DOCUMENT RESUME

ED 395 237 CG 026 982

AUTHOR Melancon, Janet G.; Thompson, Bruce
TITLE Measurement of Self-Perceptions of Jungian Psychological Types.
PUB DATE 9 Apr 96
NOTE 27p.; Paper presented at the Annual Conference of the National Council on Measurement in Education (Washington, DC, April 9-11, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Higher Education; *Personality Assessment; *Personality Measures; Personality Studies; Personality Traits; Psychological Characteristics; *Psychological Testing; *Self Concept; *Self Concept Measures
IDENTIFIERS *Myers Briggs Type Indicator

ABSTRACT

Psychological type has proven useful to myriad educational applications, including career counseling and as an assessment of learning styles. Previous studies have investigated the use of word-pairs to measure type dimensions, but prior results have consistently suggested that Judging-Perceiving (JP) preferences require sentences to measure more complex JP dynamics. The present study involved 422 subjects who completed a word-pair measure augmented with items consisting of sentences. The improved psychometric properties of scores involving both measurement strategies suggest that JP dynamics are complex, and must include more complex item forms. (Appendices present statistical analysis and the survey instrument. Contains 12 references.) (Author)

ppsdq5nc.wp1 2/24/96

MEASUREMENT OF SELF-PERCEPTIONS OF JUNGIAN PSYCHOLOGICAL TYPES

Janet G. Melancon
Loyola University

Bruce Thompson
Texas A&M University 77843-4225
and
Baylor College of Medicine

Paper presented at the annual meeting of the National Council on Measurement in Education, New York City, April 9, 1996.

Abstract

Psychological type has proven useful in myriad educational applications, including career counseling and as an assessment of learning styles. Previous studies have investigated the use of word-pairs to measure type dimensions, but our prior results have consistently suggested that Judging-Perceiving preferences require sentences to measure more complex JP dynamics. The present study involved 422 subjects who completed a word-pair measure augmented with items consisting of sentences. The improved psychometric properties of scores involving both measurement strategies suggest that JP dynamics are complex, and must include more complex item forms.

MEASUREMENT OF SELF-PERCEPTIONS OF JUNGIAN PSYCHOLOGICAL TYPES

Measures of psychological types are among the most frequently used measures of personality (cf. Thompson & Ackerman, 1994). Measures of type are used for myriad educational applications, and especially (a) in career counseling and (b) in assessing educational learning styles (Myers & McCaulley, 1985).

At least two factors account for the popularity of measures of psychological type. First, unlike many personality measures, measures of type focus on normal variations in personality, and because more people have normal as against abnormal personality, the measure may be useful with more people and in more situations than would be measures of psychopathology. Second, many educators and career counselors find that measures of type have enormous "face validity" for clients, i.e., that students/clients understand the concepts implicit in the measure, tend to agree with important aspects of type characterizations, and find the information to be useful, free of value judgments, and non-threatening.

However, this is not to suggest that measures of type have failed to provoke psychometric controversy. Paired articles debating related measurement issues have appeared, for example, in a 1989 issue of Journal of Counseling and Development (Carlson, 1989; Healy, 1989) and in a 1991 issue of Measurement and Evaluation in Counseling and Development (McCaulley, 1991; Merenda, 1991).

Measures of type are grounded in the basic precepts of Carl G.

Jung's theory of psychological functions. The theory presumes that "...much of the seemingly random variation in behavior is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use their perception and judgment" (Myers & McCaulley, 1985, p. 1).

Measures of type evaluate four dimensions: Extraversion-Introversion, Sensation-INtuition, Thinking-Feeling, and Judgment-Perception. In conventional usage, scores are computed on each dimension for each preference of the dimension (e.g., Extraversion versus INtroversion), and are then dichotomized according to which orientation is preferred. Each individual is then classified into one of the 16 types formed from all possible combinations of the four scales, e.g., ENTJ, ISTP, and ENFP.

However, Myers and McCaulley (1985) describe a pair of studies reported by Carskadon that used self-estimate of type as a validity measure. When clients were selected to choose the type description that best suited them, their tested type was chosen to a statistically significant degree more often than chance level in both studies. These findings partially corroborate anecdotal evidence that people find types to be content valid and recognize their own type once types are described to them.

But such findings also have measurement implications: It may be possible to measure types quite simply by asking subjects to respond only to adjectival or other self-description checklists. In fact, in our previous work (cf. Melancon & Thompson, 1994; Thompson & Melancon, 1995; Thompson & Stone, 1994), we have

repeatedly found across studies that reliable scores (Thompson, 1994) could be derived using self-description word-pair checklists to measure the EI, SN, and the TF dimensions. However, scores for various word-pair scales designed to measure the JP dimension have consistently been more unreliable. This replicated finding is interesting, for various reasons.

First, it is noteworthy that, unlike the other three dimensions of type, the JP construct is *implicit* (rather than explicit) within Jung's theory. Theoretically, people do have a general rank-order preference for the four mental processes or functions of Sensing, iNtuition, Thinking, and Feeling. Myers reasoned that scores on a construct she conceptualized, JP--when taken together with EI scores--would point to a person's dominant (most preferred), auxiliary, tertiary, and inferior (least preferred) psychological functions (see McCaulley, 1990; Myers & McCaulley, 1985). For example, Myers reasoned that persons with a preference for Judging most show the world in their public persona or public face either Thinking or Feeling, depending upon their preferences within the TF scale. Persons with a preference for Perceiving have either Sensing or iNtuition as the main function in their public persona, depending upon their preferences within the SN scale.

