JPI-R

Jackson Personality Inventory - Revised

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Technical Manual

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Nature and Purpose

The *Jackson Personality Inventory* (JPI) was developed to provide, in one convenient form, a set of measures of personality reflecting a variety of interpersonal, cognitive, and value orientations likely to have important implications for a person's functioning. These measures of personality were derived from contemporary research in personality and social psychology. The development of the JPI thus reflected concern both for the substantive aspects of personality functioning based on modern empirical research and for developments in psychometric theory and computer methodology as these apply to assessment.

The JPI-R is a revision of the original JPI (the main revisions are described in a separate section, below). Like the original, the JPI-R is intended primarily for use in normal populations and, as such, is to be distinguished from many personality inventories designed for use in populations of psychiatrically disturbed or deviant individuals. It is particularly appropriate for use in schools, colleges, and universities as an aid to career and vocational counseling, in work settings to facilitate the person-job match, and in research settings to contribute to the understanding of personality and its relation to behavior. Although bearing a resemblance to the author's previously published (Jackson, 1967, 1974, 1984, 1989) *Personality Research Form* (PRF), especially in regard to its general method of scale construction, and its concise, convenient scoring format, the JPI-R is to be distinguished from the PRF not only in terms of the nature of the variables of personality measured, but also in terms of its representing a further refinement and development of substantive, psychometric, and computer-based strategies for scale construction initially employed in the development of the PRF.

Format of the JPI-R

The JPI-R consists of 300 True-False statements, representing 15 scales, printed with instructions in a reusable booklet. Administration typically requires from 35 to 45 minutes, depending on the population of individuals tested. The wording was explicitly intended to be simple enough so that the average high school student will have no difficulty with it. Answer sheets were designed in such a way that scoring is convenient, and scale scores may be transferred to a profile and plotted with relative ease. Each scale consists of ten true-keyed and ten false-keyed statements (or "items"). Scales were designed in this way (a) to minimize the role of acquiescence or "yea saying" response set, and (b) to permit definition of each pole of the bipolar scale dimensions with positively-worded content.

Test User Qualifications needed to use the JPI-R

As with many other psychological inventories, certain qualifications are required for using the JPI-R. Minimum qualifications would normally include university

work in the essentials of psychological testing or advanced study in psychology or a related field. The JPI-R may also be used in a setting by persons not meeting the above qualifications if under the supervision of a psychologist or where adequate psychological consultation is available. It is particularly noteworthy that when important decisions are to be based on JPI-R scores, such as might occur in employment screening, monitoring by a fully qualified professional is highly recommended.

General Characteristics of the JPI-R

As a revision of the original JPI, the JPI-R assumes many of its predecessor's key features. The JPI was designed to provide carefully developed measures of a variety of traits of interest to the study of personality having relevance to the prediction of behavior in a range of contexts. The variables of personality chosen for inclusion were those which either had received considerable attention in the research efforts of personality and social psychologists or had, in the opinion of the author, potential for furthering an understanding of the personality functioning of the normal or non-psychopathologically disturbed individual. A variety of research applications of the JPI has supported its unique coverage of the personality domain, although it should be recognized that other, similarly specific configurations of personality traits (e.g., such as that underlying development of the *Personality Research Form*) may be equally viable from a conceptual viewpoint.

One characteristic of the JPI (and JPI-R) that differentiates it from some other personality measures is that its scales were constructed from large item pools based on explicit definitions of each trait. Table 1-1 presents descriptions and defining trait adjectives of high and low scorers on the 15 JPI-R scales. Elaborations of the trait definitions are given in Chapter 2. The descriptions listed in Table 1-1 provided a foundation both for the preparation of items for each scale, and for the definitions of traits rated by judges in validation studies (see Chapter 4). It is very important that the JPI-R user becomes familiar with the descriptions and definitions because they provide an indispensable basis for interpretation. It is to be emphasized that *scale interpretations should be based on the information provided in this manual rather than on what a test administrator might understand by the scale name from other sources.* It should also be recognized that the JPI scales were developed to be bipolar. Thus, the direction of scoring for any given scale was arbitrarily chosen to be in a particular direction. (Risk Taking could just as well have been considered in terms of Cautiousness.) This is particularly true because, for each scale, ten items were selected to represent the positive pole of the dimension and ten to represent the negative pole.

Updates to the JPI

The JPI-R and related materials reflect 10 noteworthy developments over the original version, which was first published in 1976. For the user familiar with the original JPI, it may be helpful to review the changes here.

1.   Renaming of JPI Scales

Six JPI scales were renamed in order to reflect better the underlying trait measured by those scales. The scale originally labelled "Self Esteem," for example, has been

Table 1-1: Trait Descriptions for the Jackson Personality Inventory - Revised

	Scale	Description of High Scorer	Defining Trait Adjectives of High Scorer	Description of Low Scorer	Defining Trait Adjectives of Low Scorer
ANALYTICAL	**Complexity**	Seeks intricate solutions to problems; is impatient with oversimplification; is interested in pursuing topics in depth regardless of their difficulty; enjoys abstract thought; enjoys intricacy.	Complex, contemplative, clever, discerning, intellectual, thoughtful, analytical.	Prefers concrete to abstract interpretations; avoids contemplative thought; uninterested in probing for new insight.	Uncomplicated, unreflective, straightforward, predictable, matter-of-fact.
	Breadth of Interest	Is attentive and involved; motivated to participate in a wide variety of activities; interested in learning about a diversity of things.	Curious, interested, inquiring, involved, inquisitive, seeking, exploring.	Has narrow range of interests; remains uninterested when exposed to new activities; has few hobbies; confined tastes.	Inflexible, unobservant, narrow, insular, uninvestigative.
	Innovation	A creative and inventive individual; capable of originality of thought; motivated to develop novel solutions to problems; values new ideas; likes to improvise.	Ingenious, original, innovative, productive, imaginative.	Has little creative motivation; seldom seeks originality; conservative thinker; prefers routine activities.	Unimaginative, deliberate, practical, sober, prosaic, literal, uninventive, routine.
	Tolerance	Accepts people even though their beliefs and customs may differ from his or her own; open to new ideas; free from prejudice; welcomes dissent.	Broad-minded, open-minded, unprejudiced, receptive, judicious, impartial, dispassionate, lenient, indulgent.	Entertains only opinions consistent with his or her own; makes quick value judgments about others; feels threatened by those with different opinions; rejects people from different intellectual, ethnic, religious, cultural or social backgrounds; identifies closely with those sharing his or her beliefs; critical of substandard performance.	Opinionated, intolerant, cocksure, dogmatic, narrow-minded, prejudiced, uncompromising.
EMOTIONAL	**Empathy**	Tends to identify closely with other people and their problems; values close emotional ties with others; concerned about others; upset by others' misfortunes.	Emotional, tender, kind, affectionate, demonstrative, warm-hearted, sympathetic, compassionate.	Emotionally aloof; does not allow feelings to intrude on decision making; prefers impersonal to personal relationships; displays little compassion for other people's problems; has trouble relating to people; is emotionally unresponsive to those around him or her.	Unresponsive, distant, hardheaded, taciturn, unsentimental, indifferent, cold.
	Anxiety	Tends to worry over inconsequential matters; more easily upset than the average person; apprehensive about the future.	Worried, tense, nervous, preoccupied, anxious, edgy, distressed, agitated, fearful.	Remains calm in stressful situations; takes things as they come without worrying; can relax in difficult situations; usually composed and collected.	Easygoing, patient, calm, serene, tranquil, relaxed, contented, placid, imperturbable.
	Cooperativeness	Is susceptible to social influence and group pressures; tends to modify behavior to be consistent with standards set by others; follows suit; fits in.	Compliant, agreeing, acquiescent, adapting, accommodating, cooperative, concurring, emulating.	Refuses to go along with the crowd; unaffected and unswayed by others' opinions; independent in thought and action.	Individualistic, self-directed, self reliant, unyielding, nonconforming, unrestricted, contradicting, disagreeing.

Table 1-1 continued

	Scale	Description of High Scorer	Defining Trait Adjectives of High Scorer	Description of Low Scorer	Defining Trait Adjectives of Low Scorer
E X T R O V E R T E D	**Sociability**	Will eagerly join a variety of social groups; seeks both formal and informal association with others; values positive interpersonal relationships; actively social.	Sociable, friendly, gregarious, outgoing, "joiner," convivial, companionable, fun-loving, extrovert, congenial, cordial, good natured.	Keeps to him- or herself; has a limited number of friends and acquaintances; avoids social activities.	Nonparticipant, solitary, "loner," unsociable, retiring, uncommunicative, withdrawn.
	Social Confidence	Confident in dealing with others; not easily embarrassed or influenced by others; shows presence in interpersonal situations; possesses aplomb.	Self-assured, composed, egotistical, self-possessed, poised, self-sufficient.	Feels awkward among people, especially strangers; ill at ease socially; prefers to remain unnoticed at social events; opinion of him- or herself as a group member is moderate or low; lacks self-confidence; easily embarrassed.	Self-depreciating, timid, unassuming, modest, shy, humble, self-conscious.
	Energy Level	Is active and spirited; possesses reserves of strength; does not tire easily; capable of intense work or recreational activity for long periods of time.	Lively, vigorous, active, persevering, industrious, tireless, dynamic, enthusiastic, eager.	Tires quickly and easily; avoids strenuous activities; lacks stamina; requires a good deal of rest; slow to respond; avoids tasks requiring sustained effort.	Passive, listless, drowsy, lazy, languid.
O P P O R T U N I S T I C	**Social Astuteness**	Is skillful at persuading others to achieve a particular goal, sometimes by indirect means; occasionally seen as manipulative of others, but is ordinarily diplomatic; socially intelligent.	Shrewd, sophisticated, tactful, crafty, influential, subtle, persuasive, discreet, worldly.	Tactless when dealing with others; socially naive and maladroit; speaks in a direct, straightforward manner; insensitive of the effects of his or her behavior on others.	Direct, frank, tactless, candid, unpolished, undesigning, outspoken, impolite, blunt, naive.
	Risk Taking	Enjoys gambling and taking a chance; willingly exposes self to situations with uncertain outcomes; enjoys adventures having an element of peril; takes chances; unconcerned with danger.	Reckless, bold, impetuous, intrepid, enterprising, incautious, venturesome, daring, rash.	Cautious about unpredictable situations; unlikely to bet; avoids situations of personal risk, even those with great rewards; doesn't take chances regardless whether the risks are physical, social, monetary, or ethical.	Cautious, hesitant, careful, wary, prudent, discreet, heedful, unadventurous, precautionary, security-minded, conservative.
D E P E N D A B L E	**Organization**	Makes effective use of time; completes work on schedule; is not easily distracted.	Orderly, disciplined, planful, tidy, consistent, methodical, precise, neat, meticulous, systematic.	Frequently procrastinates, easily distracted; falls behind in assignments or duties; often loses things; personal effects frequently in disarray; handles situations in an unsystematic, unpredictable way, rarely plans before doing things.	Disorganized, inefficient, orderless, absentminded, forgetful.
	Traditional Values	Values traditional customs and beliefs; his or her values may be seen by others as "old-fashioned;" takes a rather conservative view regarding contemporary standards of behavior; opposed to change in social customs.	Moralistic, conventional, strict, prim, devout, prudish, puritanical, righteous, rigid.	Critical of tradition; liberal or radical attitudes regarding behavior; questions laws and precedents; acts in an unconventional manner; believes that few things should be censored.	Modern, radical, liberal, unorthodox, contemporary, permissive.
	Responsibility	Feels a strong obligation to be honest and upright; experiences a sense of duty to other people; has a strong and inflexible conscience.	Responsible, honest, ethical, incorruptible, scrupulous, dependable, conscientious, reliable, stable, straightforward.	Apathetic about helping others; frequently breaks a promise; takes little interest in community projects; can't be relied on to meet obligations; refuses to be held to answer for his or her actions.	Unreliable, indifferent, unfair, remiss, neglectful, thoughtless, negligent, inconsiderate, self-centered, careless.

renamed *Social Confidence* to indicate more precisely the particular type of self esteem measured by that scale. The original and revised names of the six scales are as follows:

Original Scale Name	Revised Scale Name
Conformity	Cooperativeness
Interpersonal Affect	Empathy
Self Esteem	Social Confidence
Social Adroitness	Social Astuteness
Social Participation	Sociability
Value Orthodoxy	Traditional Values

2. Scale Reorganization

Studies with the JPI have shown that the 15 content scales may be grouped into five meaningful clusters. An adjective label for each of the five clusters was chosen to represent the conceptual overlap among the specific traits contributing to that cluster. The new organization of JPI scales is reflected in all tables in the Manual, as well as the JPI-R item booklet, answer sheet, and profile sheet. The statistical bases for the five dimensions are described in Chapter 4, and relevant interpretive material is provided in Chapter 2. The dimensional labels and the corresponding JPI-R scales and abbreviations are as follows:

Cluster Label	Contributing Scales	Abrs.
1. Analytical	Complexity	Cpx
	Breadth of Interest	Bdi
	Innovation	Inv
	Tolerance	Tol
2. Emotional	Empathy	Emp
	Anxiety	Axy
	Cooperativeness	Cpr
3. Extroverted	Sociability	Soc
	Social Confidence	Scf
	Energy Level	Enl
4. Opportunistic	Social Astuteness	Sas
	Risk Taking	Rkt
5. Dependable	Organization	Org
	Traditional Values	Trv
	Responsibility	Rsy

3. Removal of the Infrequency Scale

Experience with the JPI, particularly in employment settings, suggested the need to reconsider the usefulness of the JPI Infrequency scale. First, the Infrequency scale was designed to identify cases of nonpurposeful responding, which rarely arise in testing situations. Second, taken at face value, Infrequency scale items (e.g., "I have no sense of taste at all") have little or no direct conceptual relevance to external criteria. In order to facilitate the use of the JPI-R in contexts in which the relevance of individual items is considered to be important (e.g., employee selection), the original Infrequency scale has been removed. As a result, the JPI-R is 20 items shorter and requires less time to administer and score. For researchers concerned about the possibility of nonpurposeful responding, two methods of detection based on responses to items from existing scales are described in Chapter 3.

4. New and Broader-Based Norms

The original JPI adult norms were derived from college populations. College norms have been updated. In addition, two entirely new sets of norms have been developed representing blue and white collar workers, respectively. Norms are reported separately for the three groups within each sex; but, in order to facilitate normative comparisons involving diverse and heterogeneous populations, gender-specific norms used in plotting T-scores and in deriving percentile scores are based on the equally weighted combination of the three new sets of norms. Current sex-specific norms are reported in Tables 1-2 and 1-3. Table 1-4 presents sex-combined norms.

Table 1-2: Norms for the Jackson Personality Inventory-Revised (Males)

Variable	A[1] High School N = 400 Mean	SD	B[2] College N = 367 Mean	SD	C[3] Blue Collar N = 629 Mean	SD	D[4] Executives N = 440 Mean	SD	(B+C+D)[5] Combined Total N = 1,436 Mean	SD
Complexity	9.06	3.02	10.73	3.38	7.64	2.80	9.43	3.16	9.27	3.37
Breadth of Interest	8.69	3.93	10.98	4.34	9.60	4.70	11.80	4.22	10.79	4.52
Innovation	12.09	3.96	13.87	4.82	12.73	4.39	14.50	3.08	13.70	4.44
Tolerance	11.45	3.05	11.80	3.42	11.46	3.38	11.79	3.41	11.68	3.41
Empathy	9.42	3.68	11.72	4.08	10.18	4.06	9.57	4.05	10.49	4.16
Anxiety	10.76	3.75	11.20	4.50	10.53	3.99	8.64	4.26	10.12	4.39
Cooperativeness	9.32	4.06	7.87	4.12	7.09	3.73	8.68	3.94	7.88	3.99
Sociability	10.02	4.18	10.30	4.72	9.09	4.31	8.89	4.15	9.43	4.44
Social Confidence	10.72	4.17	12.50	4.52	12.97	4.47	14.33	3.85	13.27	4.36
Energy Level	11.57	3.68	11.85	4.21	12.36	3.78	14.97	3.08	13.06	3.96
Social Astuteness	9.80	3.09	10.89	3.47	8.77	3.61	10.84	3.37	10.17	3.62
Risk Taking	10.37	4.13	10.07	4.79	7.82	4.08	11.67	4.07	9.85	4.61
Organization	9.94	3.65	10.33	4.07	12.89	3.36	12.77	3.52	12.00	3.85
Traditional Values	7.74	3.27	8.27	4.35	11.63	3.44	9.81	3.66	9.90	4.07
Responsibility	10.36	3.51	11.43	3.43	14.59	3.22	14.23	2.94	13.42	3.50

Notes: 1. Reported in original manual; 2. See Appendix B for contributing institutions; 3. Contributed by J. Wayne Thompson, Ph.D.; 4. Contributed by Richard A. Hagberg, Ph.D.; 5. Based on equal weighting.

Table 1-3: Norms for the Jackson Personality Inventory-Revised (Females)

Variable	A[1] High School N = 554 Mean	SD	B[2] College N = 740 Mean	SD	C[3] Blue Collar N = 264 Mean	SD	D[4] Executives N = 115 Mean	SD	(B+C+D)[5] Combined Total N = 1,119 Mean	SD
Complexity	10.11	3.05	10.98	3.28	8.07	2.71	11.07	3.18	10.04	3.37
Breadth of Interest	9.70	4.98	11.13	4.39	9.65	4.56	12.97	3.96	11.25	4.52
Innovation	12.16	4.25	12.22	5.00	11.23	4.53	12.24	4.92	11.90	4.84
Tolerance	12.42	2.87	11.79	3.35	12.53	3.17	12.15	3.19	12.16	3.25
Empathy	13.37	3.73	14.46	3.55	12.43	3.76	14.46	3.79	13.78	3.82
Anxiety	12.82	3.71	13.29	4.13	11.77	4.09	11.23	3.80	12.10	4.10
Cooperativeness	9.95	3.93	8.90	4.58	7.53	3.89	9.66	3.56	8.70	4.13
Sociability	11.80	4.43	10.76	4.46	9.92	4.34	10.71	4.01	10.46	4.29
Social Confidence	11.11	4.42	12.44	4.58	11.06	5.10	13.98	4.85	12.49	4.99
Energy Level	11.64	3.61	11.05	3.84	11.59	3.67	12.32	3.44	11.65	3.69
Social Astuteness	9.14	2.93	10.26	3.42	8.05	3.44	10.09	3.32	9.47	3.54
Risk Taking	8.17	3.98	7.21	4.33	5.81	3.83	6.90	3.77	6.64	4.03
Organization	10.02	3.85	11.33	4.32	13.45	3.34	12.86	3.41	12.55	3.82
Traditional Values	8.86	3.45	9.09	4.13	12.30	3.17	10.72	4.22	10.70	4.09
Responsibility	12.38	3.39	13.15	2.90	15.32	2.81	16.00	2.39	14.82	2.97

Notes: 1. Reported in original manual; 2. See Appendix B for contributing institutions; 3. Contributed by J. Wayne Thompson, Ph.D.; 4. Contributed by Richard A. Hagberg, Ph.D.; 5. Based on equal weighting.

Table 1-4: JPI-R Sex-Combined Norms

Variable	Mean	SD
Complexity	9.66	3.39
Breadth of Interest	11.02	4.53
Innovation	12.80	4.73
Tolerance	11.92	3.34
Empathy	12.14	4.32
Anxiety	11.11	4.36
Cooperativeness	8.29	4.08
Sociability	9.95	4.40
Social Confidence	12.88	4.70
Energy Level	12.36	3.89
Social Astuteness	9.82	3.60
Risk Taking	8.25	4.62
Organization	12.27	3.85
Traditional Values	10.30	4.10
Responsibility	14.12	3.32

Note: Based on equal weighting of within-sex combined norms reported in the right-most column of Tables 1-2 (males) and 1-3 (females); total N = 2,555.

5. Extended Distributional Characteristics

In addition to means and standard deviations, indices of skewness and kurtosis have been included to permit evaluation of the 15 content scales with respect to distributional normality. This information can be found in Chapter 4, under the heading Extended Distributional Characteristics.

6. New Research Findings

Recent research has yielded findings relevant to the ongoing evaluation of the JPI. Results of such research, including studies of senior executives, are discussed in Chapter 4. A JPI research bibliography is also provided.

7. New/Modified Items on the Traditional Values Scale

In keeping with growing concerns over the use of psychological tests in industrial settings (e.g., for employee selection), certain items on the JPI-R Traditional Values scale (e.g., regarding the acceptability of euthanasia) were modified or replaced to increase the relevance of that scale to predicting work-related criteria. Items having similar psychometric properties (e.g., p-value and item-total correlation) were selected as replacements.

8. Carbonless-Form Answer Sheets

The JPI-R answer sheet includes a second page to facilitate hand scoring. As on the original answer sheet, a response of true (T) or false (F) is indicated with an "X" for each item. The second page of the JPI-R answer sheet records item responses automatically by a carbonless duplication process. Hand scoring proceeds by removing the top page and adding up the X's visible on the second sheet in columns designated to each of the JPI-R's 15 scales. The second page in the JPI-R answer sheet thus obviates the need for a separate scoring template.

9. Scale-by-Scale Item Lists

Because it is important that the user understands what the JPI-R's 15 scales were intended to assess, several types of information bearing on scale interpretation are provided in the Manual. One particularly useful means of understanding the JPI-R scales is to review, as a set, the items assigned to each scale. Accordingly, the 20 items on each of the 15 scales are listed in Appendix A, with true-keyed and false-keyed items grouped separately.

10. Glossary of Technical Terms

Development of the JPI (and JPI-R) involved the use of sophisticated procedures. To assist in understanding JPI scale development, a glossary of relevant technical terms has been included at the end of the Manual.

Administering the JPI-R

Administering the JPI-R is relatively straightforward. Most respondents tested individually may simply be given a test booklet and answer sheet and asked to read the printed instructions on the cover of the booklet before beginning. For group administration, it is advantageous to make certain preparations before respondents

Figure 1-1: JPI-R Carbonless-Form Answer Sheet

JPI-R
Answer Sheet

NAME (please print; press firmly)   AGE   M   F   SEX (circle one)   DATE

DIRECTIONS: Indicate your name, age, sex, and date of testing in the spaces provided at the top. The answer boxes below are numbered the same as the statements in the booklet. Answer each statement by placing an X in either the true (T) or the false circle as shown in the example at right. Press firmly and answer every statement.

EXAMPLE

BEGIN HERE (press firmly)

THIS FORM IS PRINTED IN MAGENTA INK. ANY OTHER COLOR IS UNAUTHORIZED.

DO NOT WRITE IN THIS SPACE

JPI-R
Scoring Sheet

M   F

DIRECTIONS

1. Count the number of X's in the blank spaces in each column and print the number in the appropriate scoring box in the bottom right of the page. For the first 15 columns, use the second row of scoring boxes. For the last 15 columns, use the top row of scoring boxes.

2. Sum the numbers from the first and second rows of scoring boxes within columns and print the totals in the bottom row of boxes.

Cpx   Bdi   Inv   Tol   Emp   Axy   Cpr   Soc   Scf   Enl   Sas   Rkt   Org   Trv   Rsy

Raw Scores

Cpx   Bdi   Inv   Tol   Emp   Axy   Cpr   Soc   Scf   Enl   Sas   Rkt   Org   Trv   Rsy

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arrive at the testing site. The following guidelines are suggested in either case. Guidelines 1, 2, and 4 are particularly relevant to group testing.

Administration Guidelines

1. The test administrator should have a sufficient number of booklets, answer sheets, and sharpened pencils on hand for the testing session. If these are distributed to desks or tables prior to the admission of respondents, a great deal of respondents' time is saved.

2. A sufficient number of proctors should be present to assist the test administrator in distributing and collecting materials, and in answering questions.

3. If respondents have not already been informed of the purpose of the testing, they should be advised that they are about to take a personality questionnaire and informed of its purpose. They may then be instructed to complete the identifying information requested on the answer sheet.

4. It is appropriate to read the instructions on the JPI-R booklet cover aloud to a group of respondents, asking them to read along with the administrator. Any questions they have about the instructions should be answered at this point, before responding begins.

5. If testing time is limited, respondents should be informed as to how much time is available for completion of the questionnaire. Once or twice during the testing session, they may also be reminded of the time and encouraged to work rapidly, if necessary, but carefully.

6. Close individual supervision during testing is usually not required, but occasionally questions will arise about the interpretation of an item. Although it is permissible to provide respondents with the definition of an unfamiliar word, it is best to avoid providing detailed interpretation of an item, especially when this interpretation might lead a person to respond in a particular direction. Also, in group settings, questions should be answered individually and quietly so as not to disturb other respondents.

7. Whether the JPI-R is given in a supervised group setting, individually, or on some other basis, the attitude of the test administrator and his or her demeanor in presenting the materials may have some effect on the care with which respondents complete it. In general, test administration conducted in a serious and professional manner is most likely to produce optimal results.

8. When respondents have completed the JPI-R, it is good practice to scan their answer sheets for evidence that they have answered all of the statements. If, for any reason, certain items have been omitted, the respondent should be encouraged to complete them.

Scoring

The JPI-R answer sheet includes a second sheet to facilitate hand scoring. Samples of both sheets are shown on the next page. The respondent completes the top sheet by placing an "X" in one of the circles indicating a response of either true (T) or false (F) to each statement in the JPI-R item booklet. Although respondents are directed to respond to every statement, some items may have been skipped. It is

always a good idea to check over the answer sheet to ensure that one and only one X appears for each statement. If possible, missing or double responses should be resolved conscientiously by the respondent. If this is not possible, special note should be made on the answer sheet (and profile sheet; see below) to allow special consideration in interpreting scale scores.

Scoring begins by removing the top sheet. The edges of the answer sheet are perforated to facilitate their removal. By way of a carbonless duplication process, the second sheet will show X's corresponding to those made by the respondent on the top sheet. Unlike the top sheet, however, the second sheet will show clearly only those responses keyed in the direction of the given scale. This is because response boxes for items with positive keying (i.e., those on which choice of "True" indicates more of the given trait) have pre-darkened "False" options, and response boxes for items with negative keying (i.e., those on which choice of "False" indicates more of the given trait) have pre-darkened "True" options. Thus, X's on the top page denoting responses in the non-keyed direction will be masked by the pre-darkened squares on the second sheet.

The response boxes are arranged in 30 (vertical) columns, two columns for each of the JPI-R's 15 scales. Thus, each column will contain responses to half the items on a given scale. Each scale's two designated columns are separated by exactly 15 columns. The order of the scales in the first 15 columns (from Complexity to Responsibility) is identical to the order of the scales in the second 15 columns. To score the JPI-R, the X's appearing in the white spaces in the columns designated for each scale are tallied. The number of X's from each column is recorded in a separate scoring box. Because there are two columns for each scale, there are two scoring boxes for each scale. (A third row of boxes is provided to record overall raw scores; see below.) The tallies from the first 15 columns are recorded in the same order, from left to right, in the *second* (i.e., middle) row of scoring boxes. The tallies from the last 15 columns are recorded in the *first* (i.e., top) row of scoring boxes.

After the tallies from all 30 columns have been recorded in the appropriate scoring boxes, the raw score for each scale is derived simply by adding vertically the two tallies for that scale. The sum of the two tallies per scale is recorded in the third (i.e., bottom) row of scoring boxes, designated "Raw Scores." Because each scale contains 20 items, the maximum raw score for any scale cannot exceed 20 (the minimum score per scale is zero). Accordingly, a raw score greater than 20 would indicate the need to rescore.

Norms

It is common practice in personality assessment to transform observed scale scores into standardized form to permit meaningful comparisons between an individual's scores and those of a relevant comparison or "norm" group. Current college normative data were collected based on responses from 367 males and 740 females drawn from 23 North American educational institutions. Additional norms were compiled for both blue collar workers and business executives. Descriptions of normative data collection are provided below.

In the college norming study, 165 members of the American Psychological Association's *Society for Personality and Social Psychology* listing a university or college address were asked to administer the JPI to their undergraduate classes. In

return for each completed questionnaire, we offered the student a personalized JPI profile with appropriate interpretative materials. The 23 institutions represented in the college norm group are listed in Appendix B.

The second set of new norms was derived from the responses of 629 male and 264 female blue-collar workers. Representative jobs included auto assembly worker, machine operator, roofer, construction worker, laborer, welder, and concrete finisher. All jobs were in the private sector and involved primarily physical labor. Accordingly, jobs such as computer operator and office clerk are not represented in this group.

The third set of new norms was based on the responses of 555 senior executives enrolled in a professional development program. Job titles included president, vice president, chief financial officer, divisional general manager, and other senior and upper middle management positions. Respondents' work functions included administration, accounting and finance, research and development, manufacturing, sales and marketing, engineering, and human resources. A wide range of industries also was represented, including pharmaceuticals, defense manufacturing, computer hardware and software, office products, health care, medical instrumentation, hazardous waste disposal, electronics, construction materials, laser technology, importing, energy, telecommunications, public accounting, and public utilities.

The three recently compiled sets of norms are representative of scale scores from three relatively large and unique segments of the general North American adult population, namely, college students, blue collar workers, and white collar workers. If a particular respondent is a member of one of those groups, it may be desirable to compare the individual's scores to that group's norms. However, if a respondent is from a different population and/or comparison to one of the three source groups is not appropriate, reference to more general norms may be preferred. To facilitate normative interpretations for diverse groups of respondents, means and standard deviations for the three recently obtained samples were combined (using equal weighting) in forming a broader, more general normative base. Tables 1-2 and 1-3 contain male and female norms, respectively, for the original high school sample (labelled A), the new college (B), blue collar (C), and white collar (D) samples, as well as the combined within-sex adult norms based on groups B, C, and D. Sex-combined norms, based on equal weighting of the adult combined norms from the right-most columns of Tables 1-2 and 1-3, are reported separately in Table 1-4.

The recent sampling from colleges in the United States and Canada permits comparison with the college norms reported in the original (1976) edition of the JPI. The original college norms were collected in the 1970's. A relevant question is whether or not average levels of the personality traits measured by the JPI have changed appreciably in the college population between the times the two studies were conducted. Both sets of college norms are reported in Table 1-5. Comparisons within sex reveal that 13 of the 15 scales for each sex show mean differences of less than one point (on a 20-point scale). Overall, this suggests considerable stability of the JPI norms over time. The exceptions are that males' scores have increased, on average, by 1.12 points on Sociability and by 1.88 points on Traditional Values, and that females' scores have increased, on average, by 1.98 points on Social Confidence and by 1.16 points on Traditional Values. The exact reasons for these average increases are unknown. Regarding Traditional Values, however, the increase evident in both genders might reasonably be attributed to cultural movement away

Table 1-5: JPI 1970 and JPI-R Current College Norms

	Males				Females			
	1970		Current		1970		Current	
	$N = 2,000$		$N = 367$		$N = 2,000$		$N = 740$	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Complexity	11.15	3.39	10.73	3.38	11.36	3.43	10.98	3.28
Breadth of Interest	11.41	4.29	10.98	4.34	11.70	4.21	11.13	4.39
Innovation	13.09	4.48	13.87	4.82	11.68	5.21	12.22	5.00
Tolerance	12.29	3.31	11.80	3.42	12.38	3.18	11.79	3.35
Empathy	10.97	4.35	11.72	4.08	13.71	4.02	14.46	3.55
Anxiety	10.38	4.43	11.20	4.50	12.42	4.24	13.29	4.13
Cooperativeness	8.30	4.36	7.87	4.12	9.66	4.50	8.90	4.58
Sociability	9.18	4.69	10.30	4.72	10.60	4.65	10.76	4.46
Social Confidence	11.57	4.42	12.50	4.52	10.46	5.10	12.44	4.58
Energy Level	12.04	3.83	11.85	4.21	11.08	3.96	11.05	3.84
Social Astuteness	10.47	3.26	10.89	3.47	9.65	3.29	10.26	3.42
Risk Taking	10.39	4.78	10.07	4.79	7.62	4.28	7.21	4.33
Organization	10.72	4.21	10.33	4.07	10.71	4.20	11.33	4.32
Traditional Values	6.39	3.97	8.27	4.35	7.93	4.58	9.09	4.13
Responsibility	11.32	3.56	11.43	3.43	12.88	3.24	13.15	2.90

from the pronounced and sometimes radical liberalism that characterized college campuses at the time the original norms were compiled.

An effort was made during item selection to identify a combination of items having a mean value close to the center of the scale, namely 10.0. This was done to provide final scales with more nearly normal distributions, rather than skewed in one direction or the other. It will be observed from Tables 1-2 and 1-3 that the effort to achieve means of around 10.0 was generally successful. Coefficients of skewness and kurtosis for all the JPI scales, based on scores from the new college sample (males and females combined; total $N = 1,107$), are provided in Chapter 4.

Profile Sheet

Scores that have been standardized with reference to a given normative sample (i.e., using scale means and standard deviations) may be plotted as a set in forming a profile. Computer-generated JPI-R profiles are available from the publisher as part of the JPI-R Basic Report. Blank profile sheets are also available for plotting profiles manually. Preparing a JPI-R profile by hand is quite simple, as follows:
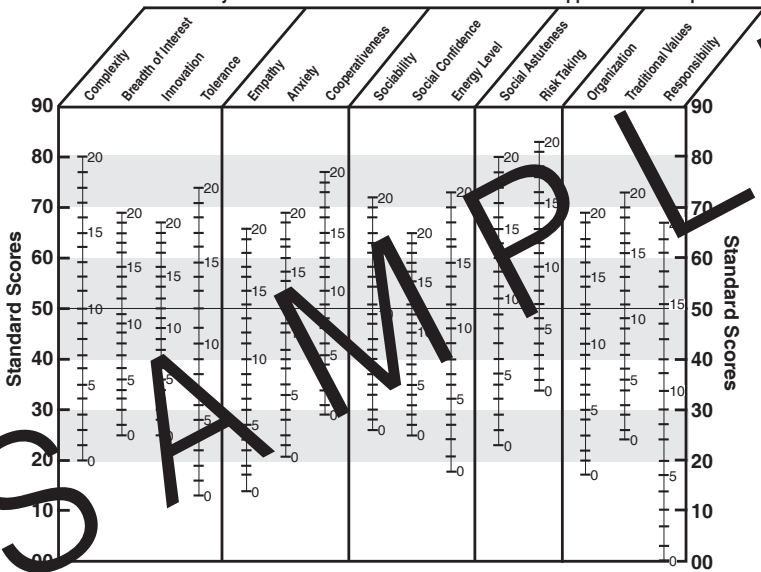
1. Score the JPI-R answer sheet (as described above) and tabulate the Raw Scores in the boxes at the bottom right of the scoring sheet.

2. Transfer the Raw Scores from the scoring sheet in the same order to the spaces contained on the profile sheet. Note that a different profile is provided for males and females on opposite sides of the profile sheet. It is important to make sure the appropriate profile is used for the given respondent. Gender is indicated at the top of both the Answer Sheet and the Scoring Sheet.

3. For each of the 15 scales, find the raw score (ranging from 0 to 20) directly above on its vertical profile grid and place a mark at that point on the grid.

4. Connect the marks from scale to scale using a straight edge.

Figure 1-2: JPI-R Profile Sheet: Female & Male Norms

By following this procedure one may easily read the standard (T) score from the vertical axes on the right and left of the profile. The T scores employed on the JPI-R Profile, like those used with other personality inventories, have a mean of 50 and a standard deviation of 10. The norms (i.e., scale means and standard deviations) providing the foundation for the JPI-R profile are the combined norms contained in the right-most columns of Tables 1-2 (males) and 1-3 (females). If standard scores or percentiles based on the combined norms are desired without the use of a profile, these may be obtained by referring to Tables 1-6 to 1-9. The standard scores employed in Tables 1-6 (males) and 1-7 (females) are the same T-scores as those used on the profiles.

Table 1-6: Standard (T) Score Equivalents of JPI-R Raw Scores: Male Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	82	70	64	74	73	73	80	74	65	68	77	72	71	75	69	20
19	79	68	62	71	70	70	78	72	63	65	74	70	68	72	66	19
18	76	66	60	69	68	68	75	69	61	62	72	68	66	70	63	18
17	73	64	57	66	66	66	73	67	59	60	69	66	63	67	60	17
16	70	62	55	63	63	63	70	65	56	57	66	63	60	65	57	16
15	67	59	53	60	61	61	68	63	54	55	63	61	58	63	55	15
14	64	57	51	57	58	59	65	60	52	52	61	59	55	60	52	14
13	61	55	48	54	56	57	63	58	49	50	58	57	53	58	49	13
12	58	53	46	51	54	54	60	56	47	47	55	55	50	55	46	12
11	55	50	44	48	51	52	58	54	45	45	52	52	47	53	43	11
10	52	48	42	45	49	50	55	51	43	42	50	50	45	50	40	10
9	49	46	39	42	46	47	53	49	40	40	47	48	42	48	37	9
8	46	44	37	39	44	45	50	47	38	37	44	46	40	45	35	8
7	43	42	35	36	42	43	48	45	36	35	41	44	37	43	32	7
6	40	39	33	33	39	41	45	42	33	32	38	42	34	40	29	6
5	37	37	30	30	37	38	43	40	31	30	36	39	32	38	26	5
4	34	35	28	27	34	36	40	38	29	27	33	37	29	36	23	4
3	31	33	26	25	32	34	38	36	26	25	30	35	27	33	20	3
2	28	31	24	22	30	32	35	33	24	22	27	33	24	31	17	2
1	25	28	21	19	27	29	33	31	22	20	25	31	21	28	15	1
0	22	26	19	16	25	27	30	29	20	17	22	29	19	26	12	0

Note: Based on combined norms from Table 1-2; mean T-score = 50, SD = 10.

