Technical Brief for the CPI 260® INSTRUMENT

CPP Research Department

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Contents

Tables

Acknowledgments

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Introduction

The CPI 260 instrument is a 260-item omnibus assessment of normal personality. It is essentially a short form of the *California Psychological Inventory*™ (CPI™) instrument (Gough, 1957, 1987; Gough & Bradley, 1996), which has been available for almost 50 years and has an established research base of nearly 2,000 citations (Gough, 2002). The CPI 260 and the CPI instruments are based on the same basic normative sample of 6,000 men and women (see Gough & Bradley, 1996).

The CPI 260 instrument was developed in order to make the exceptional history, validity, and reliability of the CPI instrument available to more people and to a greater range of applications. The 260 items of the CPI 260 instrument were carefully selected to meet the demands of human resources managers, organizational development consultants, training and development professionals, and executive coaches. The real benefit of the CPI 260 instrument is that it delivers 29 CPI scales, including the 20 folk scales and the 3 Vector scales, in an assessment that requires 40 percent less time to complete. Table 1 lists the 29 CPI scales included in the CPI 260 instrument.

The primary application for the CPI 260 instrument is intended to be in the domain of work and organizational life. Updated language, revised scale names, and new interpretive materials will encourage use in today's organizations. Some practitioners may find the instrument to be useful in broader applications of personal development, but it is not intended for clinical assessment.

TABLE 1. CPI™ AND CPI 260® INSTRUMENT SCALES

CPI 260® Scales	CPI® Scales	Description (measure of)
Dominance (Do)	Dominance (Do)	Prosocial interpersonal power and influence
Capacity for Status (Cs)	Capacity for Status (Cs)	Ambition for challenge and social status
Sociability (Sy)	Sociability (Sy)	Social participation
Social Presence (Sp)	Social Presence (Sp)	Poise and comfort with attention and recognition
Self-acceptance (Sa)	Self-acceptance (Sa)	Sense of personal worth and self-confidence
Independence (In)	Independence (In)	Self-sufficiency and self-directedness
Empathy (Em)	Empathy (Em)	Capacity to understand and respond to others' needs
Responsibility (Re)	Responsibility (Re)	Conscientiousness and follow-through
Social Conformity (So)	Socialization (So)	Conformance with social norms and customs
Self-control (Sc)	Self-control (Sc)	Cautiousness and self-regulation
Good Impression (Gi)	Good Impression (Gi)	Tact and positive self-presentation
Communality (Cm)	Communality (Cm)	Conventionality of behavior and attitudes
Well-being (Wb)	Well-being (Wb)	Overall sense of health and optimism
Tolerance (To)	Tolerance (To)	Open-mindedness and respect for others
Achievement via Conformance (Ac)	Achievement via Conformance (Ac)	Motivation within organized settings
Achievement via Independence (Ai)	Achievement via Independence (Ai)	Motivation within unstructured settings
Conceptual Fluency (Cf)	Intellectual Efficiency (Ie)	Comfort with intellectual and conceptual matters
Insightfulness (Is)	Psychological Mindedness (Py)	Analytical insight into the motivations of others
Flexibility (Fx)	Flexibility (Fx)	Adaptability and comfort with change
Sensitivity (Sn)	Femininity/Masculinity (F/M)	Tough- versus tender-mindedness
Participating/Private (v.1)	Externality/Internality (v.1)	Extraversion versus introversion
Approving/Questioning (v.2)	Norm-doubting/Norm-favoring (v.2)	Rule-following versus rule-questioning
Fulfillment (v.3)	Ego-Integration (v.3)	Fulfillment of personal potential
Managerial Potential (Mp)	Management Potential (Mp)	Inclination for supervisory responsibilities
Work Orientation (Wo)	Work Orientation (Wo)	Sense of dedication to work
Creative Temperament (Ct)	Creative Temperament (Ct)	Individualization and capacity for innovativeness
Leadership (Lp)	Leadership (Lp)	Initiative and effectiveness in leading others
Amicability (Ami)	Amicability (Ami)	Cooperation and friendliness
Law Enforcement Orientation (Leo)	Law Enforcement Orientation (Leo)	Conventional and practical values

CPI 260® Scales

The 29 scales (see Table 1) on the CPI 260 instrument are organized into 20 folk scales, 3 structural scales, and 6 special purpose scales. The folk scales are further grouped into four broad categories or classes based on their interpretive meanings. The structural scales define the personality model underlying the instrument. The special purpose scales add discrimination for specific applications.

