%
5	75%	45	59%
7	72%	47	71%
9	56%	49	75%
11	63%	51	60%
13	54%	53	31%
15	67%	55	27%
17	48%	57	61%
19	39%	59	61%
21	32%	63	53%
23	27%	65	61%
25	54%	67	38%
27	42%	69	55%
29	94%	71	52%
31	46%	73	39%
33	58%	75	69%
35	75%	77	41%
37	76%	79	64%
39	31%	81	78%

APPENDIX J

Item Loadings on Factors Extracted from Responses of Male Subjects to
Analytic Items Using a Principal Axis Analysis and
Rotated to a Varimax Solution

Factor 1: Attitude toward philosophy

- 38. I find philosophy boring. (.81)
- 22. I become impatient with philosophical discussions. (.80)
- 44. I enjoy philosophical discussions with friends. (-.78)
- 58. I become bored rapidly with long, complex discussions. (.43)
- 76. I am intellectually curious about things in general. (-.42)

Factor 2: Tendency to behave logically

- 60. My behavior is based on reason and logic. (.78)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.67)
- 46. Some of my friends think my ideas are impractical, if not a bit wild. (-.66)
- 8. I am logical in the way I plan my work. (.59)
- 50. I often make decisions without carefully thinking out the alternatives. (-.59)
- 54. I rarely go to lectures simply because I enjoy them. (-.39)

Factor 3: Attitude toward science

- 34. I would like to make an important contribution to science. (.83)
- 68. I think I would dislike the life of a scientist. (-.81)
- 48. I would enjoy being a famous scientist. (.76)
- 70. I dislike reading scientific articles. (-.68)
- 62. I know very little about modern science. (-.39)
- 58. I become bored rapidly with long, complex discussions. (-.36)

Factor 4: Attitude toward puzzles

- 18. I don't like to work on puzzles. (.78)
- 2. I am very good at solving puzzles. (-.77)
- 52. I dislike being given a puzzle or problem to solve. (.70)
- 40. I am regarded by others as an intellectual. (-.43)
- 20. I enjoy working on challenging problems that require deep thought. (-.31)

APPENDIX J (Continued)

Factor 5: Disinclination toward reading

- 26. I seldom read a book I do not have to read. (.74)
- 12. I am widely read. (-.70)
- 54. I rarely go to lectures simply because I enjoy them. (.53)

Factor 6: Attitude toward engaging in sustained problem-solving activity

- 66. I never stay up late working on some problem in which I am interested. (.76)
- 16. I have an inquiring mind. (-.64)
- 20. I enjoy working on challenging problems that require deep thought. (-.31)
- 32. I attempt to be well-informed on a wide variety of subjects. (-.30)

Factor 7: Undefined

- 10. Problems are best approached using thought and logic. (.71)
- 56. I rarely work on a problem longer than most people. (.64)
- 80. Scientific research is of little value unless it has practical applications. (.36)
- 40. I am regarded by others as an intellectual. (-.33)

Factor 8: Affinity for chess

- 14. I play chess well. (.82)
- 78. I don't like to play chess. (-.79)

Factor 9: Defined by items #6 and #82

- 6. The value of individuals lies primarily in their intellectual accomplishments. (.80)
- 82. I am not satisfied with simple solutions to complex problems. (.68)

Factor 10: Defined by item #30

- 30. I rarely write down possible solutions to problems. (.81)
- 72. I solve problems by listing all the possible solutions I can. (-.46)
- 74. I dislike working on mathematical problems. (.41)
- 62. I know very little about modern science. (.39)

APPENDIX J (Continued)

Factor 11: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (.72)
- 4. I have little interest in theoretical problems. (.58)
- 58. I become bored rapidly with long, complex discussions. (.41)
- 20. I enjoy working on challenging problems that require deep thought. (-.32)
- 80. Scientific research is of little value unless it has practical applications. (.30)

Factor 12: Defined by item #42

- 42. I rarely enjoy attempting to solve a problem. (.65)
- 40. I am regarded by others as an intellectual. (.37)
- 46. Some of my friends think my ideas are impractical, if not a bit wild. (.36)

Factor 13: Breadth of intellectual interests

- 28. I like to explore new ideas, even though it may be a total waste of time. (.66)
- 32. I attempt to be well-informed on a wide variety of subjects. (.58)