Table 1-7: Standard (T) Score Equivalents of JPI-R Raw Scores: Female Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	80	69	67	74	66	69	77	72	65	73	80	83	69	73	67	20
19	77	67	65	71	64	67	75	70	63	70	77	81	67	70	64	19
18	74	65	63	68	61	64	73	68	61	67	74	78	64	68	61	18
17	71	63	61	65	58	62	70	65	59	64	71	76	62	65	57	17
16	68	61	58	62	56	60	68	63	57	62	68	73	59	63	54	16
15	65	58	56	59	53	57	65	61	55	59	66	71	56	61	51	15
14	62	56	54	56	51	55	63	58	53	56	63	68	54	58	47	14
13	59	54	52	53	48	52	60	56	51	54	60	66	51	56	44	13
12	56	52	50	50	45	50	58	54	49	51	57	63	49	53	40	12
11	53	49	48	46	43	47	56	51	47	48	54	61	46	51	37	11
10	50	47	46	43	40	45	53	49	45	46	52	58	43	48	34	10
9	47	45	44	40	37	42	51	47	43	43	49	56	41	46	30	9
8	44	43	42	37	35	40	48	44	41	40	46	53	38	43	27	8
7	41	41	40	34	32	38	46	42	39	37	43	51	35	41	24	7
6	38	38	38	31	30	35	43	40	37	35	40	48	33	38	20	6
5	35	36	36	28	27	33	41	37	35	32	37	46	30	36	17	5
4	32	34	34	25	24	30	39	35	33	29	35	43	28	34	14	4
3	29	32	32	22	22	28	36	33	31	27	32	41	25	31	10	3
2	26	30	30	19	19	25	34	30	29	24	29	38	22	29	07	2
1	23	27	28	16	17	23	31	28	27	21	26	36	20	26	03	1
0	20	25	25	13	14	21	29	26	25	18	23	34	17	24	00	0

Note: Based on combined norms from Table 1-3; mean T-score = 50, SD = 10.

Table 1-8: Percentile Equivalents of JPI-R Raw Scores: Male Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	99	98	92	99	99	99	99	99	93	96	99	99	98	99	97	20
19	99	96	88	98	98	98	99	99	90	93	99	98	96	99	95	19
18	99	95	84	97	96	96	99	97	86	88	99	96	95	98	90	18
17	99	92	76	95	95	95	99	96	82	84	97	95	90	96	84	17
16	98	88	69	90	90	90	98	93	73	76	95	90	84	93	76	16
15	96	82	62	84	86	86	96	90	66	69	90	86	79	90	69	15
14	92	76	54	76	79	82	93	84	58	58	86	82	69	84	58	14
13	86	69	42	66	73	76	90	79	46	50	79	76	62	79	46	13
12	79	62	34	54	66	66	84	73	38	38	69	69	50	69	34	12
11	69	50	27	42	54	58	79	66	31	31	58	58	38	62	24	11
10	58	42	21	31	46	50	69	54	24	21	50	50	31	50	16	10
9	46	34	14	21	34	38	62	46	16	16	38	42	21	42	10	9
8	34	27	10	14	27	31	50	38	12	10	27	34	16	31	7	8
7	24	21	7	8	21	24	42	31	8	7	18	27	10	24	4	7
6	16	14	4	4	14	18	31	21	4	4	12	21	5	16	2	6
5	10	10	2	2	10	12	24	16	3	2	8	14	4	12	1	5
4	5	7	1	1	5	8	16	12	2	1	4	10	2	8	0	4
3	3	4	1	1	4	5	12	8	1	1	2	7	1	4	0	3
2	1	3	1	0	2	4	7	4	1	0	1	4	1	3	0	2
1	1	1	0	0	1	2	4	3	0	0	1	3	0	1	0	1
0	0	1	0	0	1	1	2	2	0	0	0	2	0	1	0	0

Note: Based on combined male norms from Table 1-2.

Table 1-9: Percentile Equivalents of JPI-R Raw Scores: Female Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	99	97	96	99	95	97	99	99	93	99	99	99	98	99	96	20
19	99	96	93	98	92	96	99	98	90	98	99	99	96	98	92	19
18	99	93	90	96	86	92	99	96	86	96	99	99	92	96	86	18
17	98	90	86	93	79	88	98	93	82	92	98	99	88	93	76	17
16	96	86	79	88	73	84	96	90	76	88	96	99	82	90	66	16
15	93	79	73	82	62	76	93	86	69	82	95	98	73	86	54	15
14	88	73	66	73	54	69	90	79	62	73	90	96	66	79	38	14
13	82	66	58	62	42	58	84	73	54	66	84	95	54	73	27	13
12	73	58	50	50	31	50	79	66	46	54	76	90	46	62	18	12
11	62	46	42	34	24	38	73	54	38	42	66	86	34	54	10	11
10	50	38	34	24	16	31	62	46	31	34	54	79	24	42	5	10
9	38	31	27	16	10	21	54	38	24	24	46	73	18	34	2	9
8	27	24	21	10	7	16	42	27	18	16	34	62	12	24	1	8
7	18	18	16	5	4	12	34	21	14	10	24	54	7	18	1	7
6	12	12	12	3	2	7	24	16	10	7	16	42	4	14	0	6
5	7	8	8	1	1	4	18	10	7	4	10	34	2	8	0	5
4	4	5	5	1	1	2	14	7	4	2	7	24	1	5	0	4
3	2	4	4	0	0	1	8	4	3	1	4	18	1	3	0	3
2	1	2	2	0	0	1	5	2	2	1	2	12	0	2	0	2
1	0	1	1	0	0	0	3	1	1	0	1	8	0	1	0	1
0	0	1	1	0	0	0	2	1	1	0	0	5	0	1	0	0

Note: Based on combined female norms from Table 1-3.

Table 1-10: Standard (T) Score Equivalents of JPI-R Raw Scores: Combined Male & Female Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	81	70	65	74	68	70	79	73	65	70	78	75	70	74	68	20
19	78	68	63	71	66	68	76	71	63	67	76	73	67	71	65	19
18	75	65	61	68	64	66	74	68	61	64	73	71	65	69	62	18
17	72	63	59	65	61	64	71	66	59	62	70	69	62	66	59	17
16	69	61	57	62	59	61	69	64	57	59	67	67	60	64	56	16
15	66	59	55	59	57	59	66	61	55	57	64	65	57	61	53	15
14	63	57	53	56	54	57	64	59	52	54	62	62	54	59	50	14
13	60	54	50	53	52	54	62	57	50	52	59	60	52	57	47	13
12	57	52	48	50	50	52	59	55	48	49	56	58	49	54	44	12
11	54	50	46	47	47	50	57	52	46	47	53	56	47	52	41	11
10	51	48	44	44	45	47	54	50	44	44	51	54	44	49	38	10
9	48	46	42	41	43	45	52	48	42	41	48	52	42	47	35	9
8	45	43	40	38	40	43	49	46	40	39	45	49	39	44	32	8
7	42	41	38	35	38	41	47	43	37	36	42	47	36	42	29	7
6	39	39	36	32	36	38	44	41	35	34	39	45	34	40	26	6
5	36	37	34	29	33	36	42	39	33	31	37	43	31	37	23	5
4	33	35	31	26	31	34	39	36	31	29	34	41	29	35	20	4
3	30	32	29	23	29	31	37	34	29	26	31	39	26	32	17	3
2	27	30	27	20	27	29	35	32	27	23	28	36	23	30	13	2
1	24	28	25	17	24	27	32	30	25	21	25	34	21	27	10	1
0	22	26	23	14	22	25	30	27	23	18	23	32	18	25	7	0

Note: Based on sex-combined norms from Table 1-4.

Table 1-11: Percentile Equivalents of JPI-R Raw Scores: Combined Male & Female Norms

Raw Score	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	Raw Score
20	99	98	93	99	96	98	99	99	93	98	99	99	98	99	96	20
19	99	96	90	98	95	96	99	98	90	96	99	99	96	98	93	19
18	99	93	86	96	92	95	99	96	86	92	99	98	93	97	88	18
17	99	90	82	93	86	92	98	95	82	88	98	97	88	95	82	17
16	97	86	76	88	82	86	97	92	76	82	96	96	84	92	73	16
15	95	82	69	82	76	82	95	86	69	76	92	93	76	86	62	15
14	90	76	62	73	66	76	92	82	58	66	88	88	66	82	50	14
13	84	66	50	62	58	66	88	76	50	58	82	84	58	76	38	13
12	76	58	42	50	50	58	82	69	42	46	73	79	46	66	27	12
11	66	50	34	38	38	50	76	58	34	38	62	73	38	58	18	11
10	54	42	27	27	31	38	66	50	27	27	54	66	27	46	12	10
9	42	34	21	18	24	31	58	42	21	18	42	58	21	38	7	9
8	31	24	16	12	16	24	46	34	16	14	31	46	14	27	4	8
7	21	18	12	7	12	18	38	24	10	8	21	38	8	21	2	7
6	14	14	8	4	8	12	27	18	7	5	14	31	5	16	1	6
5	8	10	5	2	4	8	21	14	4	3	10	24	3	10	0	5
4	4	7	3	1	3	5	14	8	3	2	5	18	2	7	0	4
3	2	4	2	0	2	3	10	5	2	1	3	14	1	4	0	3
2	1	2	1	0	1	2	7	4	1	0	1	8	0	2	0	2
1	1	1	1	0	1	1	4	2	1	0	1	5	0	1	0	1
0	0	1	0	0	0	1	2	1	0	0	0	4	0	1	0	0

Note: Based on sex-combined norms from Table 1-4.

INTERPRETING THE
JACKSON PERSONALITY INVENTORY - REVISED

In learning to use the JPI-R effectively, a number of points are worth remembering. First, it is often misleading to rely on common understanding as providing the intended meaning of a trait name. To reduce the opportunity for misunderstandings of this sort, the user should become familiar with the scale definitions contained in Table 1-1. Reviewing the items on each scale in light of the definitions would further promote accurate interpretations. Appendix A lists all 300 items, scale by scale, for this purpose. Second, the user should become familiar with the rationale of JPI-R construction covered in Chapter 3, and review the validity data presented in Chapter 4. Third, the present chapter is designed to be useful by (a) specifying types of JPI-R records requiring special attention; (b) discussing and clarifying scale definitions and interpretations contained in Table 1-1; (c) reviewing the JPI-R scale clusters identified by principal components analysis, and (d) providing a set of sample JPI-R profiles representing different kinds of people.

Records Requiring Special Attention

In general, the great majority of people responding to a personality questionnaire take it seriously and respond purposefully. However, although rare, deliberate distortion, passive noncompliance, and general carelessness in following instructions do occur. It is appropriate to make provisions for these possibilities in interpreting JPI-R scale scores. Three general classes of records may require special attention from the standpoint of validity. These include (a) nonpurposeful responding, (b) faking or motivated distortion, and (c) membership in a population different from those on which norms are based.

Nonpurposeful Responding

Occasionally, some or most of the responses on a given JPI-R will be answered on some basis other than purposeful intentions. There is a variety of possible reasons for this, although occurrences are rare. An individual may be rushed to complete the JPI-R and answer the last few dozen items more or less at random. A respondent who feels coerced into the testing situation may reflect a lack of motivation by answering randomly. An individual may not understand written English well enough to follow directions and interpret items meaningfully. Simple carelessness is another possibility. A person may, for instance, confuse the number of an item in the booklet with some non-corresponding location on the answer sheet. Obviously, profiles based on such responses are not interpretable in the usual way. Such records should be placed in a different category, resulting in higher reliability for those records retained for standard interpretation (Jackson, 1971). Methods for detecting nonpurposeful responding, based on responses to items from the JPI-R's 15 content scales, are described in Chapter 3.

Faking and Motivated Distortion

The problem of faking on personality questionnaires has received considerable attention over the past 35 years. There are several observations that should be made with respect to the JPI-R: (a) the characteristics assessed by the JPI-R are not nearly so evaluative as those assessed by many other personality questionnaires, particularly tests designed to assess psychopathology; (b) by means of special item-selection procedures, described in Chapter 3, the social desirability component of each item was suppressed in relation to its content component, thereby reducing the opportunity for "faking good" or "faking bad"; (c) many of the purposes for which the JPI-R was intended—namely, research in personality, as an aid to vocational, educational, and personal-adjustment counseling, classroom demonstration, and similar applications—present minimal motivational inducements to fake or distort responses. When the JPI-R is to be used for distinctly different purposes where motivation to fake may be present, such as in personnel selection, the user would be well advised to undertake research designed to appraise the extent of faking, what its normative effects are on specific scale scores, and how such faking might be reduced, or, alternately, how it might bear on validity. The development of scales and other strategies to detect and control for faking in particular selection situations, such as those proposed by Norman (1963), might also be undertaken. Thus, while the JPI-R was constructed using techniques designed to suppress general desirability responding, particular assessment situations may elicit a motivation to distort responses in particular directions. It is to be emphasized, however, that motivated distortion in a given situation may turn out to be less than is generally believed. Empirical findings regarding dissimulation and the JPI-R are reported in Chapter 4.

Membership in a Unique Population

The JPI-R was standardized on college, blue collar, and white collar adult populations and should be applicable to such groups, as well as groups similar in age, education, and socioeconomic background. Certain of the scales, like Tolerance and Traditional Values, are undoubtedly related to age and education. Applications of the JPI-R to populations different from the three normative groups (or from their combination) ideally should employ new norms based on such populations when there is interest in relating an individual's score to a population. A middle-aged individual employed in an occupation having allegiance to a conservative wing of a political party might appear on the combined adult norms to be deviantly low on Tolerance and deviantly high on Traditional Values. But when compared with persons of his or her own age in similar circumstances, the individual might be at the mean. It is a relatively simple matter to compute means and standard deviations for particular groups. This should be undertaken whenever an individual's JPI-R scores are to be compared with those of a population markedly dissimilar from those reported here for normative purposes. There are, of course, situations in which norms are of little or no relevance, as, for example, when individuals' scores are rank ordered for employment decisions and cut scores based on empirical findings are used. In such cases, reference to published norms might be unnecessary.

Interpretation of JPI-R Scales

The JPI-R was developed within the context of a dimensional formulation of personality. Accordingly, each individual's personality is considered to occupy a

location in a hypothetical multidimensional space. Scores on individual JPI-R scales for a given person reveal his or her location in that space. Following the traditional model of test theory, the higher a person's score on a given scale, the higher is his or her position on the dimension underlying the scale. Within the context of this model, all individuals are thought of as possessing the trait or characteristic to some identifiable degree. The higher the person's score, the greater the probability that he or she will show behavior reflecting the personality trait measured by the scale. Consideration of scores on all JPI-R scales as a set, called "profiles," permits interpretations of character that go beyond those associated with individual scales. In particular, statistical analyses of JPI-R scale scores have revealed the presence of five "higher-order" clusters of JPI-R traits, which add to the interpretations afforded by individual scales. Before turning to examples of actual JPI-R profiles, it is useful to review the meanings of high and low scores on the JPI-R scales, both individually and in terms of the five clusters.

Definitions of JPI-R Scales

The JPI-R's scales were developed explicitly to represent specific, theoretically conceived personality dimensions (cf. Jackson, 1970; 1971; Wiggins, 1973). Thus, they are defined in terms of the constructs they were designed to measure. Table 1-1 provides a convenient framework for understanding and interpreting JPI-R scale scores and profiles. To promote further the intended interpretations of JPI-R scale content, trait definitions are clarified below, particularly regarding aspects which might be misconstrued. In general, because the scales were designed with reference to trait ranges of normal people, implications regarding psychopathology should not be drawn.

Complexity involves a preference for elaborate or "deep" explanations and interpretations of things and events. Although slightly related to intelligence, this trait denotes more a certain way of thinking than it does cognitive ability. Like most other personality traits, Complexity will be functional in some situations but not others. A high scorer might be expected to demonstrate an analytical and probing style of thinking, whereas a low scorer might be expected to adopt a more concrete, bottom-line approach in dealing with other people and with day-to-day issues.

Breadth of Interest denotes concerns of a more-or-less intellectual nature, rather than those involving, for example, physical activities. People scoring high on this scale would be expected to show intellectual curiosity about a diversity of topics. Low scorers, on the other hand, would be expected to be concerned with a relatively narrow range of topics. Breadth of Interest does not refer to the intensity of interest in any one area. Hence, high scorers are not necessarily "deep" thinkers, and low scorers are not necessarily "shallow" thinkers.

Innovation denotes a tendency to be creative in thought and action. A high scorer on this scale might be expected to prefer novel solutions to problems, and to appreciate original ideas on the part of others. A low scorer could be expected to prefer tried-and-true ways of doing things, and to dislike original thinking styles.

Tolerance denotes an individual's acceptance of persons holding attitudes and customs that are different from his or her own. A high scorer will readily adopt new and diverse points of view. A low scorer is more likely to evaluate others negatively if they disagree with him or her and/or if they express unusual opinions.

Empathy refers to a person's emotional responsiveness toward other people. A person scoring high on this scale might be expected to seek out situations or activities involving deep, personally meaningful interactions with others. Someone scoring low on this scale might be expected to prefer activities more impersonal in nature. If unwillingly confronted with an emotional situation, the low scorer would be less inclined than the high scorer to allow it to affect his or her behavior.

The ***Anxiety*** scale was intended to assess mild to moderate manifestations of stress, not to be confused with the more debilitating varieties encountered in psychiatric patients. A person scoring high on Anxiety may be viewed as being generally worrisome with regard to day-to-day activities and personally relevant events. A person scoring low on Anxiety may be viewed as being unusually free from even the normal range of fears and uncertainties that affect most people from time to time.

Cooperativeness denotes sensitivity and responsiveness to social pressures and norms, especially as expressed by people in the person's immediate social environment. Although related to conformity, it goes beyond the superficial and observable kinds of compliance, such as might be revealed in a person's dress. A person scoring high on Cooperativeness could be expected to accept readily the desires of other group members, and adopt willingly the group's views regarding particular people, places, and events. A person scoring low on Cooperativeness would be expected not only to remain independent of group pressures, but also, at times, to resist them more actively.

Sociability refers to the tendency to seek out the companionship of other people in a variety of situations. High scorers tend to derive pleasure from sharing their time with others, and will actively pursue development of interpersonal relationships. Low scorers, on the other hand, would prefer being alone, actively avoiding the company of other people whenever possible. In situations where social contact is unavoidable, low scorers may be likely to terminate the interaction earlier.

Social Confidence focuses on the more interpersonal aspects of self assuredness. A high scorer on this scale would be expected to demonstrate confidence and composure in dealing with others. A low scorer would be expected to be more timid and self-conscious in such cases and to experience discomfort and embarrassment. Interpersonal self esteem is important in evaluating personality, but it should be recognized that other types of confidence may be important in certain situations.

Energy Level refers to an individual's characteristic overall level of functioning in carrying out day-to-day activities. Someone scoring high on this scale would be expected to be lively and energetic in a variety of self-selected tasks and to demonstrate appreciable enthusiasm and endurance. Someone scoring low on this scale would be expected to avoid undertaking numerous and/or strenuous activities and to fatigue easily if such activities were unavoidable.

Social Astuteness is perhaps the most difficult of the JPI scales to define and validate. In general, it denotes a social form of intelligence. A person scoring high on this scale is likely to be an effective negotiator, aware of other's motives, diplomatic in presenting issues to others, and to resolve conflict situations through persuasion rather than aggression. Such a person will tend to get his or her way with people without their necessarily becoming aware of the subtle means used to achieve that

purpose. Low scorers are likely to be considered less tactful in dealing with others, preferring a more direct style of communication.

Risk Taking has been considered to include four facets: physical, monetary, social, and ethical risk taking (Jackson, Hourany, & Vidmar, 1972). Although the Risk Taking scale assesses all four facets, it tends to weight monetary risk taking somewhat more heavily than the others. Individuals who score highly on this scale are prone to exposing themselves to situations having uncertain outcomes (e.g. gambling). Low scorers prefer to be more cautious in their approach to things.

Organization reflects an orderly and systematic approach to undertaking daily activities. A person who scores highly on this scale is inclined to plan ahead and to complete assignments on schedule. A person who scores low on Organization may be inclined to leave things until the last minute, and to avoid structure in work activities.

Traditional Values pertains to cultural change. People differentially reflect changes in societal values that occur over time. Traditional values persist, but not equally in every person. Similarly, values that will predominate in the future already are present in varying degrees in current attitudes of individuals. The Traditional Values scale assesses the degree to which an individual incorporates "old" values, as opposed to more modern views regarding topics such as patriotism and relations between the sexes. It is a scale in which significant differences would be expected between young and older adults. In general, a high scorer would be expected to be more conservative, and a low scorer more liberal in his or her views on major cultural themes.

Responsibility is identified largely in terms of the degree to which a person feels an abstract moral obligation to other people and to society at large. A high scorer feels a sense of obligation "to do the right thing," regardless of possible personal consequences. A low scorer may be not only indifferent to such obligations, but also unduly frank in reporting ethical transgressions. Although it is possible that responses to items on this scale may be influenced, in part, by a desire to create a favorable impression, it should be noted that all items for all JPI scales were selected on the basis of a higher association with their own scale than with social desirability.

Five JPI-R Scale Clusters

The JPI-R scales measure 15 conceptually distinct personality traits. Nonetheless, the scales are not completely independent of one another, and groups of scales may be identified that permit interpretations of personality at a level that is more general than that afforded by individual scales. Applying factor analysis to the 15 JPI-R scales (based on the scale scores of the new college sample, males and females combined, total $N = 1,107$), suggested the presence of five "higher-order" clusters. Results of this analysis are reported in detail in Chapter 4, under the heading Factor Analysis. Here, it is useful to review the clusters from an interpretive standpoint.

Cluster 1: Analytical

The scales forming the first JPI-R cluster are Complexity, Breadth of Interest, Innovation, and Tolerance. Although each scale denotes a unique aspect of personality, the four scales considered as a set suggest the more general attribute of being *Analytical*. On the whole, someone scoring high on the four scales in this cluster

might be expected to consider arguments from multiple points of view and to be inclined toward drawing distinctions among otherwise related elements of information. Someone scoring low on the four scales, on the other hand, might be expected to think of things in more black-and-white terms and to prefer straightforward, linear interpretations of events.

Cluster 2: Emotional

The second JPI-R cluster includes the scales of Empathy, Anxiety, and Cooperativeness. All told, these scales share in common a description of someone who is *Emotional*. People scoring high on the scales in this cluster might be expected to express their feelings readily and to have difficulty hiding their emotions, especially under stressful conditions. Those scoring low on the three scales, as a set, would be expected to be relatively unaffected by emotionally arousing situations and by social pressure.

Cluster 3: Extroverted

The scales in the third JPI-R cluster are Sociability, Social Confidence, and Energy Level. Together, these scales suggest the attribute of being *Extroverted*. High scores on these three scales, taken as a set, would indicate that the individual is interpersonally outgoing, sociable, and active. Low scores would suggest that the individual is socially uninvolved and inactive, or, in a word, introverted.

Cluster 4: Opportunistic

The fourth JPI-R cluster includes the scales of Social Astuteness and Risk Taking. What these scales have in common is a description of someone who might be considered *Opportunistic*. Someone scoring high on Social Astuteness and Risk Taking could be described as machiavellian, roguish, and, recalling that Machiavelli wrote the first book on diplomacy, could be perceived as diplomatic and, in certain situations, charming. Someone with the opposite pattern of scores on the two scales in this cluster might be deemed to be direct, unadventurous, and perhaps naive about others' self-serving intentions.

Cluster 5: Dependable

The three scales in the fifth JPI-R cluster are Organization, Traditional Values, and Responsibility. These scales share in common a description of someone who is *Dependable*. Individuals scoring high on the three scales, as a set, would be expected to be methodical, predictable, systematic, conservative, and mature in their attitudes, whereas those scoring low would be considered to be more liberal-minded, flexible in their thinking, and could be expected to be unorganized in work settings.

Comparison with Other Personality Trait Taxonomies

Considerable research supports the existence of a fairly stable set of general dimensions of personality (e.g., Digman, 1990; Goldberg, 1990; Paunonen, Jackson, Trzebinski & Forsterling, 1992). Although the number of dimensions included in such taxonomies has tended to vary (e.g., typically from 3 to 6), the most common configuration includes a set of five trait clusters known as the "Big Five." This particular taxonomy classifies the majority of personality trait measures under the general headings of Neuroticism (or its inverse: Emotional Stability), Extraversion,

Agreeableness, Openness to Experience, and Conscientiousness. It is useful to consider how the JPI-R's clusters compare with the Big Five as a further means of facilitating test score interpretations. In the following comparisons, trait adjectives defining the Big Five dimensions are those reported in several sources, including Goldberg (1990), McRae and Costa (1985, 1987), McRae, Costa and Busch (1986), McRae and John (1992), Norman (1963), and Tupes and Christal (1961).

The first JPI-R cluster, *Analytical*, is clearly similar to the Big Five dimension of Openness to Experience. Terms often used to describe people high on this dimension include intellectual, curious, imaginative, insightful, original, artistic, cultured, and having wide interests. Terms associated with low scores include narrow-minded, simple, direct, conventional, imperceptive, and boorish. The high- and low-end descriptors bear close resemblance to those reported in Table 1-1 for high and low scorers, respectively, on the four JPI-R scales composing the higher-order Analytical cluster. As might be expected, traits classifiable under Openness to Experience (e.g. Understanding from the *Personality Research Form*) have been found to correlate positively with degree of education (Costa & McRae, 1988). Accordingly, similar expectations might be forwarded regarding high scores on the JPI-R's first cluster.

The second JPI-R cluster, *Emotional*, shares elements of two of the Big Five dimensions: Neuroticism and Agreeableness. Neuroticism is represented most clearly by the JPI-R Anxiety scale. Adjectives denoting high scores on Neuroticism include worrying, nervous, high-strung, temperamental, insecure, self-pitying, and impulsive, and low scores are often associated with adjectives such as patient, hardy, relaxed, calm, poised, composed, and self-sufficient. Agreeableness on the Emotional cluster is captured by the JPI-R's Empathy and Cooperativeness scales. Representative trait adjectives for Agreeableness include, at the positive pole, good-natured, cooperative, trustful, adaptable, kindly, attentive to people, softhearted, and sympathetic, whereas the negative pole has been described in terms such as spiteful, demanding, obstructive, rigid, ruthless, selfish, and stingy. The dual representation of both Neuroticism and Agreeableness on the JPI-R's second cluster is consistent with the label of "Emotional" in that both Big Five dimensions reflect emotionality, Neuroticism in terms of emotional expressivity and Agreeableness in terms of sensitivity to others' feelings, desires, and beliefs. The dual representation also suggests that the Emotional cluster may be somewhat unique to the JPI-R.

The third cluster of JPI-R scales, *Extroverted*, clearly parallels the Big Five dimension of Extraversion, including eagerness to engage in interpersonal interaction (i.e., Sociability), self-assuredness in dealing with others (i.e., Social Confidence), and a vigorous, energetic life-style (i.e., Energy Level). Adjectives frequently found to be associated with high scores on the Big Five dimension of Extraversion include talkative, assertive, sociable, energetic, active, person-oriented, and dominant, whereas adjectives marking low scores include quiet, timid, humble, retiring, inhibited, lonely, and languid. As a set, this pattern matches very closely the descriptions given in Table 1-1 for the three traits composing the JPI-R Extroverted cluster.

The fourth JPI-R cluster, *Opportunistic*, is unlike any of the Big Five dimensions. Its distinctiveness most likely is due to JPI-R Social Astuteness, a trait that is rarely represented on other omnibus personality inventories and rarely included in studies of the dimensionality of personality. Risk Taking, also defining this cluster, sometimes loads moderately on Openness to Experience in Big Five configurations,

but frequently defines a separate dimension labelled Adventurousness or Rugged Individualism when greater numbers of factors (e.g., seven) are derived (see Hough, 1992). The relative uniqueness of Social Astuteness and Risk Taking and their combination make the JPI-R's fourth cluster, Opportunistic, an interesting addition to personality typology.

The fifth JPI-R cluster, labelled *Dependable*, most nearly resembles the Big Five dimension of Conscientiousness. Adjectives associated with the positive pole of this dimension include careful, organized, planful, neat, reliable, hard working, ambitious, achievement-oriented, efficient, scrupulous, and conservative, whereas adjectives defining the negative pole include negligent, lax, sloppy, frivolous, untraditional, undependable, and thoughtless. These adjectives are similar to those used in describing high and low scorers, respectively, on the three JPI-R scales composing the "Dependable" cluster. A notable exception, however, is the exclusion of achievement-related traits from JPI-R cluster 5, traits that are sometimes associated with the Big Five dimension of Conscientiousness. Thus, the JPI-R "Dependable" cluster may be more specific than Conscientiousness, although the two are clearly related.

In sum, the 15 scales on the JPI-R permit a parsimonious grouping of personality traits that is partly understandable in terms of the Big Five. Specifically, (a) the JPI-R cluster labelled Analytical (cluster 1) resembles the Big Five dimension of Openness to Experience, (b) the JPI-R Emotional cluster (cluster 2) represents a certain combination of the Big Five dimensions of Neuroticism and Agreeableness; (c) the JPI-R Extroverted cluster (cluster 3) captures the essence of the Big Five dimension of Extraversion; (d) the JPI-R cluster called Opportunistic (cluster 4) has no strong direct link to the Big Five and is most appropriately considered unique to the JPI-R; and (e) the JPI-R Dependable cluster (cluster 5) represents a major component of the sometimes broader Big Five dimension of Conscientiousness.

A Cautionary Note on the Use of General Personality Dimensions

The emergence of stable higher-order personality dimensions like the Big Five has provided a useful taxonomy to the study of personality through identification of a parsimonious and easy-to-manage number of distinct trait categories. It is important to realize, however, that the advantages of such typologies are offset by a corresponding loss of descriptive and explanatory detail. The fact that some traits share a certain conceptual generality does not imply that they are equivalent in relations with other variables. In addition to shared variance, each individual trait can contain a substantial unique component, which may be important in applications involving that trait. For example, although both JPI-R Organization and Traditional Values are positive markers for the general construct of being Dependable, scores on Organization but not Traditional Values may be important in predicting success as a manager. (The direction of the relation involving Traditional Values might reasonably depend on the conservativeness of the company's organizational policies, independently of the direction of the relation involving Organization.) The trade-off between parsimony and specificity in trait utilization is one that bears careful consideration with the use of broad trait typologies like the Big Five and the set of clusters reported here for the JPI-R.

Examples of JPI-R Profiles

The following JPI-R profiles were selected from a much larger number as reasonably illustrative of the range encountered in practice. The user should not expect that every profile he or she obtains will be as clear-cut as those provided here. The people from whom these profiles were obtained were selected as being atypical in one way or another. A representative sample of the general population would probably show "flatter" profiles with scores closer to the mean.

Profile 1: Outstanding Teacher

The individual providing the profile shown at the top of the next page was tested when he was 24 years old and a graduate student in history. At that time he had accumulated an outstanding academic record. He had also gained a reputation in his department for his probing, critical analyses of the research work of others. Although he was respected by his fellow students, he was not especially liked. He was known as one who did not "suffer fools gladly." When preparing for examinations, he developed the capacity for mastering not only the major conceptual themes, but large quantities of detailed data as well. After completing his graduate work he was appointed as an assistant professor of history at a small university known for the quality of its student body and instruction. In his first year of college teaching he was voted by the students as the outstanding teacher of the year. His teaching style is characterized both by considerable rigor and by high entertainment value. He prepares extensive notes, committing them to memory, and then presents them apparently extemporaneously. He is highly innovative in his teaching, making extensive use of role-playing and simulation techniques in recreating important events in history.
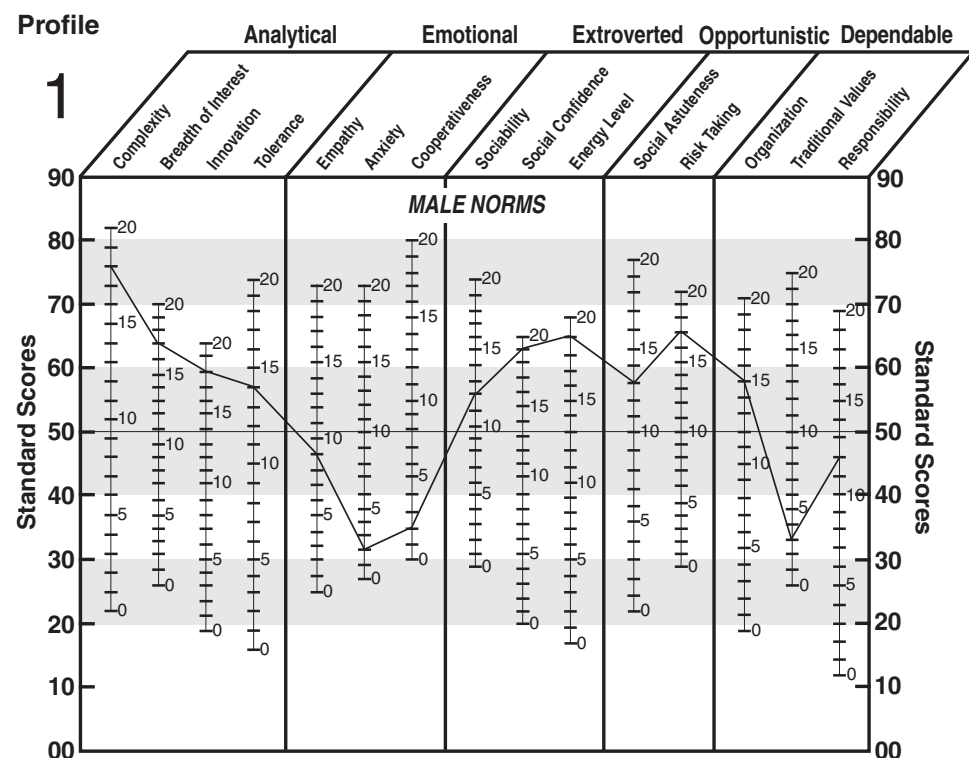
But his strongest teaching asset is his easygoing style and the supreme confidence he displays in his knowledge of the subject matter and in his delivery.

His profile is generally consistent with the above characterization. High scores on Breadth of Interest, Complexity, Energy Level, Innovation, and Risk Taking support the impression of an individual who is prepared to deal with intellectual material with zest and from fresh perspectives. The high Social Confidence score indicates that he possesses the social presence to be effective in interpersonal situations, and, together with the low score for Traditional Values, that he can be comfortable while employing novel means of instruction. Finally, his strong academic orientation and classroom presence are reflected in his overall elevated scores on the Analytical and Extroverted clusters.

Profile 2: Suicidal Student

The 18-year-old male college freshman whose profile is shown at the top of the next page came to the attention of the office of the Dean of Men at a large university after threatening suicide by ingesting phenobarbital tablets during the week just prior to final examinations. He complained that, during the previous weeks, he felt "blue," he had no friends and no one cared about him, his courses were dull, he felt like sleeping in the daytime but suffered from insomnia at night, and he had lost a good deal of money gambling. His roommate said he had on several occasions resorted to marijuana, alcohol, and morphine when in difficulty. After three days of hospitalization, he seemed to regain his equilibrium. Although still somewhat depressed, he was able to return to his dormitory. He later reported that the experience caused him to gain some insight into himself and to recognize the importance of completing his
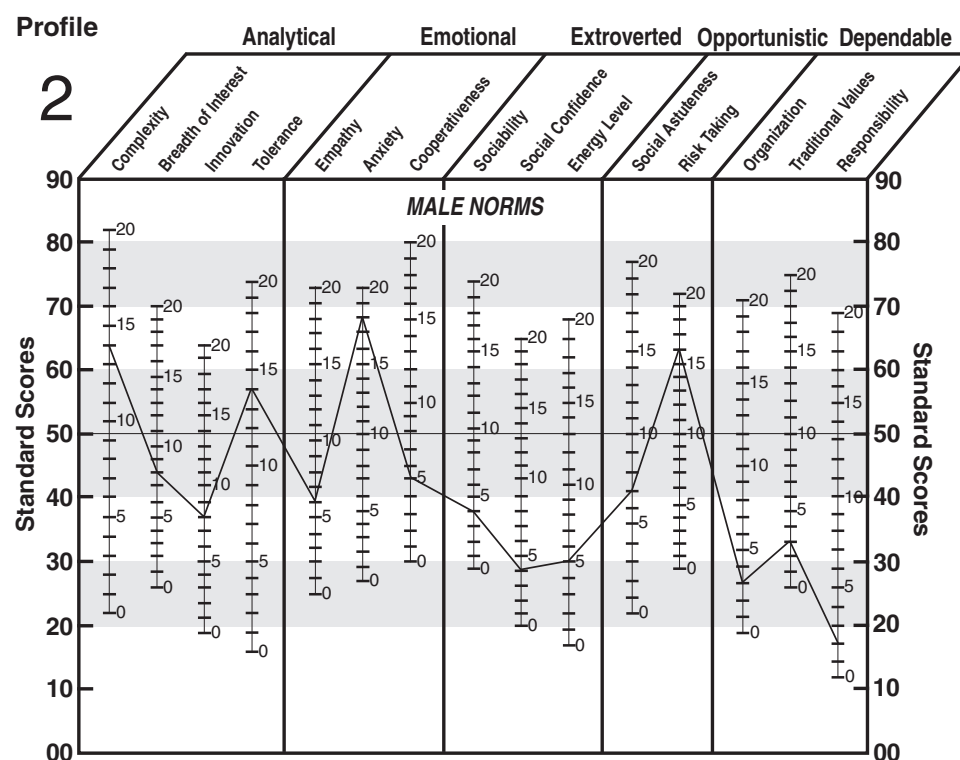
education. Although he dropped out of the university for the academic year, he did complete the following year successfully.