FOLK SCALES

The first class of folk scales measures interpersonal aspects of the person, such as self-confidence, poise, ascendancy, and social effectiveness. The seven scales are Dominance (Do), Capacity for Status (Cs), Sociability (Sy), Social Presence (Sp), Self-acceptance (Sa), Independence (In), and Empathy (Em). Scores consistently above 50 on these scales suggest outgoing, socially competent individuals. Lower scores are indicative of a more socially reticent, nonassertive style.

The second class of scales measures internal values and normative expectations like maturity, personal values, self-control, and sense of responsibility. The seven scales are Responsibility (Re), Social Conformity (So), Self-control (Sc), Good Impression (Gi), Communality (Cm), Well-being (Wb), and Tolerance (To). Scores consistently above 50 on these scales suggest a cautious, controlled individual. Lower scores are indicative of a more carefree, action-oriented individual.

The third class of scales measures achievement needs and cognitive tendencies including motivation, persistence, and organization. The three scales are Achievement via Conformance (Ac), Achievement via Independence (Ai), and Conceptual Fluency (Cf). High scores above 50 on these three scales suggest a driven person with superior ability to access his or her intellectual resources. Lower scores are indicative of a reluctant individual with less ability to draw on his or her own resources except in the most concrete and tangible of matters.

The fourth class of scales assesses stylistic preferences for things such as insightfulness, adaptability, and sensitivity. The three scales are Insightfulness (Is), Flexibility (Fx), and Sensitivity (Sn). High scores above 50 on these three scales suggest an individual who can be described as perceptive, open minded, and attuned to his or her surroundings. Scores below 50 on these scales are indicative of someone with a more closed stance who functions best in a stable, predictable environment.

STRUCTURAL SCALES

The three structural scales provide for the cuboid model of personality underlying the instrument (see Gough & Bradley, 1996). Together, the Participating versus Private (v.1) and Approving versus Questioning (v.2) scales define four general life style themes or types of people. The four types are Implementer (i.e., Participating, Approving), Supporter (i.e., Private, Approving), Innovator (i.e., Participating, Questioning), and Visualizer (i.e., Private, Questioning). The third structural scale measures level of Fulfillment (v.3). This third dimension classifies individuals across seven levels of self-realization within the four life style themes. The seven levels go from frustration at levels 1 and 2 to ordinary levels of satisfaction at levels 3, 4, and 5 to superior feelings of efficacy at levels 6 and 7.

SPECIAL PURPOSE SCALES

The special purpose scales are additional scorings of the instrument that may serve useful in specific applications. For example, the Managerial Potential scale was developed in an attempt to identify persons who would be successful in management positions. Unlike the folk scales and the cuboid model, the special purpose scales are not universally applicable. However, the special purpose scales frequently prove helpful in confirming or further clarifying interpretive decisions.

Type and Level Results

Accurate decisions about scoring of the structural scales are critical to their effectiveness. Based on previous versions of the CPI instrument (see Gough & Bradley, 1996), it was expected that approximately 25 percent of individuals in the normative sample would be found in each of the four types or life style themes. On the third dimension of Fulfillment, it was expected that individuals would follow the established distribution with percentages for each of the seven levels of 8, 12, 19, 22, 19, 12, and 8. Note that the expected distributions are the theoretical ideal and that previous versions of the CPI instrument have roughly approximated them in practice.

Type and level results for the normative sample were very close to the expected values. Type classification of the 6,000 individuals yielded 26.2 percent Implementers (*n* = 1,569), 25.8 percent Supporters (*n* = 1,548), 25.0 percent Innovators (*n* = 1,502), and 23.0 percent Visualizers (*n* = 1,381). Classification on level of Fulfillment yielded 10.1 percent at level 1 (*n* = 604), 13.6 percent at level 2 (*n* = 813), 16.4 percent at level 3 (*n* = 986), 23.0 percent at level 4 (*n* = 1,380), 19.6 percent at level 5 (*n* = 1,175), 10.1 percent at level 6 (*n* = 608), and 7.2 percent at level 7 (*n* = 434).

Indicators of Invalid Results

A decision about whether or not an individual's results on an instrument are valid enough for interpretation is a professional judgment. The CPI 260 instrument has a number of features that can assist the professional in determining the validity of results. Three of the folk scales provide direct feedback about the quality of the individual's results. A series of actuarial indicators are also available.