Second, the finding is interesting, because these results may shed light on the nature of the four constructs themselves. The EI, SN, and TF dimensions may be sufficiently straightforward that they may be readily measured using word-pair self-description.

However, measuring JP preferences may require using some sentences that elaborate more complex ideas or markers for a potentially more complex construct. The present study was conducted to evaluate this possibility, and the benefits of using sentences to augment word-pairs measuring psychological types.

Specifically, the study was conducted (a) to investigate the reliability of scores on a measure of type, and (b) to investigate the construct validity of scores on the measure. Of course, we took as a premise the recognition that it is scores, and not tests, which are reliable and valid, under certain circumstances and for certain purposes (Thompson, 1994).

Method

Subjects

We administered a revised version of the Personal Preferences Self-Description Questionnaire (PPSDQ), developed by the junior author, to 422 college students enrolled in a university located in the southern United States. There were more females (n_F=288; 68.2%) than males (n_M=134; 31.8%) in our sample. The mean age of the sample was 24.40 (SD=9.55). Ethnic groups within the sample included: Whites (n=252; 59.7%), African-Americans (n=78; 18.5%), and Hispanics (n=56; 13.3%). This sample was reasonably similar to our previous samples, so results should be comparable across studies.

Instrumentation

The revised PPDSQ developed by the junior author consists of 58 scored word-pair items and 20 scored sentence items posited to

mark each of the four psychological types. Roughly half the PPSDQ items measuring each of the four constructs were reversed in their wording so as to minimize response set. For example, item 1 ("Quiet-Expressive") measures EI, but the Introversion adjective ("Quiet") is presented first within the pair. Item 6 ("Social-Private") also measures EI, but the Extraversion adjective ("Social") is presented first within this word pair.

Each word pair is presented as a semantic differential scale. A Likert scale ("1" to "7") is presented between each pair of words, and subjects circle the number that represents which word best describes them. Thus, unlike the Myers-Briggs Type Indicator which uses an "ipsative" or forced-choice response format, the PPDSQ uses a "normative" or non-forced-choice response format.

The 20 sentence items also invoke a "1" to "7" Likert-scale response format. These sentence items were predominantly used to derive scores on the JP scale (v_{JP}=14), though some sentences were also used to measure other scales (v_{EI}=2, v_{SN}=4).

Results

Tables 1 through 4 present item and reliability analyses for scores on the word-pair and the sentence items associated with each of the four scales. The scores on reverse-scored items (having negative signs in their labels in the tables) were reverse scored for the purposes of these analyses. For scores on the full scales (both item types), the alpha coefficients were: .89 for EI, .83 for SN, .86 for TF, and .87 for JP.

INSERT TABLES 1 THROUGH 4 ABOUT HERE.

Table 5 presents the factor pattern/structure coefficients from a principal components analysis of scores from the 78 items. The reported structur.. was rotated to the varimax criterion.

INSERT TABLE 5 ABOUT HERE.

Table 6 presents Pearson product-moment correlation coefficients between pairs of scale scores. The scales beginning with "A", "S", or "X" were computed by adding the scores on only the word-pair items, only the sentence items, or the combinations of these items, respectively. The scales labelled with the prefix, "FSCOR", were orthogonal factor scores for the word pair items only. The scales labelled with the prefix, "FSCORE", were orthogonal factor scores for all 78 items.

INSERT TABLE 6 ABOUT HERE.

Discussion

The present study was undertaken (a) to investigate the reliability of scores on a measure of type, and (b) to investigate the construct validity of scores on the measure. The results in Tables 1 through 4 suggest that the PPSDQ can yield reasonably reliable scores. The alpha coefficients for scales using both item types ranged from .83 to .89. The use of the sentence items did improve score reliability, particularly on the JP scale, on which

alpha increased from .76 to .87, as reported in Table 4.

The factor analytic results presented in Table 5 bear upon construct validity (Thompson & Daniel, 1996). The items generally correlated with the expected factors, and the items that were reversed in their content had opposite signs from their companion items, as expected.

The Table 6 results also bear upon the construct validity of PPSDQ scores. Consistent with previous research (cf. Melancon & Thompson, 1994; Thompson & Melancon, 1995; Thompson & Stone, 1994), the SN ("XSENSINT") and JP ("XJUDGPER") scales tended to be fairly highly correlated ($r^2 = +.6186^2 = 38.3\%$), while scores on the other scales were considerably less correlated.

As can be seen in the lower right section of the Table 6 matrix, orthogonal factor scores and summated scale scores from the 78 items were highly correlated, as expected (+.9677, +.8821, -.9528, -.8810). Of course, the signs of the coefficients are arbitrary, since the scaling direction is arbitrary and can be reversed at will. The finding that the SN and JP scale scores are somewhat less correlated with their associated factors (+.8821 and -.8810) reflects the fact that these scales are somewhat correlated when summated scores are computed, while the scales are uncorrelated when an orthogonal rotation is employed; this discrepancy somewhat attenuates these correlations. Overall, these results suggest that the factor analytic results generalize to the use of the summated scale scores computed by adding scores on appropriate items, after reverse scoring selected items.