Profile 2 shows a pattern of traits that is largely consistent with the above scenario. The high score on Anxiety and low scores on the Extroverted cluster suggest someone who is emotionally distraught, socially withdrawn, and listless. The high score on Risk Taking reflects a propensity to gamble, and the low scores on Organization and Responsibility are perhaps consistent with his self-centered indifference toward life.

Profile 3: Best Nurse

On the next page is the profile of a 21-year-old student nurse who received the largest number of nominations for "best nurse" in a study of 88 nursing students. She also had the largest number of nominations for "active" and "vigorous." Notable among her high scores are elevations for Breadth of Interest, Tolerance, Sociability, Energy Level, and Responsibility. Her lowest scores are on Risk Taking and Anxiety. The uniformly elevated scores in each of the Analytical and Extroverted clusters reflects the academic and interpersonal orientations one might expect to be associated with being voted "best nurse." It should be recognized that there may be several different styles of effective nursing, and that Profile 3 may depict only one of them.

Profile 3 — Standard Scores chart. Clusters: Analytical (Complexity, Breadth of Interest, Innovation, Tolerance), Emotional (Empathy, Anxiety, Cooperativeness), Sociability, Social Confidence, Energy Level (Extroverted), Social Astuteness, Risk Taking (Opportunistic), Organization, Traditional Values, Responsibility (Dependable). FEMALE NORMS.
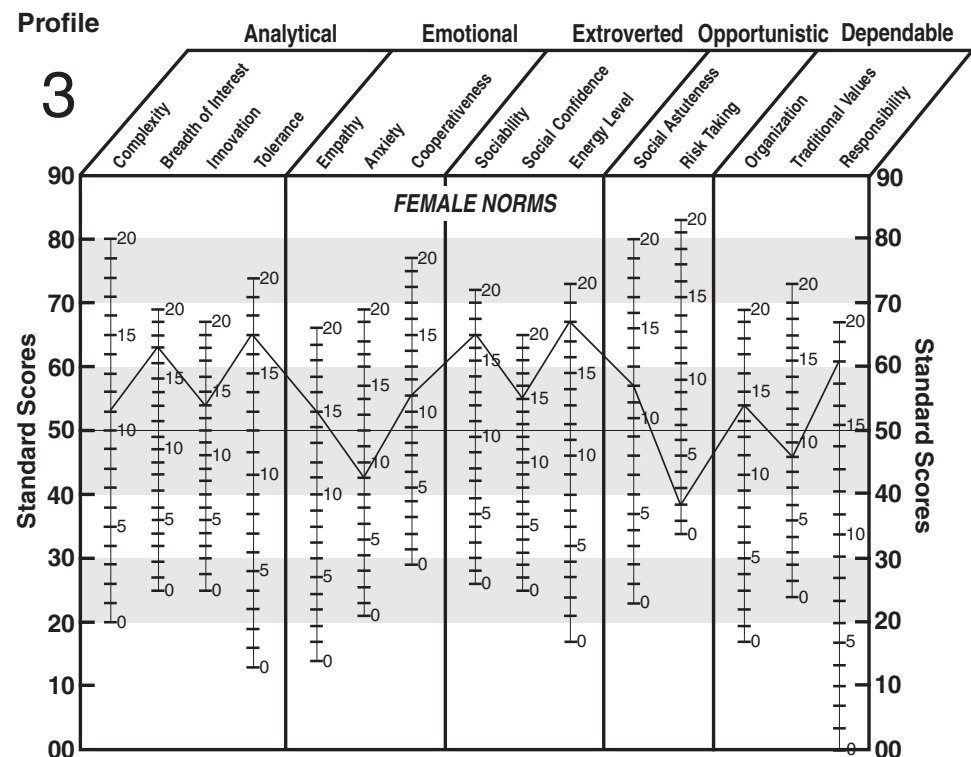
Profile 4: Poorest Nurse

In sharp contrast to Profile 3, Profile 4, shown below, illustrates the 20-year-old student nurse receiving the largest number of nominations for "poorest nurse." Low scores were obtained for Complexity, Breadth of Interest, Empathy, Social Confidence,

Profile

4

| | Analytical | | | | Emotional | | | | Extroverted | | Opportunistic | | Dependable |

FEMALE NORMS
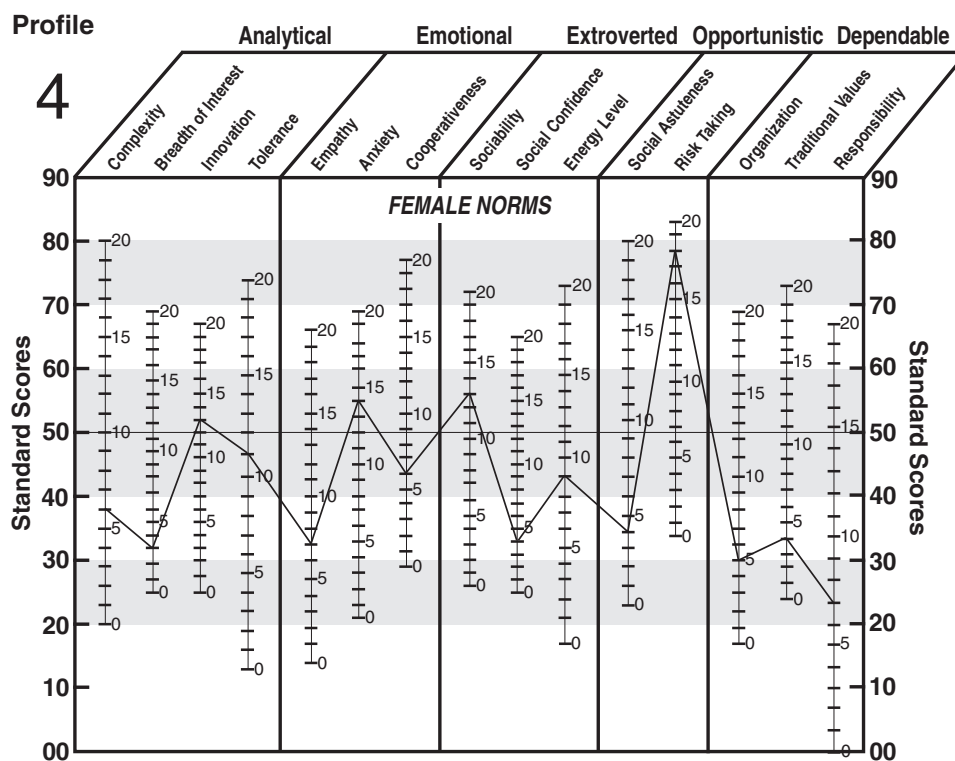
Social Astuteness, and all three scales in the cluster labelled Dependable, while the highest score was for Risk Taking. The contrasts between Profiles 3 and 4 illustrate how personality traits can combine to influence occupational outcomes.

Profile 5: Student in Academic Difficulty

The 20-year-old male whose profile appears at the top of the next page was administered the JPI in connection with his receiving academic counseling. He reported that he was failing three courses in computer science and mathematics, that he experienced feelings of loneliness and unhappiness, and that he enjoyed working with computers—in fact talked about them incessantly—but had not been successful in his advanced work. An examination of his profile reveals low scores in Energy Level, Organization, Responsibility, and Social Confidence, and a notably high score in Anxiety. Other testing revealed that he had the requisite ability to succeed in his major, but the low scores in Energy Level and Organization were anathema to success in a highly specialized and demanding field. After vocational interest testing results were discussed with him, he decided to transfer into a business administration program, which he successfully completed.

Profile 6: President, Student Council

The 21-year-old female whose profile is shown at the top of the next page was administered the JPI during her senior year in college. She was the first woman in the history of her college to be elected president of the student council. Her college career was distinguished in other ways. She had been on the Dean's list for the final three years; while on the student council, she successfully negotiated with the administration regarding greater student participation in university affairs, and

Profile 5 — MALE NORMS. Categories: Analytical (Complexity, Breadth of Interest, Innovation, Tolerance), Emotional (Empathy, Anxiety, Cooperativeness), Extroverted (Sociability, Social Confidence, Energy Level), Opportunistic (Social Astuteness, Risk Taking), Dependable (Organization, Traditional Values, Responsibility).
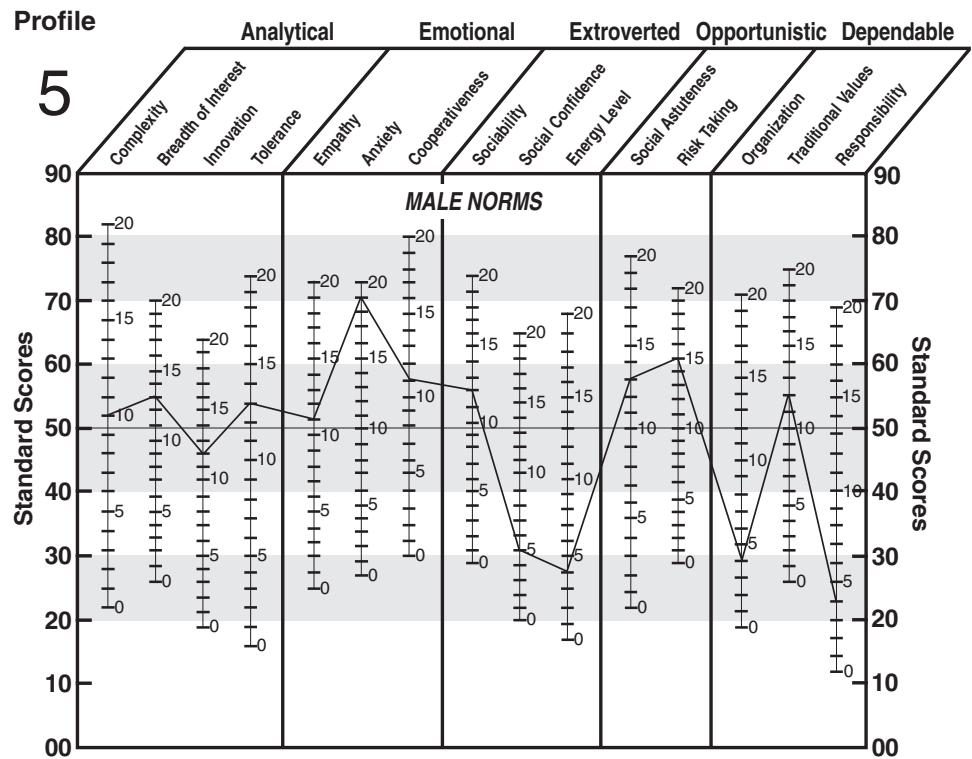
also won the right of student participation on the university board of governors. Following her senior year, she successfully undertook graduate work in one of the social sciences. Her profile speaks for itself. High scores on Sociability, Social Confidence, and Energy Level, suggest someone who is interpersonally outgoing; and

Profile 6 — FEMALE NORMS. Categories: Analytical (Complexity, Breadth of Interest, Innovation, Tolerance), Emotional (Empathy, Anxiety, Cooperativeness), Extroverted (Sociability, Social Confidence, Energy Level), Opportunistic (Social Astuteness, Risk Taking), Dependable (Organization, Traditional Values, Responsibility).
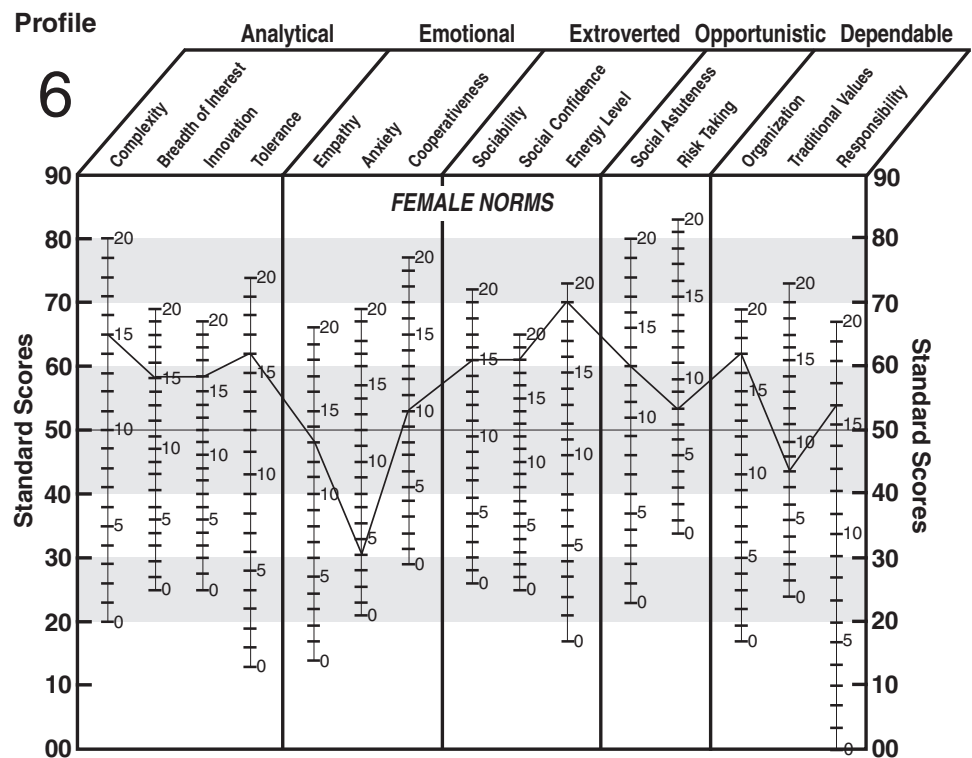
above-average scores on Complexity, Breadth of Interest, Innovation, and Tolerance indicate analytical propensities. With a high score on Organization and a low score on Anxiety, the profile is highly consistent with the respondent's vigorous role in student government and academic work.

Profile 7: Student Activist

The profile shown at the bottom of the next page is that of a male, aged 22, who was one of two leaders of a peaceful sit-in demonstration on a college campus. At the height of the demonstration, he was quoted as having made a number of rather extreme statements regarding the university administration. He was considered an effective speaker, whose tireless efforts were instrumental in galvanizing student opinion and in ultimately causing student demands to be met by the administration. His JPI-R profile is notable for several high scores and for four low scores. Complexity, Energy Level, Innovation, Risk Taking, and Social Confidence are all elevated, a profile pattern consistent with the student demonstrators studied by Neill (Chapter 4). He willingly exposes himself to risks, is confident and assertive in dealing with others, enjoys toying with new ideas and thinking deeply about problems, displaying a high level of activity and energy. Even more striking are his low scores. He obtained the lowest score possible on Cooperativeness, and was also low on Organization, Traditional Values, Responsibility, and Tolerance. The low Cooperativeness scale score is consistent with his resistance to mainstream views. In terms of values, he almost totally rejects traditional ideas of right and wrong, and declines personal responsibility to the broader community. Perhaps the most surprising score is the low Tolerance score. Although demonstrating on an academic freedom issue, he shows a pervasive rejection of discrepant ideas and people who disagree with him. This

Profile

7

Analytical · Emotional · Extroverted · Opportunistic · Dependable

Scales: Complexity, Breadth of Interest, Innovation, Tolerance, Empathy, Anxiety, Cooperativeness, Sociability, Social Confidence, Energy Level, Social Astuteness, Risk Taking, Organization, Traditional Values, Responsibility

MALE NORMS

Standard Scores (vertical axis, 00 to 90)
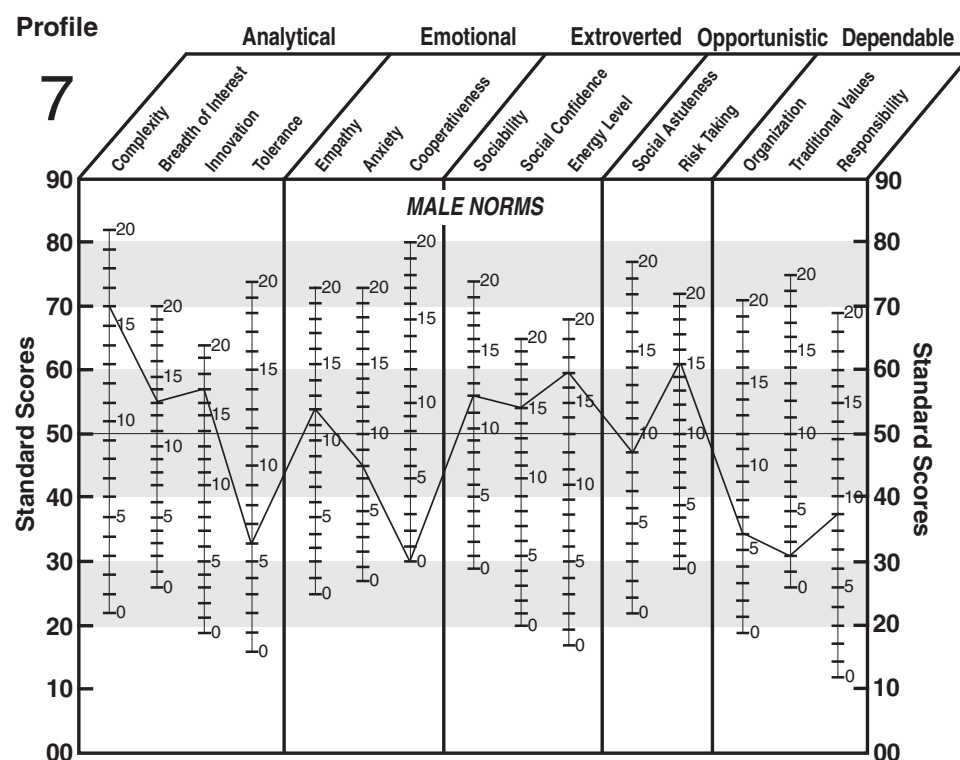
may be uncharacteristic of the typical student demonstrator, but such intolerance is sometimes encountered in individuals who dogmatically take extreme ideological stands on issues, regardless of what those issues are.

Profile 8: Marketing Executive

The profile shown below is that of a 39-year-old female marketing executive in charge of a team of account managers. A large part of her work involves supervising a group of highly creative individuals, giving advice on marketing projects, and seeing each project through to its completion. High scores on Breadth of Interest and Innovation suggest she is inquisitive and imaginative. With a low score on Traditional Values and an above-average score on Tolerance, the pattern indicates high creativity and openness to new ideas and experiences. In keeping with her profile, the individual is noted by her peers for her unconventional and fresh approach to marketing strategies. However, consistent with the low scores on Responsibility and Organization, co-workers find her to be unreliable, disorganized, and undisciplined. She is also seen as being overly prone to taking risks with important accounts and disinclined to seek or follow others' suggestions. These latter characteristics are corroborated, respectively, by a high score on Risk Taking and a low score on Cooperativeness.
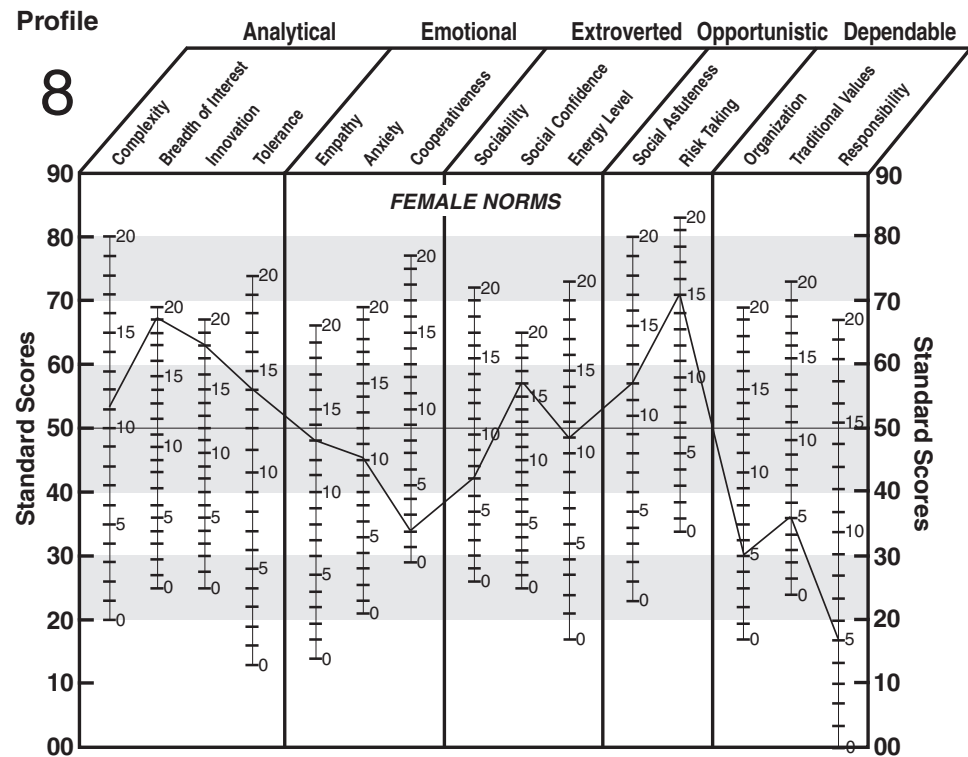
Profile 9: Manufacturing Executive

 The ninth profile, shown below, is that of a 57-year-old male senior executive at a large manufacturing firm. He comes from a family of strong traditional values and has a degree in engineering. Although his work record has been satisfactory, the team of engineers he supervises is experiencing low levels of morale and some have expressed a dislike for working with him. Many claim he is too conservative

Profile 9
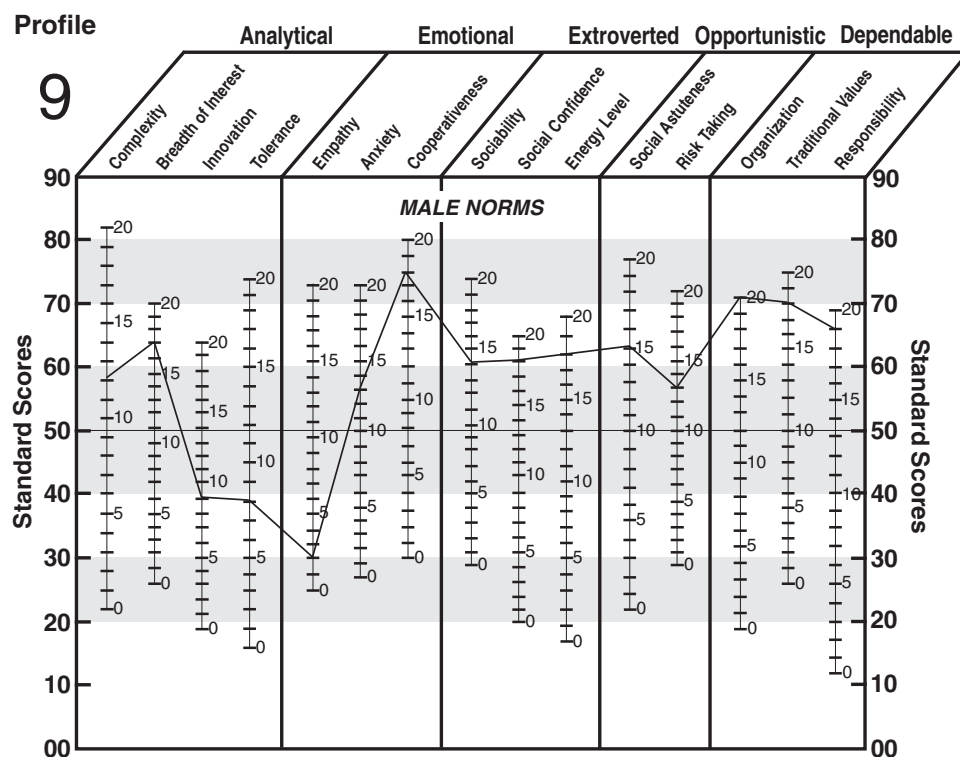
and narrow-minded, and that his autocratic leadership style affords insufficient opportunity for subordinates to make their own decisions and express their creativity. He is also perceived to be uncaring of subordinates' well-being, and intolerant of deviations from standard procedures. This individual's observed managerial style is largely reflected in his JPI-R profile. High scores on Cooperativeness, Organization, Traditional Values, and Responsibility, and low scores on Tolerance and Innovation suggest someone who is conventional and closed-minded, and who prefers getting things done in a methodical and prearranged manner. The low score on Empathy supports the observation that the respondent is insensitive to others' interests and desires.

Profile 10: Chief Executive Officer

The individual whose profile appears on the next page is a 57-year-old CEO of a large multinational corporation. He was hired to help improve productivity and boost shareholder confidence at a time when the company was facing extreme financial burdens. Two years later the company was back on its feet, and the new CEO was held largely responsible for the quick recovery. In keeping with this accomplishment, Profile 10 shows someone who is very capable of solving problems using efficient and innovative methods, and who is accountable for his actions and decisions. The profile indicates that he shows a preference not merely for getting the job done but for getting things done the "right way." These characteristics are evident in the high scores on Complexity, Breadth of Interest, Innovation, Cooperativeness, and Responsibility. Although coworkers admire him for his technical skill, analytical ability, and his insightful and visionary leadership, they sometimes perceive him to be overly critical and demanding. Some even fear him for being intolerant and hard-nosed. Low scores on Tolerance, Social Participation, and Social Confidence are

consistent with those evaluations. The high Anxiety score may reflect the pressures of senior management and is consistent with others' perceptions of the individual's hard-driving nature.
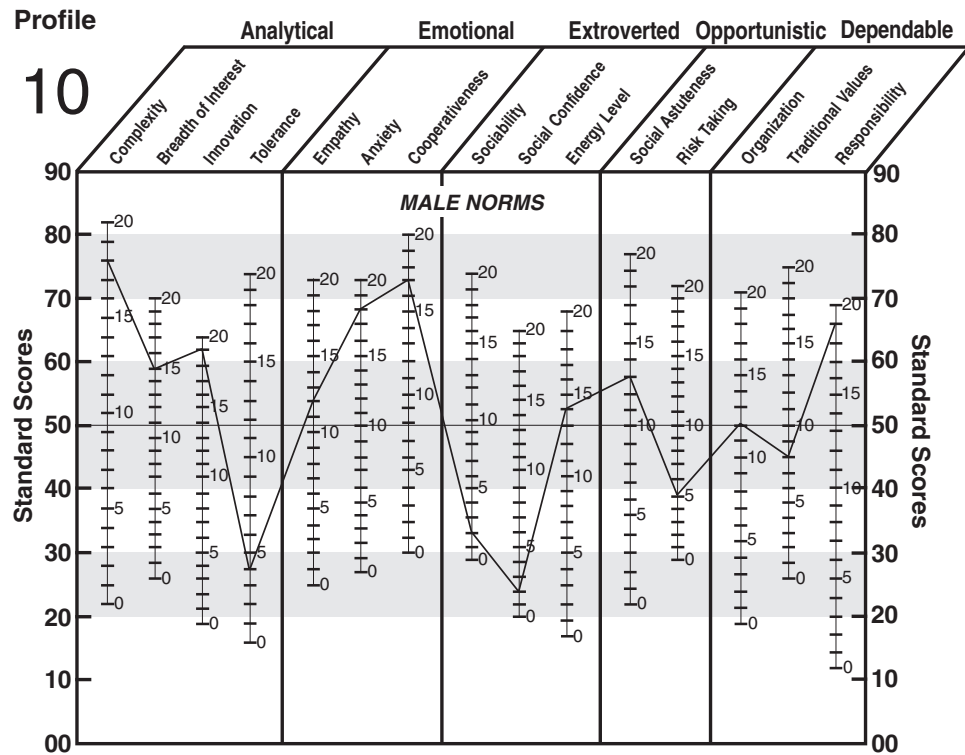
Profile 11: Overpromoted Clerical Worker

The profile shown at the top of the next page is that of a 44-year-old female middle manager at a rapidly developing computer firm. With a diploma in Business Administration, she was hired shortly after the company's inception to perform basic administrative and clerical duties. Her primary job at present is to oversee distribution of product information to inquiring and prospective customers. Her work record has been satisfactory, but recently, with budget cutbacks, the firm is considering letting her go. Part of their reasoning is that she has shown little initiative for further advancement in the company. As shown in Profile 11, her highest scores are on Energy Level and Organization. Correspondingly, she is perceived by coworkers as being conscientious about completing tasks in an orderly and timely manner, and as having ample energy to persevere on prolonged work activities. However, she is also seen as being somewhat aloof, self-centered, and insensitive to those around her. These attributes are reflected in her low scores on Social Participation, Responsibility, and Empathy. Her overall low scores on the Analytical cluster suggest further someone who prefers simple, straightforward tasks, and who might therefore be ill-suited for promotion within the company.

Profile 12: Disabled Carpenter

The 29-year-old male whose profile appears below is a certified carpenter with a serious lower-back ailment that renders him unable to work at his trade. High scores

Profile

11

| Analytical | Emotional | Extroverted | Opportunistic | Dependable |

Complexity, Breadth of Interest, Innovation, Tolerance, Empathy, Anxiety, Cooperativeness, Sociability, Social Confidence, Energy Level, Social Astuteness, Risk Taking, Organization, Traditional Values, Responsibility

FEMALE NORMS

Standard Scores
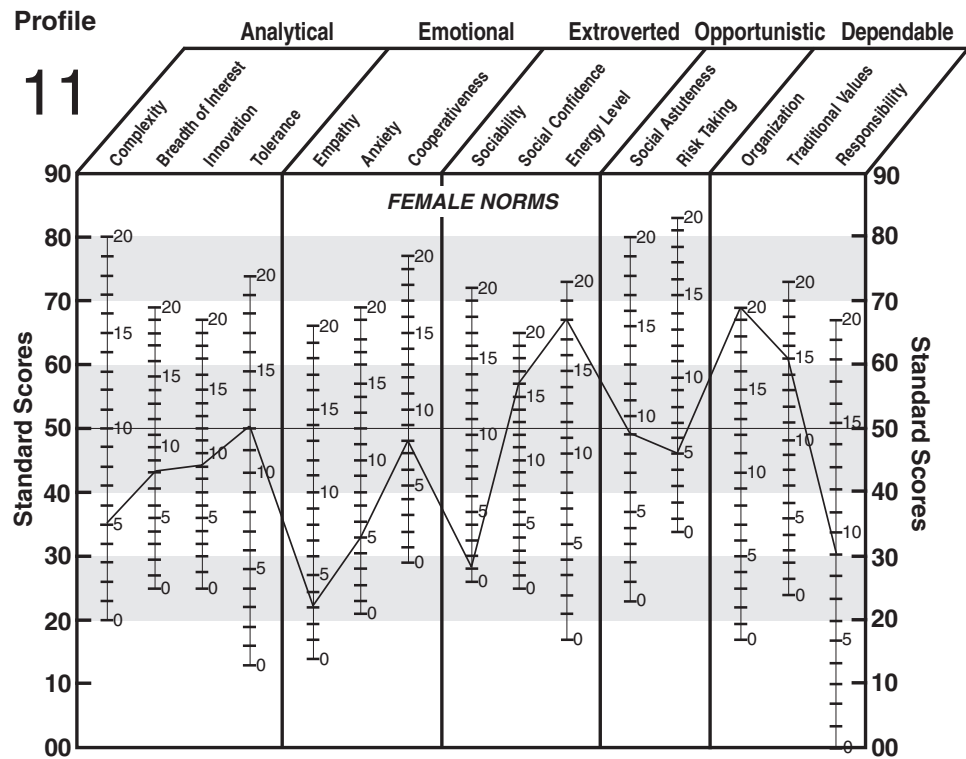
on Organization, Traditional Values, and Responsibility suggest someone who is highly dependable. Faced with the need to find a new occupation, he has indicated an interest in helping elderly people, an idea inspired by a positive experience aiding an older person in a hospital. Above-average scores on Empathy and Social

Profile

12

| Analytical | Emotional | Extroverted | Opportunistic | Dependable |

Complexity, Breadth of Interest, Innovation, Tolerance, Empathy, Anxiety, Cooperativeness, Sociability, Social Confidence, Energy Level, Social Astuteness, Risk Taking, Organization, Traditional Values, Responsibility

MALE NORMS

Standard Scores
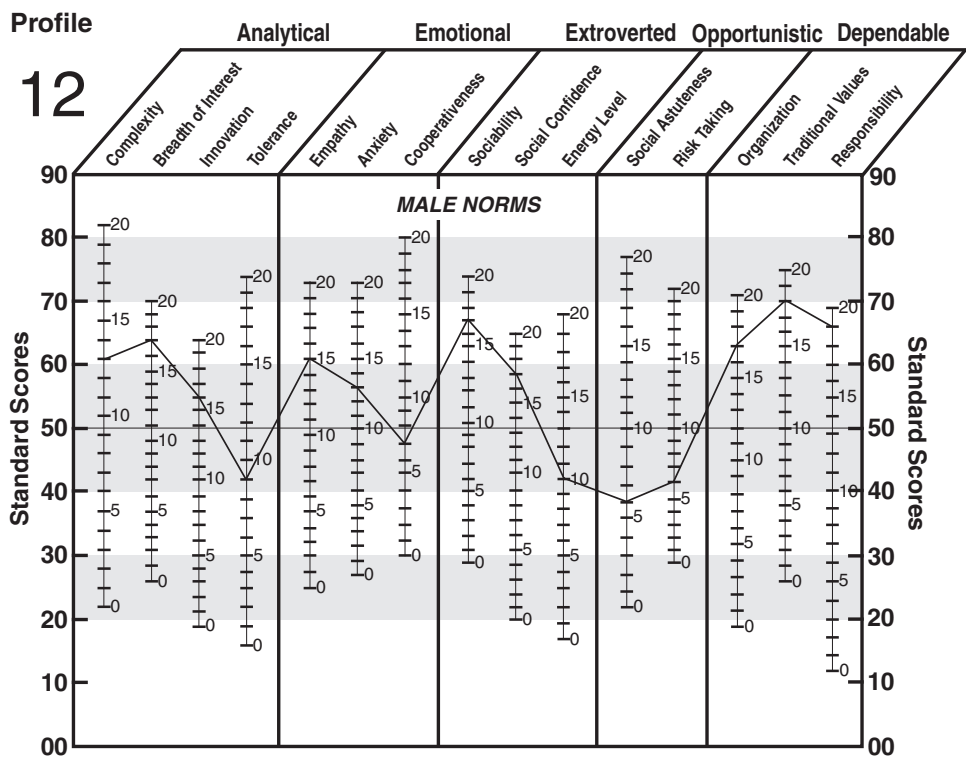
Participation corroborate such interests. A professed liking for educational television and news magazines is reflected in relatively high scores on Breadth of Interest and Complexity. These scores suggest that the individual may respond well to retraining in a new line of work.

Profile 13: Injured Letter-Carrier

The profile shown below is that of a 44-year-old female who is unable to continue in her job as letter carrier due to knee problems and a degenerative back disease. She had previously trained herself to be an aesthetician, and had operated a small business part-time for three years. Her involvement in the Big Sisters organization and her volunteer duties at a hospital are consonant with her moderately high scores on Empathy, Energy Level, and Responsibility. The high score on Energy Level is also consistent with her desire to continue engaging in physical activities such as swimming and walking despite her disabilities. Her high Anxiety score suggests that stressful jobs should be avoided. The jobs for which she has expressed interest, namely, travel agent and office administrator, although less stressful than many other jobs, might prove to be unsuitable given her relatively low score on Organization.
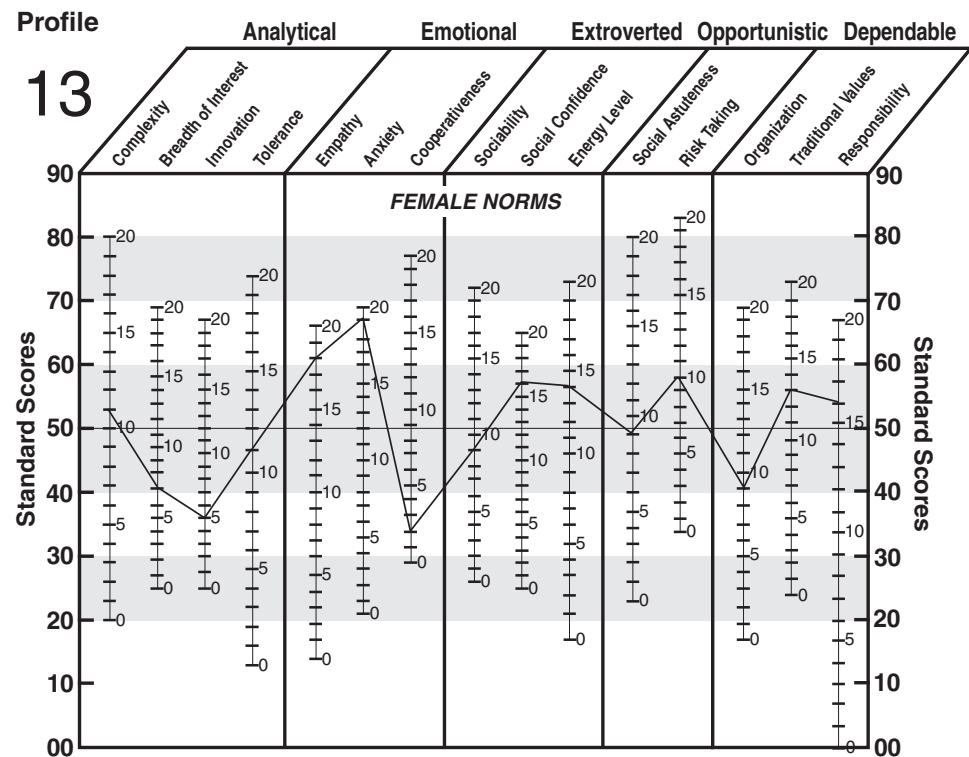
CONSTRUCTION OF THE
JACKSON PERSONALITY INVENTORY - REVISED

Rationale

The rationale for the method of scale construction used for the JPI-R is based upon and extends that employed in the development of the author's (Jackson, 1967, 1974, 1984, 1989; Wiggins, 1973, pp. 409-415) *Personality Research Form*. These procedures were employed sequentially in an effort to produce scales having particular optimum properties, including (a) freedom from response bias, (b) fidelity of items to scale definitions, (c) high empirical item content saturation, (d) high scale homogeneity and item content representativeness, and (e) normal scale distributions. Previous experience has indicated that a personality scale construction program designed to meet these requirements tends to result in scales possessing construct validity. Basically, the scale construction may be summarized in terms of ten steps, each designed to produce one or more necessary conditions for the adequate assessment of personality. Combining them, it was hoped, would yield a combination of conditions providing an appropriate framework for assessment.