Factor 14: Undefined

- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (.74)
- 80. Scientific research is of little value unless it has practical applications. (.55)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.38)

APPENDIX K

Item Loadings on Factors Extracted from Responses of Male Subjects to
Analytic Items Using a Principal Axis Analysis and
Rotated to a Quartimax Solution

Factor 1: Attitude toward philosophy

- 38. I find philosophy boring. (.82)
- 22. I become impatient with philosophical discussions. (.80)
- 44. I enjoy philosophical discussions with friends. (-.79)
- 58. I become bored rapidly with long, complex discussions. (.45)
- 76. I am intellectually curious about things in general. (-.43)
- 4. I have little interest in theoretical problems. (.31)

Factor 2: Tendency to behave logically

- 60. My behavior is based on reason and logic. (.78)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.68)
- 46. Some of my friends think my ideas are impractical, if not a bit wild. (-.65)
- 8. I am logical in the way I plan my work. (.60)
- 50. I often made decisions without carefully thinking out the alternatives. (-.60)
- 54. I rarely go to lectures simply because I enjoy them. (-.39)

Factor 3: Attitude toward science

- 34. I would like to make an important contribution to science. (-.83)
- 68. I think I would dislike the life of a scientist. (.81)
- 48. I would enjoy being a famous scientist. (-.76)
- 70. I dislike reading scientific articles. (.69)
- 62. I know very little about modern science. (.40)
- 58. I become bored rapidly with long, complex discussions. (.37)

Factor 4: Attitude toward puzzles

- 18. I don't like to work on puzzles. (.78)
- 2. I am very good at solving puzzles. (-.77)
- 52. I dislike being given a puzzle or problem to solve. (.71)
- 40. I am regarded by others as an intellectual. (-.43)
- 20. I enjoy working on challenging problems that require deep thought. (-.31)

APPENDIX K (Continued)

Factor 5: Disinclination toward reading

- 26. I seldom read a book I do not have to read. (.73)
- 12. I am widely read. (-.70)
- 54. I rarely go to lectures simply because I enjoy them. (.53)

Factor 6: Attitude toward engaging in sustained problem-solving activity

- 66. I never stay up late working on some problem in which I am interested. (.76)
- 16. I have an inquiring mind. (-.64)
- 20. I enjoy working on challenging problems that require deep thought. (-.30)
- 32. I attempt to be well-informed on a wide variety of subjects. (-.30)

Factor 7: Undefined

- 10. Problems are best approached using thought and logic. (.71)
- 56. I rarely work on a problem longer than most people. (.64)
- 80. Scientific research is of little value unless it has practical applications. (.36)
- 40. I am regarded by others as an intellectual. (-.32)

Factor 8: Affinity for chess

- 14. I play chess well. (.82)
- 78. I don't like to play chess. (-.79)

Factor 9: Defined by items #6 and #82

- 6. The value of individuals lies primarily in their intellectual accomplishments. (.81)
- 82. I am not satisfied with simple solutions to complex problems. (.68)

Factor 10: Defined by item #30

- 30. I rarely write down possible solutions to problems. (.80)
- 72. I solve problems by listing all the possible solutions I can. (-.45)
- 74. I dislike working on mathematical problems. (.40)
- 62. I know very little about modern science. (.37)

APPENDIX K (Continued)

Factor 11: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (.72)
- 4. I have little interest in theoretical problems. (.56)
- 58. I become bored rapidly with long, complex discussions. (.39)
- 20. I enjoy working on challenging problems that require deep thought. (-.30)
- 80. Scientific research is of little value unless it has practical applications. (.30)

Factor 12: Defined by item #42

- 42. I rarely enjoy attempting to solve a problem. (.64)
- 40. I am regarded by others as an intellectual. (.38)
- 46. Some of my friends think my ideas are impractical, if not a bit wild. (.36)

Factor 13: Breadth of intellectual interests

- 28. I like to explore new ideas, even though it may be a total waste of time. (.66)
- 32. I attempt to be well-informed on a wide variety of subjects. (.57)

Factor 14: Undefined

- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (.73)
- 80. Scientific research is of little value unless it has practical applications. (.54)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.37)