In summary, our results suggest that a measure that can be quickly administered, and consisting primarily of self-descriptive word pairs, can be used to yield scores with reasonable psychometric properties. Potential practical uses have already been documented using related measures, and include both career counseling and assessment of learning styles. Our results across studies also suggest that preferences for Judging or Perceiving apparently can not be fully assessed using only word pairs. These concepts seem to require measurement using sentences to elaborate more complex ideas. It appears that JP dynamics are more complex than the components of related dimensions of Jungian types.

References

Carlson, J.G. (1989). Affirmative: In support of researching the Myers-Briggs Type Indicator. Journal of Counseling and Development, 67, 484-486.

Healy, C.C. (1989). Negative: The MBTI: Not ready for routine use in counseling. Journal of Counseling and Development, 67, 487-488.

McCaulley, M.H. (1990). The Myers-Briggs Type Indicator: A measure for individuals and groups. Measurement and Evaluation in Counseling and Development, 22, 181-195.

McCaulley, M.H. (1991). Additional comments regarding the Myers-Briggs Type Indicator: A response to comments. Measurement and Evaluation in Counseling and Development, 23, 182-185.

Melancon, J.G., & Thompson, B. (1994, November). An adjectival self-description checklist evaluating Myers-Briggs Type Indicator (MBTI) scores: Concurrent and construct score validity. Paper presented at the annual meeting of the Mid-South Educational Research Association, Nashville, TN. (ERIC Document Reproduction Service No. ED 379 339)

Merenda, P.F. (1991). Additional comments regarding the Myers-Briggs Type Indicator. Measurement and Evaluation in Counseling and Development, 23, 179-181.

Myers, I.B. & McCaulley, M.H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto, CA: Consulting Psychologists Press.

Thompson, B. (1994). Guidelines for authors. Educational and

Psychological Measurement, 54, 837-847.

Thompson, B., & Ackerman, C. (1994). Review of the Myers-Briggs Type Indicator. In J. Kapes, M. Mastie & E. Whitfield (Eds.), A counselor's guide to career assessment instruments (3rd ed., pp. 283-287). Alexandria, VA: American Counseling Association.

Thompson, B., & Daniel, L.G. (1996). Factor analytic evidence for the construct validity of scores: An historical overview and some guidelines. Educational and Psychological Measurement, 56, 213-224.

Thompson, B., & Melancon, J. (1995, January). Measurement integrity of scores from a self-description checklist evaluating Myers-Briggs Type Indicator (MBTI) types: A confirmatory factor analysis. Paper presented at the annual meeting of the Southwest Educational Research Association, Dallas. (ERIC Document Reproduction Service No. ED 380 487)

Thompson, B., & Stone, E. (1994, January). Concurrent validity of scores from an adjectival self-description checklist in relation to Myers-Briggs Type Indicator (MBTI) scores. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, TX. (ERIC Document Reproduction Service No. ED 367 706)

Table 1
Item Analyses and α's for the EI Scale
(n=422; v= (15+2) = 17)

Word-Pairs (v=15)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
46+MIXERLON	46.3072	162.9388	.7371	.8558
06+SOCPRIVA	45.7787	163.9154	.6675	.8592
41-XINTREXT	46.0164	165.6958	.6509	.8602
66-XSILENGA	45.5228	169.5216	.6183	.8622
26+PERSNSHY	46.4185	163.0599	.6886	.8580
01-XQUIETEX	46.1958	168.2592	.6236	.8618
70+GREGARTI	45.8948	175.1248	.5393	.8662
54+CONGRECL	46.3214	176.8980	.5353	.8666
16+FRIEDIST	47.1413	171.4145	.6309	.8621
58-XSOLIAMI	46.1792	175.3106	.5443	.8660
62+EXUBSERE	45.4304	180.5239	.3443	.8748
50-XSTILLAN	46.4495	178.9529	.4338	.8706
11-XREFLECA	45.9043	183.2189	.2627	.8788
36+APPROACH	46.0275	177.3098	.3560	.8756
31-XTERSEWO	45.6081	184.8350	.2604	.8778

α = 0.8744

Word Pairs Plus Sentences (v= (15+2) = 17)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
46+MIXERLON	54.0536	230.7477	.7292	.8745
06+SOCPRIVA	53.5252	231.8642	.6625	.8768
41-XINTREXT	53.7628	233.3859	.6579	.8771
66-XSILENGA	53.2692	237.4924	.6348	.8784
26+PERSNSHY	54.1650	228.8590	.7237	.8743
01-XQUIETEX	53.9422	235.9402	.6411	.8780
70+GREGARTI	53.6413	243.5982	.5694	.8810
54+CONGRECL	54.0678	247.3888	.523[illegible]	.8827
16+FRIEDIST	54.8877	240.7923	.6223	.8792
58-XSOLIAMI	53.9256	245.2113	.5406	.8820
62+EXUBSERE	53.1768	251.8919	.3325	.8888
50-XSTILLAN	54.1960	249.6604	.4277	.8854
11-XREFLECA	53.6508	254.6188	.2616	.8914
36+APPROACH	53.7740	248.0550	.3484	.8892
31-XTERSEWO	53.3545	256.4881	.2583	.8907
SHY76+	52.8593	232.1982	.5515	.8818
XEASTA82-	53.6294	231.2276	.5753	.8807