Overview of Scale Construction

The ten steps used in constructing the original JPI were as follows: (a) preparation of carefully written definitions of each pole of each of the proposed dimensions (see Table 1-1); (b) preparation of an item pool for each of the dimensions ranging from 5 to 10 times the number of items finally required (i.e., 100 to 200 items per scale); (c) a review and editing process in which inappropriate or redundant items were revised or culled; (d) preparation of seven booklets each containing at least 100 items for each of several of the substantive dimensions plus a desirability scale, and administration of those booklets to separate groups of respondents; (e) the undertaking of an initial item analysis separately for each of the 15 substantive dimensions, designed to (1) maximize content saturation in relation to desirability variance, (2) maximize item variance, and (3) eliminate items showing an inappropriate pattern of correlations with irrelevant scales; (f) construction of two alternate forms each comprising 20 of the best items (as per the previous step) from each of the 15 dimensions together with items designed to assess nonpurposeful responding (i.e., Infrequency items); (g) administration of the alternate forms to new groups and completion of a second set of item analyses to promote further the desired statistical properties, particularly interscale independence; (h) completion of a final editorial process to review item content for generalizability; (i) selection of the best set of 20 items from the previous sets of 40, and assembling them into a booklet; and (j) evaluation of reliability and validity, and development of norms. Each of these steps requires some further discussion and elaboration.

The Substantive Component of Validity

In deciding how to measure a psychological variable, it is important to have a clear understanding of that which is to be measured. As the author has maintained elsewhere (Jackson, 1969), judgment about the nature of personality scale content can be remarkably precise, as evident by results from multidimensional scaling studies showing correlations in the range of .98 to .99 between scale values of personality items derived from different sets of judges with respect to the trait being measured (Jackson, 1970). Thus, in developing the original JPI, a carefully prepared set of definitions was written for each dimension (Table 1-1), and made available to the item writers. More than 20 individuals were responsible for preparing the items finally used in the JPI (and JPI-R). A systematic attempt was made to identify people for this task who were varied in terms of their own psychological characteristics, and who showed particular aptitude and interest in the task of preparing large item pools. The task of item writing was closely supervised by the author and involved a fair amount of time.

It is difficult to specify all of the considerations that entered into judging what was a good item for a particular scale, but some of the major concerns involved (a) the item's substantive relevance to the dimension under consideration; (b) independence from irrelevant dimensions; (c) clarity of expression and style; and (d) development of an item pool for each dimension which represented it broadly and completely. The latter step involved viewing the item pool as a sample of each of a number of facets of the given dimension. Thus, a measure of risk taking should involve items representing risks involving physical injury and ethical transgressions, as well as those involving monetary risks (Jackson, 1971). With this in mind, a number of items were eliminated or modified prior to their inclusion in booklets for the initial item analysis. For example, more than 180 items were prepared for the Sociability scale, but only 120 of those were selected for initial evaluation. The number of items selected for empirical analysis ranged from 100 to 140 per scale, with the total number being in excess of 1,800.

Empirical Item Selection Procedures

Item selection procedures for the JPI were similar to those employed for the *Personality Research Form - Form E* (PRF; Jackson, 1967, 1974, 1984, 1989; Neill & Jackson, 1976). The major goals of the JPI item analyses were fourfold: (a) to enhance the internal consistency reliability of the scales; (b) to suppress desirability response bias; (c) to maximize discrimination among the scales; and (d) to identify items yielding scales with normal distributions having a mean at the center of the scale (i.e., around 10.0). Two separate item analyses were undertaken sequentially.

First Item Analysis

The first analysis was designed to maximize scale reliabilities while minimizing desirability response bias and involved assembling over 1,800 items in seven booklets. A large item pool for each of two or three scales was included in each of the seven booklets, together with two combined alternate forms of the PRF Desirability scale. These seven booklets were administered in seven separate testing sessions to seven groups, each in excess of 300 respondents, all of whom were college students receiving

credit for research participation. From these data, scores for each of the personality scales, including Desirability, were obtained. Also, the correlation between each scale and the Desirability scale was calculated.

For each personality scale total score, the reliable portion can be considered as including two components: (a) that correlated with desirability responding and (b) that uncorrelated with desirability responding. Clearly, if a goal of item selection is to suppress desirability bias in content scales, item selection should take place with respect to a criterion free from such contamination. Accordingly, a new total score, one that was uncorrelated with desirability, was obtained for each respondent using partial regression procedures. These "desirability-free" scores were used in deriving item-total correlations. The effect of this procedure was notable. For example, the highest correlation between any of the preliminary scales and Desirability was .55 for Social Confidence. The corrected total score, obtained using the partial regression procedure, correlated .80 with the original total score, but .00 with Desirability. Thus, item-total scale correlations would not be inflated by virtue of their tapping common desirability variance.

As a further correction for desirability responding, a variant of the Differential Reliability Index (DRI; Jackson, 1984; Neill & Jackson, 1976) was employed for item selection. The DRI, in its original form, is the square root of the difference between the amount of variance a given item shares with its own scale's total score and that shared with the Desirability scale total score. Thus, the DRI represents an item's content saturation purified of variance owing to desirability responding. The variant of the DRI used in the JPI's construction includes information concerning the given item's ability to discriminate between individuals. A maximally discriminating item is one that elicits "True" responses from half the people in a given sample; that is, one that has an endorsement frequency of .5. An item's discriminating power may also be considered in terms of item variance. Maximum variance of dichotomous (e.g., T/F) items obtains with endorsement frequencies of .5, and lower variances obtain with more extreme frequencies, moving away from .5 in either direction. (Two items with endorsement frequencies of .4 and .6, respectively, have the same variances.) Thus, items with high variance have high discriminability and are generally preferred over those with lower variances. Item variance was added to the DRI to give preference to items having the potential for yielding more discriminatory information by virtue of having an endorsement frequency closer to .5. In addition, no item was selected with an endorsement frequency less than .2 or greater than .8. The formula for the modified DRI is as follows:

$$\text{DRI} = [r_{ig}^2 - r_{iDy}^2 + p(1 - p)]^{½}$$

where r_{ig} is the item's biserial correlation with the corrected total score,

r_{iDy} is the item's biserial correlation with the Desirability scale, and

$p(1 - p)$ is the item's variance.

Note that the statistical procedures involving Desirability scale scores involved, in effect, a double correction for desirability bias. The first correction involved the

use of the partial regression procedure noted earlier, and the second correction involved the use of the (modified) DRI. Considering the major role desirability has been identified as playing in other personality inventories (e.g., Fraboni, Jackson & Helmes, 1993), the double correction is warranted. Items for each scale were ranked in terms of the DRI and placed on alternate provisional JPI forms. Like the final form, each provisional form contained 320 items, including 15 twenty-item content scales and an Infrequency scale.

Second Item Analysis

The second item analysis involved administering the two provisional forms to large numbers of respondents and employing a new set of item-selection procedures. Whereas the first item analysis was designed to suppress desirability bias while yielding optimal levels of content saturation and item variance, the second analysis was designed to highlight the independence of JPI scales by identifying items minimally correlated with irrelevant scales. This was accomplished by first eliminating items correlating higher with an irrelevant scale than with their own scale, and then applying a technique called minimum redundancy item analysis (Jackson, 1974; Neill & Jackson, 1976). This computer-based procedure seeks to select items with high item-total scale correlations, taking into account the item's correlation with all irrelevant scales, as well as the scale intercorrelations. Neill and Jackson (1976) systematically varied three statistical parameters bearing on key item properties in showing that certain combinations of those parameters could be identified which suppress not only the average correlation between a set of scales, but also the size of the first factor in a factor analysis of all scale total scores, and the Gini index, a measure of interscale redundancy. The values for the parameters found by Neill and Jackson to be most effective in suppressing redundancy were employed in JPI scale construction to yield an Item Efficiency Index. This Item Efficiency Index involved taking the square root of the difference between the squared item-scale biserial correlation and the average squared correlation between the item and each irrelevant scale weighted by the correlation between the item's own scale score and each irrelevant scale score. Minimizing the correlation between scales in a multi-scale personality inventory means that relatively more information is provided by each separate scale, and reduces the chance that response biases are accounting for major portions of the total variance.

Table 3-1 contains an illustration of item selection procedures for several Anxiety scale items in the second item analysis and shows similar data for the Risk Taking scale. It will be observed that all six Anxiety items possess item-scale biserial correlations higher than that for any irrelevant scale, and that the proportions of people endorsing the items fall within the range of .2 to .8. Hence, none of the six items were rejected on those bases. The three selected Anxiety items were all characterized by acceptably high item-scale biserial correlations and Item Efficiency Indices (IEI's). They also showed low correlations with the Desirability scale. Items 4 and 5 were characterized by very high item-scale biserials and IEI's, but were nevertheless rejected because of what were considered to be excessively high correlations with the Desirability scale. Item 6, "I sometimes notice my hand shaking," was rejected because of insufficiently high content saturation. Both its item-scale correlation and its IEI were not acceptably high, especially when considered in relation to its correlation with the Desirability scale.

Table 3-1: Illustration of JPI Item Selection

Anxiety Scale

Selected Items		Key	p	r_{is}	IEI	r_{iDy}	r_{ig}	$|\bar{r}_{ig}|$
1.	Occasionally I feel so nervous that I begin to get all choked up.	T	.34	.69	.65	-.16	-.37	.13
2.	I often think about the possibility of an accident.	T	.49	.58	.55	-.09	-.26	.14
3.	Once in a while my stomach feels as if it were tied in knots.	T	.72	.57	.54	-.02	.31	.12
Rejected Items								
4.	I am more easily irritated or upset than others are.	T	.31	.82	.79	-.37	.31	.16
5.	People tell me I worry too much about insignificant things.	T	.42	.90	.86	-.39	-.36	.16
6.	I sometimes notice my hand shaking.	T	.39	.36	.32	-.34	-.24	.11

Risk Taking Scale

Selected Items		Key	p	r_{is}	IEI	r_{iDy}	r_{ig}	$|\bar{r}_{ig}|$
1.	I enjoy taking risks.	T	.42	.85	.84	-.05	.27	.15
2.	I think I would enjoy almost any type of gambling.	T	.26	.65	.63	-.11	-.23	.12
3.	When in school I rarely took the chance of bluffing my way through an assignment.	F	.57	.51	.48	.19	.39	.11
Rejected Items								
4.	Rather than risk being embarrassed, I am especially cautious of what I say in the presence of my boss.	F	.56	-.33	.24	.10	.48	.17
5.	Most people would say that I am cautious and conservative with my money.	F	.47	.43	.41	.15	.45	.12

Note: For key, T = true, F = false; p = proportion of respondents answering true; r_{is}= item-scale biserial correlation; IEI = Item Efficiency Index; r_{ig} = highest obtained biserial correlation between the scale and an irrelevant content scale; $|\bar{r}_{ig}|$ = mean absolute value of the biserial correlation between the scale and the irrelevant content scales.

Items for the Risk Taking scale (also in Table 3-1) illustrate different item properties. As is often the case, the highest IEI was obtained for a simple direct item: "I enjoy taking risks." An item reporting enjoyment of gambling also showed good statistical properties. Item 3, involving a combination of social and ethical risk taking, was acceptable, although it did correlate moderately with Social Confidence, an irrelevant scale. Another social risk taking item, item 4, did not pass the screening because it had an unacceptably low item-scale biserial correlation and a low IEI. Worse, that item was substantially correlated with an irrelevant scale, Cooperation. Similarly, item 5 had a higher correlation with an irrelevant scale, this time, Organization, than with its own scale. When selecting the best 20 items from the best 40 items, such instances of higher correlations with the Desirability scale were relatively rare, although they did occur. In general, there were many more items meeting statistical criteria than could be included in the 20-item scales.

After all items for each scale were ranked in terms of their IEI values, they were subjected to final editorial review to insure that items in each scale were judged to reflect adequately the content domain represented by the scale definition, and that certain kinds of content were not over or under represented. For instance, in the case of the Risk Taking scale, the four best items, as judged on purely statistical grounds, all involved gambling. Because risk taking was conceptualized as being

broader than gambling, however, two of those four items were removed from the scale, and statistically acceptable items reflecting broader facets of risk taking were substituted. Thus, the generalizability of the Risk Taking scale was enhanced. After final editorial review, items were assembled into final form in booklets, and reliability and validity studies were undertaken, results of which are reported in the next chapter.

Detection of Nonpurposeful Responding

As noted in Chapter 2, test situations in which it is reasonable to question whether some respondents may have completed the JPI-R nonpurposefully are relatively rare. Nonetheless, it may be important in some situations to be able to identify cases of nonpurposeful responding so that such cases may be removed from the sample, or at least given independent consideration. Identification of cases of nonpurposeful responding was accomplished with the original version of the JPI through the use of a separate 20-item Infrequency scale, comprising items heterogeneous with regard to content but having either extremely low (for true-keyed items) or high (for false-keyed items) endorsement frequencies. Lack of an Infrequency scale on the JPI-R requires alternative means of identifying troublesome cases. Two such means of detection, both of which are based on responses to items from the remaining 15 scales, are described below.

One way to detect nonpurposeful responding is made possible by the fact that items on a given questionnaire differ in their endorsement frequencies. Items with a high endorsement frequency (e.g., p-value > .70) are those to which the majority of respondents (i.e., 70% or more) answer "True." Items with a low endorsement frequency (e.g., p-value < .30), on the other hand, are responded to in the keyed direction by only a relatively few respondents (i.e., 30% or less). If an individual responds to many such extreme items from diverse scales in the direction opposite to that of most other respondents, it is reasonable to consider that he or she may not be responding in a purposeful and/or conscientious manner. Thus, an infrequency scale can be created using items having extreme p-values. Because nonpurposeful responding is independent of particular trait dimensions, items included in such a scale are most appropriately selected from every content scale.

Such a scale has been created for the JPI-R. Based on responses from the current normative college sample (males and females combined), p-values were determined for every item on each of the JPI-R's 15 content scales. Within each of the true- and false-keyed item sets per scale, the item with the lowest p-value, indicating a relatively low endorsement rate, was selected to be a true-keyed infrequency item, and the item with the highest p-value, indicating a relatively high endorsement rate, was selected to be a false-keyed infrequency item. Thus, each content scale contributes two true-keyed and two false-keyed items to the total of 60 items making up the current infrequency scale. Note that, for two items per scale, keying for infrequency is opposite to that used in scoring for content (i.e., one item keyed true for content is keyed false for infrequency, and one item keyed false for content is keyed true for infrequency). This ensures that the infrequency scale is balanced as well as heterogeneous regarding content, allowing meaningful capture of infrequent responding independent of content. It should also be noted that, because all the JPI-R's items were selected for inclusion on their respective scales partly on the basis of having moderate endorsement frequencies (i.e., items with p-values < .20 or >

.80 were excluded), the current infrequency scale can be expected to have a mean that is higher than that of a scale composing items with more extreme p-values. Accordingly, whereas a seemingly low score on an infrequency scale containing only very extreme endorsement items (e.g., a score of 10 out of 60) might reasonably suggest a case of nonpurposeful responding, a considerably higher score on the current 60-item scale might be required to warrant similar consideration. The items included on the current infrequency scale, their source scales, and their direction of keying on both the source and infrequency scales are listed in Appendix A.

A second type of case requiring special attention stems from the expectation that conscientious responding will give rise to high within-individual response consistency over the course of test administration. If people are responding purposefully throughout the testing session, then their *pattern* of trait scores based on half of the items on each scale should be similar to their pattern of trait scores based on the other half of the items on each scale. The degree of similarity between score patterns derived from the two halves of item sets may be reflected in the correlation, within each person, between the two sets of half-scale scores. Such a *Response Consistency Index* (RCI) is the within-person correlation between paired half-scores from the JPI-R's 15 scales. This second approach to detecting nonpurposeful responding, unlike the first method, utilizes responses to all 300 items on the JPI-R in 15 pairs of 10-item sets. The two half-scales for each trait were formed so as to be balanced both in terms of the number of true- and false-keyed items (5 of each type on each half-scale) and in terms of item endorsement frequencies. The items assigned to each half-scale and their keying are listed at the end of Appendix A.

Using means and standard deviations for the new Infrequency scale and the RCI, it is possible to determine critical values beyond which an individual may reasonably be considered to be responding in an unusual fashion. Theoretical ranges, observed means and standard deviations based on the responses from the current normative college sample (males and females combined), and corresponding critical values for the two indices are provided in Table 3-2. Two points are noteworthy about the critical values. First, setting critical values is somewhat arbitrary. Based on experience with the original JPI Infrequency scale, raw score values cutting off the 2.5% of cases at the appropriate end of the respective distributions (i.e., the upper end of the distribution of Infrequency scale scores and the lower end of the distribution of RCIs) are suggested as indicating the need for special attention. Raw score values corresponding to the extreme 5% of cases are also provided to facilitate more liberal

Table 3-2: Theoretical Ranges, Means, Standard Deviations, and Critical Values for the JPI-R Infrequency Scale and Response Consistency Index

Measure	Theoretical Range	Mean	SD[1]	Critical Values 2.5%	5%
Infrequency scale	0 to 60	15.42	4.18	> 24	> 22
Response Consistency Index	-1.00 to +1.00	.61	.25	< .13	< .21

Notes: Means and standard deviations based on the current college normative sample (males and females combined). 1: standard deviations based on the half of the distributions associated with non-purposeful responding.

detection of possible nonpurposeful responding. Second, the standard deviations reported in Table 3-2 and used in determining the critical values take into account the expected asymmetry of the distributions. Given the relatively low base rates of problematic cases, the Infrequency scale distribution is positively skewed (i.e., low mean and extended positive tail) and the RCI distribution is negatively skewed (i.e., high mean and extended negative tail). Thus, the observed variability from the mean in each case is greater for the portion of the distribution corresponding to nonpurposeful or unreliable responding than it is for the portion corresponding to purposeful or reliable responding. It is appropriate that the variability associated with problematic responding be used in calculating the critical values. Accordingly, the standard deviations reported in Table 3-2 were computed as the square root of the average squared difference (with division by N - 1) between the mean and the scores in the skewed portion of the respective distributions. These standard deviations are larger than those that would obtain using the entire distributions.

EMPIRICAL EVALUATION OF THE JACKSON PERSONALITY INVENTORY - REVISED

A number of studies have been undertaken with the original JPI that have a bearing on its structural properties and validity. Because the scales on the JPI-R are identical to those on the original JPI (with minor exceptions in the case of Traditional Values), results based on the original apply readily to the current version. In general, studies of the JPI have taken one of seven forms: (a) reliability analyses; (b) assessment of extended distributional characteristics; (c) evaluation of susceptibility to faking; (d) factor analyses; (e) studies of multitrait-multimethod matrices reflecting convergent and discriminant validity of scale scores; (f) group differences; and (g) correlations with other tests and with other forms of behavior.

Reliability Analysis[‡]

Internal consistency reliability estimates for the JPI were obtained from two college samples using two statistical procedures, from the current college standardization sample, and from a sample of students from the University of Rhode Island. The first two samples consisted of 82 volunteers (36 males and 46 females) from the University of California at Los Angeles, and 307 volunteers (146 males and 161 females) from the Pennsylvania State University. In addition to the widely-used Cronbach alpha reliability estimate, Bentler's (1972) theta coefficient was also computed. The latter approach to reliability estimation is appropriate when constructs underlying scales are dimensionally complex. Risk taking, for instance, has been shown to include at least four facets pertaining to physical, monetary, social, and ethical risks (Jackson, Hourany & Vidmar, 1972). A single, broader dimension of risk taking can be identified, however, by the high intercorrelations among the distinguishable facets. For constructs like risk taking, which depart from unidimensionality, Cronbach's alpha underestimates reliability relative to Bentler's theta. Thus, Bentler's theta is reported for two samples in recognition of the multidimensionality of some scales.

Table 4-1 lists the JPI-R's 15 scales along with the corresponding reliability coefficients for each of the four samples. Median reliabilities are reported at the bottom of the table. Considering that there are only 20 items per scale, the reliability estimates are all acceptable and consistent with expectations based on the method of scale construction employed (see Chapter 3). Also reported in Table 4-1 is the standard error of measurement (SEM) for each scale. Each SEM represents the expected standard deviation of scores for a given respondent who takes a large number of randomly parallel forms of the scale (Nunnally & Bernstein, 1994). The SEM's for the JPI-R's scales are not large, indicating that individuals' JPI-R scores could be expected to be relatively stable over repeated independent administrations.

[‡]Portions of this section are adapted from Jackson, D. N. (1977). Reliability of the Jackson Personality Inventory. *Psychological Reports, 40,* 613-614

Table 4-1: Internal Consistency Reliabilities for the JPI-R Scales

Scale	California N = 82 Alpha	Theta	Pennsylvania N = 307 Alpha	Theta	Current College N = 1,107 Alpha	Rhode Is. N = 195 Alpha	SEM
Complexity	.72	.90	.73	.85	.66	.74	1.94
Breadth of Interest	.79	.93	.82	.90	.80	.79	1.95
Innovation	.83	.94	.87	.93	.87	.82	1.80
Tolerance	.64	.84	.60	.75	.66	.81	1.98
Empathy	.78	.92	.83	.90	.78	.78	1.90
Anxiety	.85	.95	.83	.90	.82	.77	1.88
Cooperativeness	.81	.93	.82	.90	.82	.80	1.86
Sociability	.84	.94	.84	.91	.82	.72	1.95
Social Confidence	.88	.95	.84	.91	.84	.79	1.82
Energy Level	.80	.93	.77	.87	.76	.80	1.98
Social Astuteness	.62	.86	.65	.80	.66	.71	2.02
Risk Taking	.81	.93	.84	.91	.84	.82	1.91
Organization	.75	.92	.79	.88	.79	.74	1.94
Traditional Values	.77	.91	.81	.89	.79	.71	1.95
Responsibility	.67	.87	.70	.82	.66	.70	1.92
median	*.79*	*.93*	*.82*	*.90*	*.79*	*.78*	*1.94*

Note: Reliabilities for the California sample were provided by Peter M. Bentler, for the Pennsylvania sample by George M. Guthrie, and for the Rhode Island sample by J. Michael Govia. SEM = standard error of measurement; based on the current college normative sample (males and females combined, *N* = 1,107).

Another way to consider internal consistency reliability is in terms of the correlations between individual items and total scale scores. Items should show evidence of strong correlations on average with their own scale's total score. Table 4-2 contains mean biserial correlations between each scale's items and the total

Table 4-2: Mean Item-Total Biserial Correlations for the JPI

Scale	Mean Biserial Correlation
Complexity	.53
Breadth of Interest	.61
Innovation	.71
Tolerance	.47
Empathy	.58
Anxiety	.64
Cooperativeness	.65
Sociability	.65
Social Confidence	.65
Energy Level	.59
Social Astuteness	.53
Risk Taking	.67
Organization	.62
Traditional Values	.59
Responsibility	.57

Note: Based on responses used in the second item analysis conducted in constructing the original JPI.

scale score. Biserial correlations take into account the assumption that one variable is a dichotomous representation of an actually continuous dimension. In the present case, individual items have a dichotomous true/false response format, which may be assumed to represent a continuum of agreement. The mean item-total correlations reported in Table 4-2 range from .47 for Tolerance to .71 for Innovation, suggesting adequate scale homogeneity.

As a further aid in describing the reliability of the JPI-R's scales, mean item-total correlations were computed for each scale using responses from the new college norm group (males and females combined; total $N = 1,107$). It is informative to compare mean correlations between items and their *own* total scale score with mean correlations between those same items and the total scores on *other* scales. Reliability in this context would be supported by mean item-own scale correlations that are higher than the corresponding mean item-other scale correlations. Table 4-3 reports all 15 x 15 = 225 mean item-total correlations for the JPI-R scales. The diagonal values (shown in bold typeface) are the mean item-own scale correlations, and the off-diagonal elements are the mean item-other scale correlations. Unlike the means reported in Table 4-2, those in Table 4-3 are based on point biserial correlations, which do not assume that individual item responses are continuous. One result of this is that the correlational ceiling is lowered (i.e., the maximum possible correlation is considerably less than 1.0) due not only to dichotomous measurement per se, but

Table 4-3: Mean Item-Total Correlations for the JPI-R

Total Scores	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy	mean off-diag. l r l corrected
Complexity	**24**	21	22	12	07	02	-08	01	09	06	03	10	-07	-14	01	06
Breadth of Interest	15	**36**	24	14	02	-08	-10	02	16	16	04	16	-03	-08	07	08
Innovation	15	20	**47**	10	-02	-07	-17	02	19	13	07	21	-07	-09	-02	08
Tolerance	12	18	15	**25**	01	-11	-15	03	11	09	-01	08	-08	-08	07	07
Empathy	07	02	-02	01	**34**	21	18	15	01	-04	03	-08	02	04	08	04
Anxiety	02	-07	-08	-09	20	**39**	20	02	-12	-11	03	-11	05	02	-01	06
Cooperativeness	-06	-10	-16	-12	15	20	**39**	09	-19	-08	10	-13	04	09	01	08
Sociability	01	02	01	03	14	03	09	**39**	17	08	05	05	-01	01	02	03
Social Confidence	06	15	21	08	01	-11	-18	16	**42**	20	03	19	03	-05	01	08
Energy Level	05	16	16	07	-04	-12	-09	09	23	**32**	02	14	09	00	04	07
Social Astuteness	03	03	11	-02	03	04	14	07	04	02	**23**	11	-03	-03	-07	03
Risk Taking	07	14	23	06	-07	-10	-13	05	19	12	08	**42**	-11	-13	-11	09
Organization	-06	-03	-08	-07	01	05	04	-01	03	08	-02	-13	**34**	09	08	03
Traditional Values	-12	-08	-11	-06	04	02	09	01	-06	-00	-03	-14	09	**35**	12	04
Responsibility	00	10	-03	07	10	-02	01	02	02	05	-07	-15	10	14	**24**	04
mean off-diagonal l r l corrected for upward bias	04	08	10	05	04	06	09	03	09	06	02	10	03	05	03	

Notes: All values are mean point-biserial correlations based on the current college norms (males and females combined; $N = 1,107$; decimals omitted). Diagonal elements are mean corrected item-total correlations (i.e. mean correlations between each item and the sum of the remaining items on the host scale). Overall mean off-diagonal l r l corrected for upward bias = .06. Overall mean diagonal r = .34.

also to unbalanced proportions of true and false responses to each item. Accordingly, comparisons between the results shown in Tables 4-2 and 4-3 must necessarily take into account the differences between biserial and point biserial correlations.

The results in Table 4-3 indicate that, for each of the JPI-R's scales, items correlate higher on average with their own scale's total score than they do with the total score on any of the other 14 scales. Averages of the mean item-other scale correlations are reported for each scale to facilitate comparisons. Because the direction of the item-other scale correlations is arbitrary (i.e. items were not assigned to scales on the basis of the direction of their relations with other scales), absolute values were used in averaging the mean item-other scale correlations. After correcting for upward bias due to the use of absolute values (see Tett, Jackson, Rothstein & Reddon, 1994), the overall average item-other scale correlation is .06. This compares to an overall average item-own scale correlation of .34, which is nearly six times as large.

All told, results from the various studies reported above suggest that the JPI-R's scales are sufficiently reliable with respect to internal consistency to permit meaningful scale score interpretations. Such findings clearly reflect the JPI's method of scale construction, which was designed, in part, to promote scale reliability.

Extended Distributional Characteristics

The JPI was intended to produce scale scores that are approximately normally distributed in the general population. In keeping with this objective, the norms reported in Tables 1-2 and 1-3 show that, for most scales and for each sex, the means for the JPI-R are close to the midpoint on the scale (i.e., around 10 out of a possible score of 20). More detailed appraisal of distributional normality is permitted by reference to indices of skewness and kurtosis. *Skewness* denotes the degree of symmetry of a score distribution around the mean. A negatively skewed distribution is one that is lopsided to the right owing to greater relative frequency of extreme negative scores, and a positively skewed distribution is one that is lopsided to the left owing to greater relative frequency of extreme positive scores. A normal distribution is symmetrical and, hence, has zero skewness. *Kurtosis* refers to the narrowness of the distribution. A relatively narrow (i.e., "tall") distribution is said to be "leptokurtic," and a relatively wide (i.e., "flat") distribution is said to be "platykurtic." For both skewness and kurtosis, statistics may be derived such that values for a normal distribution are zero, and values for non-normal distributions may exceed ± 1.00. Positive kurtosis values indicate leptokurtic distributions, and negative kurtosis values indicate platykurtic distributions. For most observed distributions, skewness and kurtosis values fall in the range of ± .90.

Standardized skewness and kurtosis indices for each JPI-R scale, based on the 1,107 cases derived from the current college norming study (males and females combined), are reported in Table 4-4. With regard to distributional symmetry, the values in the first column indicate that the JPI-R scales are not adversely skewed one way or the other. It will be noted that the direction of skewness in particular cases is related to which side of the midpoint (i.e., above or below 10) the given scale's mean falls (see Tables 1-2 and 1-3). That is, scales with means greater than 10 tend to be negatively skewed and scales with means less than 10 tend to be positively skewed. Also, the degree of skewness tends to reflect the extremity of the mean. Thus, scales having either the highest means (e.g., Innovation) or the lowest means

Table 4-4: Skewness and Kurtosis of JPI-R Scale Distributions

Variable	Skewness	Kurtosis
Complexity	-.03	-.43
Breadth of Interest	-.12	-.75
Innovation	-.55	-.69
Tolerance	-.25	-.35
Empathy	-.73	.18
Anxiety	-.42	-.56
Cooperativeness	.21	-.70
Sociability	-.11	-.66
Social Confidence	-.33	-.73
Energy Level	-.21	-.54
Social Astuteness	.07	-.53
Risk Taking	.34	-.73
Organization	-.07	-.73
Traditional Values	.39	-.44
Responsibility	-.27	-.42

Note: Based on current college norms; $N = 1,107$.

(e.g., Cooperativeness), tend to be those with the strongest skewness values. The reason these patterns emerge is that (a) raw scores on each scale are finite (i.e., 0 - 20), (b) all scores are represented in each distribution, and (c) the range of possible scores is greater on the side opposite to that where the mean is located. Thus, high means are associated with negative skewness, low means with positive skewness, and the more extreme means are associated with more extreme skewness. Because there is considerable "room to move" around both sides of the mean for any given scale, however, the degrees of skewness shown in Table 4-4 pose no serious threats to the assumption of normality in the use of the JPI-R scales.

With regard to kurtosis, values in the second column of Table 4-4 indicate that the JPI-R scale distributions are somewhat flatter (i.e., more platykurtic), on the whole, than the normal distribution. This is not surprising, given that items with extreme p-values were excluded from the JPI in its development (see Chapter 3). Such items were dropped because they are less discriminating in identifying individuals high or low on a given trait. With entire scales composed of non-extreme items, true-score (i.e., actual) trait levels will be pushed out slightly toward the extreme ends of the scale score distributions. Thus, scores of 0, 1, or 2 and 18, 19, or 20 will be relatively overrepresented, and the observed distributions will, accordingly, be flatter than normal. In any case, kurtosis values of the order presented in Table 4-4 are not substantially different from zero and, hence, warrant no serious concerns with respect to the assumption of normality.

Faking

The possibility of motivated distortion or faking on personality questionnaires has been discussed at length in the literature. Although respondents even in selection situations rarely assume a role similar to that of a respondent instructed to make "the best possible impression," it is nevertheless of interest to know how much mean scale scores change under such instructions. Accordingly, a study was undertaken in which

groups of respondents completed the JPI-R under three conditions: (a) to respond normally using standard instructions, (b) to make the best possible impression, and (c) to make the best possible impression as if applying for a managerial position.

Results of the faking study are reported in Table 4-5. It will be observed that in most instances the mean differences between scales is not large, reflecting the method of scale construction in which desirability was suppressed. Where differences exist, the pattern is not necessarily the same for general faking and managerial faking conditions. For managerial dissimulation, highest scores were on Innovation and Social Confidence, while for general faking, the two highest scores were for Empathy and Responsibility.

Table 4-5: JPI-R Means and Standard Deviations Under Straight-Take, General Fake-Good, and Manager Fake-Good Conditions

Scale	Straight-Take $N = 113$		General Fake-Good $N = 109$		Manager Fake-Good $N = 111$	
	Mean	SD	Mean	SD	Mean	SD
Complexity	10.8	3.5	11.0	3.1	10.6	3.0
Breadth of Interest	10.1	4.4	11.9	5.3	13.0	4.7
Innovation	12.4	4.8	13.4	4.9	14.4	4.4
Tolerance	11.1	2.9	12.2	3.4	11.9	3.6
Empathy	13.1	3.9	13.6	3.3	12.2	3.5
Anxiety	12.6	3.6	11.8	3.8	10.9	4.4
Cooperativeness	8.8	4.9	8.8	5.1	9.0	4.5
Sociability	12.1	4.4	12.3	4.2	12.3	4.2
Social Confidence	12.4	4.4	13.5	4.4	14.1	4.2
Energy Level	11.0	3.7	11.9	4.9	13.1	4.3
Social Astuteness	10.5	3.2	10.6	3.1	11.6	3.0
Risk Taking	10.3	4.9	9.5	4.8	10.1	4.4
Organization	10.0	4.2	11.6	4.1	13.2	4.5
Traditional Values	9.3	3.9	9.8	3.4	9.9	3.2
Responsibility	11.3	3.7	13.5	3.4	13.4	3.9

Notes: Results are based on responses from undergraduate university students randomly assigned to one of three instructional conditions. *Straight-Take* refers to administration using standard instructions, *General Fake-Good* denotes administration using instructions to make a generally favorable impression, and *Manager Fake-Good* refers to administration using instructions so as to make a favorable impression as an applicant for a managerial job.

Factor Analysis

A notable feature of the JPI-R is that its scales are organized into five clusters to permit interpretations at a relatively general level. The clusters reflect the results of a principal components analysis based on the responses of the 1,107 college students (740 females, 367 males) in the current normative sample. The five resulting factors, accounting for 65 per cent of the total variance, were rotated to a Procrustes criterion with two major aims in mind: (a) to provide psychologically meaningful factors, and (b) to yield clusters on which all relevant scales were positively represented. A profile providing clusters in which some scales were positively keyed and some

Table 4-6: Intercorrelations of the JPI-R Scales Within Sex

Scale	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Complexity		45	42	28	13	02	-18	02	19	-23	10	25	-19	-34	-01
Breadth of Interest	47		42	37	01	-17	-22	04	30	39	06	34	-07	-18	20
Innovation	42	50		28	-01	-09	-27	01	36	-19	17	38	-15	-18	00
Tolerance	38	44	27		-03	-25	-35	04	-05	23	-05	22	-16	-19	15
Empathy	24	07	03	12		42	35	38	02	-03	13	-07	02	07	15
Anxiety	03	-17	-19	-23	38		43	10	-23	-23	16	-17	09	01	-09
Cooperativeness	-15	-23	-31	-25	30	34		16	-40	-19	33	-30	07	20	01
Sociability	02	08	05	11	22	-06	23		34	38	11	11	-02	05	04
Social Confidence	17	39	43	17	04	-27	-33	33		46	39	39	04	12	02
Energy Level	16	33	35	23	-13	-29	-18	20	49		-00	25	22	01	17
Social Astuteness	04	12	22	-04	09	03	25	19	13	14		16	-07	-04	-15
Risk Taking	16	32	42	22	-10	-15	-15	17	41	29	31		-27	-29	-20
Organization	-11	-03	-10	-23	-05	06	07	-03	09	19	-04	-16		21	21
Traditional Values	-30	-18	-23	-17	04	04	18	-01	-09	01	-09	-25	21		28
Responsibility	03	18	-04	15	16	-13	-00	-00	02	12	-25	-20	21	28	

Note: Decimals omitted; based on current college normative sample; males (*N* = 367) below the diagonal; females (*N* = 740) above the diagonal.

negatively keyed would be difficult to interpret (i.e., consistency of scores within a given cluster would give a jagged profile, whereas inconsistency could give a flat profile). If one were to relax the criterion of all positive loadings within clusters, other reasonable factor rotations are possible. All rotated loadings are reported in Table 4-7. The salient loadings for each of the five major components are as follows:

Factor 1

Complexity	.79
Breadth of Interest	.76
Innovation	.62
Tolerance	.61

The person scoring high on this factor prefers intricate solutions to problems, has broad interests, is motivated to be creative, and accepts a variety of people and ideas. All told, this combination of characteristics describes someone who prefers being analytical and flexible. Related descriptors include being open-minded, rational, scientific, and academic. The negative pole describes someone who might be considered narrowly focussed, concrete, and perhaps rigid in thinking about people, problems, and ideas.