APPENDIX L

Item Loadings on Factors Extracted from Responses of Male Subjects to
Analytic Items Using an Alpha Analysis and Rotated
to a Quartimax Solution

Factor 1: Attitude toward science

- 34. I would like to make an important contribution to science. (-.81)
- 68. I think I would dislike the life of a scientist. (.74)
- 48. I would enjoy being a famous scientist. (-.69)
- 70. I dislike reading scientific articles. (.64)
- 62. I know very little about modern science. (.38)
- 58. I become bored rapidly with long, complex discussions. (.36)

Factor 2: Tendency to behave logically

- 60. My behavior is based on reason and logic. (.74)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.62)
- 46. Some of my friends think my ideas are impractical, if not a bit wild. (-.56)
- 50. I often make decisions without carefully thinking out the alternatives. (-.54)
- 8. I am logical in the way I plan my work. (.52)
- 54. I rarely go to lectures simply because I enjoy them. (-.33)

Factor 3: Attitude toward puzzles

- 2. I am very good at solving puzzles. (-.70)
- 18. I don't like to work on puzzles. (.69)
- 52. I dislike being given a puzzle or problem to solve. (.61)
- 40. I am regarded by others as an intellectual. (-.39)

Factor 4: Attitude toward philosophy

- 44. I enjoy philosophical discussions with friends. (-.75)
- 38. I find philosophy boring. (.74)
- 22. I become impatient with philosophical discussions. (.72)
- 58. I become bored rapidly with long, complex discussions. (.44)
- 76. I am intellectually curious about things in general. (-.40)
- 4. I have little interest in theoretical problems. (.33)

APPENDIX L (Continued)

Factor 5: Attitude toward engaging in sustained problem-solving activity

- 66. I never stay up late working on some problem in which I am interested. (.56)
- 16. I have an inquiring mind. (-.47)
- 20. I enjoy working on challenging problems that require deep thought. (-.30)

Factor 6: Disinclination toward reading

- 26. I seldom read a book I do not have to read. (.68)
- 12. I am widely read. (-.57)
- 54. I rarely go to lectures simply because I enjoy them. (.40)

Factor 7: Undefined

- 10. Problems are best approached using thought and logic. (.60)
- 56. I rarely work on a problem longer than most people. (.51)

Factor 8: Defined by items #6 and #82

- 6. The value of individuals lies primarily in their intellectual accomplishments. (.66)
- 82. I am not satisfied with simple solutions to complex problems. (.50)

Factor 9: Affinity for chess

- 14. I play chess well. (.70)
- 78. I don't like to play chess. (-.69)

Factor 10: Defined by item #30

- 30. I rarely write down possible solutions to problems. (.61)
- 72. I solve problems by listing all the possible solutions I can. (-.30)

Factor 11: Undefined

- 80. Scientific research is of little value unless it has practical applications. (.47)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (.46)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.33)

APPENDIX L (Continued)

Factor 12: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (.58)
- 4. I have little interest in theoretical problems. (.40)

Factor 13: Breadth of intellectual interests

- 32. I attempt to be well-informed on a wide variety of subjects. (.43)
- 28. I like to explore new ideas, even though it may be a total waste of time. (.42)

Factor 14: Defined by item #42

- 42. I rarely enjoy attempting to solve a problem. (.51)

APPENDIX M

Endorsement Rates of Male Subjects to Analytic Items

<u>Item</u>	<u>Endorsement rate</u>	<u>Item</u>	<u>Endorsement rate</u>
2	53%	42	20%
4	39%	44	60%
6	11%	46	54%
8	69%	48	36%
10	91%	50	44%
12	31%	52	20%
14	32%	54	52%
16	88%	56	44%
18	31%	58	48%
20	59%	60	56%
22	38%	64	78%
24	56%	66	9%
26	54%	68	52%
28	75%	70	43%
30	48%	72	45%
32	80%	74	40%
34	43%	76	83%
36	81%	78	33%
38	39%	80	40%
40	36%	82	27%

APPENDIX N

Item Loadings on Factors Extracted from Responses of Female Subjects
to Analytic Items Using a Principal Axis Analysis
and Rotated to a Varimax Solution