α = 0.8882

Table 2
Item Analyses and α's for the SN Scale
(n=422; v= (14+4) = 18)

Word-Pairs (v=14)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
42+TRADCREA	57.4319	104.7345	.5256	.7665
12+PRECIMAG	57.5219	105.6919	.5520	.7646
47-XINVENOR	58.1947	106.8768	.4778	.7712
59+PLANVISI	57.5930	108.2788	.5087	.7691
18+CONCLEXP	57.0599	112.3510	.4682	.7740
07-XINSIGHT	57.6573	108.5126	.4826	.7712
55-XDIVERCO	57.6357	109.5077	.4249	.7762
02+REALINTU	58.6120	115.3035	.2650	.7899
63-XDIVERPR	57.7945	107.3350	.5137	.7683
71-XCONCEPR	58.9769	118.1211	.1984	.7945
51+DIRECTIN	57.7577	113.8002	.3506	.7823
67+PRACTHEO	58.9762	120.6483	.1359	.7982
27-XVARIREP	56.9580	111.5113	.4171	.7770
49-XINQUICR	57.5659	113.6733	.3668	.7810

α = 0.7904

Word Pairs Plus Sentences (v= (14+4) = 18)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
42+TRADCREA	76.4780	175.1519	.5512	.8172
12+PRECIMAG	76.5680	176.8678	.5652	.8168
47-XINVENOR	77.2408	177.9965	.5022	.8202
59+PLANVISI	76.6391	179.5950	.5378	.8187
18+CONCLEXP	76.1059	184.9843	.4942	.8219
07-XINSIGHT	76.7034	180.9233	.4863	.8213
55-XDIVERCO	76.6818	182.9135	.4136	.8253
02+REALINTU	77.6581	189.6872	.2707	.8327
63-XDIVERPR	76.8405	180.3983	.4925	.8210
71-XCONCEPR	78.0230	193.2391	.2047	.8355
51+DIRECTIN	76.8037	187.7293	.3543	.8281
67+PRACTHEO	78.0223	195.3793	.1689	.8365
27-XVARIREP	76.0041	184.8021	.4202	.8249
49-XINQUICR	76.6120	187.4780	.3722	.8272
XLEFAC85-	77.9353	182.2210	.3817	.8275
INVENT88+	76.1344	185.1409	.4376	.8241
XMECHA91-	76.6707	177.5696	.5135	.8196
PERSPE94+	75.5472	186.6461	.4641	.8234

α = 0.8328

Table 3
Item Analyses and α's for the TF Scale
(n=422; v=21)

Word-Pairs (v=21)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
48+FACTCOMP	90.7987	263.0000	.6081	.8473
60-XTENDERR	91.2196	262.8956	.5907	.8478
52-XFEELTHI	91.3200	262.2129	.5488	.8491
44-XKINDANA	90.7300	264.0548	.5515	.8492
72+STRICTFO	90.4480	268.9010	.5260	.8506
09+DISPASEM	90.0771	272.6244	.4972	.8520
64+SKEPTRUS	91.0333	266.2309	.5087	.8509
04-XEMPATHL	92.1944	272.2425	.4291	.8539
56+LOGICHUM	91.1850	264.0402	.5327	.8499
73-XLIGHTHE	90.6802	271.5322	.4593	.8529
43-XGULLSUS	92.1745	276.8564	.3394	.8571
24-XCARICOO	90.2134	273.3288	.4454	.8534
65-XACCEPDI	90.4361	270.0550	.4732	.8523
30-XRECEPTS	91.3271	271.7286	.3925	.8554
45+EVALNONJ	91.5546	272.5927	.3918	.8553
34-XSYMPATH	92.0049	278.8865	.2607	.8604
19+JUSTHARM	91.5854	278.4583	.2295	.8628
25+EVALOPEN	90.9243	270.4270	.4369	.8536
39+PRINCIPL	90.8324	270.1960	.4065	.8549
29+IMPERPER	90.0309	274.9712	.4453	.8536
32-XSENSUAL	90.9859	279.6040	.2520	.8607

α = 0.8596

Table 4
Item Analyses and α's for the JP Scale
(n=422; v= (8+14) = 22)

Word-Pairs (v=8)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
XFLEXORG	28.6003	52.4473	.5023	.7334
PROMPTFR	28.2867	49.3664	.5737	.7189
XRANDSEQ	28.7331	53.7303	.4878	.7364
TIMELYRE	28.3018	53.5389	.4570	.7417
XIMPETTA	29.1347	56.3107	.4472	.7440
XIMPULDE	28.3137	56.0049	.4184	.7480
RESPADAP	29.0507	56.2557	.3233	.7660
XCAREFRE	28.2796	52.4979	.5101	.7321