Factor 2

Empathy	.79
Anxiety	.73
Cooperativeness	.71

The second factor describes someone who is sensitive to the needs of others, anxious, and cooperative in the sense of doing what he or she feels is expected. A

Table 4-7: Rotated Principal Component Factor Loadings of JPI-R Scales

	Factor				
	I	**II**	**III**	**IV**	**V**
Scale	**Analytical**	**Emotional**	**Extroverted**	**Opportunistic**	**Dependable**
Complexity	**79**	17	-07	09	-15
Breadth of Interest	**76**	-07	17	14	12
Innovation	**62**	-16	15	39	-08
Tolerance	**61**	-16	22	-34	-14
Empathy	18	**79**	20	-20	06
Anxiety	06	**73**	-26	09	05
Cooperativeness	-34	**71**	-09	15	11
Sociability	10	37	**80**	-06	-15
Social Confidence	29	-23	**71**	20	04
Energy Level	28	-28	**52**	30	37
Social Astuteness	01	32	11	**68**	-12
Risk Taking	26	-28	33	**48**	-39
Organization	-14	01	-01	18	**78**
Traditional Values	-36	09	13	-20	**53**
Responsibility	25	12	13	-49	**61**

Note: Analysis based on current college normative sample (males and females combined; *N* = 1,107). Decimals omitted.

common thread connecting these characteristics is emotional sensitivity. Someone scoring high on this factor could be expected to be influenced by other people's expressed desires, needs, and expectations. Low scorers, on the other hand, might be considered to be independent and to display high emotional control.

Factor 3

Sociability	.80
Social Confidence	.71
Energy Level	.52

The person scoring high on this factor would be expected to be gregarious, actively pursuing involvement with other people, and, in certain situations, might be described as dominant. The low-scoring individual, on the other hand, would tend to be shy and passive toward interacting with others; in some situations, he or she might feel socially awkward and perhaps submissive. This factor clearly captures the general dimension of Extraversion versus Introversion.

Factor 4

Social Astuteness	.68
Risk Taking	.48

High scores on this factor indicate shrewdness in dealing with other people as well as a sense of adventure. Together, these traits might be attributed to someone who is opportunistic and perhaps machiavellian. Low scores denote the combination of being direct in dealing with others and generally cautious.

Factor 5

Organization	.78
Responsibility	.61
Traditional Values	.53

This factor is defined by scales reflecting methodicalness and socialization in terms of the willingness both to assume personal responsibility and to hold traditional societal values. An individual scoring highly on this dimension would be expected to be planful and orderly, emotionally mature, and relatively conservative in terms of social beliefs. A description consistent with these traits is that of being dependable. Low scores reflect the tendency to avoid careful planning, to be self-centered, and to adopt nontraditional attitudes.

Multitrait/Multimethod Analyses: Studies Using Peer Ratings and Self Ratings

Two major studies with the JPI have been undertaken using peer ratings and self ratings. The first of these was conducted employing 70 Stanford University undergraduate students residing in common housing units. Each of the 15 trait dimensions assessed by the JPI-R was measured using four different methods of measurement: (a) the JPI, (b) adjective checklist, (c) self ratings, and (d) peer ratings. The JPI was administered using standard instructions and scoring keys. The adjective checklist was constructed by the author by selecting 10 positively keyed and 10 negatively keyed adjectives for each scale. The adjectives bore a substantive relation to the scale definitions contained in Table 1-1. Examples of adjectives used are also contained in Table 1-1. Respondents were asked to read each adjective and decide whether it was self descriptive. If so, they were to answer "true," otherwise "false." The Self Rating used a nine-point bipolar rating scale anchored at each pole with opposite adjectives defining alternative extremes of the given trait dimension. For example, the following scale was used to represent Anxiety:

relaxed   1   2   3   4   5   6   7   8   9   tense

Two such scales were used to represent each trait dimension. Peer ratings were obtained by providing judges with an adjective trait name for each trait dimension along with a definition similar to that presented in Table 1-1. For example, the adjective, "energetic" was used for Energy Level, "trustworthy" for Responsibility, and "conservative" for Traditional Values. Judges were asked to rate each person in their living unit, ranging from six to 10 people, on a nine-point scale in terms of how characteristic or uncharacteristic each trait was of each individual. To obtain a composite peer rating on a trait for a particular person, the ratings of all judges for that person were averaged.

The combination of sets of 15 trait scores for each of the four methods of measurement (JPI, adjective checklist, self ratings, and peer ratings) yielded a 60-by-60 intercorrelation matrix. The correlations relevant in evaluating the JPI-R are those between the 15 JPI content scale total scores and the 15 trait scores derived using the other three methods. These correlations are presented in Table 4-8.

It will be observed that, for the majority of the JPI scales, most convergent validities show higher positive values than do the correlations with irrelevant traits. Table 4-9 contains the convergent validities extracted from the diagonals of the matrices presented in Table 4-8. It is noteworthy that the median values for the adjective checklist, the self rating, and the peer rating are .70, .56, and .38, respectively. With the exception of the values for Breadth of Interest and Social Astuteness, all heteromethod peer rating validities are significant at the .01 level, ranging from .66 for Social Confidence to .32 for Empathy. In the case of Social Astuteness, it proved particularly difficult to find an appropriate adjective for the peer and self ratings. Our choice of "diplomatic" was apparently inopportune. But in studies with senior executives (Hagberg, Jackson & Jackson, 1992), the Social Astuteness scale was a significant predictor of performance. In general, there is substantial evidence that JPI scale score variance is reflected in the variance for like-named traits measured by an adjective checklist, self rating, and peer rating. This is especially true given the somewhat lower social visibility of traits like Complexity and Innovation, as compared with many characteristics from, for example, the Murray system, which are more interpersonally oriented and therefore more apparent to peers.

As a means of evaluating convergent and discriminant validity, the 60-by-60 correlation matrix, based on the above data, was analyzed using multimethod factor analysis (Jackson, 1975), a procedure specifically designed for this type of problem. First, each monomethod (e.g., JPI) block was factored separately by complete components analysis. One factor was extracted for each measure, and rotated so that one and only one measure was highly loaded. Second, correlations between the 15 component scores from the four separate analyses were derived, then factored and rotated orthogonally. Table 4-10 reports the loadings for each of the predicted salients as well as the average absolute irrelevant loading. The results show that, in the majority of cases, predicted measures are highly loaded on their respective factors. This supports the convergent and discriminant validity of the JPI at the factorial level.

A second study was conducted relating JPI scale scores, self ratings, and peer ratings. It employed 116 females living in a large university residence who, in smaller groups, had been roommates for a minimum of five months. As in the previous study, each subject responded to the JPI and to a self-rating form on which the same set of trait-descriptive adjectives was rated by people who knew the respondent well. Correlations of the JPI with self and roommate ratings are reported in Table 4-11. The self-rating correlations are substantial. All but two (for Responsibility and Social Astuteness) are significant at the .01 level. The significant values range from .77 for Social Confidence to .28 for Tolerance. Although a majority of the peer rating correlations are significant, their average value is lower than those reported for the Stanford University students, reflecting the lower reliability of ratings made by a single judge, which have been found to be typically in the range of .20 to .40. The significant values of these range from .43 for Risk Taking to .23 for Tolerance. It

Table 4-8: Multitrait-Multimethod Matrix of JPI Scales with Adjective Checklist, Self Ratings, and Peer Ratings *(N* = 70)

Adjective Checklist	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Complexity	**66**	39	48	35	03	-15	-27	-09	18	04	-18	13	-32	-34	-01
Breadth of Interest	42	**42**	36	35	30	04	-13	26	17	27	-12	11	-04	-18	32
Innovation	42	28	**79**	20	-07	-34	-35	14	47	11	08	58	-40	-40	-24
Tolerance	30	30	30	**45**	-02	-28	-31	20	29	11	-22	20	-28	-21	18
Empathy	04	-03	07	12	**66**	28	06	48	21	01	08	06	-03	-11	-07
Anxiety	-02	-09	-07	-14	28	**71**	38	08	-29	-26	05	-25	13	-05	-06
Cooperativeness	-35	-20	-20	-24	04	30	**56**	06	-46	-17	13	-33	26	21	04
Sociability	04	13	17	19	26	-14	-11	**70**	66	29	15	35	-15	11	12
Social Confidence	09	16	27	04	-14	-45	-41	08	**73**	21	14	43	-03	-01	-02
Energy Level	12	29	05	11	15	-07	-04	33	44	**72**	06	18	28	19	35
Social Astuteness	13	15	24	-14	02	00	-06	14	33	-02	**15**	03	-13	19	01
Risk Taking	-03	-06	24	08	-12	-36	-28	28	48	24	23	**74**	-27	-10	-23
Organization	-21	14	-18	-21	-17	10	08	-20	-03	26	04	-30	**78**	24	31
Traditional Values	-49	-16	-49	-35	11	37	41	-02	-31	-03	10	-43	34	**72**	16
Responsibility	-06	30	-09	09	10	10	-01	16	10	26	-09	-23	37	30	**46**
Self Rating															
Complexity	**35**	25	26	23	05	-10	-17	-07	00	-14	-07	-02	-25	-22	-07
Breadth of Interest	08	**19**	21	20	19	-03	-13	-01	23	21	08	02	13	04	20
Innovation	25	13	**72**	11	08	-03	-19	05	26	-03	03	29	-23	-24	-16
Tolerance	12	03	11	**26**	19	-02	-14	20	24	-01	08	10	-09	-14	15
Empathy	09	15	14	18	**70**	24	16	43	16	06	06	-08	-04	-06	01
Anxiety	16	-01	-01	04	23	**58**	31	03	-21	-09	05	-31	16	-15	08
Cooperativeness	-25	-16	-25	-24	08	29	**61**	08	-26	-02	29	-26	07	23	-09
Sociability	06	24	31	21	18	-17	-09	**55**	59	41	19	36	-11	07	11
Social Confidence	14	13	20	16	-07	-42	-43	13	**66**	20	01	39	-19	-02	04
Energy Level	-03	16	05	17	15	-11	-01	23	33	**50**	-03	08	10	22	33
Social Astuteness	14	35	27	03	18	-06	-11	29	44	23	**13**	06	-07	13	13
Risk Taking	-06	08	30	12	-11	-39	-36	26	44	24	13	**73**	-30	-17	-13
Organization	-14	10	-09	-18	06	18	26	-08	-02	17	19	-31	**54**	16	18
Traditional Values	-22	08	-21	-20	-05	22	-36	04	-16	07	19	-30	26	**56**	12
Responsibility	-11	10	-01	14	24	13	21	13	00	-01	-02	-26	23	19	**16**
Peer Rating															
Complexity	**37**	19	32	32	17	02	-19	20	-08	-02	00	-04	-10	-17	02
Breadth of Interest	28	**18**	22	40	23	-15	-15	-05	21	13	06	18	-01	-31	10
Innovation	28	15	**37**	39	23	04	-15	18	-02	-11	04	09	-03	-42	-02
Tolerance	26	11	13	**36**	11	-16	-08	12	02	-13	16	03	-13	-34	-04
Empathy	07	04	-01	22	**32**	09	15	-09	-16	05	-02	-17	04	02	17
Anxiety	06	-06	03	01	27	**43**	05	22	10	09	09	10	07	04	16
Cooperativeness	-11	19	-25	-19	02	20	**38**	23	-11	17	-04	-25	16	32	21
Sociability	06	12	13	24	28	-03	-03	**47**	47	20	20	24	06	-07	09
Social Confidence	11	18	31	15	-01	-23	-43	16	**66**	22	11	45	10	-16	03
Energy Level	10	19	16	23	07	-18	-07	01	39	**47**	04	21	24	-08	26
Social Astuteness	34	33	20	31	25	-02	07	16	04	03	**-01**	-20	01	-18	24
Risk Taking	06	-06	25	18	01	-21	-39	12	37	02	16	**52**	-17	-36	-24
Organization	13	32	-03	07	07	10	23	-03	-13	27	-16	-36	**33**	18	38
Traditional Values	-27	-00	-34	-27	-07	17	34	03	-18	20	-01	-36	24	**57**	31
Responsibility	03	12	-10	15	09	13	29	09	-32	-01	-11	-40	17	06	**33**

Table 4-9: Validity Coefficients for the JPI (*N* = 70)

	Adjective Checklist	Self Rating	Peer Rating
Complexity	66	37	37
Breadth of Interest	42	19	18
Innovation	79	73	37
Tolerance	45	24	36
Empathy	66	76	32
Anxiety	71	64	43
Cooperativeness	56	64	38
Sociability	70	60	47
Social Confidence	73	64	66
Energy Level	72	52	47
Social Astuteness	15	10	-01
Risk Taking	75	77	52
Organization	78	56	33
Traditional Values	72	58	57
Responsibility	46	18	33
Median	*70*	*56*	*38*

Note: Decimals omitted. For *N* = 70, the *p* = .01 and *p* = .05 critical values are .31 and .24, respectively (two-tailed tests).

Table 4-10: Rotated Multimethod Factor Matrix of JPI, Adjective Checklist, Self Ratings, and Peer Ratings (*N* = 70)

		Rotated Factor Loading				
Factor	Trait Name	JPI	Adjective Checklist	Self Rating	Peer Rating	Average Absolute Irrelevant Loading
I	Complexity	57	83	73	23	10
II	Breadth of Interest	17	05	67	56	11
III	Innovation	87	79	81	44	07
IV	Tolerance	40	29	68	50	11
V	Empathy	77	79	86	52	08
VI	Anxiety	80	82	83	69	07
VII	Cooperativeness	74	74	76	17	09
VIII	Sociability	60	76	72	78	09
IX	Social Confidence	69	86	83	60	07
X	Energy Level	77	72	65	65	10
XI	Social Astuteness	25	74	77	29	11
XII	Risk Taking	76	80	88	57	07
XIII	Organization	69	85	81	46	09
XIV	Traditional Values	79	74	78	58	09
XV	Responsibility	46	52	52	28	12

Note: Decimals omitted.

Table 4-11: Correlations between JPI Scales, Self Ratings, and Roommate Ratings (*N* = 116)

JPI Scale	Self Rating	Roommate Rating
Complexity	41	13
Breadth of Interest	43	17
Innovation	75	23
Tolerance	28	23
Empathy	40	09
Anxiety	64	25
Cooperativeness	47	26
Sociability	47	34
Social Confidence	77	30
Energy Level	59	33
Social Astuteness	09	03
Risk Taking	65	43
Organization	63	41
Traditional Values	50	33
Responsibility	16	17

Note: Decimals omitted. The .05 and .01 significance levels for *N* = 116 are .18 and .24 respectively.

is evident that peer rating validities will vary as a function of the number of judges and their ability to differentiate between constructs having similar meanings. The complete heteromethod correlation matrices between the JPI and self and peer ratings are shown in Table 4-12.

The latter study included measures of response bias—specifically, measures of acquiescence and desirability—permitting appraisal of the degree of association between these measures and JPI scales. The corresponding correlations are reported in Table 4-13. The acquiescence scale included items drawn from the neutral range of desirability from the *California Psychological Inventory*, all keyed True; the desirability scale was taken from the *Personality Research Form*. Although these two response biases have been implicated in the interpretation of the largest two factors in other personality inventories, the correlations reported in Table 4-13 are not high. The mean absolute value of the correlation with acquiescence is .13, while the corresponding value for desirability is .19. Clearly, JPI-R scale score variance is largely free from these response biases.

The Neill Study of Student Demonstrators

One method of evaluating a psychological test is to analyze differences between groups that might reasonably be expected to differ on characteristics measured by the test. John A. Neill tested a group of student demonstrators who had peacefully occupied a university building to protest the failure of the university to renew the contract of a professor. He also tested a comparable group of students who had not participated in the demonstration, and compared the mean scores for the two groups. Table 4-14 summarizes the major results of this study. It will be noted that student demonstrators are significantly higher on JPI(-R) scales for Breadth of

Table 4-12: Correlations between the JPI, Self Ratings, and Peer Ratings (*N* = 116)

Self Rating	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Complexity	**41**	22	34	11	21	11	-07	00	16	24	06	18	-08	-10	01
Breadth of Interest	14	**43**	31	16	23	-12	-19	10	33	48	-04	18	11	05	12
Innovation	43	43	**75**	21	17	-02	-15	01	22	38	11	33	-18	-27	05
Tolerance	10	18	13	**28**	16	-23	-20	16	09	-04	01	02	-16	-31	15
Empathy	-03	12	12	19	**40**	13	07	14	01	-10	03	-06	-10	-07	09
Anxiety	02	-11	-01	-19	08	**64**	24	-18	-29	-07	11	-05	08	06	-16
Cooperativeness	-26	-31	-21	-13	13	21	**47**	16	-22	-29	03	-42	02	32	14
Sociability	-11	04	17	15	25	01	10	**47**	41	13	-08	-03	16	18	11
Social Confidence	09	21	21	16	00	-49	-40	29	**77**	43	01	22	17	02	07
Energy Level	10	24	22	10	21	-05	-08	27	40	**59**	05	26	09	03	-09
Social Astuteness	-09	-01	-17	02	10	-07	18	-05	-17	-13	**09**	-26	13	22	28
Risk Taking	25	23	27	15	-05	-15	-17	13	26	27	15	**65**	-32	-28	-23
Organization	-14	-11	-10	-07	07	09	11	01	13	05	-02	-25	**63**	24	14
Traditional Values	-26	-19	-23	-13	-07	07	25	-13	-13	-10	01	-38	16	**50**	17
Responsibility	-12	-10	-09	-03	08	05	06	02	02	-11	-05	-23	41	21	**16**
Peer Rating															
Complexity	**13**	05	18	03	-07	-04	-10	-14	06	04	10	00	14	-07	-03
Breadth of Interest	14	**17**	31	18	13	00	-10	03	13	21	13	09	-07	-17	03
Inovation	06	02	**23**	03	03	-08	-03	12	12	11	13	10	-22	-01	-13
Tolerance	16	10	06	**23**	-01	-08	-06	02	-08	03	04	14	-27	-13	10
Empathy	15	-17	02	01	**09**	14	10	06	-11	-16	09	14	-23	-07	-07
Anxiety	07	-10	06	-08	-04	**25**	02	-09	03	-08	-05	-05	20	08	-10
Cooperativeness	-19	-18	-13	-14	10	18	**26**	22	-07	-21	-01	-08	00	21	01
Sociability	24	03	12	13	16	-01	01	**34**	21	20	10	26	-27	-02	01
Social Confidence	08	10	14	03	-04	-35	-11	20	**30**	23	-01	16	-07	-10	-00
Energy Level	16	18	10	15	12	-02	-10	26	24	**33**	-04	21	-07	-04	02
Social Astuteness	11	04	-07	08	10	07	03	-01	-10	05	**03**	-01	-03	09	09
Risk Taking	09	05	12	-01	-12	-20	-18	17	20	15	-05	**43**	-17	-27	-23
Organization	-09	-06	-22	04	-03	16	09	-07	-12	-05	-05	-24	**41**	12	09
Traditional Values	-21	14	-15	-15	02	21	30	-02	-09	-13	02	-31	25	**33**	08
Responsibility	-06	-05	-16	16	03	22	11	-13	-16	-07	-04	-14	18	14	**17**

Note: Decimals omitted.

Interest, Complexity, Energy Level, Innovation, Risk Taking, Social Confidence, and Tolerance. Demonstrators are significantly lower on Cooperativeness, Social Astuteness, and Traditional Values. Particularly striking are the very large differences in mean scores and associated *t* values for Cooperativeness and Traditional Values.

The Creeggan Study of Attitudes Toward Curriculum Change

Creeggan (1970) undertook a study of factors affecting faculty attitudes toward innovation in curriculum planning in nursing education based on six hospital schools of nursing. Thirty-two attitude statements spanning traditional vs. modern approaches to nursing education were administered to 96 instructors. Modern attitudes included allowing students freedom in the choice of course work, dress, and residence, representation in curriculum planning, choice of emphasis on principles rather than procedures in instruction, and encouraging individual familiarity with original sources. Significant correlations ($p < .01$) were found between the following

Table 4-13: Correlations between JPI Scales and Measures of Acquiescence and Desirability (*N* = 116)

JPI Scale	Acquiescence	Desirability
Complexity	-14	05
Breadth of Interest	07	20
Innovation	-11	05
Tolerance	-06	24
Empathy	10	11
Anxiety	29	-29
Cooperativeness	12	-09
Sociability	02	25
Social Confidence	-06	36
Energy Level	02	25
Social Astuteness	-04	-02
Risk Taking	-23	-14
Organization	20	21
Traditional Values	39	29
Responsibility	23	39
Mean Absolute Value	*13*	*19*

Note: Decimals omitted. The .05 and .01 significance levels for *N* = 116 are .18 and .24, respectively.

Table 4-14: Differences between Student Demonstrators and Nondemonstrators on the JPI

JPI Scale	Nondemonstrators (*N* = 94)		Demonstrators (*N* = 47)		*t*
	Mean	Sigma	Mean	Sigma	
Complexity	11.75	3.47	14.17	2.69	4.18***
Breadth of Interest	10.98	4.10	13.00	4.00	2.77**
Innovation	11.96	5.19	15.53	4.31	4.05**
Tolerance	12.13	2.78	14.02	2.67	3.85***
Empathy	13.06	4.19	13.94	3.81	1.19
Anxiety	11.95	4.19	10.92	5.13	1.26
Cooperativeness	10.11	4.42	6.00	4.60	5.10***
Sociability	11.22	4.78	12.04	4.01	1.00
Social Confidence	10.64	4.97	12.36	4.28	2.02*
Energy Level	10.97	3.89	13.57	2.73	4.10***
Social Astuteness	10.07	3.36	8.72	3.36	2.24*
Risk Taking	9.81	5.49	13.11	4.20	3.60***
Organization	9.70	3.99	7.70	4.37	2.69**
Traditional Values	7.52	3.94	3.60	3.61	5.70***
Responsibility	11.06	3.61	10.68	3.23	0.61

Note: Data supplied through the courtesy of John A. Neill.
***p < .001, ** p < .01, * p < .05.

JPI(-R) scales and the attitude measure: Breadth of Interest (.37), Complexity (.39), Innovation (.37), Risk Taking (.32), Tolerance (.48), and Traditional Values (-.46). Thus, personality variables assessed by the JPI-R appear to be predictive of attitudes toward educational change.

Ethnic Stereotypes, Ethnic Attitudes, and Personality

In a series of studies directed at investigating the nature of ethnic stereotypes, Gardner and his associates have identified separate factors for tendencies to hold stereotypes and tendencies to hold negative attitudes regarding different ethnic groups. In one such study involving the JPI (Gardner,1973), a factor marked by positive attitudes toward African Americans, Jews, and French Canadians, had a .59 loading for the Tolerance scale. Also loading the factor substantially were JPI(-R) scales for Empathy, Responsibility, and Complexity. According to Gardner (1973, p. 141), "The pattern suggests an association between personality variables associated with tolerance and generalized favorable reactions to most ethnic groups." It should be recognized that the Tolerance scale is not limited to favorable reactions to ethnic groups, but encompasses, in the tradition of Rokeach (1956), acceptance of people with discrepant beliefs and values.

Correlations between the JPI and Selected Psychological Variables and Scales

A number of correlation matrices have been derived involving the JPI and other psychological tests and measuring instruments. Table 4-15 presents the correlations between the JPI and the *Personality Research Form* (PRF; Jackson, 1989) for males and females separately. Table 4-16 gives the correlations with the *Minnesota Multiphasic Personality Inventory* (MMPI), Table 4-17 presents the correlations with the *Survey of Work Styles* (SWS; Jackson & Mavrogiannis-Gray, 1993), a multidimensional measure of Type A personality, and correlations with the *Jackson Vocational Interest Survey* (JVIS) are contained in Tables 4-18 for males and 4-19 for females. Of particular interest are correlations between the JPI and the *Bentler Psychological Inventory* (Table 4-20) and the *Bentler Interactive Psychological Inventory* (BIPI; Table 4-21). The latter instrument requires ratings of the subject by a judge who knows him or her well, and hence the validities do not reflect common method variance. Also, because the BIPI ratings were based on unitary trait descriptors and because single-judge ratings on such descriptors are known to be substantially unreliable relative to ratings based on more numerous judgements, the correlations involving the BIPI undoubtedly underestimate JPI validity. In spite of the expected attenuation due to measurement error, it will be observed that there are sizeable correlations between JPI(-R) scales and similarly-named BIPI scales. Correlations between the JPI(-R) and like-named *Bentler Personality Inventory* scales are also noteworthy in many cases.

It is additionally informative to consider correlations between JPI scales and theoretically related variables reported in other studies. Selected JPI scales were employed in studies of (a) risk taking (Jackson, Hourany & Vidmar, 1972; Neill, 1968), (b) drug use and attitudes (Kohn, Annis, Lei & Chan, 1985), (c) peer nominations among nursing students, (d) creativity (Goldsmith, 1987), (e) self-esteem (Van Tuinen & Ramanaia, 1979), (f) ego strength (Martin, Blair, Rudolph &

Table 4-15: Correlations between the JPI and the PRF-E within Sex
Males (*N* = 100)

JPI Scale	PRF-E Scale																			
	Aba	Ach	Aff	Agg	Aut	Chg	CSt	Def	Dom	End	Exh	Har	Imp	Nur	Ord	Ply	Sen	Soc	Suc	Und
Complexity	-04	11	15	07	12	25	-15	09	09	04	22	-08	05	21	-18	17	31	-15	-10	64
Breadth of Interest	24	18	22	-25	21	32	-08	-24	14	15	13	-29	-02	31	-02	16	39	-23	-14	55
Innovation	14	15	05	-01	31	38	-26	-12	08	18	28	-31	17	19	-14	28	38	-28	-27	43
Tolerance	47	07	28	-37	13	24	-22	-43	-03	06	10	-19	06	42	-15	19	37	-30	-19	32
Empathy	29	08	55	-17	-25	03	-10	-05	09	-05	29	-01	25	70	-10	14	24	12	30	05
Anxiety	01	-07	-04	25	-32	-18	14	29	-08	-05	-12	28	03	04	-03	-14	-06	27	32	-10
Cooperativeness	-05	-06	17	17	-53	-17	23	28	10	-17	14	36	-04	-01	11	-11	-18	69	43	-35
Sociability	16	-02	63	04	-46	12	-03	09	18	-08	43	-02	13	36	-04	29	09	30	41	-10
Social Confidence	-07	20	46	07	-02	34	-06	-00	61	14	68	-29	05	33	-06	17	08	06	02	17
Energy Level	01	42	23	-08	09	26	-01	-15	33	40	33	-22	-05	24	11	10	16	-08	-14	25
Social Astuteness	10	00	21	-03	-18	11	12	05	14	04	26	-03	00	10	05	05	08	36	23	00
Risk Taking	02	-15	15	08	26	50	-38	00	22	-09	40	-57	47	06	-42	37	14	-16	16	10
Organization	-11	45	-07	-05	-16	-19	64	-01	20	45	-16	22	-68	-02	84	-51	-26	27	-00	03
Traditional Values	-03	17	-04	-04	-20	-12	24	01	04	15	-12	07	-11	09	23	-20	-18	18	02	-40
Responsibility	22	41	13	-36	-16	-09	29	31	06	17	-10	15	-33	37	31	-37	12	14	-07	-03

Females (*N* = 115)

JPI Scale	PRF-E Scale																			
	Aba	Ach	Aff	Agg	Aut	Chg	CSt	Def	Dom	End	Exh	Har	Imp	Nur	Ord	Ply	Sen	Soc	Suc	Und
Complexity	11	24	-11	-12	40	46	-31	-11	07	25	06	-28	08	11	-30	-14	41	-50	-32	64
Breadth of Interest	23	29	09	-12	35	58	-40	-25	27	36	19	-47	24	28	-25	09	45	-37	-23	63
Innovation	16	15	07	03	43	40	-24	-11	23	21	25	-32	22	06	-11	12	36	-36	-29	37
Tolerance	40	18	21	-39	24	40	-42	-42	03	11	18	-31	17	35	-28	11	33	-48	-18	49
Empathy	28	14	40	-03	-16	16	-04	-12	18	20	18	-01	12	66	-07	12	25	-08	27	07
Anxiety	-19	-06	-06	24	-29	-18	32	26	-10	-12	-20	28	-06	05	01	-17	14	26	37	-21
Cooperativeness	-12	-09	11	02	-56	-40	41	22	-12	-18	-12	34	-12	-05	20	-02	-19	76	41	-47
Sociability	01	-02	69	-02	-29	14	01	00	31	02	54	06	14	32	15	40	04	18	29	-14
Social Confidence	01	11	55	-03	15	29	-31	-12	53	05	80	-18	17	16	08	39	11	-12	-01	14
Energy Level	28	29	19	-27	14	37	-31	-28	12	38	19	-46	08	13	-09	12	20	-20	-29	28
Social Astuteness	-08	11	19	15	05	05	-04	06	33	-07	26	04	14	-12	02	08	08	23	09	-07
Risk Taking	21	08	05	-07	51	58	-48	-25	14	19	18	-61	36	-05	-24	22	31	-25	-38	17
Organization	-16	25	09	12	-32	-25	55	12	21	20	09	12	-46	-03	77	-19	03	29	15	-16
Traditional Values	19	01	10	00	-40	-32	35	-09	03	03	-11	30	-06	19	25	-08	-19	21	21	-40
Responsibility	27	29	11	-25	-19	-05	02	-28	10	21	04	-00	-14	53	08	-17	-04	-02	03	-01

Note: Decimals omitted; Aba = Abasement; Ach = Achievement; Aff = Affiliation; Agg = Aggression; Aut = Autonomy; Chg = Change; CSt = Cognitive Structure; Def = Defendence; Dom = Dominance; End = Endurance; Exh = Exhibition; Har = Harmavoidance; Imp = Impulsivity; Nur = Nurturance; Ord = Order; Ply = Play; Sen = Sentience; Soc = Social Recognition; Suc = Succorance; Und = Understanding.

Table 4-16: Correlations between the JPI and the Minnesota Multiphasic Personality Inventory (MMPI; *N* = 105)

JPI Scale	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
							MMPI Scale						
Complexity	01	-05	09	-04	-09	19	-02	33	10	02	01	03	-17
Breadth of Interest	13	-13	15	-22	-21	01	-13	12	-00	-28	-19	-13	- 26
Innovation	-01	-05	06	-18	-23	14	-02	-02	09	-13	-01	13	-33
Tolerance	-01	-04	37	-20	-31	18	-01	-03	02	-33	-26	-05	-32
Empathy	02	-05	-06	-02	-06	-05	00	46	08	09	01	09	01
Anxiety	-09	17	-20	28	37	03	18	25	07	43	32	-03	26
Cooperativeness	-03	-14	-13	09	23	-11	01	06	-02	20	06	-07	21
Sociability	-02	-08	13	-04	-26	05	02	-08	00	-33	-22	11	-42
Social Confidence	05	-25	23	-15	-42	19	-08	-19	05	-48	-36	14	-60
Energy Level	20	-24	25	-41	-35	-09	-17	-13	04	-51	-37	-15	-36
Social Astuteness	-27	-24	-00	-03	-15	06	-08	-18	-08	-07	-13	13	-25
Risk Taking	00	-14	10	11	-18	22	-00	-23	11	-07	-06	16	-34
Organization	21	-08	-03	-09	-09	-04	-08	-06	-10	-22	-10	07	-12
Traditional Values	15	-13	-04	14	-06	-19	-06	-15	-04	02	-05	-08	16
Responsibility	18	03	08	-12	-10	-20	-20	13	07	-22	-04	-18	-04

Note: Decimals omitted. K correction not used for MMPI scales. Data supplied through the courtesy of Todd L. Fay. L = Lie; F = Frequency; K = Correction; Hs = Hypochondriasis; D = Depression; Hy = Hysteria; Pd = Psychopathic Deviancy; Mf = Masculinity-Femininity; Pa = Paranoia; Pt = Psychasthenia; Sc = Schizophrenia; Ma = Hypomania; Si = Social Introversion-Extraversion.

Table 4-17: Correlations between the Survey of Work Styles (SWS) and the JPI (*N* = 150)

SWS Scale	Cpx	Bdi	Inv	Tol	Emp	Anx	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
								JPI Scale							
Impatience	09	-07	-02	-33	-04	30	13	-03	-01	04	14	14	07	-01	-21
Anger	-02	-19	-04	-31	25	49	22	11	-11	-24	-00	-06	-18	-06	-19
Work Involvement	-07	-12	-12	-03	-08	12	08	-03	-06	08	22	-01	-04	10	-03
Time Urgency	-06	02	07	-03	-10	11	10	-03	-01	07	22	-01	14	14	12
Job Dissatisfaction	03	-20	-10	-20	04	33	10	-18	-23	-31	04	-13	-14	-18	-19
Competitiveness	11	-01	08	-21	-02	17	09	18	07	14	08	22	07	14	-19

Note: Decimals omitted.

Table 4-18: Correlations between the Jackson Vocational Interest Survey (JVIS) and the JPI: Males (*N* = 127)

JVIS Scale	Cpx	Bdi	Inv	Tol	Emp	Anx	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Creative Arts	03	-15	-02	-12	-09	-01	07	-17	-15	-15	-14	-15	-14	-15	-24
Performing Arts	-02	-22	-07	-09	-01	-06	-07	01	03	-11	-03	05	-32	-14	-38
Mathematics	24	11	16	13	-21	-07	-18	-19	-07	11	-15	-11	15	09	20
Physical Science	14	19	15	13	-21	-16	-14	-22	00	16	-10	-05	13	03	06
Engineering	10	09	20	04	-20	-21	-05	-15	-00	16	-02	03	12	06	05
Life Science	12	23	13	11	-05	-09	-05	-20	-03	06	-06	-00	02	11	11
Social Science	17	22	19	09	-12	-08	-21	-28	-06	06	-04	-19	04	24	22
Adventure	-11	-15	-00	-05	-15	-29	-06	-10	09	03	05	30	-31	-10	-41
Nature-Agriculture	-10	-01	-16	-09	01	-05	08	-15	-09	00	-05	-00	-08	11	-13
Skilled Trades	-14	-34	-15	-23	04	07	13	-13	-19	-13	-10	-14	-07	01	-25
Personal Service	-22	-29	-03	-22	-02	-05	04	04	02	-10	03	09	-15	-08	-36
Family Activity	-14	-20	-11	-11	-02	-04	09	-11	-10	-09	-14	-04	-13	-09	-23
Medical Service	-06	-01	-02	09	00	-25	-05	02	03	07	-08	08	-19	-04	-24
Dominant Leadership	-05	-13	-01	-20	-21	-05	-20	-29	15	06	02	13	-03	12	-17
Job Security	-43	-30	-33	-43	12	32	36	-07	-30	-30	-01	-38	01	21	03
Stamina	11	19	03	14	-11	-01	-07	-17	02	17	-10	-14	22	20	21
Accountability	-18	10	-07	-05	13	24	20	-08	-13	00	-05	-34	23	30	35
Teaching	07	20	12	12	18	12	10	22	11	-04	11	-08	03	04	22
Social Service	07	07	01	20	39	15	07	25	-06	-14	03	-12	-08	-01	23
Elementary Education	05	10	-07	11	30	22	21	33	-11	-10	06	-22	06	05	26
Finance	-17	-03	-06	-04	-09	-11	02	13	04	12	03	29	10	-12	-09
Business	-20	-20	-14	-15	08	12	12	22	-01	-07	10	13	01	-16	-01
Office Work	-27	-23	-29	-27	-01	04	11	-02	-21	-22	01	02	-01	-11	-12
Sales	-07	-11	-07	-02	09	10	11	32	06	-04	18	21	-01	-21	-10
Supervision	-09	-12	-04	-01	-05	03	01	20	10	-02	14	24	-06	-15	-05
Human Relations Management	02	13	02	12	09	01	-05	29	15	02	05	12	-07	-05	15
Law	-08	-19	-09	-06	01	02	-05	24	09	08	12	26	-02	-13	-13
Professional Advising	02	15	09	13	05	03	02	20	14	11	03	10	00	-02	24
Author-Journalism	40	12	20	14	-02	01	-12	14	17	07	11	10	-08	-18	00
Academic Achievement	39	46	26	31	-01	-07	-17	-12	08	09	-05	-11	20	11	35
Technical Writing	28	27	16	21	07	03	-17	02	12	10	12	03	13	10	25
Independence	03	02	06	-00	03	13	-17	-19	09	02	05	12	12	-04	-03
Planfulness	-17	-02	-07	-14	13	18	17	00	-06	-08	-02	-17	38	12	15
Interpersonal Confidence	-04	-05	-05	04	15	25	13	24	13	-06	07	11	-05	-08	01

Note: Decimals omitted.