Factor 1: Attitude toward puzzles

- 2. I am very good at solving puzzles. (-.78)
- 52. I dislike being given a puzzle or problem to solve. (.73)
- 18. I don't like to work on puzzles. (.69)
- 20. I enjoy working on challenging problems that require deep thought.
(-.50)
- 42. I rarely enjoy attempting to solve a problem. (.43)

Factor 2: Attitude toward science

- 48. I would enjoy being a famous scientist. (-.85)
- 34. I would like to make an important contribution to science. (-.76)
- 68. I think I would dislike the life of a scientist. (.75)
- 70. I dislike reading scientific articles. (.67)
- 62. I know very little about modern science. (.47)

Factor 3: Disinclination toward reading

- 12. I am widely read. (-.70)
- 26. I seldom read a book I do not have to read. (.64)
- 6. The value of individuals lies primarily in their intellectual accomplishments. (.30)

Factor 4: Defined by item #76

- 76. I am intellectually curious about things in general. (.79)
- 16. I have an inquiring mind. (.44)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (.39)

Factor 5: Attitude toward philosophy

- 38. I find philosophy boring. (.81)
- 44. I enjoy philosophical discussions with friends. (-.76)
- 22. I become impatient with philosophical discussions. (.75)
- 58. I become bored rapidly with long, complex discussions. (.34)
- 80. Scientific research is of little value unless it has practical applications. (.33)

APPENDIX N (Continued)

Factor 6: Tendency to behave logically

- 8. I am logical in the way I plan my work. (.70)
- 60. My behavior is based on reason and logic. (.65)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.47)
- 10. Problems are best approached using thought and logic. (.39)
- 32. I attempt to be well-informed on a wide variety of subjects. (.36)
- 72. I solve problems by listing all the possible solutions I can. (.32)

Factor 7: Affinity for chess

- 14. I play chess well. (-.77)
- 78. I don't like to play chess. (.74)

Factor 8: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (-.74)
- 4. I have little interest in theoretical problems. (-.41)
- 30. I rarely write down possible solutions to problems. (-.41)
- 18. I don't like to work on puzzles. (.30)

Factor 9: Attitude toward engaging in sustained problem-solving activity

- 56. I rarely work on a problem longer than most people. (.68)
- 66. I never stay up late working on some problem in which I am interested. (.68)
- 16. I have an inquiring mind. (-.53)
- 58. I become bored rapidly with long, complex discussions. (.40)
- 4. I have little interest in theoretical problems. (.30)

Factor 10: Defined by item #74

- 74. I dislike working on mathematical problems. (.77)
- 4. I have little interest in theoretical problems. (.48)
- 62. I know very little about modern science. (.43)
- 20. I enjoy working on challenging problems that require deep thought. (-.35)
- 32. I attempt to be well-informed on a wide variety of subjects. (.35)
- 58. I become bored rapidly with long, complex discussions. (.32)

APPENDIX N (Continued)

Factor 11: Tendency toward impulsive, impractical thinking

- 46. Some of my friends think my ideas are impractical, if not a bit wild. (.80)
- 50. I often make decisions without carefully thinking out the alternatives. (.67)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (-.36)

Factor 12: Undefined

- 54. I rarely go to lectures simply because I enjoy them. (.68)
- 72. I solve problems by listing all the possible solutions I can. (-.46)
- 10. Problems are best approached using thought and logic. (.44)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (-.39)
- 30. I rarely write down possible solutions to problems. (.35)
- 20. I enjoy working on challenging problems that require deep thought. (-.30)

Factor 13: Tendency to value intellectualism

- 40. I am regarded by others as an intellectual. (.70)
- 6. The value of individuals lies primarily in their intellectual accomplishments. (.65)

Factor 14: Defined by item #28

- 28. I like to explore new ideas, even though it may be a total waste of time. (.88)

Factor 15: Defined by item #82

- 82. I am not satisfied with simple solutions to complex problems. (.75)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.49)
- 80. Scientific research is of little value unless it has practical applications. (-.44)
- 30. I rarely write down possible solutions to problems. (.30)

APPENDIX O

Item Loadings on Factors Extracted from Responses of Female Subjects
to Analytic Items Using a Principal Axis Analysis
and Rotated to a Quartimax Solution

Factor 1: Attitude toward puzzles

- 2. I am very good at solving puzzles. (-.78)
- 52. I dislike being given a puzzle or problem to solve. (.74)
- 18. I don't like to work on puzzles. (.69)
- 20. I enjoy working on challenging problems that require deep thought. (-.51)
- 42. I rarely enjoy attempting to solve a problem. (.44)

Factor 2: Attitude toward Science

- 48. I would enjoy being a famous scientist. (-.86)
- 34. I would like to make an important contribution to science. (-.76)
- 68. I think I would dislike the life of a scientist. (.75)
- 70. I dislike reading scientific articles. (.67)
- 62. I know very little about modern science. (.48)

Factor 3: Tendency to behave logically

- 8. I am logical in the way I plan my work. (.70)
- 60. My behavior is based on reason and logic. (.65)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.47)
- 10. Problems are best approached using thought and logic. (.38)
- 32. I attempt to be well-informed on a wide variety of subjects. (.35)
- 72. I solve problems by listing all the possible solutions I can. (.32)

Factor 4: Disinclination toward reading

- 12. I am widely read. (-.70)
- 26. I seldom read a book I do not have to read. (.64)
- 6. The value of individuals lies primarily in their intellectual accomplishments. (.30)

APPENDIX O (Continued)

Factor 5: Attitude toward philosophy

- 38. I find philosophy boring. (.81)
- 22. I become impatient with philosophical discussions. (.76)
- 44. I enjoy philosophical discussions with friends. (-.76)
- 58. I become bored rapidly with long, complex discussions. (.35)
- 80. Scientific research is of little value unless it has practical applications. (.33)

Factor 6: Affinity for chess

- 14. I play chess well. (-.77)
- 78. I don't like to play chess. (.74)

Factor 7: Defined by item #76

- 76. I am intellectually curious about things in general. (.79)
- 16. I have an inquiring mind. (.43)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (.38)

Factor 8: Attitude toward engaging in sustained problem-solving activity

- 56. I rarely work on a problem longer than most people. (.68)
- 66. I never stay up late working on some problem in which I am interested. (.68)
- 16. I have an inquiring mind. (-.54)
- 58. I become bored rapidly with long, complex discussions. (.40)
- 4. I have little interest in theoretical problems. (.31)

Factor 9: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (-.74)
- 4. I have little interest in theoretical problems. (-.41)
- 30. I rarely write down possible solutions to problems. (-.41)
- 18. I don't like to work on puzzles. (.30)

Factor 10: Defined by item #74

- 74. I dislike working on mathematical problems. (.76)
- 4. I have little interest in theoretical problems. (.47)
- 62. I know very little about modern science. (.42)
- 32. I attempt to be well-informed on a wide variety of subjects. (.36)
- 20. I enjoy working on challenging problems that require deep thought. (-.33)
- 58. I become bored rapidly with long, complex discussions. (.32)

APPENDIX O (Continued)

Factor 11: Tendency toward impulsive, impractical thinking

- 46. Some of my friends think my ideas are impractical, if not a bit wild. (.80)
- 50. I often make decisions without carefully thinking out the alternatives. (.66)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (-.36)

Factor 12: Undefined

- 54. I rarely go to lectures simply because I enjoy them. (.68)
- 72. I solve problems by listing all the possible solutions I can. (-.46)
- 10. Problems are best approached using thought and logic. (.44)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (-.40)
- 30. I rarely write down possible solutions to problems. (.35)
- 20. I enjoy working on challenging problems that require deep thought. (-.30)

Factor 13: Tendency to value intellectualism

- 40. I am regarded by others as an intellectual. (.70)
- 6. The value of individuals lies primarily in their intellectual accomplishments. (.64)

Factor 14: Defined by item #28

- 28. I like to explore new ideas, even though it may be a total waste of time. (.88)

Factor 15: Defined by item #82

- 82. I am not satisfied with simple solutions to complex problems. (.75)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.48)
- 80. Scientific research is of little value unless it has practical applications. (-.43)
- 30. I rarely write down possible solutions to problems. (.30)

APPENDIX P

Item Loadings on Factors Extracted from Responses of Female Subjects
to Analytic Items Using an Alpha Analysis
and Rotated to a Quartimax Solution