α = 0.7653

Word Pairs Plus Sentences (v= (8+14) = 22)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	"Corrected" Item-Total Correlation	α if Item Deleted
10-XFLEXORG	82.6412	333.0417	.5256	.8595
53+PROMPTFR	82.3276	330.1638	.5207	.8595
17-XRANDSEQ	82.7740	335.1699	.5268	.8596
61+TIMELYRE	82.3427	336.6596	.4682	.8614
57-XIMPETTA	83.1756	344.3942	.4264	.8629
20-XIMPULDE	82.3546	342.9663	.4184	.8631
05+RESPADAP	83.0916	343.9618	.3352	.8660
40-XCAREFRE	82.3205	337.5618	.4581	.8618
XPLAN74-	83.7669	333.6880	.5446	.8590
HOLIDA75+	82.8451	336.1673	.4781	.8611
NOORGI77+	82.3371	333.9313	.4579	.8618
XSTFRE78-	81.8996	338.0407	.4991	.8606
XMALIS80-	82.8048	339.5531	.3642	.8654
PRESSU81+	82.8262	336.6466	.3886	.8647
GOFLOW83+	82.5679	333.0329	.5272	.8594
XHATER84-	83.1010	342.8979	.3354	.8662
XROUTI86-	82.9849	338.4054	.4811	.8611
CHANGE87+	81.3167	347.0593	.3778	.8643
LASTMI89+	82.6413	335.2808	.4514	.8620
XHAIMP90-	82.5743	343.3502	.3972	.8637
XONTIM92-	84.1138	342.3048	.4048	.8635
NOORDR93+	84.1532	340.4417	.4671	.8616

α = 0.8677

Table 5
Varimax-Rotated Factor Pattern/Structure Coefficients
(n=422; v=(15+2) + (14+4) + (21+0) + (8+14) = 78)

Item	Factor I	II	III	IV
46+MIXERLON	.28046	.74260	-.04213	.02103
06+SOCPRIVA	.20020	.69839	.02369	.13026
41-INTREXTR	-.11265	-.69764	.07339	-.02661
66-SILENGAB	-.05836	-.68699	.02056	-.13612
26+PERSNSHY	.09475	.76056	-.12857	.07449
01-QUIETEXP	.02739	-.69593	.26139	-.08643
70+GREGARTI	-.01109	.62637	-.16788	.09635
54+CONGRECL	.30842	.55401	.06341	-.03038
16+FRIEDIST	.37990	.62385	-.08677	-.04040
58-SOLIAMIC	-.23793	-.56421	.09587	.01981
62+EXUBSERE	-.05629	.41045	-.04563	.01744
50-STILLANI	-.13923	-.43663	.29252	-.04526
11-REFLECAC	.08968	-.38344	-.08169	.06111
36+APPROACH	.24216	.41059	.20738	-.02620
31-TERSEWOR	-.07405	-.28089	.09283	-.00874
SHY76+	-.13588	.64044	-.13126	.04851
EASTAL82-	-.06621	-.61469	.12065	-.01191
42+TRADCREA	-.11845	-.23947	.61733	-.04996
12+PRECIMAG	-.16994	-.14679	.57903	-.17360
47-INVENORG	.04935	.11283	-.45429	.43815
59+PLANVISI	-.20058	-.05369	.54291	-.25493
18+CONCLEXP	-.15304	-.09284	.58063	-.03120
07-INSIGHTS	.31611	.05949	-.42891	.21337
55-DIVERCON	.14323	.11821	-.46382	.13649
02+REALINTU	-.01105	-.01340	.30739	-.07961
63-DIVERPRE	.26794	.21293	-.45671	.21555
71-CONCEPRE	-.03236	-.08477	-.21986	.07300
51+DIRECTIN	.07426	-.04129	.43507	-.09804
67+PRACTHEO	.01582	.11257	.22282	-.05326
27-VARIREPI	.18578	.28395	-.42269	.11034
49-INQUICRI	.33057	.11417	-.33723	.06575
LEFACT85-	.00969	-.00670	-.35994	.29856
INVENT88+	.15337	-.02102	.58615	-.08341
MECHAN91-	.11739	.11558	-.55434	.11760
PERSPE94+	-.14487	-.13138	.56416	.03891
48+FACTCOMP	-.63631	-.06302	.23929	-.04341
60-TENDERRA	.64031	-.02652	-.09498	-.00738
52-FEELTHIN	.63418	.04056	.02364	.03372
44-KINDANAL	.64713	.11896	-.03512	-.04039
72+STRICTFO	-.59951	.05534	.13930	-.05512
09+DISPASEM	-.50507	-.15948	.07655	-.01395
64+SKEPTRUS	-.61125	-.09467	-.11223	-.07145
04-EMPATHLO	.47635	-.07416	-.07079	.05984