Table 4-19: Correlations between the Jackson Vocational Interest Survey (JVIS) and the JPI: Females (*N* = 142)

JVIS Scale	Cpx	Bdi	Inv	Tol	Emp	Anx	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Creative Arts	02	00	19	05	-10	-04	-17	-12	-12	-04	05	17	-21	-16	-10
Performing Arts	-06	-15	11	-02	-10	-07	01	24	01	-12	11	12	-28	-24	-17
Mathematics	15	16	06	-02	-16	-05	-10	-26	-02	22	-05	-09	13	-03	22
Physical Science	15	22	08	-01	-09	03	-05	-21	-05	20	-03	-09	18	-02	22
Engineering	10	16	13	-01	-14	06	-11	-11	02	16	-05	09	10	-05	13
Life Science	21	31	12	06	00	11	01	-16	-03	20	02	02	04	-04	16
Social Science	25	19	04	13	13	02	-03	-05	-10	14	04	-01	-09	-01	14
Adventure	07	15	04	-00	-02	02	02	-01	-06	-01	25	42	-25	-29	-28
Nature-Agriculture	-10	06	-09	04	-04	-04	-09	-18	-23	-02	-07	03	-16	-11	-11
Skilled Trades	-33	-24	-20	-09	-12	-07	-06	-02	-23	-29	-09	-03	-20	-14	-27
Personal Service	-14	-06	-14	01	15	15	21	18	-18	-21	15	10	-27	-18	-31
Family Activity	-18	-16	-18	-08	-01	-01	19	02	-32	-12	02	-12	-09	04	-12
Medical Service	17	17	-01	05	02	03	11	-17	-03	09	09	06	04	-13	06
Dominant Leadership	-05	-03	-03	-28	-14	-02	-00	-10	10	-06	13	04	09	04	-07
Job Security	-30	-24	-33	-33	-19	-06	09	-19	-26	-11	-06	-27	08	09	-09
Stamina	20	20	06	07	04	05	02	-16	-03	37	-00	-15	28	17	34
Accountability	05	10	-08	04	12	12	07	-15	-14	13	-06	-19	16	10	30
Teaching	11	10	05	12	22	05	08	15	17	09	08	-01	10	20	15
Social Service	-04	08	-02	30	29	-21	-11	25	11	-04	-10	-04	-10	18	19
Elementary Education	-20	-17	-20	05	18	-17	05	19	-02	-18	-11	-09	-10	09	-09
Finance	01	-17	-03	-19	-05	13	19	11	15	-09	05	10	07	-01	-09
Business	-21	-23	-03	04	-01	02	08	14	14	-16	07	11	-06	-03	-25
Office Work	-39	-39	-35	-12	-10	-08	04	08	-09	-28	-23	-24	03	03	-19
Sales	-25	-28	-15	-04	03	-01	02	24	05	-31	00	-01	-12	01	-25
Supervision	-12	-16	-06	-01	06	-01	06	17	15	-15	-06	-08	06	15	-06
Human Relations Management	21	20	16	29	24	05	-07	26	30	13	06	14	-03	09	15
Law	-07	-03	01	-05	03	16	05	09	19	-07	03	12	03	08	-06
Professional Advising	-03	-12	10	01	08	04	01	23	15	-03	00	-05	06	15	03
Author-Journalism	14	-06	28	-02	-00	01	03	11	00	-13	08	04	-08	-01	-10
Academic Achievement	31	21	26	00	-04	-03	-24	-11	18	38	-05	-09	29	11	26
Technical Writing	24	19	29	06	-02	-07	-10	-12	15	34	-02	-15	27	17	26
Independence	11	02	13	00	02	-04	-15	-13	07	-01	11	13	-06	-13	-06
Planfulness	-19	-22	-21	-12	-17	01	-02	-07	-06	01	-25	-33	30	20	14
Interpersonal Confidence	-01	-04	-01	05	01	-12	-10	13	17	-12	-06	15	-10	-04	-06

Note: Decimals omitted.

Table 4-20: Correlations between the JPI and the Bentler Psychological Inventory (BPI; *N* = 84)

BPI Scale	Cpx	Bdi	Inv	Tol	Emp	Anx	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
									JPI Scale						
Agility	-01	22	23	10	-22	-45	04	03	50	38	26	40	-05	06	-14
Ambition	16	17	18	-29	-01	15	30	07	23	16	26	37	-02	-20	-20
Art Interest	44	56	40	23	15	10	-17	-01	13	-04	-09	21	06	-33	06
Attractiveness	09	31	33	21	12	-22	-13	27	66	38	21	23	-00	-04	-09
Body Weight	-16	-19	-12	-11	14	18	19	22	-05	-02	-08	-03	-13	00	-05
Cheerfulness	-07	15	12	42	17	-38	-25	36	46	25	-06	02	09	06	09
Clothes-Consciousness	07	11	-09	-17	10	05	22	12	39	15	21	14	37	14	-07
Congeniality	-09	19	-04	37	14	-28	-21	07	06	15	-03	-14	-03	22	27
Deliberateness	01	-18	-19	-24	03	06	19	-17	-11	-22	-15	-52	51	16	22
Diligence	09	15	08	-02	09	-14	-12	11	28	41	10	-17	51	01	07
Extraversion	03	12	18	10	19	-09	-17	38	67	24	-00	21	-00	-16	-04
Flexibility	14	25	-01	46	12	-19	14	10	02	01	13	-06	-08	27	32
Generosity	22	39	17	28	39	01	17	04	11	10	29	19	05	25	32
Intelligence	30	25	36	20	-09	-34	-07	-08	34	19	-00	13	05	-36	-11
Invulnerability	10	15	22	27	-34	-46	-42	-16	47	18	06	10	00	-01	-10
Law Abidance	11	09	-18	13	25	12	19	-13	-21	-15	-03	-35	26	46	77
Leadership	08	22	39	05	11	-25	-18	17	75	29	18	38	08	-22	-29
Liberalism	20	03	14	07	-14	-14	-18	-02	02	-02	-33	10	-25	-61	-15
Masculinity	-06	-04	24	05	-24	-24	08	-11	13	14	15	31	-23	-01	-19
Objectivity	04	-17	-23	-22	-06	-17	-02	09	10	12	-26	-30	12	-08	17
Orderliness	-07	-03	-06	-24	-08	-10	10	-02	09	03	-03	-19	73	10	-01
Perceptiveness	19	34	-05	13	30	-10	-14	13	35	14	14	-08	15	13	23
Religious Commitment	-01	-02	-14	07	-13	06	22	-14	01	-04	39	12	02	62	10
Self Acceptance	06	18	24	18	09	-45	-24	22	56	44	18	-11	12	10	08
Stability	04	18	19	25	-34	-74	-21	-10	26	26	-05	-01	17	-02	-03
Thriftiness	-10	05	23	08	-04	-27	-14	12	01	-01	-35	-19	10	-15	07
Travel Interest	29	28	22	16	-16	-21	-27	06	25	35	-02	41	-18	-19	-09
Trustfulness	-20	-06	-13	20	26	-20	06	26	-13	03	-28	-35	13	08	29
Sexual Experience	20	21	21	28	-07	-15	-23	-07	08	21	-09	18	-13	-32	-18

Note: Decimals omitted.

Table 4-21: Correlations between the JPI and the Bentler Interactive Psychological Inventory (BIPI; *N* = 84)

BIPI Scale	JPI Scale														
	Cpx	Bdi	Inv	Tol	Emp	Anx	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
Agility	10	18	37	14	-16	-36	01	-03	36	27	16	12	02	-03	-16
Ambition	27	20	19	-04	05	-02	14	07	35	13	27	13	10	-07	03
Art Interest	40	22	34	05	18	15	05	-01	-06	-03	-02	-08	17	-22	10
Attractiveness	16	33	24	-03	25	00	11	12	28	34	19	13	24	07	-05
Body Weight	-24	-37	-30	-12	05	15	13	34	-02	-15	-09	-10	-16	05	-10
Cheerfulness	10	15	18	13	18	-23	-21	28	28	22	14	-06	03	-03	-04
Clothes-Consciousness	29	21	-06	-08	11	09	21	-18	-00	03	-01	-17	38	01	14
Congeniality	-09	-03	03	-07	22	13	12	-09	-10	-14	10	-37	07	01	14
Deliberateness	02	-09	-12	-12	04	18	03	-36	-18	-35	-16	-37	34	08	17
Diligence	37	33	12	05	22	-08	14	-02	06	21	04	-21	41	05	16
Extraversion	06	11	06	03	18	-07	-07	35	62	22	10	23	00	04	-04
Flexibility	04	20	15	06	25	15	04	13	-09	03	08	-24	01	-07	09
Generosity	23	15	00	-09	37	25	26	-16	05	03	21	10	05	14	20
Intelligence	34	08	18	14	-12	-10	01	-25	12	-12	-04	-12	21	-16	-07
Invulnerability	25	11	13	25	-11	-28	-16	-20	18	29	-03	-05	-07	06	15
Law Abidance	07	08	-11	05	25	13	20	-22	-38	-08	-17	-32	19	30	60
Leadership	42	17	09	-12	10	02	11	-17	47	02	24	10	20	-04	-07
Liberalism	17	09	24	-05	-05	-05	-07	05	01	-03	-26	10	-17	-51	-23
Masculinity	-04	-03	23	06	-23	-24	07	-10	14	15	17	37	-13	08	-18
Objectivity	02	-11	-17	00	-02	-16	07	21	-06	04	-26	-34	-01	-05	28
Orderliness	29	27	09	04	05	-09	04	-08	15	03	-09	-06	65	-01	05
Perceptiveness	17	07	19	-02	18	08	06	-10	01	-09	16	-24	19	03	15
Religious Commitment	-13	-05	-21	10	08	04	18	-06	-08	06	39	11	-03	48	05
Self Acceptance	20	20	30	19	14	-25	-20	-12	34	29	20	-04	03	09	01
Stability	06	07	24	11	-26	-40	-10	-38	10	23	05	02	-12	-04	-05
Thriftiness	-18	-12	-01	01	01	-08	-20	12	-12	-25	-25	-34	06	-13	09
Travel Interest	30	13	07	-07	-20	-21	-11	09	27	12	-01	17	-03	-18	-11
Trustfulness	14	09	-08	19	18	-12	01	20	01	08	-19	-25	00	04	33
Sexual Experience	27	22	22	29	-13	-16	-27	-09	18	16	-04	17	-10	-17	-09

Note: Decimals omitted.

Morrissey, 1982), (g) dogmatism (Martin & Morris, 1982), (h) adaptation-innovation & creativity (Goldsmith, 1986), (i) fantasy-proneness (Myers & Austrin, 1985), (j) bargaining behavior (Jackson & Buckspan, 1969), and (k) salesforce satisfaction and performance (Bagozzi, 1978). Rather than discuss the tables and studies separately, each JPI-R scale is listed below with correlations reported in the various sources. Validity coefficients obtained from the previously discussed studies involving self and peer ratings are excluded from this summary.

Complexity

.64	*Personality Research Form* (PRF) Understanding (males)
.64	PRF Understanding (females)
-.50	PRF Social Recognition (females)
.46	PRF Change (females)
.44	*Bentler Psychological Inventory* (BPI) Art Interest
-.43	*Jackson Vocational Interest Survey* (JVIS) Job Security (males)
.42	*Bentler Interactive Psychological Inventory* (BIPI) rated Leadership
.40	PRF Autonomy (females)
.40	JVIS Author-Journalism (males)
.40	BIPI rated Art Interest
.39	JVIS Academic Achievement (males)
-.39	JVIS Office Work (females)
.37	BIPI rated Diligence
.34	BIPI rated Intelligence
-.33	JVIS Skilled Trades (females)
.33	MMPI Masculinity-Femininity (males)
.32	Peer Nomination Study - Sum of nominations on "Complexity"
.31	PRF Sentience (males)
-.31	PRF Cognitive Structure (females)
.31	JVIS Academic Achievement (females)
-.30	PRF Order (females)
-.30	JVIS Job Security (females)
.30	BPI Intelligence
.30	BIPI rated Travel Interest
.29	BPI Travel Interest
.29	BIPI rated Orderliness
.28	JVIS Technical Writing (males)
.27	BIPI rated Sexual Experience
.25	PRF Change (males)
.25	BIPI rated Invulnerability
.24	PRF Achievement (females)
.17	Myers & Austrin, 1985 - Fantasy Proneness as measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Breadth of Interest

.63	*Personality Research Form* (PRF) Understanding (females)
.58	PRF Change (females)
.56	*Bentler Psychological Inventory* (BPI) Art Interest
.55	PRF Understanding (males)
-.47	PRF Harmavoidance (females)
.46	*Jackson Vocational Interest Survey* (JVIS) Academic Achievement (males)
.45	PRF Sentience (females)
-.40	PRF Cognitive Structure (females)
.39	PRF Sentience (males)
-.39	JVIS Office Work (females)
.39	BPI Generosity
.37	Peer Nomination Study - Sum of nominations on "Has a great deal of curiosity; interested in learning many things"
-.37	PRF Social Recognition (females)
-.37	*Bentler Interactive Psychological Inventory* (BIPI) rated Body Weight
.36	PRF Endurance (females)
.35	PRF Autonomy (females)
.34	BPI Perceptiveness
.33	BIPI rated Attractiveness
.33	BIPI rated Diligence
.32	PRF Change (males)
.31	PRF Nurturance (males)
.31	JVIS Life Science (females)
.31	BPI Attractiveness
.29	PRF Achievement (females)
-.29	PRF Harmavoidance (males)
.28	PRF Nurturance (females)
-.28	MMPI Psychasthenia
.28	BPI Travel Interest
.27	BIPI rated Orderliness
-.26	MMPI Social Introversion/Extraversion
-.25	PRF Aggression (males)
-.25	PRF Order (females)
.25	BPI Flexibility
.25	BPI Intelligence
.20	Myers & Austrin, 1985 - Fantasy Proneness, measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Innovation

.68	Self Rating of Inventive vs. Unimaginative
.65	Preference for occupation of Appliance Designer

.57   Goldsmith, 1987 - Creativity, measured by Khatena & Torrence's (1976) *Something About Myself*

.54   Goldsmith, 1986 - Willingness to Change, measured by Hurt et al.'s (1977) *Innovativeness Scale* (correlation averaged over two samples)

.47   Goldsmith, 1986 - Kirton's *Adaptation-Innovation Inventory* (correlation averaged over two samples)

.45   Self Rating of Likes to Improvise vs. Enjoys Routine Activities

.44   Goldsmith, 1986 - Innovativeness, measured by Leavitt & Walton's (1983) *Open Processing   Scale* (correlation averaged over two samples)

.43   Peer Nomination Study - Sum of nominations on "Capable of originality of thought"

.43   *Personality Research Form* (PRF) Understanding (males)

.43   PRF Autonomy (females)

.40   PRF Change (females)

.40   *Bentler Psychological Inventory* (BPI) Art Interest

.39   BPI Leadership

.38   PRF Change (males)

.38   PRF Sentience (males)

.37   PRF Understanding (females)

.37   Myers & Austrin, 1985 - Fantasy Proneness, measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

.37   *Bentler Interactive Psychological Inventory* (BIPI) rated Agility

.36   PRF Sentience (females)

.36   BPI Intelligence

-.36   PRF Social Recognition (females)

-.35   *Jackson Vocational Interest Survey* (JVIS) Office Work (females)

.34   BIPI rated Art Interest

-.33   JVIS Job Security (males)

-.33   MMPI Social Introversion/Extraversion

-.33   JVIS Job Security (females)

-.32   PRF Harmavoidance (females)

-.31   PRF Harmavoidance (males)

.30   BIPI rated Self-Acceptance

-.30   BIPI rated Body Weight

-.29   PRF Succorance (females)

-.29   JVIS Office Work (males)

.29   JVIS Technical Writing (females)

.28   PRF Exhibition (males)

.28   PRF Play (males)

.28   JVIS Author-Journalism (females)

-.28   PRF Social Recognition (males)

-.27   PRF Succorance (males)

-.26   PRF Cognitive Structure (males)

.25   PRF Exhibition (females)

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Tolerance

-.58	Martin & Morris, 1982 - Rokeach's (1960) *Dogmatism Scale, Form E*
.53	Self Rating of "Impartial vs. Prejudiced"
.49	*Personality Research Form* (PRF) Understanding (females)
-.48	PRF Social Recognition (females)
.47	PRF Abasement (males)
.46	*Bentler Psychological Inventory* (BPI) Flexibility
.45	Self Rating of "Open minded vs. Dogmatic"
-.37	PRF Aggression (males)
-.43	PRF Defendence (males)
-.43	*Jackson Vocational Interest Survey* (JVIS) Job Security (males)
.42	PRF Nurturance (males)
.42	BPI Cheerfulness
-.42	PRF Defendence (females)
-.42	PRF Cognitive Structure (females)
.40	PRF Abasement (females)
.40	PRF Change (females)
-.39	PRF Aggression (females)
.38	Preference for occupation of Foreign Student Advisor
.37	PRF Sentience (males)
.37	BPI Congeniality
.35	PRF Nurturance (females)
.33	PRF Sentience (females)
-.33	*Survey of Work Styles* (SWS) Impatience
-.33	MMPI Psychasthenia
-.33	JVIS Job Security (females)
.32	PRF Understanding (males)
-.32	MMPI Social Introversion/Extraversion
.31	JVIS Academic Achievement (males)
-.31	PRF Harmavoidance (females)
-.31	SWS Anger
-.31	MMPI Depression
.30	JVIS Social Service (females)
-.30	PRF Social Recognition (males)
.29	*Bentler Interactive Psychological Inventory* (BIPI) rated Sexual Experience
-.29	BPI Ambition
.28	PRF Affiliation (males)
.28	BPI Generosity
.28	BPI Sexual Experience
-.28	PRF Order (females)
.27	BPI Invulnerability

-.26   MMPI Schizophrenia

.25   BPI Stability

.25   BIPI rated Invulnerability

Empathy

.70   *Personality Research Form* (PRF) Nurturance (males)

.66   PRF Nurturance (females)

.62   Self Rating of Affectionate vs. Hard Hearted

.55   PRF Affiliation (males)

.46   MMPI Masculinity-Femininity (males)

.42   Self Rating of Sympathetic vs. Unsympathetic

.40   PRF Affiliation (females)

.39   *Jackson Vocational Interest Survey* (JVIS) Social Service (males)

.39   *Bentler Psychological Inventory* (BPI) Generosity

.37   *Bentler Interactive Psychological Inventory* (BIPI) rated Generosity

-.34   BPI Invulnerability

.30   PRF Succorance (males)

.30   JVIS Elementary Education (males)

.30   BPI Perceptiveness

.29   PRF Abasement (males)

.29   PRF Exhibition (males)

.29   JVIS Social Service (females)

.28   PRF Abasement (females)

.28   Peer Nomination Study: Sum of nominations for "Compassionate and warm: tends to identify closely with people; expresses feelings"

.27   PRF Succorance (females)

.26   BPI Trustfulness

-.26   BIPI rated Stability

.25   PRF Impulsivity (males)

.25   PRF Sentience (females)

.25   *Survey of Work Styles* Anger

.25   BPI Law Abidance

.25   BIPI rated Attractiveness

.25   BIPI rated Flexibility

.25   BIPI rated Law Abidance

-.25   PRF Autonomy (males)

.21   Myers & Austrin, 1985: Fantasy Proneness, as measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Anxiety

-.74   *Bentler Personality Inventory* (BPI) Stability

.73   Self Rating: Nervous vs. Calm

.65	Self Rating: Tense vs. Relaxed
-.58	Preference for occupation of Private Investigator
.49	*Survey of Work Styles* (SWS) Anger
-.46	BPI Invulnerability
-.45	BPI Agility
-.45	BPI Self-Acceptance
-.40	*Bentler Interactive Personality Inventory* (BIPI) rated Stability
.43	MMPI Psychasthenia
-.38	BPI Cheerfulness
.37	*Personality Research Form* (PRF) Succorance (females)
.37	MMPI Depression
-.36	BIPI rated Agility
-.34	BPI Intelligence
.33	SWS Job Dissatisfaction
.32	PRF Succorance (males)
.32	PRF Cognitive Structure (females)
.32	MMPI Schizophrenia
.32	*Jackson Vocational Interest Survey* Job Security (males)
-.32	PRF Autonomy (males)
.30	SWS Impatience
.29	PRF Defendence (males)
-.29	PRF Autonomy (females)
.28	PRF Harmavoidance (males)
.28	PRF Harmavoidance (females)
.28	MMPI Hypochondriasis
-.28	BPI Congeniality
-.28	BIPI rated Invulnerability
.27	PRF Social Recognition (males)
-.27	BPI Thriftiness
.26	PRF Defendence (females)
.26	PRF Social Recognition (females)
.26	MMPI Social Introversion-Extraversion
.25	PRF Aggression (males)
.25	MMPI Masculinity-Femininity (males)
.25	BIPI rated Generosity
-.25	BPI Leadership
-.25	BIPI rated Self-Acceptance
.25	Peer Nomination Study: Sum of nominations for "Tends to worry about inconsequential matters"
.22	Myers & Austrin, 1985: Fantasy Proneness, as measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Cooperativeness

  .76   *Personality Research Form* (PRF) Social Recognition (females)

  .69   PRF Social Recognition (males)

  -.63 Martin et al., 1982 - Barron's (1953) Ego Strength Scale

  .60   Preference for occupation of Social Group Worker

  -.56 PRF Autonomy (females)

  -.53 PRF Autonomy (males)

  -.47 PRF Understanding (females)

  -.42 *Bentler Psychological Inventory* (BPI) Invulnerability

  .43   PRF Succorance (males)

  .41   PRF Cognitive Structure (females)

  .41   PRF Succorance (females)

  -.40 PRF Change (females)

  .36   PRF Harmavoidance (males)

  .36   *Jackson Vocational Interest Survey* Job Security (males)

  -.35 PRF Understanding (males)

  .34   PRF Harmavoidance (females)

  .30   BPI Ambition

  .28   PRF Defendence (males)

  -.27 BPI Travel Interest

  .27   *Bentler Interactive Psychological Inventory* (BIPI) rated Sexual Experience

  .26   BIPI rated Generosity

  -.25 BPI Cheerfulness

  .22   Peer Nomination Study: Sum of nominations for "Conforming and compliant"

Sociability

  .69   *Personality Research Form* (PRF) Affiliation (females)

  .63   PRF Affiliation (males)

  .54   PRF Exhibition (females)

  -.46 PRF Autonomy (males)

  .43   PRF Exhibition (males)

  -.42 MMPI Social Introversion-Extraversion

  .41   PRF Succorance (males)

  .40   PRF Play (females)

  .38   *Bentler Psychological Inventory* (BPI) Extraversion

  -.38 *Bentler Interactive Psychological Inventory* (BIPI) rated Stability

  .36   PRF Nurturance (males)

  .36   BPI Cheerfulness

  -.36 BIPI rated Deliberateness

  .35   BIPI rated Extraversion

.34	BIPI rated Body Weight
.33	*Jackson Vocational Interest Survey* (JVIS) Elementary Education (males)
-.33	MMPI Psychasthenia
.32	PRF Nurturance (females)
.32	JVIS Sales (males)
.31	PRF Dominance (females)
.30	PRF Social Recognition (males)
.30	Peer Nomination Study: Sum of nominations for Social Participation
.29	PRF Play (males)
.29	PRF Succorance (females)
.29	JVIS Human Relations Management (males)
-.29	PRF Autonomy (females)
.28	BIPI rated Cheerfulness
.27	BPI Attractiveness
.26	JVIS Human Relations Management (females)
.26	BPI Trustfulness
-.26	MMPI Depression
-.25	BIPI rated Intelligence

Social Confidence

.87	Neill, 1968: Self rating of Self Esteem
.80	*Personality Research Form* (PRF) Exhibition (females)
.75	*Bentler Psychological Inventory* (BPI) Leadership
.74	Van Tuinen & Ramanaia, 1979: Self rating of Social Self Esteem
.74	Van Tuinen & Ramanaia, 1979: Social Self Esteem, as measured by the Janis- Field Feelings of Inadequacy Scale
.68	PRF Exhibition (males)
.68	Neill, 1968: Self ranking for Self Esteem
.67	BPI Extraversion
.66	BPI Attractiveness
.62	*Bentler Interactive Psychological Inventory* (BIPI) rated Extraversion
.61	PRF Dominance (males)
-.60	MMPI Social Introversion-Extraversion
.56	BPI Self Acceptance
.55	PRF Affiliation (females)
.53	PRF Dominance (females)
.50	BPI Agility
.48	Jackson et al., 1972: Self Rating of "Rarely concerned with the effects of behavior on public image"
.48	Peer Nomination Study: Sum of nominations for "Self-assured; not easily embarrassed by others; self-sufficient"
-.48	MMPI Psychasthenia

.47   BPI Invulnerability

.47   BIPI rated Leadership

.47   Neill, 1968: Peer rating for Self Esteem

.46   PRF Affiliation (males)

.46   BPI Cheerfulness

-.44   Peer Nomination Study: Sum of nominations for "Experiences feelings of inferiority in dealing with others"

.43   Neill, 1968: Peer ranking on Self Esteem

-.42   MMPI Depression

.39   PRF Play (females)

.39   BPI Clothes-Consciousness

-.38   BIPI rated Law Abidance

.36   BIPI rated Agility

-.36   MMPI Schizophrenia

.35   BPI Perceptiveness

.35   BIPI rated Ambition

.34   PRF Change (males)

.34   BPI Intelligence

.34   BIPI rated Self Acceptance

.33   PRF Nurturance (males)

-.32   *Jackson Vocational Interest Survey* (JVIS) Family Activity (females)

-.31   PRF Cognitive Structure (females)

.30   JVIS Human Relations Management (females)

-.30   JVIS Job Security (males)

.29   PRF Change (females)

-.29   PRF Harmavoidance (males)

.28   BPI Diligence

.28   BIPI rated Attractiveness

.28   BIPI rated Cheerfulness

.27   BIPI rated Travel Interest

.26   BPI Stability

.25   BPI Travel Interest

-.23   *Survey of Work Styles* Job Dissatisfaction

-.22   Bagozzi, 1978: sales job-related tension

-.20   Bagozzi, 1978: sales role ambiguity

.15   Bagozzi, 1978: sales performance

Energy Level

.71   Self Rating of "Active vs. Tires Easily"

.52   Self Rating of "Lively vs. Listless"

-.51   MMPI Psychasthenia

-.46	*Personality Research Form* (PRF) Harmavoidance (females)
.44	*Bentler Psychological Inventory* (BPI) Self-Acceptance
.43	PRF Understanding
.42	PRF Achievement (males)
.41	BPI Diligence
-.41	MMPI Hypochondriasis
.40	PRF Endurance (males)
.38	PRF Endurance (females)
.38	*Jackson Vocational Interest Survey* (JVIS) Academic Achievement (females)
.38	BPI Agility
.38	BPI Attractiveness
.37	PRF Change (females)
.37	Peer Nomination Study: Sum of nominations for "Active; vigorous; has reserves of strength"
.37	JVIS Stamina (females)
-.37	MMPI Schizophrenia
-.36	MMPI Social Introversion-Extraversion
.35	BPI Travel Interest
-.35	*Bentler Interactive Psychological Inventory* (BIPI) rated Deliberateness
-.35	MMPI Depression
.34	JVIS Technical Writing (females)
.34	BIPI rated Attractiveness
.33	PRF Dominance (males)
.33	PRF Exhibition (males
-.31	PRF Cognitive Structure (females)
-.31	*Survey of Work Styles* (SWS) Job Dissatisfaction
-.31	JVIS Sales (females)
-.30	JVIS Job Security (males)
.29	PRF Achievement (females)
.29	BPI Leadership
.29	BIPI rated Invulnerability
.29	BIPI rated Self-Acceptance
-.29	PRF Succorance (females)
.28	PRF Abasement (females)
.28	PRF Understanding (females)
-.28	PRF Defendence (females)
.27	BIPI rated Agility
-.27	PRF Aggression (females)
.26	PRF Change (males)
.26	BPI Stability
.25	PRF Understanding (males)

.25   BPI Cheerfulness

-.25   BIPI rated Thriftiness

-.24   SWS Anger

Social Astuteness

.39   *Bentler Psychological Inventory* (BPI) Religious Commitment

.39   *Bentler Interactive Psychological Inventory* (BIPI) rated Religious Commitment

.36   *Personality Research Form* (PRF) Social Recognition (males)

-.35   BPI Thriftiness

.33   PRF Dominance (females)

.33   Self Rating of "Diplomatic vs. Blunt"

-.33   BPI Liberalism

.29   BPI Generosity

-.28   BPI Trustfulness

.27   BIPI rated Ambition

-.27   MMPI L scale

.26   PRF Exhibition (males)

.26   PRF Exhibition (females)

.26   BPI Agility

.26   BPI Ambition

-.26   BPI Objectivity

-.26   BIPI rated Liberalism

-.26   BIPI rated Objectivity

-.25   MMPI Social Introversion-Extraversion

-.25   BIPI rated Thriftiness

-.24   MMPI F scale

.23   PRF Social Recognition (females)

.20   Jackson & Buckspan, 1969: Profits in a bargaining experiment

.18   JVIS Sales (males)

Risk Taking

.80   Jackson et al., 1972: Monetary Risk Taking

.67   Jackson et al., 1972: Self Rating of "Enjoy gambling for money"

.65   Neill, 1968: Self rating of Risk Taking

.63   Jackson et al., 1972: Physical Risk Taking

.62   Neill, 1968: Self ranking on Risk Taking

-.61   *Personality Research Form* (PRF) Harmavoidance (females)

.59   Jackson et al., 1972: Social Risk Taking

.58   PRF Change (females)

-.57   PRF Harmavoidance (males)

.54   Jackson et al., 1972: Ethical Risk Taking

-.52	*Bentler Psychological Inventory* (BPI) Deliberateness
.51	PRF Autonomy (females)
.51	Jackson et al., 1972: Situational Dilemma: Monetary Risk Taking
.50	PRF Change (males)
.50	Neill, 1968: Peer rating of Risk Taking
.48	Neill, 1968: Peer ranking on Risk Taking
-.48	PRF Cognitive Structure (females)
.47	PRF Impulsivity (males)
.45	Jackson et al., 1972: Preference for occupation of Commodity Trader
.45	Goldsmith, 1987: Kirton's *Adaptation-Innovation Inventory*
.44	Jackson et al., 1972: Situational Dilemma: Ethical Risk Taking
.42	*Jackson Vocational Interest Survey* (JVIS) Adventure (females)
-.42	PRF Order (males)
.41	BPI Travel Interest
.40	PRF Exhibition (males)
.40	BPI Agility
.39	Peer Nomination Study: Sum of nominations for Risk Taking
.38	BPI Leadership
-.38	PRF Cognitive Structure (males)
-.38	PRF Succorance (females)
-.38	JVIS Job Security (males)
.37	PRF Play (males)
.37	BPI Ambition
.37	*Bentler Interactive Psychological Inventory* (BIPI) rated Masculinity
.37	Jackson et al., 1972: Situational Dilemma: Social Risk Taking
-.37	BIPI rated Congeniality
-.37	BIPI rated Deliberateness
.36	PRF Impulsivity (females)
-.35	BPI Law Abidance
-.35	BPI Trustfulness
-.34	MMPI Social Introversion-Extraversion
-.34	JVIS Accountability (males)
-.34	BIPI rated Objectivity
-.34	BIPI rated Thriftiness
.33	Kohn et al., 1985: Attitude toward marijuana use (correlation averaged over three samples)
-.33	JVIS Planfulness (females)
-.32	BIPI rated Law Abidance
.31	PRF Sentience (females)
.31	BPI Masculinity
.30	JVIS Adventure (males)

-.30	BPI Objectivity
.29	JVIS Finance (males)
.28	Jackson et al., 1972: Situational Dilemma: Physical Risk Taking
.27	Agreement with: "Would try marijuana if legalized"
.25	Goldsmith, 1987: Creativity, as measured by Khatena & Torrence's (1976) *What Kind of Person Are You?*
-.25	PRF Defendence (females)
-.25	PRF Social Recognition (females)
-.25	BIPI rated Trustfulness
.23	Kohn et al., 1985: Marijuana use (correlation averaged over three samples)
-.21	Kohn et al., 1985: Concerns about immediate risks of marijuana use (correlation averaged over three samples)

Organization

.84	*Personality Research Form* (PRF) Order (males)
.77	PRF Order (females)
.73	*Bentler Psychological Inventory* (BPI) Orderliness
-.68	PRF Impulsivity (males)
.65	*Bentler Interactive Psychological Inventory* (BIPI) rated Orderliness
.64	PRF Cognitive Structure (males)
.55	PRF Cognitive Structure (females)
.51	BPI Deliberateness
.51	BPI Diligence
-.51	PRF Play (males)
-.46	PRF Impulsivity (females)
.45	PRF Achievement (males)
.45	PRF Endurance (males)
.41	BIPI rated Diligence
.38	*Jackson Vocational Interest Survey* (JVIS) Planfulness (males)
.38	BIPI rated Clothes-Consciousness
.37	BPI Clothes Consciousness
.34	BIPI rated Deliberateness
-.32	PRF Autonomy (females)
-.32	JVIS Performing Arts (males)
-.31	JVIS Adventure (males)
.30	JVIS Planfulness (females)
.30	Peer Nomination Study: Sum of nominations for Organization
.29	PRF Social Recognition (females)
.29	JVIS Academic Achievement (females)
-.28	JVIS Performing Arts (females)
.27	PRF Social Recognition (males)

.26	BPI Law Abidance
-.26	PRF Sentience (males)
.25	PRF Achievement (females)
-.25	PRF Change (females)
-.25	BPI Liberalism
-.25	Tobacco smoking
-.24	Reported non-medical drug use
.23	JVIS Accountability (males)
-.22	MMPI Psychasthenia
-.12	Myers & Austrin, 1985: Fantasy Proneness, as measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Traditional Values

.75	Self Rating of "Traditional vs. Modern in Outlook"
.62	*Bentler Psychological Inventory* (BPI) Religious Commitment
-.61	BPI Liberalism
.58	Self Rating of "Conservative vs. Radical"
.57	Frequency of church attendance
-.51	*Bentler Interactive Psychological Inventory* (BIPI) rated Liberalism
-.49	Rated pleasantness of drug experience
.48	BIPI rated Religious Commitment
-.47	Attitude toward legalizing marijuana
.46	BPI Law Abidance
.45	Peer Nomination Study: Sum of nominations for "Values traditional customs and beliefs; takes a rather conservative view regarding contemporary standards of behavior"
-.44	Preference for occupation of "Advisor, Drug Rehabilitation Center"
-.40	PRF Understanding (males)
-.40	PRF Understanding (females)
-.40	PRF Autonomy (females)
-.36	BPI Intelligence
.35	PRF Cognitive Structure (females)
-.33	BPI Art Interest
-.32	PRF Change (females)
-.32	BPI Sexual Experience
.30	PRF Harmavoidance (females)
.30	*Jackson Vocational Interest Survey* (JVIS) Accountability (males)
.30	BIPI rated Law Abidance
-.29	JVIS Adventure (females)
-.28	Agreement with "I would try marijuana if it was legalized"
-.28	Reported tobacco smoking
.27	BPI Flexibility

-.27   Reported use of alcoholic beverages

.25   PRF Order (females)

.25   BPI Generosity

.24   PRF Cognitive Structure (males)

-.22   Reported marijuana use

-.14   Myers & Austrin, 1985: Fantasy Proneness, as measured by the *Wilson-Barber Inventory of Childhood Memories and Imaginings: Children's Form*

Responsibility

.77   *Bentler Psychological Inventory* (BPI) Law Abidance

-.62   Jackson et al., 1972: Ethical Risk Taking

.60   *Bentler Interactive Psychological Inventory* (BIPI) rated Law Abidance

.53   *Personality Research Form* (PRF) Nurturance ((females)

.53   Self Rating of "Careful to avoid any behavior which might compromise my ethical standards"

-.50   Jackson et al., 1972: Situational Dilemma: Ethical Risk Taking

.41   PRF Achievement (males)

-.41   JVIS Adventure (males)

-.38   JVIS Performing Arts (males)

.37   PRF Nurturance (males)

-.37   PRF Play (males)

-.36   PRF Aggression (males)

-.36   JVIS Personal Service (males)

.35   JVIS Accountability (males)

.35   JVIS Academic Achievement (males)

.33   BIPI rated Trustfulness

.33   Reported church attendance

-.33   PRF Impulsivity (males)

.32   BPI Flexibility

.32   BPI Generosity

.31   PRF Defendence (males)

.31   PRF Order (males)

.30   JVIS Planfulness (females)

.30   Peer Nomination Study: Sum of nominations for "Has strong conscience; behaves responsibly"

.29   PRF Cognitive Structure (males)

.29   PRF Achievement (females)

.29   BPI Trustfulness

-.29   BPI Leadership

.28   BIPI rated Objectivity

-.28   PRF Defendence (females)

-.28   JVIS Performing Arts (females)

-.28	Reported non-medical drug use
.27	PRF Abasement (females)
.27	BPI Congeniality
-.25	PRF Aggression (females)
-.22	MMPI Psychasthenia
-.21	Reported use of alcoholic beverages

RESEARCH USES OF THE JACKSON PERSONALITY INVENTORY - REVISED

The JPI has had a wide variety of applications in research. The research bibliography in this manual provides an extensive list of research theses, dissertations, and articles that have employed the entire JPI or at least some of its scales. This listing is not exhaustive, and new applications of the JPI are continuing to appear in the psychological literature. Obviously, because of limited space, it is not possible to identify all areas of actual and potential use of the JPI-R. The following sections describe some representative research involving JPI applications.

Modal Profile Analysis†

Concept of a Modal Profile

Although much can be learned about a person by examining his or her individual scale scores, a consideration of the entire configuration of scale scores yields additional insight. Over the past several years my colleagues and I have maintained an active interest in the classification of personality and the implications of employing alternative approaches to classification. Our work in the area (Jackson and Williams, 1975; Skinner, Jackson, and Hoffman, 1974; Skinner, Reed, and Jackson, 1976) has evolved into a formulation and series of analytic steps that we have termed *modal profile analysis*. Although different types of classification problems involve different assumptions and lend themselves to some classification techniques better than others, there has been an unfortunate tendency in psychology to assume that one clustering algorithm is as good as another for a particular problem. In personality assessment, what one frequently is looking for is a representation of an idealized individual, or "ideal type," indicative of a broader class that shares similar attributes and for which a common set of predictions might be made. This may have the advantage over purely descriptive methods because classification permits the application of psychological laws differentially to different types of persons. Thus, an attempt is made to go beyond purely descriptive work and inductive generalization to the development of concepts representing broader classes of individuals and the development of theoretical systems or models (Hempel, 1965).

Each modal profile represents the personality profile and the patterning of behavioral dimensions that is characteristic of the subset of persons in a particular population. In general, individuals will not be perfect representations of a single modal profile but, rather, combinations of several profiles. Even so, the modal profile most similar to an individual's observed profile is likely to describe him or her best. By the identification of a variety of modal profiles that appear with some frequency in the population, it is possible to classify a majority of the individuals in

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† Portions of this section are adapted with permission from Jackson, D. N. (1978). Interpreter's guide to the Jackson Personality Inventory. In McReynolds, P. (Ed.) *Advances in Psychological Measurement.* San Francisco: Jossey-Bass, pp. 56-102.

terms of their similarities to these "pure" types. The extent to which this is possible is an empirical matter, but the goal is to reduce the apparently chaotic diversity of individual profiles to a manageable system involving relatively few modal profiles.

An example may clarify this use of modal profiles. Skinner and others (1974) identified eight modal profiles among a large number of alcoholic psychiatric patients who had completed the *Differential Personality Inventory*, an unpublished structured questionnaire involving 28 content scales of psychopathology developed by the author in collaboration with Samuel Messick. The 16 types comprising the eight modal profiles (two types per profile, one generated in this analysis comprise a set of ideal types with different sets of symptoms and different prognoses. On the basis of earlier work in our laboratory (Partington and Johnson, 1969), it might be inferred that there are also a number of demographic characteristics, including education, drinking patterns, and socioeconomic class, that differentiate the types. These results provide a foundation for investigating the extent to which alcoholic patients resembling specific modal profiles have different probabilities for successful treatment under varying programs.

The goal, then, with modal profile analysis is to identify a set of higher-order constructs, each of which implies a specific, differential pattern of personality scores and differential probabilities for behavior in a wide variety of situations. Having established the existence of such modal profiles, one is free to investigate: (a) the degree of replicability of these modal profiles in samples drawn from the same and different populations; (b) the degree to which new samples may be sufficiently classified, using various criteria, into the modal profile system; and (c) the evaluation of the different modal profiles as the foundation for predicting different criteria, as well as for studying the differential operation of psychological laws as a function of membership in distinct ideal types.

Method of Analysis

Briefly, the method for obtaining modal profiles is predicated on the representation of a data matrix, usually with entities (for example, individuals) as rows and attributes (for example, personality scale scores) as columns. This data matrix can be partitioned into three general components, namely, elevation (the entity mean across attributes), scatter (the degree of dispersion of each profile), and shape (a measure of correlation or association between each individual's profile and the idealized modal profile). In addition, a certain proportion of the variance is attributable to error.

Having formulated the problem in this way, the first stage is to identify within any given sample the ideal types that underlie the given data set. This may be accomplished by decomposing the data matrix in each of several samples according to the Eckart-Young (1936) theorem and obtaining the left- and right-hand eigenvectors and a diagonal matrix of singular values. After appropriate rotation of the larger components, the component scores derived from this analysis describe the projection of each attribute on the principal components of the entity factor space. Thus, one obtains a matrix describing idealized profiles that account for the major components of a larger number of observed profiles. The second stage is to compare the idealized types derived from each of a number of samples. This is accomplished by applying generalized canonical correlation procedures to the separate sets of modal profiles based on different samples. Stated more simply, to the extent that the different profile

shapes derived from each sample correspond across samples, one has evidence that modal profile types are replicable. The procedures for accomplishing this are, in principal, similar to procedures proposed for the analysis of multitrait-multimethod matrices (Jackson, 1975), in that they involve the decomposition of a matrix of component score intercorrelations. Normally, profiles replicating across three or more samples are retained for further analysis and interpretation. In the third stage, one determines the extent to which one can account for a substantial percentage of the variance in a new sample by employing profiles so derived. This is a test of the generalizability of the modal profiles.

Modal Profiles for the JPI-R

The procedures briefly outlined above were applied to three groups of 150 males and three groups of 150 females, all of whom were college students. Following the procedure, the identification of modal profiles took place first within each of the separate groups of males and females. In each of the three male and three female groups, five eigenvalues in the basic structure analysis were found to be substantial and, based on the scree test, were retained. The decision was thus made to retain five modal profiles within each sex and to compare these across randomly drawn samples. It should be noted that, within the separate groups, the classification rate was quite satisfactory. When individual profiles were compared with the within-group modal profiles using as a criterion a correlation of .50 or better, the classification efficiencies (the percentage of individuals who could be assigned to one modal profile) were 78.7, 81.3, and 86.7 for the males, and 82.0, 78.7, and 79.3 for the females.

The next step in the analysis was an evaluation of the replicability of the modal profiles in the sets of male and female groups. Multiple-set factor analysis revealed that there were substantial correlations among implicit component scores. Factor analysis of these implicit component scores, followed by rotation to a univocal varimax criterion (Jackson and Skinner, 1975), indicated that final profiles were well defined by intraset profiles, with median loadings of .85 in both the three male and the three female samples. It was thus decided to retain the initially defined five profiles for males and females for further evaluation and research.

Description of JPI-R Modal Types

Tables 5-1 and 5-2 present the T-scores for the five male and five female profiles, respectively, where the standardization is across the fifteen JPI-R scales within each profile. It should be recognized immediately that each of these profiles is bipolar in the sense that a person may be classified as very similar to either the positive pole or the negative pole of the profile. In the case of Modal Profile I+ for males, such a person would tend to have high scores on Organization, Responsibility, and Traditional Values and low scores on Complexity, Risk Taking, and Social Astuteness. Another person might possess an opposite pattern of scores, showing high scores on Complexity, Risk Taking, and Social Astuteness and low scores on Organization, Responsibility, and Traditional Values. Such a person would thus be classified as being most similar to the negative pole of Modal Profile I for males. (Which pole is positive and which one negative is arbitrary.) Thus, for the five male modal profiles, there are ten modal types, two for each modal profile. Each of the profiles shows a unique configuration of JPI scores, and suggests a particular set of predictions for nontest behavior.

Table 5-1: JPI-R Modal Profile (+) T-scores for Males

Modal Profile	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
I	34	43	39	50	50	47	58	58	50	51	40	36	60	69	64
II	53	46	38	50	51	58	59	73	45	52	34	63	48	43	39
III	35	40	50	38	44	41	52	57	65	54	68	61	57	52	37
IV	51	57	54	61	41	30	34	58	62	60	36	56	49	49	55
V	50	57	45	43	36	55	48	36	38	62	44	62	71	54	48

Table 5-2: JPI-R Modal Profile (+) T-scores for Females

Modal Profile	Cpx	Bdi	Inv	Tol	Emp	Axy	Cpr	Soc	Scf	Enl	Sas	Rkt	Org	Trv	Rsy
I	64	60	61	63	51	40	36	50	55	49	43	57	32	38	49
II	56	40	45	45	65	65	59	64	50	41	54	53	38	37	37
III	41	45	42	53	55	33	52	72	62	58	43	38	47	47	60
IV	46	46	52	42	39	42	45	55	63	61	61	66	60	40	33
V	59	53	46	49	56	62	43	47	52	62	32	40	68	36	46

The positive and negative poles of the five modal profiles for males and females are depicted on the following pages. The positive pole profiles, shown on the left side of each page, depict the T-scores listed in Tables 5-1 and 5-2. The negative pole profiles, shown on the right side of each page, depict the reflections of the positive pole versions across the horizontal line representing a T-score of 50. (The negative pole T-scores are obtained by subtracting the positive pole values from 100.) It is clear from an inspection of these figures that persons falling within a particular type are characterized not only by certain high scores but also by a definite configuration including extremely low as well as intermediate scores. An appropriate interpretation of such a set of configurations of scores is in terms of high, intermediate, and low response probabilities for behavior related to each of the fifteen JPI-R scales. This is a useful alternative to scale-by-scale interpretation, as knowledge of the respondent's particular modal type alone immediately implies a set of response probabilities with respect to a wide range of behavior.

Table 5-3 presents the high-scoring scales for each of the modal types for males, and Table 5-4 presents similar information for females. The low scale points for each modal type may be obtained from its complement. Although the technique used to identify the individual's type in modal profile analysis is to correlate his or her profile with that of the modal profile, in clear-cut cases one can simply identify the high and low T-scores of the individual's profile and compare them with the values in Tables 5-3 or 5-4. Alternatively, the pattern of the individual's T-scores plotted on a profile sheet may be compared to the profiles presented in the following pages.

Comparison of Classification Efficiencies

It will be recalled that classification rates in the first stage of JPI modal profile analysis ranged from about 79 percent to 87 percent in the three groups of males and three

groups of females. If classification were based predominantly on chance association of randomly occurring profiles, classification rates would be near chance level on a new sample. To test the robustness of the modal types, the JPI was administered to a new sample of 732 males and 750 females. A fairly conservative criterion for inclusion in a modal type was set: If a person showed a correlation with a modal profile higher than an absolute value of .50, and this was the highest correlation for any of the identified profiles, this person was classified in terms of the type related to that profile. Using this criterion, the classification rate was 71% for males and 73% for females. These values are much higher than expectations based on random data, compare very favorably with values reported for other classification systems, and attest to the feasibility of applying the modal profiles derived in our analyses to new samples.

The latest norming of the JPI-R allowed a further check on the usefulness of the modal profiles in classifying individuals. Of the 367 male and 740 female college students in the current normative sample, 69% of each sex were classifiable under one of the profiles identified in the earlier research, again using a classification correlation of .50 or higher. In light of the fact that the previous and recent replication sample data were collected 20 years apart, the current percentages indicate appreciable stability in the classification utility of the five JPI modal profiles. Table 5-5 shows the percentages of males and females participating in the recent college norming study that were classified under each pole of the respective modal profiles.

Applications of Modal Typology

The demonstration that individual profiles may be classified reliably under broader categories has a number of implications for research and the use of personality test scores. Four possible applications are noteworthy: (a) in studies of the perception of personality, (b) in occupational classification and vocational counseling, (c) in studies of teaching and learning styles, and (d) in prediction studies.

Research on the perception of personality and clinical judgment (Jackson, MacLennan, Erdle, Holden, Lalonde and Thompson, 1986; Paquin and Jackson, 1977; Reed and Jackson, 1975; Strasburger and Jackson, 1977) has demonstrated that individuals can make reliable predictions about the behavior of persons who are described in terms of modal type. There are some data supporting the view that characterizations inconsistent with modal types yield low reliability. One fruitful avenue for further study is an investigation of the extent to which the validity of

Table 5-5: JPI-R Modal Profile Classification Percentages for the Current College Normative Sample

Males (*N* = 367)				Females (*N* = 740)		
Modal Profile	Positive Pole	Negative Pole		Modal Profile	Positive Pole	Negative Pole
I	5.7	16.1		I	14.9	7.7
II	1.4	6.0		II	8.4	3.8
III	4.4	7.1		III	6.1	1.9
IV	15.0	5.5		IV	0.9	13.0
V	1.1	6.8		V	11.9	0.0

JPI-R Modal Profiles: Males
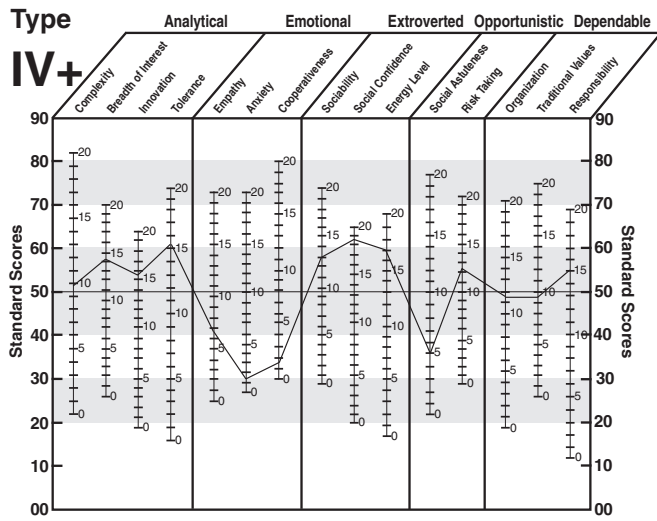
JPI-R Modal Profiles: Males
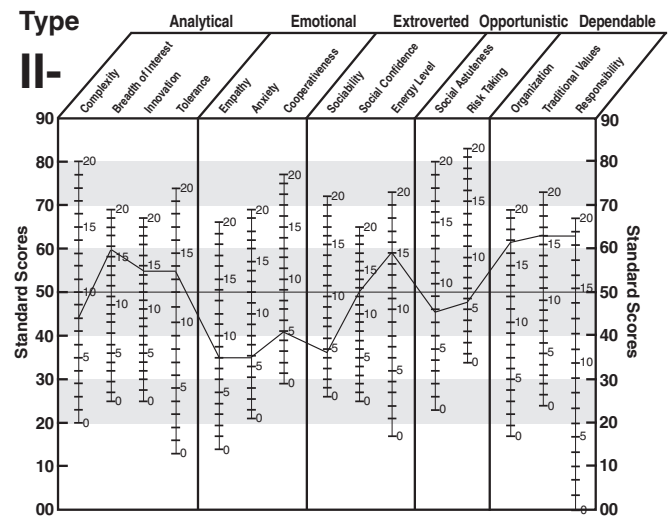

Type IV+

Type IV-

Type V+

Type V-
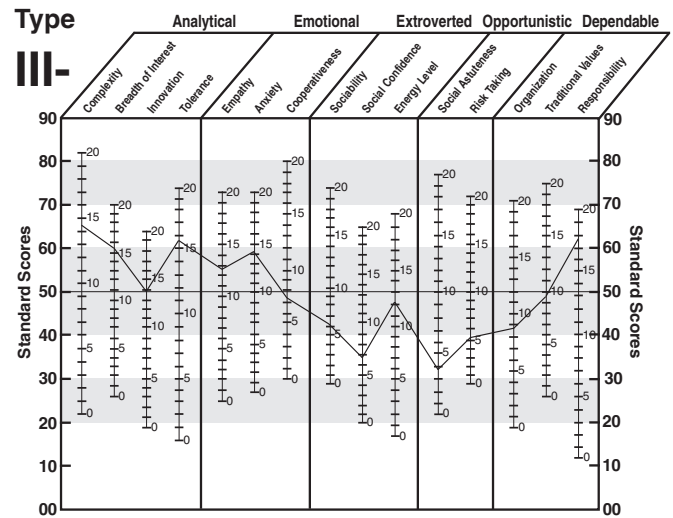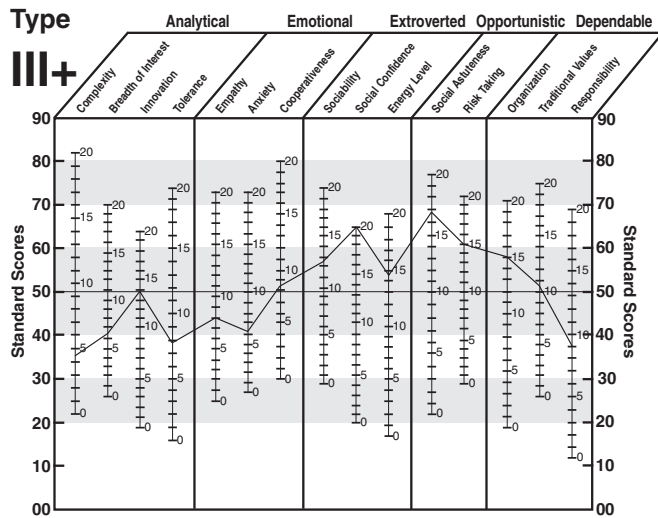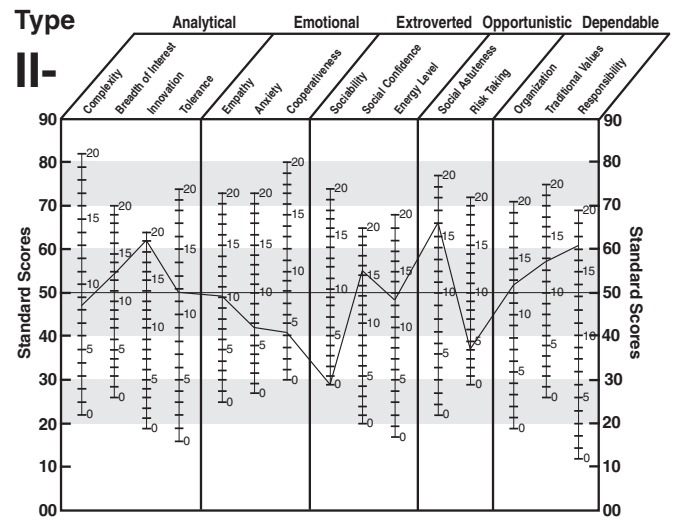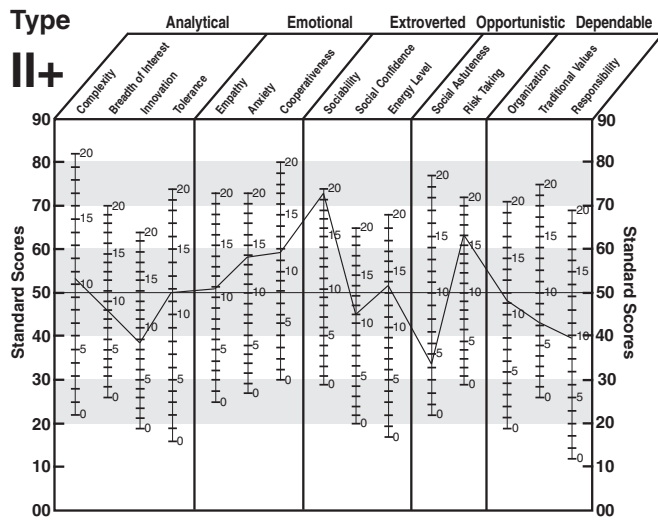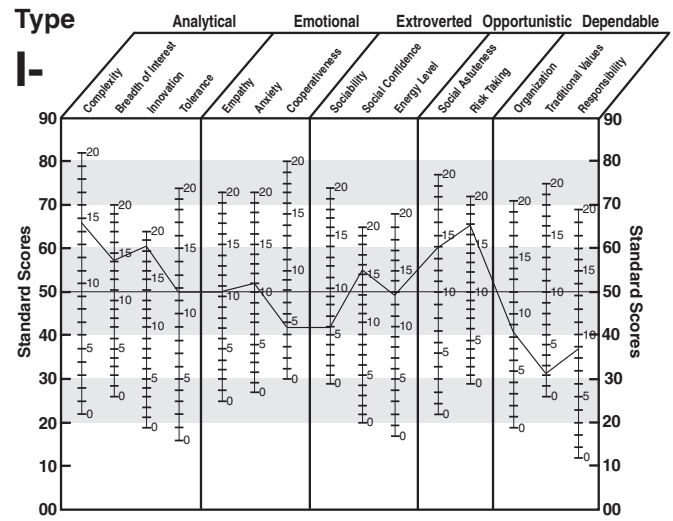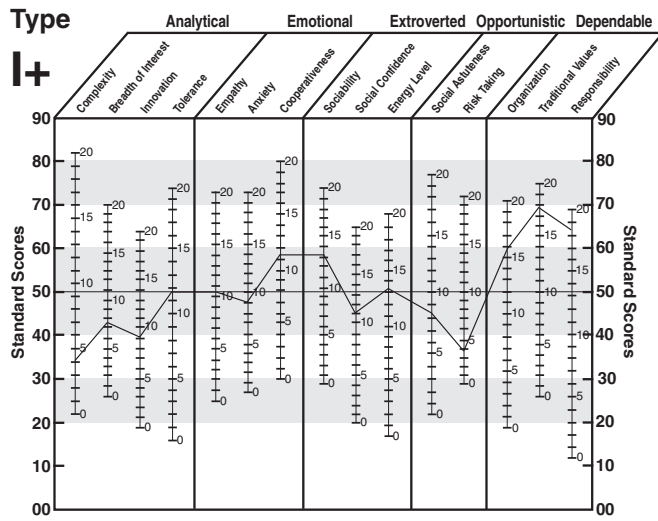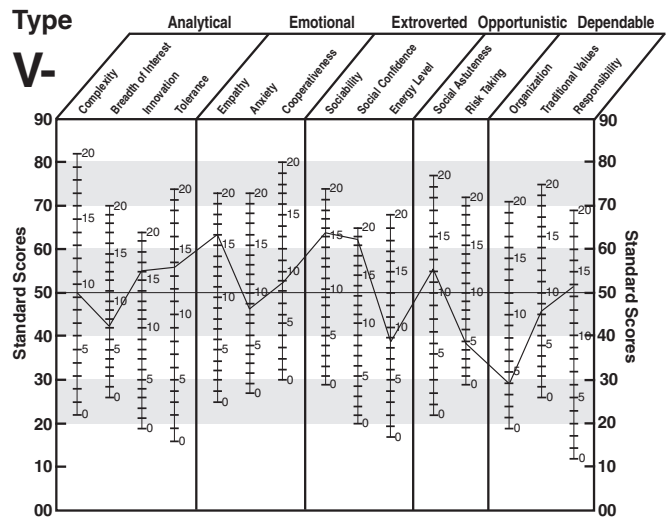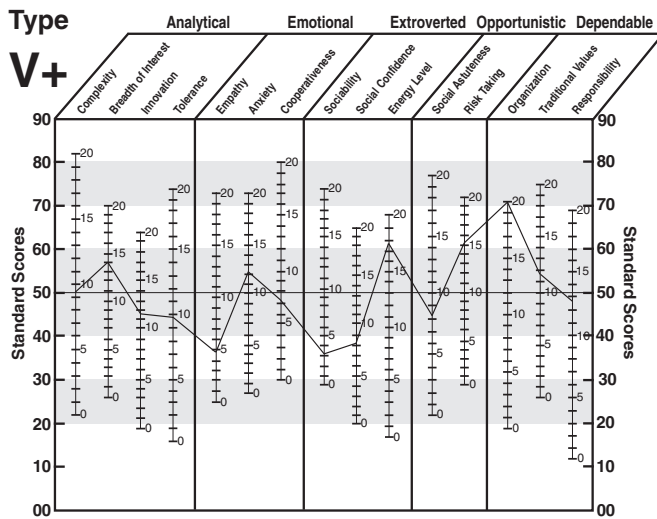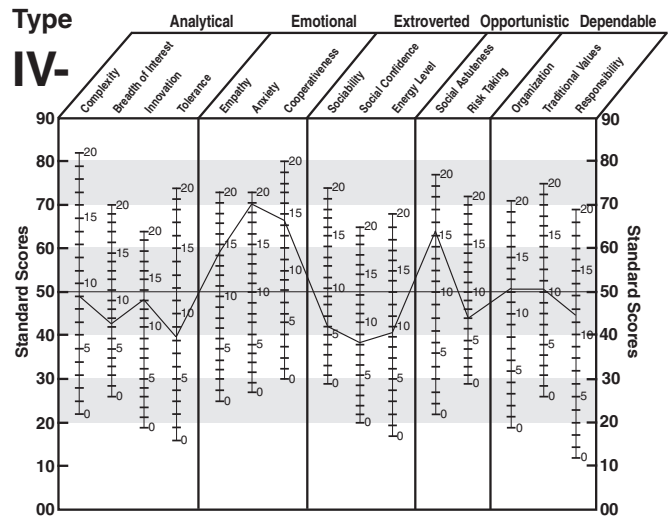
Table 5-3: Salient Scales of the JPI-R Modal Profile Types for Males

Type I+	Type I-
Traditional Values, Responsibility, Organization	Complexity, Risk Taking, Innovation, Social Astuteness

Type II+	Type II-
Sociability, Risk Taking, Cooperativeness, Anxiety	Social Astuteness, Innovation, Responsibility

Type III+	Type III-
Social Astuteness, Social Confidence, Risk Taking	Complexity, Responsibility, Tolerance, Breadth of Interest

Type IV+	Type IV-
Social Confidence, Tolerance, Energy Level, Sociability	Anxiety, Cooperativeness, Social Astuteness, Empathy

Type V+	Type V-
Organization, Energy Level, Risk Taking	Sociability, Empathy, Social Confidence

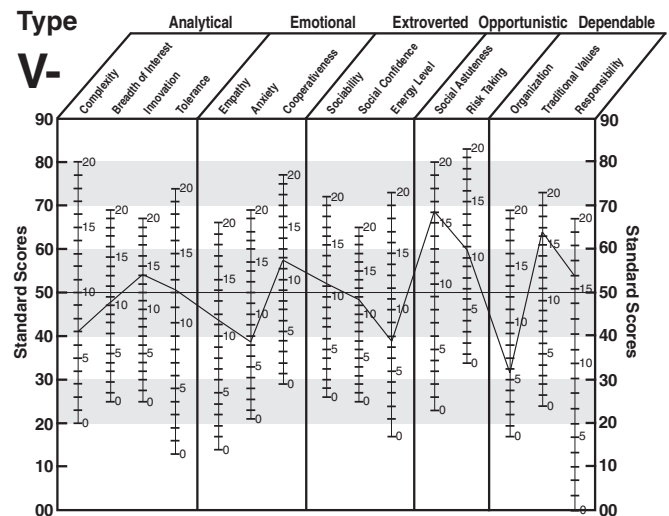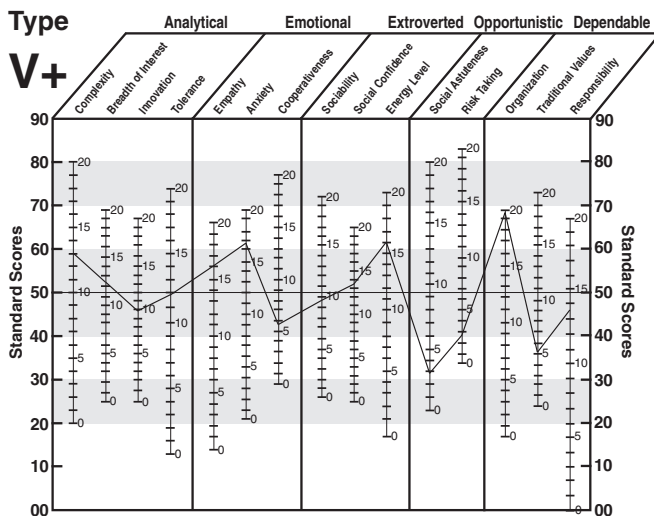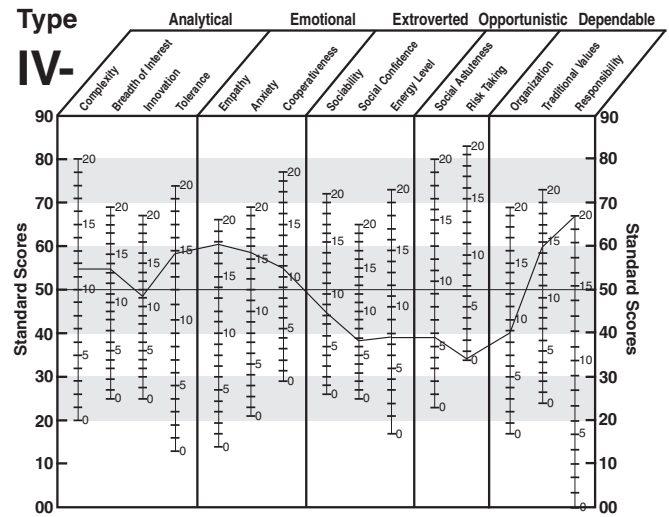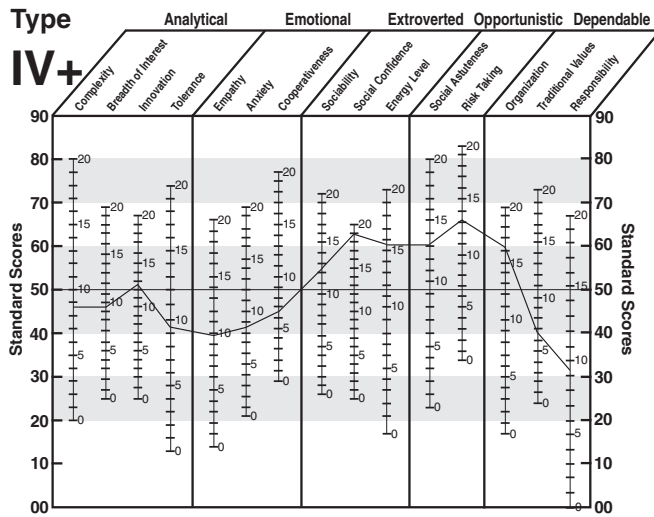# JPI-R Modal Profiles: Females
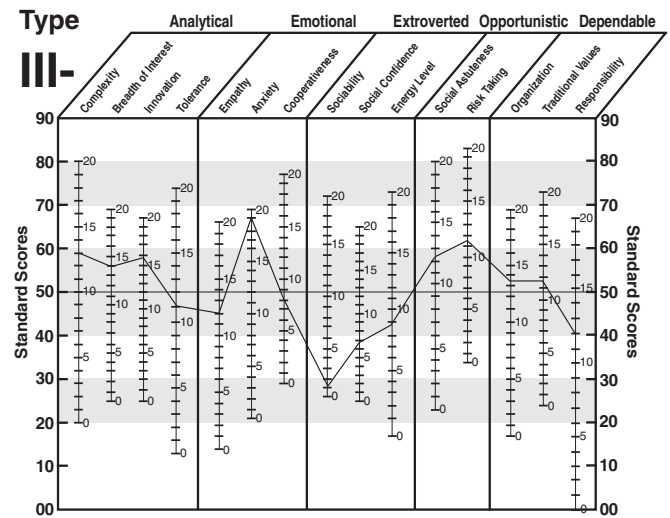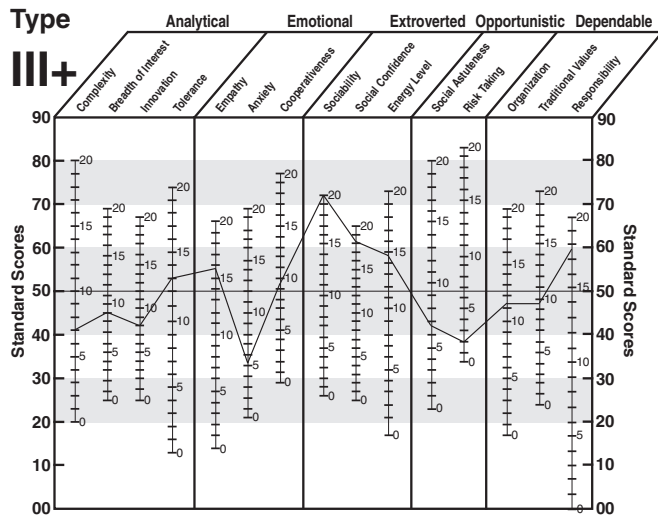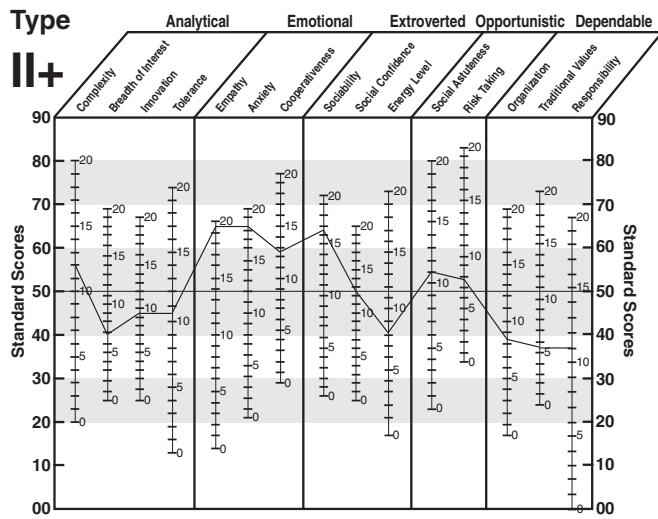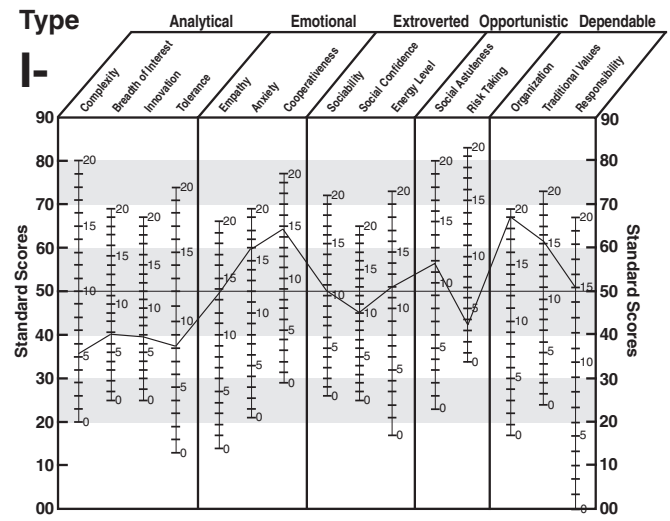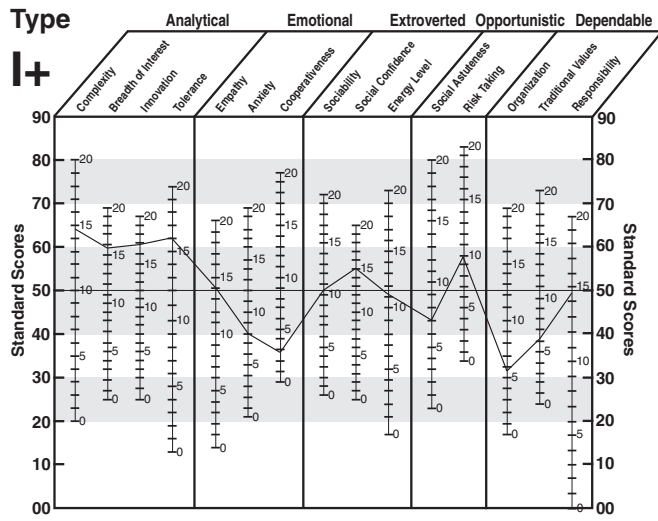
JPI-R Modal Profiles: Females

Table 5-4: Salient Scales of the JPI-R Modal Profile Types for Females

Type I+	Type I-
Complexity, Tolerance, Innovation, Breadth of Interest	Organization, Cooperativeness, Traditional Values, Anxiety

Type II+	Type II-
Empathy, Anxiety, Sociability, Cooperativeness	Traditional Values, Responsibility, Organization

Type III+	Type III-
Sociability, Social Confidence, Responsibility	Anxiety, Risk Taking, Complexity

Type IV+	Type IV-
Risk Taking, Social Confidence, Energy Level	Responsibility, Empathy, Traditional Values

Type V+	Type V-
Organization, Anxiety, Energy Level	Social Astuteness, Traditional Values, Risk Taking

predictions about behavior will vary as a function of the degree to which target persons are similar to frequently or infrequently appearing types.

There is considerable evidence (Jackson, 1980; Jackson, Peacock, and Holden, 1982; Jackson, Peacock and Smith, 1980; Rothstein and Jackson, 1980; Siess and Jackson, 1970) that personality factors and vocational interest factors can be located within a common space. The question arises about the extent to which persons in different occupations may be differentiated by modal type classification. A similar question arises about the relative success rates of persons in different occupations as a function of their modal type. If such correlations could be established, the possibility of employing these classification procedures for vocational counseling would exist. In a preliminary study, Skinner, Jackson, and Rampton (1976) identified consistently different personality profiles for persons in different military personnel classifications. Data on a wider range of occupations would also be informative. One occupation for which there are extensive data bearing on the relevance of personality data and rated performance is teaching (for example, Medley and Mitzel, 1963). Because the majority of JPI-R scales bear on interpersonal or cognitive dimensions that are relevant to teaching, the modal type classification of teachers or teacher trainees might relate to different teaching styles and different levels of teaching performance. Similarly, membership in particular typal clusters might indicate a preference for certain styles of learning over others. For example, Modal Profile I+ for females is characterized by high scores in Complexity, Innovation, and Tolerance, while Modal Profile I- is characterized by high Cooperativeness, Organization, and Traditional Values. The former group might learn more effectively in an environment encouraging exploration and individual projects, while the latter group might proceed at a faster pace when working under highly structured, programmed conditions. A study of other modal types would suggest other hypotheses.

There are at least two ways in which the modal profile approach may be relevant to prediction. First, membership in a modal type might serve as a moderator variable with respect to another predictor. Psychological relationships might thus be observed to vary as a function of modal type membership. This is plausible in light of the findings of Kogan and Wallach (1964), who reported such moderated relationships between anxiety and risk taking, two variables of personality defining JPI-R modal profiles. A second application of modal profiles is in the area of classical prediction. Since a person may be characterized as being differentially similar to each of the five JPI-R modal profiles, these indices of similarity may be used as scores in linear regression studies. The reduced number of variables increases the degrees of freedom. This can be a decided advantage, especially when the number of individuals is not large. Data from such analyses will serve to appraise the validity of the configuration of JPI-R scores rather than individual scales and would support the use of profile information rather than individual scale information in psychological report writing and research.

Correlations between JPI-R Scales and Adjective Endorsements

One way to appraise a personality scale and to learn more about the potentially elaborate network of trait relationships existing for the scale is to study its correlations with adjectives endorsed significantly more frequently by those scoring high and

low on the scale. Such a review provides a perspective on the "surplus meaning" of a scale score as mediated by the respondent's own self concept. Below is listed for each scale the set of adjectives endorsed more frequently and less frequently by 115 respondents who were, respectively, "high scorers" and "low scorers" on each JPI-R scale.

Complexity	High Scorer:	complicated, idealistic, imaginative, ingenious, insightful, inventive, original, unconventional, sophisticated.
	Low Scorer:	cautious, conservative, conventional, practical, realistic.
Breadth of Interest	High Scorer:	interests wide, enterprising, imaginative, shows initiative, insightful, optimistic.
	Low Scorer:	interests narrow, cautious, realistic, bitter.
Innovation	High Scorer:	imaginative, inventive, enterprising, artistic, ingenious, insightful, shows initiative, spontaneous, original, clever, resourceful, interests wide, farsighted, curious.
	Low Scorer:	reserved, commonplace, conventional, realistic.
Tolerance	High Scorer:	optimistic, patient, relaxed, easy going, calm, adaptable, self-confident, understanding, sincere, persistent, determined, praising.
	Low Scorer:	touchy, irritable, impatient, fault-finding, bitter, fussy, defensive, excitable, intolerant, formal, indifferent, sarcastic, opinionated, selfish, thrifty, withdrawn.
Empathy	High Scorer:	affectionate, emotional, praising, sentimental, soft-hearted, sympathetic, warm.
	Low Scorer:	unemotional, cold, self-controlled, hard-hearted, practical, realistic.
Anxiety	High Scorer:	tense, anxious, worrying, emotional, nervous, self-punishing, irritable, resentful, excitable, moody.
	Low Scorer:	self-confident, relaxed, confident, calm, self-controlled, patient.
Cooperativeness	High Scorer:	dependent, conservative, conscientious.
	Low Scorer:	individualistic, self-confident, self-controlled, unaffected, unconventional, independent, reflective.
Sociability	High Scorer:	sociable, talkative, outgoing, attractive, spontaneous, civilized, affectionate, cheerful, energetic, enthusiastic, jolly, mischievous, spunky, witty, praising.
	Low Scorer:	quiet, shy, silent, wary, withdrawn, reserved, self-controlled, thrifty, timid, unfriendly, moody, distractible, individualistic, suspicious.
Social Confidence	High Scorer:	outgoing, sociable, self-confident, talkative, witty, confident, affectionate, strong, uninhibited, charming, assertive, attractive, cheerful.
	Low Scorer:	quiet, withdrawn, shy, reserved, silent, inhibited, timid.
Energy Level	High Scorer:	enterprising, industrious, shows initiative, energetic, persistent, self-confident, imaginative, efficient, adventurous, courageous.
	Low Scorer:	confused, worrying, lazy, sulky, unambitious, leisurely, anxious, easy-going, pessimistic.

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Social Astuteness	High Scorer:	opportunistic, spontaneous, versatile, insightful, evasive, tactful, civilized, enthusiastic, cheerful, optimistic, suggestible, strong, trusting, dominant, assertive, ambitious, savvy.
	Low Scorer:	tactless, unintelligent, unambitious, quarrelsome, dependent.
Risk Taking	High Scorer:	daring, enterprising, adventurous, enthusiastic, reckless, spontaneous, courageous, uninhibited, shows initiative, opportunistic, inventive.
	Low Scorer:	cautious, conservative, fearful, reserved, suspicious, worrying.
Organization	High Scorer:	thorough, organized, efficient, formal, methodical, precise, stable, steady.
	Low Scorer:	lazy, absent-minded, changeable, disorderly, distractible, forgetful, impulsive, informal.
Traditional Values	High Scorer:	conservative, conventional, quitting, dependent, affected, stern, timid, unambitious.
	Low Scorer:	unconventional, relaxed, cynical, informal, clever, humorous, individualistic, insightful, intelligent, inventive, reckless, sharp-witted, tolerant, witty.
Responsibility	High Scorer:	kind, considerate, responsible, sympathetic.
	Low Scorer:	fault-finding, greedy, conceited, self-centered, egotistical, self-seeking, stingy, noisy, nagging, selfish, complaining, evasive.

Prediction of Managerial Leadership Rating from JPI-R Scales

Past research has seemingly contradicted the "intuitively obvious" notion that there is a link between personality and job performance (Guion and Gottier, 1965; Hedlund, 1965; Locke and Hulin, 1962; see also Jackson, 1990). Tett, Jackson, and Rothstein (1991), however, in a meta-analytic review of the literature concluded that the mean correlation between personality and job performance across 52 independent studies was sufficiently high to warrant further study of those relations. They also noted that the correlation was substantially higher in studies that: (a) provided a theoretical rationale for the selection of personality variables, and (b) undertook, in addition, job analyses to determine job-relevant personality content. Encouraged by those findings, Hagberg, Jackson, and Jackson (April, 1993) sought to predict managerial leadership ratings using the JPI in a group of 260 senior executives employed in a variety of organizations. A substantial number of subordinates, peers, and superiors (median = 19), all of whom were well acquainted with the given executive's work, evaluated 44 dimensions representing various aspects of managerial performance. JPI-R scales that significantly ($p<.05$) differentiated high and low performance ratings on the leadership dimensions are shown below. A negative sign indicates that a high JPI-R scale score represented poorer performance.

Complexity	Creativity Self Discipline (-)
Breadth of Interest	Conflict Management (-) Organizing the Work of Others (-) Monitoring & Controlling (-)
Innovation	First Impression (-) Creativity Risk Taking Technical Skill Self Discipline (-) Emotional Control (-)
Tolerance	Thoroughness (-) Self Discipline (-)
Empathy	Sensitivity Flexibility Analytic Ability (-) Conflict Management Social Astuteness Sociability Emotional Control (-) Motivating Others
Anxiety	First Impression (-) Social Astuteness (-) Emotional Control (-)
Cooperativeness	none
Sociability	Ambition Social Astuteness Thoroughness (-) Self Discipline (-)
Social Confidence	First Impression Flexibility Persuasiveness Risk Taking Technical Skill (-) Analytic Ability (-) Ambition Social Astuteness Sociability Motivating Others Company Representative Vision Ability to Attract & Retain Staff Interpersonal Relations Negotiation Self Discipline (-) Self Esteem

Energy Level	Negotiation
	Self Esteem
Social Astuteness	Flexibility
	Persuasiveness
	Risk Taking
	Ambition
	Social Astuteness
	Negotiation
	Emotional Control
	Vision
	Ability to Attract & Retain Staff (-)
Risk Taking	First Impression
	Flexibility
	Persuasiveness
	Risk Taking
	Short Term Planning (-)
	Organizing the Work of Others (-)
	Ambition
	Social Astuteness
	Thoroughness (-)
	Negotiation
	Self Esteem
	Assuming Responsibility
	Vision
	Company Representative
	Inspirational Role Model
Organization	Creativity (-)
	Decisiveness
	Short Term Planning
	Organizing the Work of Others
	Monitoring & Controlling
	Thoroughness
	Self Discipline
	Dependability
Traditional Values	Achievement & Motivation
	Creativity (-)
Responsibility	Independence
	Emphasizing Excellence
	Integrity
	Short Term Planning
	Thoroughness
	Vertical Communication

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GLOSSARY

Bipolar Scale. A measure whose two endpoints define opposite poles of a given dimension, where each pole is interpretable in its own right. For example, risk taking and harmavoidance define the two poles of the Risk Taking scale. In contrast, a unipolar scale is one assumed to have a single interpretable pole, where low scores connote merely a lack of the given trait. For example, a low score on a unipolar measure of hypochondriasis would indicate merely a lack of hypochondriasis, rather than some identifiable trait involving low hypochondriasis.

Canonical Correlation. See *Generalized Canonical Correlation*

Component Score. The sum of weighted scores on a set of scales, where the weights are determined using principal components analysis. Each person will have a component score for each component extracted in the analysis.

Convergent Validity. The degree to which a given measure correlates with measures intended to assess conceptually related dimensions. (Compare with *Discriminant Validity*.)

Construct. A conceptual variable having a particular meaning (e.g., anxiety).

Diagonal Matrix. A square matrix with non-zero values in the diagonal and zeroes in the off-diagonals.

Differential Reliability Index (DRI). A measure of the amount of variance in a given item that is independent of social desirability. Mathematically, the DRI is defined as follows:

$$DRI = (r_{ig}^2 - r_{idy}^2)^{1/2}$$

where r_{ig} is the biserial correlation between an item and its own scale, and r_{idy} is the biserial correlation between that item and a desirability scale.

Discriminant Validity. The degree to which a given measure is statistically independent of measures intended to assess conceptually unrelated dimensions. (Compare with *Convergent Validity*.)

Eigenvalue. The variance accounted for by a given component in a principal components analysis. Mathematically, it is sum of the squared loadings for a given component. Eigenvalues tend to decrease with successively extracted components.

Eigenvector. In matrix algebra, any matrix can be decomposed into left- and right-hand eigenvectors and a diagonal matrix of eigenvalues. Estimation of eigenvectors is an essential step in factor analysis and in calculating modal profiles.

Entity Factor Space. A hypothetical space in which entities, such as individual people, occupational groups, or other discrete units, define the dimensions in contrast to a space defined by psychological variables, such as test scores.

Factor Analysis. A family of statistical procedures used in identifying groups of co-variates within a larger set of variables. Principal components analysis is a member of this family. It is considered a 'data reduction' technique in that it reduces the number of variables requiring interpretation. It entails a loss of specificity, however, regarding interpretations of variables entered into the analysis.

Factor Loading. The correlation between a given measure (e.g., personality scale total score) and the linear weighted sum of a larger set of measures which includes the measure in question. Ranging from -1.0 to +1.0, it indicates the importance of the variable in defining the given factor. More extreme values indicate greater importance.

Factor Space. See *Entity Factor Space.*

Generalized Canonical Correlation. A statistical procedure for identifying clusters of independent variables and clusters of dependent variables simultaneously such that clusters in one domain are related to clusters in the other domain.

Gini Index. A statistic proposed by the Italian mathematician, Gini, for indicating the concavity of a curve. It may be used with a plot of eigenvalues (see *Scree Test*) to describe the degree to which a given set of variables is represented by a single factor or component.

Loading. See *Factor Loading*.

Meta-Analytic Review. A quantitative summary of a specified research domain, entailing the averaging of statistical findings across multiple studies of the same relation. It is generally accepted as providing a more powerful estimate of the focal relation than that permitted within a single-sample study.

Multimethod Factor Analysis. A statistical procedure for clustering constructs measured by multiple methods (e.g., from self- vs. peer-report). The first step entails factoring the variables within each method (separately from the other methods), to produce clusters that are independent of one another (within methods). The second step entails factoring the factor scores on the clusters from all methods, to produce second-order clusters. The chief advantage of this procedure is that it eliminates the unwanted effects of variance associated with particular methods, thereby permitting a 'cleaner' interpretation of construct clusters (i.e., independent of the methods used to measure the constructs).

Multitrait/Multimethod Matrix. A matrix of correlations among constructs (e.g., personality traits) measured using multiple methods (e.g., self- and peer-ratings). Convergent validities are represented in the matrix as the correlations between different measures of the same construct (i.e., monotrait-heteromethod elements). Generally speaking, these correlations are expected to be larger than their off-diagonal counterparts (heterotrait-heteromethod elements) and, more importantly, the correlations between different constructs measured using a given single method (i.e., heterotrait-monomethod elements).

Orthogonal Rotation. A procedure within factor analysis for configuring clusters of variables to make the clusters more interpretable, while keeping them mutually uncorrelated.

Principal Components Analysis. A member of the family of factor analytic procedures used to cluster variables into meaningful groups.

Rotation. A secondary procedure within factor analysis for configuring clusters of variables to promote their interpretability.

Scree Test. A visual assessment of eigenvalues plotted on a graph for determining the most appropriate number of factors to retain for interpretation. In general, according to the scree test, the number of retainable factors is determined by the number of eigenvalues falling above a noticeable break in the plot of eigenvalues. The term "scree" derives from the fact that the lower eigenvalues in the plot (i.e., those for the factors derived in the later stages of the analysis) resemble the scree at the foot of a mountain. The higher eigenvalues (i.e., those for the first few factors) are represented by the "mountain" in the scree plot. In this sense, the scree test amounts to identifying the point on the graph at which the scree and the mountain are most clearly distinguished.

t. An inferential statistic used in assessing the probability that an observed difference between two like statistics (e.g., two means or two correlations) is due to chance. The higher the value of *t*, the less likely it is that the observed difference can be attributed to chance and the more likely it is that the observed difference represents a true difference.

T-score. A standardized version of a raw score, which has a mean of 50 and a standard deviation of 10. A T-score may be obtained for a given raw score by the following formula:

$$T = 50 + [10 (\text{raw score - group mean}) / \text{group standard deviation}].$$

Univocal Varimax Criterion. A modification of a varimax rotation in which each variable is targeted to be associated with one and only one factor in a factor analysis.

SCALE-BY-SCALE ITEM LISTS FOR THE JACKSON PERSONALITY INVENTORY - REVISED

The following JPI-R items are listed by scale for qualified users who would like to better understand item content and the constructs being measured. It is critical to emphasize that these items may not be reproduced in whole or in part in any form or by any means without written permission of SIGMA Assessment Systems, Inc. Reproducing these items in any way, without written consent of the publisher, constitutes a violation of international copyright law and infringement of the ethical and responsible use of assessments. In order to use the JPI-R items for clinical or research purposes, you must first obtain permission by contacting a representative from the publisher, SIGMA Assessment Systems, Inc.

Cluster 1: Analytical

Complexity (Cpx)

Item #	T/F	
1	T	Extremely simple problems bore me.
31	T	I enjoy involved discussions, even those that last for hours.
61	T	Modern music is so varied that there is something for each different mood I have.
91	T	I prefer drawings that require some study in order to be understood.
121	T	I enjoy trying to figure out what a poet was trying to say in a poem.
151	T	The reasons that people do things are usually complex.
181	T	I always feel that I must look into all sides of a problem.
211	T	Usually I read several books at the same time.
241	T	I enjoy the challenge of reading a complicated novel.
271	T	A musical theme with unusual features is more interesting than a simple one.
16	F	If an artist is painting scenery, the picture created should be as accurate as possible.
46	F	I like people who are stable and easy to understand.
76	F	Most things are quite simple once you get to know about them.
106	F	I prefer dealing with problems which have clear-cut solutions.
136	F	I like simple, clear art the best.
166	F	I try to make everything as simple and easy as I can.
196	F	I admire people who take a simple, uncomplicated view of life.
226	F	I don't waste time thinking about problems that can't be solved.
256	F	The most useful political principles are those that are easy to understand.
286	F	I think of myself as a straightforward, uncomplicated person.

Breadth of Interest (Bdi)

Item

 # T/F

17	T	I would like to learn about the geography of foreign countries.
47	T	Almost every section of the newspapers has something in it that interests me.
77	T	I usually look at a wide variety of different magazines each month.
107	T	I maintain a lively interest in reading books on several different topics.
137	T	There are very few topics that bore me.
167	T	I enjoy listening to speeches on a wide variety of topics.
197	T	I would enjoy hearing the details about discoveries in any field.
227	T	I would find almost any type of music enjoyable.
257	T	I am keenly interested in all kinds of current events.
287	T	I am very interested in politics.
2	F	I have only one or two real hobbies.
32	F	I am not interested in trying to keep up with recent developments in science.
62	F	I prefer activities which I know I will enjoy to ones I have never tried.
92	F	I could never become interested in the strange hobbies that some people have.
122	F	I prefer activities which are familiar to me.
152	F	I would not care to see a motion picture about the life of the otter.
182	F	So many speeches are about things which are not important to me.
212	F	I rarely attend cultural events.
242	F	I would only have a slight interest in touring an art museum.
272	F	I can't be bothered finding out about things that may never be of any use to me.

Innovation (Inv)

Item

 # T/F

3	T	I prefer work that requires original thinking.
33	T	I am always seeking new ways to look at things.
63	T	Original ideas have occurred to me at almost any time of the day or night.
93	T	I enjoy thinking of original plans on which to work.
123	T	People often ask me for help in creative activities.
153	T	I often surprise people with my novel ideas.
183	T	I often try to invent new uses for everyday objects.
213	T	I would enjoy the chance to make up plots for television programs.
243	T	I like to experiment with various ways of doing the same thing.
273	T	I hope to develop a new technique in my field of work.
18	F	I would dislike having to think of new toys and games for children.
48	F	I might be at a loss if I had to design a new book cover.
78	F	I do not have an especially vivid imagination.
108	F	I obtain more satisfaction from mastering a skill than coming up with a new idea.

138   F   I don't really think of myself as a creative person.

168   F   I don't usually contribute many new ideas to a project.

198   F   I like a job which demands skill and practice rather than inventiveness.

228   F   I seldom bother to think of original ways of doing a task.

258   F   I wouldn't know where to begin if I had to design a boat.

288   F   I usually continue doing a new job in exactly the way it was taught to me.

Tolerance (Tol)

Item

 #   T/F

19   T   I enjoy entertaining people of various beliefs and nationalities.

49   T   I rarely decide that I don't like someone after only one or two meetings.

79   T   I like to get to know people well before judging them.

109   T   I pay little attention to people who behave in an unusual way.

139   T   I find it refreshing to discuss my views with someone who strongly disagrees with me.

169   T   If people continue to speak their native language after they have moved to this country, it is no concern of mine.

199   T   Many of my friends have quite different political views.

229   T   I enjoy being with all kinds of people, even those whose habits may seem unusual.

259   T   A person's social class makes no difference to me.

289   T   I enjoy working with people who use different methods of organization than I do.

4   F   I think that people who readily change their beliefs just have no backbone.

34   F   I think it is best for me to choose friends who agree with the same general principles as I do.

64   F   I get along best with people of my own nationality.

94   F   Some people are just too narrow-minded to listen to the right way to live.

124   F   I consider good table manners an important quality in my dinner guests.

154   F   I can tell as soon as I meet someone whether I will like that person or not.

184   F   I can put up with certain types of people for only short periods of time.

214   F   Some people have such foolish beliefs that I find it hard to understand how they can accept them.

244   F   If I don't like someone's looks, I rarely make an effort to get to know that person.

274   F   Some political groups are so unprincipled that they should be outlawed.

Cluster 2: Emotional

Empathy (Emp)

Item

 #   T/F

5   T   I would feel discouraged and unhappy if someone I knew lost a job.

35   T   I am so sensitive to the moods of my friends that I can almost feel what they are feeling.

65   T   I would like to spend a great deal of my time helping less fortunate people.

95   T   I am often very sentimental where my friends are concerned.

125	T	I am quite affectionate toward people.
155	T	I tend to get strongly attached to people.
185	T	I tend to get quite involved in other people's problems.
215	T	When I talk about someone I like very much, I have a very hard time hiding my feelings.
245	T	I usually feel very sad when a movie has an unhappy ending.
275	T	I get embarrassed for a speaker who makes a mistake.
20	F	I prefer not to spend a lot of time worrying about a person whose condition can't be helped.
50	F	I don't really care if my friends follow my advice or not.
80	F	I try to keep my feelings toward people rather neutral.
110	F	I think I could keep myself from worrying if a friend became ill.
140	F	I don't waste my sympathy on people who have caused their own problems.
170	F	I have no patience with someone who is just looking for a shoulder to cry on.
200	F	I rarely get upset when other people make fools of themselves.
230	F	I never get too upset about other people's misfortunes.
260	F	I try to keep out of other people's problems.
290	F	I am not a very emotional person.

Anxiety (Axy)

Item
T/F

21	T	When I am waiting for anything, I usually get very anxious.
51	T	I get worried when someone I have been expecting does not arrive on time.
81	T	Occasionally I feel so nervous that I begin to get all choked up.
111	T	I frequently worry about whether I am doing my work well.
141	T	I become upset when something interferes with my schedule.
171	T	Once in a while my stomach feels as if it were tied in knots.
201	T	Once in a while, I get very upset about things that have happened in the past.
231	T	Sometimes I get upset about financial matters.
261	T	I often think about the possibility of an accident.
291	T	I sometimes feel jittery.
6	F	I am a calm, easy-going type of person.
36	F	Something has to be very important before I worry much about it.
66	F	People have told me that I have very steady nerves.
96	F	I rarely dwell on past mistakes.
126	F	I usually solve any problems I may have and then forget about them.
156	F	I am not a "high-strung" person.
186	F	I don't worry very much about the future.
216	F	I am not a very excitable person.
246	F	I seem to worry about things less than other people do.
276	F	I seldom get "butterflies" in my stomach.

Cooperativeness (Cpr)

Item

**T/F**

7 T I am very sensitive to what other people think of me.

37 T In most situations, I usually agree with the opinions of the group.

67 T Before making a decision, I often worry whether others will approve of it.

97 T It makes me feel uncomfortable to be dressed differently from those around me.

127 T I often wonder why some people get pleasure out of doing unconventional things.

157 T My actions are governed by the way people expect me to behave.

187 T It causes me a great deal of worry if I think that someone doesn't approve of something I have done.

217 T I am very concerned about my popularity.

247 T I try to act in such a way that others will accept me.

277 T I try to change things about myself that other people dislike.

22 F I can't be bothered trying to find out what others think of me.

52 F When I want to purchase something, I rarely consider other people's opinion of it.

82 F I believe in speaking my mind, even if it offends others.

112 F I do not worry about what I say when out socially.

142 F I am not concerned about how many friends I have.

172 F I seldom concern myself with how other people dress.

202 F I do what I please, not what others say I should do.

232 F I refuse to behave like everyone else just to please people.

262 F Generally, I don't concern myself with what other people think of my beliefs.

292 F What the general public thinks does not affect my standards or beliefs.

Cluster 3: Extroverted

Sociability (Soc)

Item

**T/F**

23 T My life would be miserable if I didn't know a lot of people.

53 T I enjoy group activities more than the things I do by myself.

83 T I dislike eating alone.

113 T When travelling alone, I enjoy engaging in conversation with strangers.

143 T I get lonely when I am left by myself.

173 T I would rather telephone a friend than read a magazine in my spare time.

203 T I like to meet as many new people as I can.

233 T I spend a great deal of my spare time with other people.

263 T Rather than spend an evening by myself, I would invite a neighbor in to talk.

293 T At a social event, I like to get around and talk to all the guests.

8 F I only telephone friends when there is something important to discuss.

38 F It wouldn't bother me to go for days without seeing another person.

68	F	I like working where I won't be bothered by others.
98	F	I don't particularly like to be surrounded by a group of noisy people.
128	F	I like spare time activities which allow me to get away from people.
158	F	I would prefer a quiet evening at home to attending a social event.
188	F	I am not interested in knowing a great many people.
218	F	I find it very relaxing to travel by myself.
248	F	I don't need the company of others to be happy.
278	F	Generally, I prefer to be by myself.

Social Confidence (Scf)

Item
 # T/F

9	T	I am usually quite confident when learning a new game or sport.
39	T	I rarely feel self-conscious in a strange group.
69	T	It is easy for me to strike up a conversation with someone.
99	T	I am seldom at a loss for words.
129	T	I am considered a leader in my social circle.
159	T	I enjoy stating my opinions in front of a group.
189	T	People seem to be interested in getting to know me better.
219	T	I usually try to add a little zest to a party.
249	T	I am able to talk intelligently to people in a wide variety of occupations.
279	T	I find it easy to introduce people.
24	F	I make a better follower than a leader.
54	F	I have never been a very popular person.
84	F	I am not the type of person one remembers after one meeting.
114	F	I am ill at ease when I am meeting new people.
144	F	My behavior would be quite awkward if I had to apply for a loan from a bank.
174	F	I often wish that I were more outgoing.
204	F	I seem to do more listening than talking in conversations with others.
234	F	I like to remain unnoticed when others are around.
264	F	I have trouble expressing my opinion.
294	F	I prefer to go to social functions with a group of people so as not to stand out.

Energy Level (Enl)

Item
 # T/F

25	T	I was a very active child.
55	T	I usually have several projects going at once.
85	T	I avoid spending my time just sitting around resting.
115	T	I lead a busier life than most people.
145	T	I enjoy all kinds of vigorous hobbies.
175	T	I am rarely too tired to read.

118

205	T	I like to be constantly active.
235	T	I don't like to stay in bed very long when I am sick.
265	T	I can easily work on several tasks without becoming tired.
295	T	I don't need a lot of sleep to keep up my energy.
10	F	Some days I am just too tired to do anything.
40	F	Sometimes I can't even find the energy to think.
70	F	I have no more than an average amount of energy.
100	F	I don't have the necessary stamina to participate in long, involved discussions.
130	F	Some nights I don't even have the ambition to read the newspaper.
160	F	If the working day were cut in half, I might be able to get through it without becoming exhausted.
190	F	I am not an energetic person.
220	F	I sometimes feel as if I could sleep for a week.
250	F	I do not feel I have to keep constantly on the move.
280	F	I would be more efficient if I didn't tire so easily.

Cluster 4: Opportunistic

Social Astuteness (Sas)

Item

 # T/F

11	T	I often pretend to enjoy things which I dislike when it suits my purpose.
41	T	I hold my personal feelings in check if they might interfere with my getting what I want from someone.
71	T	I feel that I have a knack for getting the most out of people.
101	T	I enjoy trying to get people to do things without letting them know I'm doing it.
131	T	I have developed a talent for getting people to talk about themselves.
161	T	Without really trying, I find that I can stop people from arguing.
191	T	I sometimes play various roles so that I appear in the best possible way to different people.
221	T	I talk about things I might need from people in terms of their own desires and preferences.
251	T	Sometimes by agreeing with someone, I can gradually get that person around to my way of thinking.
281	T	Since most people have their private dream world, you must understand this to deal with them effectively.
26	F	I don't change the way I act just to satisfy the person with whom I am dealing.
56	F	I would never try to appear less informed than I actually was about any topic.
86	F	I would not enjoy a job in which I might have to be nice to people I did not like.
116	F	When I want another person to do something for me, I usually ask for it directly, rather than proceed by indirect means.
146	F	I would never do a favor for someone just to get something I wanted in return.
176	F	I never try to guide the conversation toward certain topics.
206	F	It is difficult for me to be polite to someone I do not respect.
236	F	Flattery has never been much help to me in getting people to do things.
266	F	I often find it difficult to guess the mood of another person.
296	F	I see no useful purpose in pretending to like things that I really do not.

Risk Taking (Rkt)

Item

 # T/F

27   T   When I want something, I'll sometimes go out on a limb to get it.

57   T   I would enjoy bluffing my way into an exclusive club or private party.

87   T   If the possible reward was very high, I would not hesitate putting my money into a new business that could fail.

117   T   People have told me that I seem to enjoy taking chances.

147   T   The thought of investing in stocks excites me.

177   T   I enjoy taking risks.

207   T   Taking risks does not bother me if the gains involved are high.

237   T   I would enjoy the challenge of a project that could mean either a promotion or loss of a job.

267   T   I think I would enjoy almost any type of gambling.

297   T   In games I usually "go for broke" rather than playing it safe.

12   F   I rarely make even small bets.

42   F   If I invested any money in stocks, it would probably only be in safe stocks from large, well-known companies.

72   F   When in school, I rarely took the chance of bluffing my way through an assignment.

102   F   Skin diving in the ocean would be much too dangerous for me.

132   F   I rarely, if ever, take risks when there is another alternative.

162   F   I would prefer a stable position with a moderate salary to one with a higher salary but less security.

192   F   I consider security an important element in every aspect of my life.

222   F   I try to avoid situations that have uncertain outcomes.

252   F   I would participate only in business undertakings that are relatively certain.

282   F   I probably would not take the chance of borrowing money for a business deal even if it might be profitable.

Cluster 5: Dependable

Organization (Org)

Item

 # T/F

13   T   I often have a task finished sooner than necessary.

43   T   I prefer to complete a task before resting, rather than taking a "break" in the middle.

73   T   It is unusual for me to fall behind in my work.

103   T   My time is too valuable to be wasted unnecessarily.

133   T   I think a high degree of organization is important in anyone's life.

163   T   Before I start a task, I like to determine the most efficient way of doing it.

193   T   I do not like to leave things until the last possible moment.

223   T   I seldom misplace things.

253   T   I am very regular in my habits.

283   T   I become annoyed with people who are disorganized.

28   F   Little things usually slip my mind.

58   F   I sometimes have trouble finding things when I need them.

88   F   I prefer starting a new task without detailed plans.

118   F   I can't be bothered making lists of all the things I have to do.

148   F   I do not need a neat desk in order to work well.

178   F   I like to keep my work organized loosely, so that I am not tied down by elaborate plans.

208   F   I sometimes start to write letters without finishing them.

238   F   I don't feel it is important to make good use of every minute in the day.

268   F   When people visit me unexpectedly, I usually have to apologize for my state of disorder.

298   F   I am in such a rush in the morning that I often forget to do something.

Traditional Values (Trv)

Item
T/F

29   T   Some current fashions are too indecent to be worn in the workplace.

59   T   My values might seem a little old-fashioned by modern standards.

89   T   Cheating and lying are always wrong, no matter what the situation.

119   T   Our censorship laws have proven to be for our own good.

149   T   Reading material in company reception areas should be carefully screened and controversial material removed.

179   T   Young people would have fewer problems if they listened to their parents more.

209   T   People today don't have enough respect for authority.

239   T   Working people today don't have enough respect for management's authority.

269   T   It is wrong to spend money on things you can't afford.

299   T   Many people are too hasty in trying to change our laws.

14   F   Taking one's own life should be allowed if the circumstances justify it.

44   F   I often reject the beliefs that older people expect me to have.

74   F   People should be allowed to take certain drugs if they enjoy it and harm no one else.

104   F   The discoveries of science may someday show that many of our most cherished beliefs are wrong.

134   F   People who will never get well should have the choice of being put to death painlessly.

164   F   Married people who no longer love each other should be given a divorce.

194   F   People should be able to refuse to fight for their country without the fear of punishment.

224   F   The legal drinking age should be lowered.

254   F   I would like to see some unconventional people running major corporations.

284   F   People respect tradition more than necessary.

Responsibility (Rsy)

Item
T/F

15   T   I contribute to charity regularly.

45   T   If I accidently scratched a parked car, I would try to find the owner to pay for the repairs.

75   T   Under no circumstances would I give incorrect testimony or evidence in court.

105   T   If the conductor on a train forgot to take my ticket, I would present it anyway.

135 T I am very careful not to litter public places.

165 T I would not even be tempted to collect unemployment insurance when I could be working.

195 T People should spend a part of their leisure time working on community projects.

225 T I think that the penalty for not paying traffic fines should be severe.

255 T I would never hunt or fish out of season.

285 T If I were called for jury duty, I would serve without hesitation no matter how inconvenient it might be for me.

 30 F If I had a cold, it would not bother me to mix with other people.

 60 F I am too busy to find time to help needy people.

 90 F Sometimes it is too troublesome to do exactly what I promised I would do.

120 F I think it would be challenging to try to smuggle a small item into the country.

150 F If people choose to drink and drive, it is their own business.

180 F If I could get away with it, I would not pay taxes.

210 F I see no need for belonging to service clubs or community organizations.

240 F I collect souvenirs such as towels or glasses from hotels and restaurants I visit.

270 F Sometimes the only way to get waited on in a store is to push through to the head of the line.

300 F I see nothing wrong with having a traffic ticket "fixed."

Infrequency

True-keyed (i.e., high infrequency) items are those with low p-values on each scale, and false-keyed (i.e., low infrequency) items are those with high p-values on each scale, based on the current college normative sample (males and females combined; $N = 1,107$). Responses to items keyed false for infrequency are reflected prior to summation.

Source scale	Keyed true for infrequency		Keyed false for infrequency	
	Keyed true for content	Keyed false for content	Keyed true for content	Keyed false for content
Complexity	211	16	61	46
Breadth of Interest	287	272	227	122
Innovation	183	18	33	108
Tolerance	109	244	259	184
Empathy	185	170	95	200
Anxiety	81	186	231	6
Cooperativeness	157	112	7	232
Sociability	23	8	233	248
Social Confidence	39	234	249	294
Energy Level	295	100	55	250
Social Astuteness	281	266	131	116
Risk Taking	267	102	27	12
Organization	73	118	163	58
Traditional Values	239	284	299	134
Responsibility	225	150	135	30

Response Consistency Index

The Response Consistency Index is the within-person correlation between an individual's paired half-scores (A and B) on the 15 JPI-R scales. Each half-score on each scale is derived as the sum of the responses to five true-keyed (T) and five false-keyed (F) items, as per the scoring keys provided below. False-keyed items are reflected prior to summation.

Complexity

A		B	
T	F	T	F
61	16	1	46
91	136	31	76
121	166	151	106
181	196	211	226
241	256	271	286

Breadth of Interest

A		B	
T	F	T	F
47	2	17	32
107	92	77	62
197	122	137	152
257	182	167	212
287	242	227	272

Innovation

A		B	
T	F	T	F
3	108	33	18
93	138	63	48
123	168	153	78
183	198	213	258
243	228	273	288

Tolerance

A		B	
T	F	T	F
79	34	19	4
109	94	49	64
139	124	169	184
199	154	259	214
229	244	289	274

Empathy

A		B	
T	F	T	F
35	20	5	80
65	50	185	110
95	140	215	200
125	170	245	260
155	230	275	290

Anxiety

A		B	
T	F	T	F
81	6	21	96
111	36	51	126
201	66	141	156
261	216	171	186
291	276	231	246

Cooperativeness

A		B	
T	F	T	F
127	22	7	52
157	82	37	112
187	142	67	172
247	232	97	202
277	262	217	292

Sociability

A		B	
T	F	T	F
23	38	83	8
53	98	173	68
113	188	233	128
143	218	263	158
203	248	293	278

Social Confidence

A		B	
T	F	T	F
39	84	9	24
99	114	69	54
159	144	129	174
219	204	189	234
279	294	249	264

Energy Level

A		B	
T	F	T	F
55	10	25	40
85	70	115	160
175	100	145	190
205	130	235	220
265	280	295	250

Social Astuteness

A		B	
T	F	T	F
11	56	71	26
41	86	101	116
131	146	161	176
191	266	221	206
251	296	281	236

Risk Taking

A		B	
T	F	T	F
27	42	57	12
87	102	147	72
117	132	207	162
177	222	237	192
297	252	267	282

Organization

A		B	
T	F	T	F
43	58	13	28
73	148	103	88
193	208	133	118
223	268	163	178
253	298	283	238

Traditional Values

A		B	
T	F	T	F
29	14	59	74
89	44	119	104
149	134	179	194
209	164	269	254
239	224	299	284

Responsibility

A		B	
T	F	T	F
15	90	45	30
135	150	75	60
165	180	105	120
195	210	225	270
285	240	255	300

Institutions Contributing to the Current JPI-R College Norms

Arizona State University, Tempe, Arizona

California State University, Nordhoff, California

Clemson University, Clemson, North Carolina

Colorado State University, Fort Collins, Colorado

Columbia University, New York, New York

Florida International University, North Miami, Florida

Fresno Pacific College, Fresno, California

Memorial University of Newfoundland, St. John's, Newfoundland

Miami University, Oxford, Ohio

Northern Illinois University, DeKalb, Illinois

Oregon State University, Corvallis, Oregon

Purdue University, West Lafayette, Indiana

Rutgers University, Kingston, New Jersey

Saginaw Valley State University, University Center, Michigan

State University of New York College, Geneseo, New York

Tufts University, Medford, Massachusetts

University of Illinois, Chicago, Illinois

University of Missouri, Rolla, Missouri

University of North Carolina, Chapel Hill, North Carolina

University of Texas, Austin, Texas

University of Utah, Salt Lake City, Utah

University of Wisconsin, Madison, Wisconsin

Wheaton College, Norton, Massachusetts