Factor 1: Attitude toward puzzles

- 52. I dislike being given a puzzle or problem to solve. (.69)
- 2. I am very good at solving puzzles. (-.67)
- 18. I don't like to work on puzzles. (.63)
- 20. I enjoy working on challenging problems that require deep thought.
(-.48)
- 42. I rarely enjoy attempting to solve a problem. (.40)

Factor 2: Tendency to behave logically

- 61. My behavior is based on reason and logic. (.61)
- 8. I am logical in the way I plan my work. (.51)
- 24. It is extremely important to me to be able to see logical, rational
reasons for my behavior. (.42)

Factor 3: Attitude toward science

- 48. I would enjoy being a famous scientist. (-.83)
- 68. I think I would dislike the life of a scientist. (.70)
- 34. I would like to make an important contribution to science. (-.69)
- 70. I dislike reading scientific articles. (.60)
- 62. I know very little about modern science. (.42)

Factor 4: Practical versus theoretical interests

- 64. I am more interested in practical than theoretical matters. (.56)
- 4. I have little interest in theoretical matters. (.36)

Factor 5: Attitude toward philosophy

- 38. I find philosophy boring. (.73)
- 44. I enjoy philosophical discussions with friends. (-.70)
- 22. I become impatient with philosophical discussions. (.66)
- 58. I become bored rapidly with long, complex discussions. (.31)

APPENDIX P (Continued)

Factor 6: Defined by item #82

- 82. I am not satisfied with simple solutions to complex problems. (.53)
- 24. It is extremely important to me to be able to see logical, rational reasons for my behavior. (.36)
- 80. Scientific research is of little value unless it has practical applications. (-.30)

Factor 7: Affinity for chess

- 78. I don't like to play chess. (.60)
- 14. I play chess well. (-.55)

Factor 8: Disinclination toward reading

- 12. I am widely read. (-.50)
- 26. I seldom read a book I do not have to read. (.50)

Factor 9: Undefined

- 54. I rarely go to lectures simply because I enjoy them. (.43)
- 72. I solve problems by listing all the possible solutions I can. (-.38)
- 36. I enjoy nothing more than a good discussion about a problem in which I am interested. (-.36)
- 30. I rarely write down possible solutions to problems. (.34)
- 20. I enjoy working on challenging problems that require deep thought. (-.33)

Factor 10: Attitude toward engaging in sustained problem-solving activity

- 56. I rarely work on a problem longer than most people. (.55)
- 16. I have an inquiring mind. (-.50)
- 66. I never stay up late working on some problem in which I am interested. (.48)
- 58. I become bored rapidly with long, complex discussions. (.34)
- 4. I have little interest in theoretical problems. (.30)

Factor 11: Tendency toward impulsive, impractical thinking

- 46. Some of my friends think my ideas are impractical, if not a bit wild. (.65)
- 50. I often make decisions without carefully thinking out the alternatives. (.50)

APPENDIX P (Continued)

Factor 12: Defined by item #74

- 74. I dislike working on mathematical problems. (.69)
- 4. I have little interest in theoretical problems. (.38)

Factor 13: Tendency to value intellectualism

- 40. I am regarded by others as an intellectual. (.53)
- 6. The value of individuals lies primarily in their intellectual accomplishments. (.40)

Factor 14: Defined by item #28

- 28. I like to explore new ideas, even though it may be a total waste of time. (.65)

Factor 15: Defined by item #76

- 76. I am intellectually curious about things in general. (.62)
- 16. I have an inquiring mind. (.35)

APPENDIX Q

Endorsement Rates of Female Subjects to Analytic Items

<u>Item</u>	<u>Endorsement rate</u>	<u>Item</u>	<u>Endorsement rate</u>
2	41%	42	23%
4	54%	44	65%
6	14%	46	41%
8	76%	48	25%
10	91%	50	38%
12	40%	52	38%
14	9%	54	48%
16	89%	56	40%
18	34%	58	54%
20	40%	60	43%
22	45%	62	55%
24	55%	66	14%
26	39%	68	66%
28	81%	70	58%
30	55%	72	48%
32	74%	74	53%
34	36%	76	85%
36	70%	78	57%
38	45%	80	39%
40	34%	82	23%