56+LOGICHUM	-.54886	-.07968	.16631	-.10679
73-LIGHTHEA	.50220	.12148	-.11953	.09064
43-GULLSUSP	.41733	.06785	.16276	.10735
24-CARICOOL	.51881	.12163	.04028	-.13797
65-ACCEPDIS	.51983	.14271	-.12403	-.00075
30-RECEPTSE	.42089	.13326	-.05196	.11407
45+EVALNONJ	-.45665	.09755	.24161	-.08326
34-SYMPATHY	.31175	-.04627	.07649	.13271
19+JUSTHARM	-.25090	.10566	.09682	-.11950
25+EVALOPEN	-.46462	-.13154	.08933	-.10260
39+PRINCIPL	-.40281	-.15294	.09693	-.15202
29+IMPERPER	-.48734	-.25625	.15269	.05147
32+SENSUALI	.29410	.09693	.05172	-.00337
10-FLEXORGA	.23515	.04103	-.30647	.46109
53+PROMPTFR	-.23035	-.02361	.45732	-.37256
17-RANDSEQU	.17651	.07205	-.28826	.48231
61+TIMELYRE	-.30258	.03696	.23289	-.40981
57-IMPETTAS	.15942	-.01159	-.24760	.39349
20-IMPULDEL	.14246	.16899	-.34616	.30332
05+RESPADAP	.00092	.04291	.25643	-.36288
40-CAREFREE	.51159	.02003	-.33711	.29181
PLAN74-	.13897	-.02891	-.10124	.61450
HOLIDA75+	-.09751	.05665	.15496	-.50774
NOORGI77+	-.15281	-.01603	.19977	-.45237
STFREE78-	.28299	.15350	-.13934	.47959
MALIST80-	.00218	-.03689	-.09431	.44512
PRESSU81+	.06631	-.11483	-.12464	-.60706
GOFLOW83+	-.21895	-.02288	.20106	-.51478
HATERU84-	-.15709	.07055	.02924	.54422
ROUTIN86-	.00701	.13436	-.39911	.41084
CHANGE87+	.02615	-.18485	.53036	-.19221
LASTMI89+	.12410	-.10985	.05911	-.59678
HAIMPU90-	.03943	.21354	-.12736	.42963
ONTIME92-	.10122	-.14479	-.11130	.49231
NOORDR93+	-.03788	-.03302	.09033	-.56342

Note. Word-pair items begin with a number, while sentence items do not. Items that are reverse scored have a minus sign in their label, while the remaining items have a plus sign in their label.

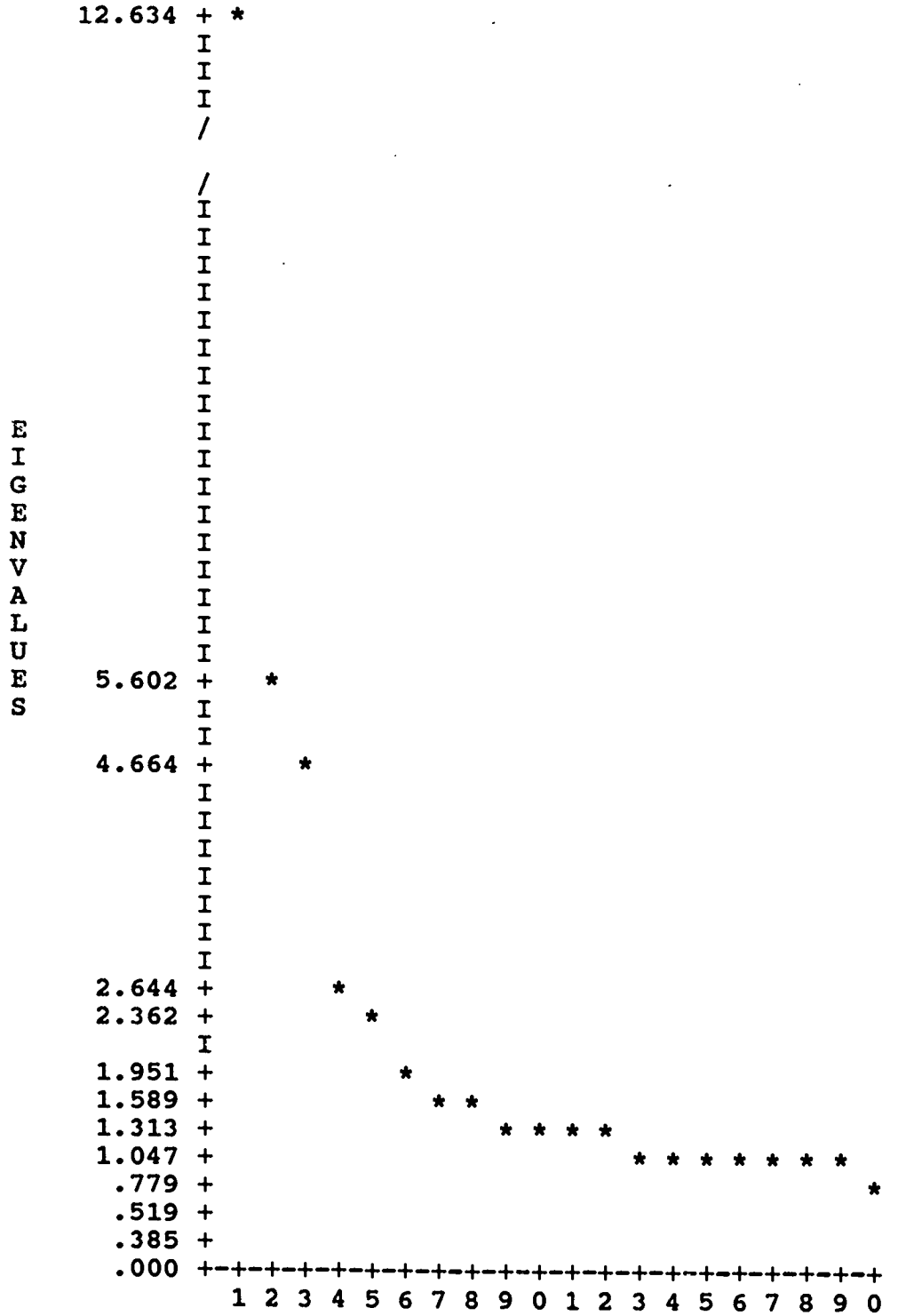
Table 6
Correlation Coefficients for Scale and Factor Scores
Computed for Word-Pair Items, For Sentence Items, and for their Combinations
(n=422; v=(15+2) + (14+4) + (21+0) + (8+14) = 78)