Well-being (Wb), Good Impression (Gi), and Communality (Cm) each provide meaningful information about the validity of results on the CPI 260 instrument. Low scores at or below 30 on Wb suggest exaggeration of personal distress or a fake-bad profile. High scores on Gi at or above 70 suggest exaggerated positive response characteristics and fake-good profile. This generally occurs when the respondent is trying to make a positive impression on the test interpreter such as in a job applicant or other evaluative setting. Low scores at or below 30 on Gi suggest a more negative response bias and the possibility of a fake-bad profile. High scores on Cm at or above 50 suggest a standard approach to the inventory. Low scores on Cm at or below 30 indicate the possibility of random responding, inability to read, errors in marking, or a fake-bad profile.

More precise classification of fake-good, fake-bad, and random profiles is available based on the computation of three equations adapted for use with the CPI 260 instrument. The three equations improve classification by combining the three validity indicators already discussed plus the addition of other scales. The following three linear equations were established using raw scale scores on the CPI 260 instrument.

$$\text{Fake-good} = 32.30 + .49\text{Do} + .67\text{Em} + 1.12\text{Gi} - .62\text{Wb} - .58\text{Fx}$$
$$\text{Fake-bad} = 100.67 - 2.32\text{Cm} - .44\text{Wb} - .31\text{Fx} + .18\text{Ac}$$
$$\text{Random} = 42.77 + .30\text{In} + .37\text{Gi} + .49\text{To} - .29\text{Cm}$$

The products of the three equations are applied in a decision-tree format. If the fake-good score is equal to or greater than 65.50, the result is considered fake-good. If the score on fake-bad is equal to or greater than 66.00 and if the score on random is less than or equal to 51.49, the result is considered fake-bad. Lastly, if the score on fake-bad is equal to or greater than 66.00 and the score on random is equal to or greater than 51.50, the result is random. All other results on the CPI 260 instrument are considered normal. In the normative sample of 6,000 men and women, 0.43 percent were judged fake-good, 0.75 percent were judged fake-bad, and 0.47 percent were judged random.

Type and Level Results
(Item Selection Process)

The criteria for selecting items to be included in the CPI 260 instrument were 1) acceptable content in the organizational and managerial world, 2) item correlations with nontest criteria in archival samples, and 3) item correlations with the full scales as scored on the CPI instrument. The first criterion meant that items were included if they were easy to read, as non-threatening or ego-syntonic as possible for use in organizational settings, and subtle when appropriate to reduce the influence of item response sets. The second criterion continued the empirical tradition of the CPI instrument by emphasizing and retaining the items that maximize the relationships between responses to the inventory and the external outcome or target behavior. Correlations were obtained from various published and unpublished data sets involving nontest criteria. The nontest criteria were at times behavioral, experimental, or observational (e.g., adjectival clusters identified by observers). A detailed description of how this process has contributed to the development of the CPI scales can be found in the *CPI™ Manual* (Gough & Bradley, 1996). The third criterion meant that items that best represented the desired CPI scale were retained in order to maximize the equivalence in meaning between the full 434-item CPI instrument and the CPI 260 instrument. This also meant that an attempt was made to continue to represent the full breadth of content found in each of the multidimensional CPI scales.

Because each item on the inventory is scored dichotomously (i.e., True vs. False), each scale required a minimum of 20 items for adequate scale ranges. Even after allowing for item overlap across scales on the CPI 260 instrument, it was determined that a minimum of 250 items were needed to score the 20 folk scales and the 3 vector scales. The addition of 6 special purpose scales and the iterative process of identifying the best items for each of the 29 scales on the CPI 260 instrument led to a final inventory of 260 items. The CPI 260 instrument does continue the often criticized practice of allowing items to appear on more than one scale; the criticism being that item overlap makes it difficult to identify the underlying factor structure of the personality measure, in this case, the CPI instrument. This is a reasonable psychometric concern for researchers, but it poses no real-life concern to practitioners. In fact, the very real advantage of using overlapping items is that it allows for much more extensive and precise assessment with a smaller pool of items than could be achieved without overlap. In the case of the 29 scales on the CPI 260 instrument, over 600 items would be required if items were not scored on more than one scale.

Further review of the items was conducted after the preliminary set of items was decided. This review resulted in the substitution, rewording, or dropping of several items. The review included assessment of the preliminary item set by a panel of experienced researchers and organizational consultants in the U.S. and Western Europe. The panel assessed the items and recommended solutions based on generally understood organizational practices. Examples of items that were reworded to make them more contemporary include the slight change of "It's no use worrying my head about public affairs; I can't do anything about them anyhow" to "I see no reason to worry about public affairs; I can't do anything about them anyhow" and "It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he really believes" to "It is annoying to listen to lecturers who cannot seem to make up their minds as to what they really believe." Examples of items that were reworded to allow greater likelihood of correct translation and use internationally include "I would like to be a soldier" to "I would like to serve in the armed forces" and "Only a fool would try to change our American way of life" to "The old ways of doing things are almost always the best." The item "I think Lincoln was greater than Washington" is a good example of an item that was

dropped for the same reason. Additional examples of items that were dropped are "I looked up to my father as an ideal man," "Maybe some minority groups do get rough treatment, but it's no business of mine," and "I sometimes tease animals."

A final review was completed once the definitive set of 260 items for the CPI 260 instrument was prepared in manuscript form. A law firm with expertise in legal and psychological matters and experience in employment practices legislation conducted this final review and provided support for the CPI 260 instrument as a non-medical test appropriate for application in organizational settings. However, it should be noted that the ethical and legally appropriate use of psychological assessments is ultimately the responsibility of the practicing professional.

Normative Data

The normative group used to standardize the CPI 260 instrument is identical to that of the 434-item CPI instrument. Details concerning the normative group of 6,000 persons can be found in the *CPI™ Manual* (Gough & Bradley, 1996). The sample contains 3,000 men and 3,000 women representing all aspects of society including students and employed adults in various occupations. The data file from the sample used in establishing norms for the 434-item CPI instrument was rescored for the CPI 260 instrument. The raw score means and standard deviations from the normative group are reported in Table 2. For the CPI 260 instrument, a decision was made to report standard scores based only on the total or combined normative group of 6,000 in order to simplify interpretation. For the purpose of comparison, Table 2 includes raw score means and standard deviations for men (n = 3,000), women (n = 3,000), and combined (N = 6,000). It is important to note that the difference between men and women on the mean raw score and the combined mean raw score is generally small. The difference is greater than 0.5 for four scales (i.e., Sp, In, Re, Ac) and greater than 1.0 only once (i.e., Sn). The wide difference between men and women on the Sn scale was expected because the original scale was developed as a measure of Femininity/Masculinity (F/M).

TABLE 2. RAW SCORES FOR THE NORMATIVE SAMPLE ON THE CPI 260® INSTRUMENT

Scale	No. of Items	Mean of U.S. Men	St. D. of U.S. Men	Mean of U.S. Women	St. D. of Women	Mean of U.S. Combined	St. D. of U.S. Combined
Do	32.00	17.15	6.49	16.46	6.56	16.80	6.53
Cs	26.00	12.91	4.37	13.38	4.64	13.15	4.52
Sy	23.00	13.59	4.37	13.85	4.50	13.72	4.44
Sp	29.00	18.36	3.86	17.31	4.24	17.83	4.09
Sa	23.00	12.58	3.89	12.52	3.93	12.55	3.91
In	23.00	12.63	4.04	11.53	4.21	12.08	4.16
Em	25.00	11.36	3.63	11.83	3.72	11.60	3.68
Re	23.00	14.83	3.99	16.47	3.63	15.65	3.90
So	30.00	19.98	4.30	20.89	4.44	20.44	4.40
Sc	28.00	13.51	4.91	14.41	5.14	13.96	5.04
Gi	27.00	11.92	4.72	12.27	4.69	12.10	4.71
Cm	22.00	19.11	2.75	19.32	2.00	19.21	2.13
Wb	20.00	15.30	3.38	14.93	3.61	15.12	3.50
To	20.00	10.73	4.07	11.64	4.14	11.19	4.13
Ac	29.00	18.69	4.79	19.99	4.52	19.34	4.70
Ai	25.00	13.28	4.55	13.57	4.87	13.43	4.72
Cf (Ie)	30.00	18.88	4.94	19.17	5.17	19.02	5.06
Is (Py)	22.00	12.29	3.34	12.28	3.54	12.28	3.44
Fx	22.00	9.56	3.67	9.32	3.71	9.44	3.69
Sn (FM)	28.00	12.39	2.94	16.42	2.97	14.40	3.58
v.1	20.00	11.62	4.39	12.31	4.28	11.96	4.35
v.2	20.00	11.98	3.61	12.98	3.60	12.48	3.64
v.3	31.00	15.16	5.84	15.54	6.16	15.35	6.00
Mp	25.00	12.70	4.61	12.68	4.69	12.69	4.65
Wo	23.00	16.10	3.60	16.04	3.70	16.07	3.65
Ct	29.00	14.78	4.18	14.70	4.06	14.74	4.12
Lp	36.00	22.44	6.47	22.21	6.61	22.33	6.54
Ami	28.00	17.42	4.48	17.67	4.73	17.54	4.60
Leo	29.00	16.56	3.20	15.85	3.15	16.21	3.19

Scale Reliability and Form Equivalence

There are two important technical issues that must be addressed in establishing the CPI 260 instrument as a reasonable addition to any practitioner's tool kit. The two issues are (a) the reliability of the scores and (b) the relative validity of the scores. Table 3 compares the number of items used to measure each of the scales in the 434-item CPI and the CPI 260 instruments. Table 3 also reports the internal consistency/reliability estimates for the CPI 260 instrument scales. The reliability estimates range from a low of .36 for the Law Enforcement Orientation scale to a high of .86 for Dominance. The average reliability estimate across the 29 scales is .72, suggesting that the scales measure clearly defined concepts.

Although some may cite high internal consistency estimates as evidence of superior personality measures, the reader is reminded that the scales on the CPI and the CPI 260 instruments are empirically constructed and multidimensional. For example, the Communality scale, with an internal consistency estimate of .55, was found in the development of the 434-item CPI instrument to contain 10 factors with eigenvalues of 1.00 or greater. This finding is best explained by the fact that the Communality scale is really an empirically developed validity scale similar to the Hathaway and McKinley F scale on the MMPI® instrument. That is, the Communality scale is not a content scale that measures any particular construct, but rather is a subset of items answered in a consistent direction by a very high percentage of the normative sample and used to identify when an individual's responses to the instrument are not within the modal or common pattern. Similarly, the Law Enforcement Orientation scale is based solely on an empirical item analysis contrasting persons and their performance in police work with that of 14 other occupational groups. In this way, the Law Enforcement Orientation scale is very similar to the Occupational Scales on the *Strong Interest Inventory*® instrument.

TABLE 3. A COMPARISON BETWEEN THE CPI 260® INSTRUMENT AND THE CPI™ 434-ITEM INSTRUMENT IN THE NORMATIVE SAMPLE

CPI 260® Scale	Items in Old (434) / New Scales (260)	CPI 260® Scale Internal Consistency Estimates	Correlations Between Old (434) and New Scales (260)
Do	36/32	.86	.95
Cs	28/26	.74	.94
Sy	32/23	.77	.97
Sp	38/29	.65	.96
Sa	28/23	.68	.96
In	30/23	.75	.94
Em	38/25	.60	.93
Re	36/23	.73	.95
So	46/30	.73	.95
Sc	38/28	.77	.97
Gi	40/27	.77	.96
Cm	38/22	.55	.81
Wb	38/20	.76	.93
To	32/20	.78	.95
Ac	38/29	.76	.97
Ai	36/25	.78	.96
Cf (Ie)	42/30	.78	.96
Is (Py)	28/22	.64	.96
Fx	28/22	.68	.96
Sn (FM)	32/28	.54	.82
v.1	34/20	.80	.93
v.2	36/20	.70	.94
v.3	58/31	.83	.95
Mp	34/25	.77	.97
Wo	40/23	.70	.93
Ct	42/29	.71	.91
Lp	70/36	.85	.93
Ami	36/28	.75	.96
Leo	42/29	.36	.89

The extent to which one can generalize the established validity and interpretive guidelines from the CPI instrument to the CPI 260 instrument hinges on the relationship between the two forms. The average correlation of .94, in the normative group sample, between the 434-item CPI scales and those on the CPI 260 instrument indicates a very strong relationship between the two instruments (see Table 3).

Further evidence of the general equivalence between the longer versions of the CPI instrument (434- and 462-item forms, respectively) and the CPI 260 instrument can be found in Table 4. The first three columns contain correlation coefficients that indicate the relationship between the 434-item CPI scales and the CPI 260 instrument in a randomly selected sample. The sample consisted of 6,000 men and women drawn from the CPP, Inc., database. The average correlation between the two forms was .93. The fourth through sixth columns of Table 4 contain the correlation coefficients for the 462-item CPI instrument and the CPI 260 instrument in a sample of 5,610 leadership development participants. The average correlation between these two forms was .89 in the leadership development sample.

A comparison of standard scores based on the random sample drawn from the CPP, Inc., database and the leadership development sample is shown in Table 5. A careful review of Table 5 highlights the strong similarity between scores on the longer versions of the CPI instrument and the CPI 260 instrument. The

similarity between the 434-item CPI instrument and the CPI 260 instrument is slightly greater than between the 462-item CPI instrument and the CPI 260 instrument. One explanation is that the 434-item CPI instrument was used as the basis for the CPI 260 instrument and that both were published after the ADA and EEOC guidelines were enacted. Another explanation is that the leadership development sample had a restricted range of scores (positive skew), which likely attenuated the correlations.

TABLE 4. CORRELATION OF RAW SCORES BETWEEN THE CPI 260® INSTRUMENT AND THE CPI™ 434-ITEM AND 462-ITEM INSTRUMENTS IN A RANDOM SAMPLE OF 6,000 CPP ADMINISTRATIONS AND 5,610 CCL® PARTICIPANTS

	434	434	434	462	462	462
Scale Name	Combined (*N* = 6,000)	Men (*n* = 3,000)	Women (*n* = 3,000)	Combined (*N* = 5,610)	Men (*n* = 4,070)	Women (*n* = 1,540)
Do	.94	.94	.95	.89	.90	.89
Cs	.90	.89	.91	.85	.84	.86
Sy	.95	.95	.96	.95	.95	.95
Sp	.95	.95	.95	.96	.96	.97
Sa	.94	.93	.95	.88	.88	.88
In	.93	.91	.94	.90	.89	.91
Em	.92	.92	.92	.92	.92	.92
Re	.94	.95	.94	.91	.91	.90
So	.93	.93	.92	.87	.87	.87
Sc	.98	.98	.98	.97	.97	.97
Gi	.96	.97	.96	.94	.94	.94
Cm	.77	.80	.74	.58	.62	.53
Wb	.94	.94	.94	.78	.77	.79
To	.94	.94	.94	.87	.86	.87
Ac	.96	.96	.96	.92	.93	.92
Ai	.94	.94	.94	.92	.92	.91
Cf (Ie)	.96	.95	.96	.88	.88	.89
Is (Py)	.94	.93	.95	.87	.87	.87
Fx	.96	.97	.96	.96	.96	.96
Sn (FM)	.91	.87	.85	.90	.87	.84
v.1	.94	.94	.94	.93	.93	.93
v.2	.93	.93	.92	.88	.88	.89
v.3	.94	.95	.94	.91	.92	.90
Mp	.97	.96	.96	.90	.91	.90
Wo	.93	.93	.92	.86	.86	.86
Ct	.91	.92	.91	.92	.92	.91
Lp	.94	.94	.94	.89	.89	.90
Ami	.97	.97	.97	.95	.95	.95
Leo	.92	.91	.91	.87	.87	.86

TABLE 5. A COMPARISON OF STANDARD SCORES BETWEEN THE CPI 260® INSTRUMENT AND THE CPI™ 434-ITEM AND 462-ITEM INSTRUMENTS IN A RANDOM SAMPLE OF 6,000 CPP ADMINISTRATIONS AND 5,610 CCL® PARTICIPANTS

Scale	434-item CPI™ instrument standard scores in a random sample of 6,000 CPP administrations	CPI 260® instrument standard scores in a random sample of 6,000 CPP administrations	462-item CPI™ instrument standard scores in a sample of 5,610 leadership development participants	CPI 260® instrument standard scores in a sample of 5,610 leadership development participants
Do	58.89	58.03	63.88	61.33
Cs	56.88	57.17	55.76	58.56
Sy	56.60	56.56	54.06	56.37
Sp	53.54	53.21	53.06	54.28
Sa	57.04	56.65	56.42	58.41
In	56.03	58.31	58.29	62.03
Em	58.78	59.39	55.08	60.13
Re	53.34	53.10	54.85	54.58
So	54.78	54.20	53.43	55.05
Sc	56.20	55.97	54.06	54.00
Gi	58.58	58.55	54.30	57.09
Cm	52.68	52.26	55.52	54.33
Wb	55.51	55.55	54.56	57.00
To	59.37	59.46	55.73	60.83
Ac	56.78	56.65	57.23	57.41
Ai	60.07	60.23	56.97	62.28
Cf (Ie)	56.66	56.87	52.99	58.10
Is (Py)	58.11	58.26	55.57	59.96
Fx	55.71	54.71	49.80	55.06
Sn (F/M)	48.30	47.33	47.30	43.23
v.1	44.39	44.39	42.28	40.76
v.2	50.91	51.24	53.57	51.86
v.3	60.59	60.13	55.84	60.72
Mp	60.21	60.85	60.42	65.41
Wo	56.25	56.38	55.02	56.44
Ct	55.49	56.23	52.90	57.86
Lp	58.96	58.53	*	61.67
Ami	55.18	55.66	*	56.47
Leo	59.03	59.51	*	60.09

* Note: The special purpose scales Lp, Ami, and Leo were not available in Form 462 of the CPI instrument.

Factor Structure

A series of factor analyses were run on the CPI 260 instrument standard scale scores using the random sample of 6,000 cases drawn from the CPP, Inc., database. The sample was balanced by gender, allowing for three analyses of the CPI 260 instrument: men (n = 3,000), women (n = 3,000), and combined (N = 6,000). In each of the three analyses, four unrotated factors were identified as having eigenvalues greater than 1.0. A varimax rotation was also conducted. Tables 6 through 8 show the eigenvalues before and after rotation, as well as the rotated factor matrix for each analysis.

The results presented in Tables 6 through 8 are reassuring for two reasons. The first reason is that the number and content of the factors is very similar to previous factor analyses of the CPI instrument (see Gough 1987, Gough & Bradley 1996). Across previous studies, the first two factors consistently group Do, Cs, Sy, Sp, Sa, In, and Em in one grouping and Re, So, Sc, Gi, Wb, To, and Ac in another. This same grouping of scales is very robust here. The Do to Em grouping has been interpreted in the past as a measure of interpersonal effectiveness, poise, and resourcefulness (see McAllister 1996). The grouping of Re to Ac has been interpreted as a measure of personal well-being, optimism, and positive socialization. The third and fourth factors found in the current analyses are also familiar to previous factor analysis of the CPI instrument. The grouping of Ai, Fx, To, Cf, and Is may not be as striking, with a number of items cross loading in the current results, but the pattern is evident. This grouping has been interpreted in the past as a measure of independence of thought and action (see McAllister 1996). The fourth factor is represented most distinctly by Sn, and appears to measure tender- versus tough-mindedness. The second reason to be reassured by the current results is that the same pattern of factor loadings appears for both men and women. This finding suggests that the CPI 260 instrument is working in a similar fashion for both genders. These results provide further support for using combined norms to simplify interpretation of the CPI 260 instrument.

TABLE 6. ROTATED FACTOR MATRIX IN A SAMPLE OF MEN (*n* = 3,000)

CPI 260® Scale	1	2	3	4
Do	0.23	0.89	-0.02	0.14
Cs	0.16	0.76	0.39	-0.06
Sy	0.20	0.79	0.13	0.10
Sp	-0.14	0.62	0.38	0.26
Sa	-0.05	0.84	0.05	0.15
In	0.29	0.66	0.23	0.27
Em	0.18	0.58	0.47	-0.03
Re	0.71	0.30	0.11	-0.21
So	0.72	0.16	-0.07	0.13
Sc	0.87	-0.22	0.02	-0.15
Gi	0.85	0.01	0.04	-0.07
Cm	0.39	0.15	-0.07	0.23
Wb	0.72	0.29	0.22	0.42
To	0.67	0.16	0.57	0.01
Ac	0.71	0.44	-0.07	-0.17
Ai	0.45	0.28	0.69	-0.03
Cf	0.57	0.51	0.40	0.03
Is	0.48	0.33	0.44	0.09
Fx	-0.13	-0.02	0.82	-0.03
Sn	-0.04	-0.26	0.06	-0.58
Mp	0.66	0.44	0.35	0.06
Wo	0.82	0.16	0.29	0.17
Ct	0.03	0.38	0.80	-0.05
Lp	0.51	0.78	0.07	0.16
Ami	0.86	0.02	0.28	0.11
Leo	0.61	0.19	-0.21	0.25
Eigenvalue	11.49	4.11	2.52	1.16
% variance accounted for	44.2	15.8	9.7	4.5
Rotated eigenvalue	7.64	5.87	3.47	1.03
Rotated % variance	31.5	24.2	14.3	4.2

TABLE 7. ROTATED FACTOR MATRIX IN A SAMPLE OF WOMEN (*n* = 3,000)

CPI 260® Scale	1	2	3	4
Do	0.24	0.91	0.00	0.07
Cs	0.12	0.74	0.42	0.16
Sy	0.19	0.84	0.11	0.06
Sp	-0.08	0.74	0.36	-0.04
Sa	0.01	0.87	0.06	0.08
In	0.35	0.76	0.22	-0.09
Em	0.19	0.59	0.49	0.07
Re	0.67	0.21	0.13	0.37
So	0.68	0.17	-0.05	0.05
Sc	0.85	-0.26	0.01	-0.03
Gi	0.85	0.01	0.01	-0.08
Cm	0.43	0.16	-0.10	0.22
Wb	0.75	0.40	0.17	-0.13
To	0.66	0.17	0.54	0.05
Ac	0.67	0.34	-0.07	0.41
Ai	0.46	0.30	0.66	0.22
Cf	0.55	0.52	0.38	0.23
Is	0.51	0.35	0.41	0.21
Fx	-0.10	0.01	0.80	-0.08
Sn	-0.12	-0.42	0.08	0.32
Mp	0.65	0.49	0.34	0.06
Wo	0.81	0.22	0.26	0.02
Ct	0.05	0.48	0.74	-0.01
Lp	0.50	0.81	0.07	0.10
Ami	0.87	0.07	0.28	-0.11
Leo	0.61	0.26	-0.30	-0.05
Eigenvalue	11.92	4.19	2.33	1.07
% variance accounted for	45.9	16.1	8.9	4.1
Rotated eigenvalue	7.52	6.69	3.26	0.72
Rotated% varience	31.0	27.6	13.4	3.0

TABLE 8. ROTATED FACTOR MATRIX IN A SAMPLE OF MEN AND WOMEN COMBINED (*N* = 6,000)

CPI 260® Scale	1	2	3	4
Do	0.26	0.89	-0.03	0.15
Cs	0.16	0.76	0.39	-0.07
Sy	0.20	0.82	0.11	0.05
Sp	-0.10	0.70	0.35	0.15
Sa	0.00	0.86	0.03	0.08
In	0.33	0.70	0.21	0.32
Em	0.19	0.59	0.47	-0.04
Re	0.72	0.26	0.10	-0.24
So	0.70	0.16	-0.06	0.05
Sc	0.85	-0.26	0.02	0.05
Gi	0.84	-0.01	0.04	0.13
Cm	0.42	0.18	-0.09	-0.02
Wb	0.72	0.35	0.19	0.31
To	0.67	0.16	0.56	0.00
Ac	0.73	0.40	-0.10	-0.25
Ai	0.47	0.31	0.66	-0.10
Cf	0.59	0.53	0.36	0.00
Is	0.52	0.36	0.40	-0.02
Fx	-0.14	0.00	0.81	-0.03
Sn	-0.14	-0.31	0.09	-0.58
Mp	0.67	0.46	0.33	0.10
Wo	0.82	0.19	0.26	0.15
Ct	0.04	0.44	0.77	0.01
Lp	0.52	0.78	0.05	0.14
Ami	0.86	0.04	0.28	0.16
Leo	0.62	0.22	-0.26	0.27
Eigenvalue	11.83	4.09	2.46	1.11
% variance accounted for	45.5	15.7	9.5	4.3
Rotated eigenvalue	7.80	6.31	3.24	0.90
Rotated% varience	32.0	26.0	13.4	3.7

Summary

Overall, the preliminary results in this report supported the CPI 260 instrument as a reasonably reliable and valid short form of the *California Psychological Inventory* (CPI) instrument, with the added quality of having retained items that meet the demands of professionals in organizational settings. The type and level findings, as well as that of the invalidity indicators, in the normative sample were consistent with previous versions of the CPI instrument. Likewise, comparisons of internal consistency estimates and scale score means between the CPI 260 instrument and previous versions of the CPI instrument indicated a very strong relationship between the two assessment tools. This evidence suggested that the new, briefer instrument is a reasonable equivalent and can be expected to perform in ways that are similar to the well-established CPI instrument. This was further supported by the strikingly similar factor results in this report that showed the underlying structure to be well maintained in the CPI 260 instrument. The factor results also supported the use of combined norms for men and women, which will simplify interpretation in today's expanding workforce.

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