	AINTREXT	ASENSINT	ATHINFEE	AJUDGPER	SINTREXT	SSENSINT	SJUDGPER	XINTEXTR	XSENSINT	XTHINFEE	XJUDGPER
AINTREXT	1.0000										
ASENSINT	-.3315**	1.0000									
ATHINFEE	-.3273**	.3871**	1.0000								
AJUDGPER	-.2188**	.6691**	.4315**	1.0000							
SINTREXT	.6303**	-.2267**	-.0988*	-.1117*	1.0000						
SSENSINT	-.1807**	.6385**	.1979**	.4243**	-.2238**	1.0000					
SJUDGPER	-.1716**	.4923**	.2282**	.6363**	-.1382**	.4036**	1.0000				
XINTEXTR	.9865**	-.3307**	-.3002**	-.2103**	.7489**	-.2014**	-.1756**	1.0000			
XSENSINT	-.3140**	.9745**	.3629**	.6512**	-.2439**	.7948**	.5058**	-.3195**	1.0000		
XTHINFEE	-.3273**	.3871**	1.0000	.4315**	-.0988*	.1979**	.2282**	-.3002**	.3629**	1.0000	
XJUDGPER	-.2090**	.6172**	.3382**	.8558**	-.1406**	.4527**	.9436**	-.2080**	.6186**	.3382**	1.0000
FSCOR1	.1940**	-.1402**	-.9448**	-.2355**	-.0039	-.0271	-.0607	.1648**	-.1185*	-.9448**	-.1417**
FSCOR2	-.1513**	.8572**	.2396**	.8078**	-.1028*	.5691**	.5851**	-.1508**	.8417**	.2396**	.7390**
FSCOR3	.9599**	-.2111**	-.1225*	-.0504	.6431**	-.1104*	-.0752	.9550**	-.1986**	-.1225*	-.0720
FSCOR4	.0569	.2562**	.1002*	.2667**	-.0226	.2150**	.1359**	.0438	.2646**	.1002*	.2056**
FSCORE1	.2114**	-.2511**	-.9528**	-.3585**	-.0411	-.0439	-.0864	.1718**	-.2108**	-.9528**	-.2118**
FSCORE2	.9534**	-.1838**	-.1209*	-.0448	.7297**	-.0915	-.0997*	.9677**	-.1716**	-.1209*	-.0860
FSCORE3	-.0966*	.8398**	.1212*	.5048**	-.1465**	.7548**	.2534**	-.1133*	.8821**	.1212*	.3965**
FSCORE4	.0542	-.2822**	-.1030*	-.6237**	.0352	-.1948**	-.9147**	.0537	-.2793**	-.1030*	-.8810**

Note. Scale scores with a prefix of "FSCOR" were orthogonal factor scores. Scale scores with a prefix of "A" were computed using only *word-pair* items. Scale scores with a prefix of "S" were computed using only *sentence* items. Scale scores with a prefix of "X" were computed using both *word-pair and sentence* items.

* p < .05 ** p < .01

Figure 1
Scree Plot for Trace Prior to Rotation
(n=422; v=(15+2) + (14+4) + (21+0) + (8+14) = 78)



Personal Preferences Self-Description Questionnaire (PPSDQ)

PART A.

Instructions. *Circle the one number on each scale which best indicates which one of the adjectives or nouns in each item is most appealing to you personally. There are no wrong or right answers; each person has different preferences and makes different choices. Some choices will be difficult, but it is important that you answer every item.*

Example

E1. Popularity 1 2 3 4 (5) 6 7 Happiness

This person had a slight preference for happiness over popularity.

1.	Quiet	1	2	3	4	5	6	7	Expressive
2.	Realistic	1	2	3	4	5	6	7	Intuitive
3.	Naive	1	2	3	4	5	6	7	Unbelieving
4.	Empathy	1	2	3	4	5	6	7	Logic
5.	Responsible	1	2	3	4	5	6	7	Adaptable
6.	Social	1	2	3	4	5	6	7	Private
7.	Insightful	1	2	3	4	5	6	7	Systematic
8.	Arbitrate	1	2	3	4	5	6	7	Listen
9.	Dispassionate	1	2	3	4	5	6	7	Emotional
10.	Flexible	1	2	3	4	5	6	7	Organized
11.	Reflective	1	2	3	4	5	6	7	Active
12.	Precise	1	2	3	4	5	6	7	Imaginative
13.	Hear	1	2	3	4	5	6	7	Rule
14.	Subjective	1	2	3	4	5	6	7	Objective
15.	Decisive	1	2	3	4	5	6	7	Curious

16.	Friendly	1	2	3	4	5	6	7	Distant
17.	Random	1	2	3	4	5	6	7	Sequential
18.	Conclude	1	2	3	4	5	6	7	Explore
19.	Justice	1	2	3	4	5	6	7	Harmony
20.	Impulsive	1	2	3	4	5	6	7	Deliberate
21.	Deep	1	2	3	4	5	6	7	Broad
22.	Enjoyment	1	2	3	4	5	6	7	Anticipation
23.	Receive	1	2	3	4	5	6	7	Decide
24.	Caring	1	2	3	4	5	6	7	Cool
25.	Evaluative	1	2	3	4	5	6	7	Open
26.	Personable	1	2	3	4	5	6	7	Shy
27.	Variety	1	2	3	4	5	6	7	Repetition
28.	Appraise	1	2	3	4	5	6	7	Savor
29.	Impersonal	1	2	3	4	5	6	7	Personal
30.	Receptive	1	2	3	4	5	6	7	Selective
31.	Terse	1	2	3	4	5	6	7	Wordy
32.	Sensual	1	2	3	4	5	6	7	Innovative
33.	Observe	1	2	3	4	5	6	7	Assess
34.	Sympathy	1	2	3	4	5	6	7	Fairness
35.	Judging	1	2	3	4	5	6	7	Perceiving
36.	Approachable	1	2	3	4	5	6	7	Mysterious
37.	Global	1	2	3	4	5	6	7	Meticulous
38.	Ratings	1	2	3	4	5	6		Information
39.	Principles	1	2	3	4	5	6	7	People
40.	Carefree	1	2	3	4	5	6	7	Demanding
41.	Introvert	1	2	3	4	5	6	7	Extrovert
42.	Traditional	1	2	3	4	5	6	7	Creative
43.	Gullible	1	2	3	4	5	6	7	Suspicious

44.	Kind	1	2	3	4	5	6	7	Analytical
45.	Evaluative	1	2	3	4	5	6	7	Nonjudgmental
46.	Mixer	1	2	3	4	5	6	7	Loner
47.	Inventive	1	2	3	4	5	6	7	Organized
48.	Factual	1	2	3	4	5	6	7	Compassionate
49.	Inquisitive	1	2	3	4	5	6	7	Critical
50.	Still	1	2	3	4	5	6	7	Animated
51.	Directed	1	2	3	4	5	6	7	Ingenious
52.	Feeling	1	2	3	4	5	6	7	Thinking
53.	Prompt	1	2	3	4	5	6	7	Free-spirited
54.	Congenial	1	2	3	4	5	6	7	Reclusive
55.	Diversity	1	2	3	4	5	6	7	Consistency
56.	Logical	1	2	3	4	5	6	7	Humane
57.	Impetuous	1	2	3	4	5	6	7	Task-oriented
58.	Solitary	1	2	3	4	5	6	7	Amicable
59.	Planful	1	2	3	4	5	6	7	Visionary
60.	Tender	1	2	3	4	5	6	7	Rational
61.	Timely	1	2	3	4	5	6	7	Relaxed
62.	Exuberant	1	2	3	4	5	6	7	Serene
63.	Diverse	1	2	3	4	5	6	7	Precise
64.	Skeptical	1	2	3	4	5	6	7	Trusting
65.	Accepting	1	2	3	4	5	6	7	Discriminating
66.	Silent	1	2	3	4	5	6	7	Gabby
67.	Practical	1	2	3	4	5	6	7	Theoretical
68.	Benevolent	1	2	3	4	5	6	7	Impartial
69.	Picky	1	2	3	4	5	6	7	Inquiring
70.	Gregarious	1	2	3	4	5	6	7	Timid
71.	Conceptual	1	2	3	4	5	6	7	Real

72. Strict 1 2 3 4 5 6 7 Forgiving

73. Lighthearted 1 2 3 4 5 6 7 Prudent

PART B.

Instructions. Circle the one number on the scale below each item to indicate how much you agree or disagree with each statement. There are no wrong or right answers; each person has different preferences and makes different choices. Some choices will be difficult, but it is important that you answer every item.

Example

E2. I like ice cream.

Strongly Disagree 1 2 3 4 5 (6) 7 Strongly Agree

This person somewhat agreed that he or she likes ice cream.

74. I prefer to plan ahead regarding what I will do, whenever possible.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

75. My favorite holidays are unscheduled, and I just take things as they come.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

76. Whether or not others can see it, I'm actually a shy person.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

77. Many of the best things in life are done without any organization.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

78. I like to structure my free time, so that there are fewer surprises.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

79. I believe that wisdom is more important than common sense.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

80. I enjoy making lists.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

81. I like the pressures of doing tasks at the last minute.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

82. I find it easy to talk to other people, even people I haven't met before.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

83. My preferred style of working is to just go with the flow.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

84. I hate doing rush jobs.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

85. I prefer learning subjects involving facts rather abstract theories.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

86. I find routines comforting.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

87. Change is what makes life interesting.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

88. I like the idea of inventing new things.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

89. The pressures of last minute tasks are actually kind of fun.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

90. I prefer not to be in situations where I have to be impulsive.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

91. I'm more of a "mechanic" than I am an "idea person."

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

92. I try to be on time, and I prefer others to be on time too.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

93. I find order and neatness irritating.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

94. I like to look at things from many different perspectives.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree