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Clinical Validation of the Chinese Personality Assessment Inventory

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The clinical validity of the Chinese Personality Assessment Inventory (CPAI; F. M. Cheung, K. Leung, et al., 1996) was examined in 2 studies involving a group of 167 male prisoners in Hong Kong and a group of 339 psychiatric patients in China. Elevated scores on the clinical scales were obtained for the clinical samples. Logistic regression analyses confirmed that the CPAI scales were useful in differentiating between male prisoners and the Hong Kong male normative sample and between psychiatric patients and a random sample of normal adults in China. Multivariate analyses of variance results showed significant differences on the CPAI clinical scales and personality scales among subgroups of psychiatric patients with diagnoses of bipolar, schizophrenic, and neurotic disorders. The usefulness of an indigenous personality inventory is discussed.

Clinical psychologists in Asia have relied on translated tests, such as the Minnesota Multiphasic Personality Inventory—2 (MMPI–2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989), as the major tools for personality assessment (Cheung, 1996, in press). The importation of well-established tests provides psychologists with the wealth of evidence accumulated to support these tools. Yet, cross-cultural differences observed in the test results raise questions about the suitability of direct applications of these instruments. For example, scores on several clinical scales on the MMPI–2, including Scales 2 Depression, 7 Psychasthenia, and 8 Schizophrenia, are elevated even among the normative sample in China. If these scores were interpreted directly according to the U.S. norms, there would be an overestimation of psychopathology.

To overcome this problem, cross-cultural researchers could develop local norms for translated Western tests. However, even if local norms are adopted, one major deficiency remains: In translated instruments, indigenous personality constructs that are important and meaningful to the local culture are missing. These deficiencies have led to a rising interest in developing indigenous measures (Cheung & Leung, 1998; Church & Katigbak, 1988). The early attempts to develop indigenous personality tests in Asia for clinical assessment involved modifying or adapting imported instruments (Cheung, in press). However, cross-cultural and multicultural researchers have pointed out the need for culturally relevant and sensitive assessment of ethnic minority groups in the United States as well as of people from other cultural backgrounds (Atkinson, Morten, & Sue, 1998; Cheung & Leung, 1998). It has been noted in studies of Asian Americans that individualistic concepts underlying counseling and psychotherapy in the Caucasian American culture may be inconsistent with Asian values (Atkinson et al., 1998). To date, the most comprehensive attempt to develop an indigenous personality inventory suitable for the Chinese culture is the Chinese Personality Assessment Inventory (CPAI; Cheung, Leung, et al., 1996).

The CPAI

The CPAI was developed to provide an indigenous personality inventory for normal as well as diagnostic assessment of the Chinese people, who constitute one fifth of the world's population. The goal was to construct an inventory relevant to the local culture while retaining the high standards of test validity and reliability expected of established assessment instruments. The construction of the CPAI followed a similar approach to the development of the MMPI–2 content scales (Butcher, Graham, Williams, & Ben-Porath, 1990). The test developers preferred an omnibus personality measure, which serves multiple purposes in assessment, over an instrument limited to clinical assessment. Scales that measure normal personality attributes and clinical predispositions were included in the full set. Some of the normal personality attributes, such as optimism–pessimism and emotionality, are relevant to clinical considerations. Conversely, clinical features are also relevant to personality assessment in personnel selection and other normal functions.

The personality constructs included in the CPAI were developed from multiple input covering a wide range of daily life experiences. Personality descriptions were obtained by using different methods, including a review of contemporary Chinese novels, informal surveys of people in the street, self- and other-

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descriptions by professionals, and a review of the relevant psychological literature. For the clinically based personality constructs, references were also made to the clinical experiences of local practitioners. The test developers identified common patterns of symptoms observed among Chinese psychiatric patients. References were made to previous research on the Chinese MMPI (Cheung & Song, 1989; Cheung, Song, & Butcher, 1991; Cheung, Zhao, & Wu, 1992). The labels for the CPAI clinical scales focused on specific symptomatology and avoided the use of diagnostic nomenclature, such as "schizophrenia" and "psychasthenia." Large-scale empirical testing was conducted in several stages to generate and select scale items for the CPAI, to verify the selected scales, and to standardize the final version (see Cheung, Leung, et al., 1996, for the detailed steps in the construction of the CPAI).

The CPAI consists of 22 personality scales for assessing normal personality traits, 12 clinical scales for assessing personality characteristics associated with psychopathology (including 1 that is double-listed as a personality scale), and 3 validity indexes. The names and brief descriptions of the scales are listed in the Appendix.

To address the lack of culturally relevant constructs for the Chinese people in translated Western personality tests, a number of CPAI scales were developed on the basis of constructs that are particularly important to the Chinese culture but are not covered in other personality measures, such as Harmony (HAR), Modernization (MOD), Graciousness versus Meanness, and Face (FAC). These constructs have been studied extensively in Chinese psychology (see Bond, 1996). Factor analysis of the CPAI extracted four personality factors and two clinical factors. The four principal-components factors for the personality scales are Dependability, Interpersonal Relatedness, Social Potency, and Individualism. In particular, the Interpersonal Relatedness factor consists of mainly indigenous scales that depict the emphasis on instrumental relationships in Chinese culture, such as maintaining harmony, avoiding conflict, saving face, adhering to norms and reciprocity in social interactions, and exchanging favors and affection according to implicit rules in relationships. This factor is unique to the CPAI and is not found in other Western personality tests (Cheung et al., 2001). These personality attributes are relevant not only to social behaviors but also to coping and mental health among Chinese people. In previous studies, the Interpersonal Relatedness factor scales added predictive value beyond those contributed by translated Western personality tests in predicting filial piety, trusting behavior, persuasion tactics, and communication styles (see Cheung et al., 2001).

The clinical scales of the CPAI assess common forms of psychopathology found among Chinese psychiatric patients. Most of these clinical scales tap symptoms that are mostly common across cultures, including moods, physical symptoms, delusions, and hallucinatory experiences. In these scales, only symptoms relevant to the local contexts are included. The two clinical factors extracted are Emotional Problems and Behavioral Problems (see Cheung, Leung, et al., 1996). The scales that load on the Emotional Problems factor include Depression (DEP), Anxiety (ANX), Physical Symptoms (PHY), Inferiority versus Self-Acceptance (I-S), and Somatization (SOM). The scales that load on the Behavioral Problems factor include Hypomania (HYP), Antisocial Behavior (ANT), Need for Attention (NEE), Pathological Dependence (PAT), Paranoia (PAR), Distortion of Reality (DIS), and Sexual Maladjustment (SEX).

SOM is the only CPAI indigenous clinical scale designed to assess the reported tendency of Chinese patients to use somatic symptoms to present their psychological distress (Cheung, 1995). Somatic complaints are dominant features in Chinese patients' description of discomfort and may be viewed as a contextualized response to emotional distress with implications for social relationships (Kleinman, 1986). For Chinese psychiatric patients, somatic complaints legitimize the initiation of the help-seeking process (Cheung, 1998). The somatization tendency differs from the diagnosis of somatization disorder listed in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM–IV–TR*; American Psychiatric Association, 2000) in that these Chinese patients may not reject the notion that their symptoms are caused by psychological factors. Instead, they tend to focus on the somatic presentation because it destigmatizes psychiatric illness.

The SOM scale addresses the underlying dynamic process in which patients react to psychological distress, including the tendency to suppress negative affect or the reluctance to seek psychological treatment. Although patients may be aware of their psychological distress, they tend to focus on the somatic symptoms and do not address the underlying psychological causes. A sample item from the SOM scale is "When I am not happy, I would show that I have a headache or I am tired instead of talking about it" (English translation). Although related, the SOM scale is distinct from the CPAI PHY scale, which taps only the range of physical complaints commonly associated with psychosomatic distress. It also differs from the hypochondriacal syndrome measured by Scale 1 (Hypochondriasis) of the MMPI–2, which covers a broad range of physical symptoms, and the clinical phenomenon of conversion hysteria measured by Scale 3 (Hysteria), which includes items covering denial of social anxiety, need for affection, lassitude–malaise, somatic complaints, and inhibition of aggression (Butcher & Williams, 1992).

Data collected in the CPAI standardization study provided preliminary support for the validity of the CPAI clinical scales. Analyses of the results of the normative sample showed that all of the CPAI clinical scales were negatively correlated with general and specific indices of life satisfaction (Cheung, Gan, & Lo, in press). The convergent validity of the CPAI clinical scales was demonstrated by their high correlations with the corresponding clinical and content scales on the MMPI–2 among university students (Cheung, Zhang, & Cheung, 2002). A number of CPAI personality scales akin to the concept of neuroticism in Western personality measures, such as Emotionality (EMO) and Optimism versus Pessimism (O-P), were also related to psychopathology as measured by the MMPI–2 clinical and content scales.

The clinical utility of the CPAI scales in differentiating clinical from normal groups was examined in two studies. We used CPAI scales to differentiate (a) prisoners from a normal comparison group in Hong Kong in Study 1 and (b) psychiatric patients from a normal comparison group in China in Study 2. In each study, we examined the average standardized scores of the clinical sample. We expected that the mean scores of the clinical sample on the relevant CPAI clinical scales would be elevated above the mean of the normal comparison sample. Furthermore, we used logistic regression to evaluate the contribution of the CPAI scales to the

discrimination of the clinical sample from the normal comparison group. In addition to the clinical scales, we expected a selection of the CPAI personality scales to distinguish the clinical sample from the normal group. The identification of personality scales characterizing the clinical samples is exploratory in nature. These personality scales provide a descriptive constellation of the personality features associated with psychopathology. In particular, if the indigenous personality scales were included in the regression model, there would be further support for the usefulness of the CPAI.

Study 1

In the first study, the clinical utility of the CPAI was examined with a group of male prisoners by discriminating them from a comparable group in the normative sample. We explored the clinical and personality scales that characterize this group of prisoners.

Method

Participants. The prisoner group consisted of male prisoners who were incarcerated for serious crimes against persons; the prisoners were in the high-security prisons run by the Correctional Services Department in Hong Kong. Invalid protocols were deleted from the original sample (see the *Procedure* section for the criteria used to identify invalid protocols). The index offenses for prisoners in the final sample ($N = 170$) were wounding ($n = 46$), robbery ($n = 91$), and rape ($n = 32$), with 1 case missing the offense information. The mean age of the group was 28.8 years ($SD = 7.9$). More than half of the prisoners had completed junior high school (Grade 9), whereas another 25% had only a primary school education (Grade 6). The majority of the prisoners were single (72%), another 13% of the sample were divorced or separated, and 13% were married.

The normal comparison group used in this study consisted of 227 men extracted from the normative sample collected in the standardization study in Hong Kong. The CPAI normative sample consisted of a representative sample of 2,444 Chinese adults (ages 18–65 years) obtained from different regions of China and Hong Kong. The Hong Kong normative sample ($N = 446$) was based on random sampling from a territory-wide household survey, followed by a random selection of household members (see Cheung, Leung, et al., 1996).

Measures. The full set of the CPAI (consisting of 510 items that cover the 22 personality scales, 12 clinical scales, and 3 validity scales) was used in this study. It is a self-report measure in a paper-and-pencil form. There are about 15 items on each scale. The items are self-descriptions of behavior to be answered in a true–false format, and the summed responses form the score on each scale. The average Cronbach's alpha coefficient for the personality scales is .69; that for the clinical scales is .76. Traditional Chinese characters are adopted in the version used in Hong Kong.

The raw scores on the CPAI personality and clinical scales were converted to prototype *T* scores, modeled after the uniform *T* score of the MMPI–2 (Tellegen & Ben-Porath, 1992). Like the uniform *T* score, the prototype *T* score addresses the issue of skewed distribution in the scales by combining the distributional characteristics of the scales to form a prototype distribution and determining the best formulas for converting the raw scores into standardized scores (Yung et al., 2000). Different distributions and formulas were used for the clinical scales, which were more skewed than the personality scales. The scale scores for the entire normative sample from the standardization study were used to develop the prototype *T* scores. The prototype *T* score allows percentile comparability across scales and preserves the correlation structures of the scales. For the Chinese normative sample, the mean prototype *T* score on each scale was set at 50 and one standard deviation was 10, similar to the characteristics of the MMPI–2 uniform *T* score.

Procedure. Permission was granted by the Correctional Services Department. The prisoners were informed about the purpose of the study by the psychologists at their institutions and were invited to participate in the study on a voluntary basis with informed consent. The prisoners took the CPAI in small groups of less than 20. The groups were arranged with the assistance of the psychologists at the Correctional Services Department. The prisoners who participated in the study were relieved of their scheduled work activity. A research assistant attended the testing session to administer the test and to answer any queries. The testing time took about 90 min. At the end of the session, the participants were debriefed about the background of the CPAI and the purpose of the study. The Correctional Services Department did not have access to the test results of the individual participants. To screen out invalid protocols on the CPAI in research studies, cases with more than 30 unanswered items and those with their Response Consistency Index (RCI) score less than 4 were deleted. The RCI consists of eight pairs of repeated items, with a high score indicating good consistency between each pair.

The mean prototype *T* scores of the prisoners on the CPAI scales were computed. In addition, we used logistic regression to assess the ability of the CPAI scales to predict criminality. Logistic regression helps to evaluate the validity of the set of CPAI scales in estimating an individual's probability of diagnostic group membership. The sample of Hong Kong men extracted from the normative sample of the standardization study was combined with the male prisoner sample for the logistic regression. Because of the large number of scales, separate analyses were conducted for the CPAI clinical and personality scales. For both analyses, the dependent variable was group membership, with normal people coded as 0 and prisoners coded as 1.

Results

Personality profiles. Cronbach's alpha and the mean prototype *T* scores of the prisoners on the CPAI clinical and personality scales are presented in Table 1. On the clinical scales, a high *T* score of approximately 60 predicts psychopathology. This is consistent with previous findings that used the Chinese norms on the Chinese MMPI. The mean *T* score of psychiatric patients was generally around one standard deviation above the mean on many of the MMPI clinical scales (Cheung & Song, 1989; Cheung, Song, & Zhang, 1996). On the personality scales, a *T* score above 50 depicts a higher level of the personality characteristic represented on that scale. For scales with a bipolar dimension, a score above the mean of 50 indicates more of the personality characteristic listed first in the scale label. A score below the mean of 50 indicates more of the personality characteristic listed second in the scale label.

On the clinical scales, the prisoners scored highest on PAT and ANT. The other clinical scales fell within one standard deviation of the norm. On the personality scales, all of the scale scores were within one standard deviation of the norm. The prisoners tended to score lower than the norm on Veraciousness versus Slickness (V-S; i.e., more slick), Thrift versus Extravagance (T-E; i.e., more extravagant), and Responsibility (RES; i.e., less responsible).

Logistic regression. In the first model estimation using only the clinical scales, all 12 CPAI clinical scales were included. The forward stepwise estimation method was used to build the simplest logistic model that was able to distinguish between the normal comparison group and the prisoner sample. The results are presented in Table 2.

Table 1
CPAI Clinical and Personality Scales' Alphas and Prototype T-Score Means and Standard Deviations of the Prisoners

Scale	α	*M*	*SD*
Clinical scales			
DEP	.73	54.62	11.18
PHY	.75	52.16	11.69
ANX	.79	55.15	11.22
I-S	.81	55.30	11.44
SOM	.67	50.61	10.51
HYP	.66	53.27	10.48
ANT	.75	59.21	12.49
NEE	.80	55.04	12.62
PAT	.71	63.67	13.01
DIS	.69	54.85	12.28
PAR	.84	55.27	14.21
SEX	.60	49.18	10.39
Personality scales			
PRA	.67	46.16	10.62
EMO	.74	54.83	10.63
RES	.79	44.41	10.92
I-S	.81	54.85	9.97
G-M	.74	46.38	10.74
V-S	.67	42.96	9.25
O-P	.65	46.44	10.45
MET	.60	46.27	8.96
E-I	.64	50.49	9.11
FAM	.79	46.85	11.28
HAR	.66	47.94	10.28
REN	.56	49.65	9.46
FLE	.61	53.79	8.49
MOD	.56	47.92	9.23
FAC	.71	50.13	9.39
T-E	.61	43.99	9.89
LEA	.75	49.10	9.87
ADV	.53	50.28	9.07
I-E	.75	46.82	13.59
S-S	.70	46.53	12.15
L-A	.64	45.48	9.45
DEF	.69	48.41	9.71

Note. CPAI = Chinese Personality Assessment Inventory; DEP = Depression; PHY = Physical Symptoms; ANX = Anxiety; I-S = Inferiority vs. Self-Acceptance; SOM = Somatization; HYP = Hypomania; ANT = Antisocial Behavior; NEE = Need for Attention; PAT = Pathological Dependence; DIS = Distortion of Reality; PAR = Paranoia; SEX = Sexual Maladjustment; PRA = Practical Mindedness; EMO = Emotionality; RES = Responsibility; G-M = Graciousness vs. Meanness; V-S = Veraciousness vs. Slickness; O-P = Optimism vs. Pessimism; MET = Meticulousness; E-I = External vs. Internal Locus of Control; FAM = Family Orientation; HAR = Harmony; REN = Ren Qing (Relationship) Orientation; FLE = Flexibility; MOD = Modernization; FAC = Face; T-E = Thrift vs. Extravagance; LEA = Leadership; ADV = Adventurousness; I-E = Introversion vs. Extraversion; S-S = Self- vs. Social Orientation; L-A = Logical vs. Affective Orientation; DEF = Defensiveness (Ah-Q Mentality).

Four clinical scales were entered in the final model: PAT, ANT, SOM, SEX. This combination of predictors was able to differentiate prisoners from normal people, $\chi^2(4, N = 393) = 181.54$, $p < .01$, and correctly classified 79.9% of the cases. Model chi-square, improvement chi-square, *B*, Wald, and partial correlation (*pr*) statistics for each predictor are shown in Table 2.

Similar logistic regression analyses were conducted with all 22 CPAI personality scales. Table 2 presents the results of the analysis. Seven personality scales were entered in the final model: T-E, O-P, V-S, Ren Qing (Relationship) Orientation (REN), MOD, Flexibility (FLE), and Adventurousness (ADV). This combination of predictors was able to differentiate prisoners from normal people, $\chi^2(7, N = 383) = 137.12$, $p < .01$, and correctly classified 75.5% of the cases. Model chi-square, improvement chi-square, *B*, Wald, and partial correlation (*pr*) statistics for each predictor are shown in Table 2.

Study 2

In the second study, we examined the clinical utility of the CPAI in discriminating psychiatric patients from a normal comparison group. In addition, we compared three subgroups of patients. We expected the patients in the psychotic spectrum to have more disturbed profiles than the nonpsychotic patients. Further, we expected the behavioral problem scales to be more elevated than the emotional problem scales among the psychotic patients. In the case of the nonpsychotic patients, we expected the pattern to be reversed. In addition to the clinical scales, we included the personality scales in the analyses for exploratory purpose.

Method

Participants. Patients from two psychiatric hospitals in Beijing, China were recruited by the attending doctors to participate in the study. These two hospitals are among the leading teaching hospitals in psychiatry in China. After invalid protocols were deleted from the sample, 339 patients (159 men and 180 women) were included in the final sample. On the basis of the second revision of the Chinese Classification of Mental Disorder (CCMD–2) set by the Chinese Medical Association (1981, 1985) and the *Chinese Journal of Nervous and Mental Disease* Editorial Committee (1986), the diagnoses of the patient group included schizophrenic disorders ($n = 212$), bipolar disorders ($n = 43$), neurotic disorders ($n = 79$), and other disorders ($n = 5$). The subgroups in the neurotic disorders include anxiety and depression. According to Yang et al. (1999, pp. 361–362), there is good correspondence between the primary diagnoses according to CCMD–2 and *DSM–IV* (American Psychiatric Association, 1994) diagnoses. Except for a small proportion of neurotic patients who were seen in the outpatient clinics, all the other patients were inpatients of the two hospitals. Only those patients whose disturbed symptoms had settled and could concentrate on the self-report measure were invited to participate in the study. The severity of the patients' symptoms was not recorded on their diagnoses. The patients with bipolar disorders were tested mostly during the manic episode. These patients commonly reported psychotic symptoms. The mean age of the patients was 35.1 years ($SD = 10.3$). Information on the educational level was missing from the majority of the patients.

To generate a comparison group of normal adults for the logistic regression, we randomly selected the same number of men ($N = 159$) and women ($N = 180$) from the normative sample collected in the standardization study in mainland China. The original normative sample of the CPAI consists of a representative sample of 2,444 Chinese adults (ages 18–65 years) obtained from different regions in China and Hong Kong. The normative sample from China ($N = 1{,}998$) was based on a quota sample from seven major regions in China (see Cheung, Leung, et al., 1996; Cheung et al., 2001).

Measures. As in Study 1, the full set of the CPAI (consisting of the 22 personality scales, 12 clinical scales, and 3 validity scales) was used in this study. Simplified Chinese characters were printed in the version used in

Table 2
Separate Logistic Regression Models Using CPAI Clinical Scales and Personality Scales as Predictors to Differentiate Prisoners From the Normal Comparison Group

Predictor	Model χ^2	Improvement χ^2	*B*	Wald	*pr*
Clinical scales					
Step 1					
Pathological Dependence	149.14**	149.14**	.10	55.15**	.32
Step 2					
Antisocial Behavior	159.52**	10.38**	.07	20.95**	.19
Step 3					
Somatization	173.25**	13.73**	−.05	8.52**	−.11
Step 4					
Sexual Maladjustment	181.54**	8.29**	−.05	7.82**	−.10
Personality scales					
Step 1					
Thrift vs. Extravagance	69.97**	69.97**	−.10	38.82**	−.27
Step 2					
Optimism vs. Pessimism	100.13**	30.16**	−.07	17.84**	−.17
Step 3					
Veraciousness vs. Slickness	109.86**	9.73**	−.05	12.12**	−.14
Step 4					
Ren Qing (Relationship) Orientation	117.72**	7.86**	.04	9.04**	.12
Step 5					
Modernization	123.04**	5.32*	−.05	12.35**	−.14
Step 6					
Flexibility	129.30**	6.27*	.04	7.88**	.11
Step 7					
Adventurousness	137.12**	7.82**	.04	7.46**	.10

Note. Model χ^2 and improvement χ^2 are estimates at each step; *B*, Wald, and partial correlation (*pr*) are estimates at the final step. CPAI = Chinese Personality Assessment Inventory.
* $p < .05$. ** $p < .01$.

China. To standardize the comparison across scales with the normative sample, the raw scores on the CPAI scales were transformed to prototype *T* scores with a mean of 50 and a standard deviation of 10. Separate male and female norms were used for the conversion of the *T* scores for the psychiatric patients.

Procedure. For the psychiatric patients, staff members administered the test individually or in small groups at the hospital. For some patients, more than one sitting was needed to complete the test. The patients were invited to participate in the study on a voluntary basis. They were informed about the purpose of the study by their doctors and were told they could discontinue participation at any time. The same screening criteria as in Study 1 were used to delete invalid protocols: more than 30 unanswered items or an RCI score less than 4.

The mean scores for the whole group of patients as well as the three diagnostic subgroups of patients were computed. Multivariate analyses of variance (MANOVAs) were conducted to examine the main effect of diagnostic categories on the set of CPAI clinical and personality scales, followed by univariate analyses of variance (ANOVAs) for multiple comparisons of means.

We then used logistic regression to assess the ability of the CPAI scales to predict the occurrence of psychiatric disorders. Given the large number of CPAI scales, we ran separate analyses for the personality and clinical scales. For both analyses, the dependent variable was group membership, with nonclinical adults coded as 0 and psychiatric patients coded as 1.

Results

Personality profiles. Cronbach's alpha and the mean prototype *T* scores of the patients on the CPAI clinical and personality scales are presented in Table 3. The scores for the total group as well as for the three major diagnostic groups are included in this table.

For the total patient group, many of the clinical scales were elevated, especially the following three scales that had an average *T* score over 60: ANT, PAT, and DIS. Scores on all of the personality scales fell within the normal range.

MANOVA. MANOVA results show significant main effects of psychiatric diagnoses on the clinical scales. Overall, there were significant differences in the clinical dispositions among the three patient groups, Wilks's Λ $F(24, 588) = 3.80$, $p < .01$. For each clinical scale, we performed an ANOVA, followed by Tukey's honestly significant difference test for multiple comparisons between means ($p < .05$). The results of the ANOVAs and multiple comparisons are presented in Table 3.

In the group comparisons between patients with bipolar disorders and patients with neurotic disorders, the former group scored higher on SOM, HYP, ANT, NEE, DIS, PAR, SEX. Comparison between the neurotic patients and the schizophrenic patients showed that neurotic patients scored higher on DEP and PHY, whereas schizophrenic patients scored higher on HYP, ANT, DIS, PAR, and SEX. Although the patients with bipolar disorders scored slightly higher on some of the clinical scales than the patients with schizophrenic disorders, there were no significant differences between the two groups of patients on the clinical scales.

Table 3
CPAI Clinical and Personality Scales' Alphas and Prototype T-Score Means and Standard Deviations by Three Psychiatric Categories

			Psychiatric category[b]						
			Bi.		Neur.		Schiz.		
Scale	α	F[a]	*M*	*SD*	*M*	*SD*	*M*	*SD*	Total
Clinical scales									
DEP	.77	4.21*	$55.90_{a,b}$	12.00	57.06_{a}	12.29	52.80_{b}	10.83	54.19 (11.45)
PHY	.71	8.46**	$54.22_{a,b}$	11.35	57.92_{a}	13.18	51.73_{b}	9.88	53.49 (11.18)
ANX	.81	*ns*	57.80	13.77	55.79	11.85	56.49	11.95	56.50 (12.16)
I-S	.84	*ns*	57.10	12.58	53.46	12.75	55.33	11.76	55.13 (12.11)
SOM	.75	3.92*	59.85_{a}	15.61	52.39_{b}	10.91	$55.28_{a,b}$	14.00	55.22 (13.71)
HYP	.76	17.23**	65.17_{a}	15.24	51.72_{b}	9.73	60.20_{a}	13.15	58.91 (13.41)
ANT	.77	6.08**	65.63_{a}	16.26	55.92_{b}	14.05	60.97_{a}	14.54	60.43 (14.91)
NEE	.81	4.18*	62.85_{a}	16.33	55.01_{b}	12.49	$58.95_{a,b}$	14.27	58.56 (14.32)
PAT	.80	*ns*	64.85	15.12	58.85	16.04	61.63	16.01	61.42 (15.95)
DIS	.79	10.10**	63.57_{a}	19.23	53.54_{b}	12.10	62.01_{a}	15.74	60.50 (15.96)
PAR	.81	7.36**	63.56_{a}	14.24	54.41_{b}	12.23	60.06_{a}	13.27	59.22 (13.44)
SEX	.66	5.29**	61.54_{a}	15.34	53.55_{b}	13.94	58.44_{a}	12.96	57.72 (13.71)
Personality scales									
PRA	.46	3.05*	44.71	8.52	45.91	9.18	48.01	8.85	47.08 (8.95)
EMO	.73	3.48*	$54.26_{a,b}$	10.36	55.60_{a}	11.78	51.96_{b}	10.01	53.14 (10.60)
RES	.71	3.21*	$50.84_{a,b}$	8.48	47.17_{b}	11.40	50.40_{a}	9.41	49.66 (9.91)
I-S	.84	*ns*	54.74	11.25	53.24	11.71	54.60	10.09	54.28 (10.64)
G-M	.77	*ns*	46.89	12.67	48.11	11.25	46.35	11.22	46.85 (11.40)
V-S	.68	*ns*	46.32	11.61	47.97	9.65	46.01	10.12	46.53 (10.21)
O-P	.63	6.49**	49.68_{a}	10.25	43.85_{b}	12.58	48.62_{a}	9.53	47.58 (10.63)
MET	.68	6.08**	$50.18_{a,b}$	8.76	46.84_{b}	11.83	51.73_{a}	9.93	50.33 (10.47)
E-I	.54	*ns*	49.74	8.23	47.79	9.09	47.70	8.49	47.97 (8.61)
FAM	.74	*ns*	45.03	10.62	46.32	11.45	46.79	10.42	46.45 (10.69)
HAR	.67	15.17**	51.39_{a}	9.82	43.31_{b}	11.19	51.13_{a}	10.73	49.23 (11.23)
REN	.74	5.53**	$49.26_{a,b}$	10.65	44.32_{b}	11.03	49.30_{a}	11.43	48.07 (11.40)
FLE	.70	9.18**	45.08_{b}	10.36	51.89_{a}	9.83	46.38_{b}	10.31	47.58 (10.47)
MOD	.63	9.11**	$45.76_{a,b}$	10.25	50.08_{a}	10.65	44.10_{b}	10.13	45.79 (10.55)
FAC	.75	6.58**	54.29_{a}	11.22	49.65_{b}	9.55	54.26_{a}	9.18	53.13 (9.72)
T-E	.60	10.47**	51.16_{a}	9.62	46.19_{b}	9.96	51.96_{a}	8.99	50.43 (9.60)
LEA	.80	9.06**	57.11_{a}	8.79	48.45_{c}	10.57	52.41_{b}	10.65	52.02 (10.69)
ADV	.58	3.36*	51.13_{a}	10.59	$46.75_{a,b}$	11.04	46.56_{b}	9.55	47.18 (10.14)
I-E	.70	7.97**	40.61_{c}	10.67	50.55_{a}	13.26	46.34_{b}	12.74	46.66 (12.92)
S-S	.65	5.26**	54.63_{a}	11.85	47.63_{b}	10.94	51.46_{a}	11.64	50.91 (11.66)
L-A	.70	14.39**	54.66_{a}	10.43	46.91_{b}	8.87	53.62_{a}	9.87	52.09 (10.12)
DEF	.77	18.04**	57.71_{a}	10.26	46.71_{c}	10.87	53.47_{b}	9.83	52.33 (10.71)

Note. Scale means with different subscripts differ at $p < .05$. CPAI = Chinese Personality Assessment Inventory; DEP = Depression; PHY = Physical Symptoms; ANX = Anxiety; I-S = Inferiority vs. Self-Acceptance; SOM = Somatization; HYP = Hypomania; ANT = Antisocial Behavior; NEE = Need for Attention; PAT = Pathological Dependence; DIS = Distortion of Reality; PAR = Paranoia; SEX = Sexual Maladjustment; PRA = Practical Mindedness; EMO = Emotionality; RES = Responsibility; G-M = Graciousness vs. Meanness; V-S = Veraciousness vs. Slickness; O-P = Optimism vs. Pessimism; MET = Meticulousness; E-I = External vs. Internal Locus of Control; FAM = Family Orientation; HAR = Harmony; REN = Ren Qing (Relationship) Orientation; FLE = Flexibility; MOD = Modernization; FAC = Face; T-E = Thrift vs. Extravagance; LEA = Leadership; ADV = Adventurousness; I-E = Introversion vs. Extraversion; S-S = Self- vs. Social Orientation; L-A = Logical vs. Affective Orientation; DEF = Defensiveness (Ah-Q Mentality).

[a] For clinical scales, *df*s = 2, 305; for personality scales, *df*s = 2, 301. [b] For the clinical scales, the subsample sizes for bipolar disorders (Bi.), neurotic disorders (Neur.), and schizophrenic disorders (Schiz.) are 41, 71, and 196, respectively; for the personality scales, the subsample sizes are 38, 75, and 191.

* $p < .05$. ** $p < .01$.

We conducted similar analyses on the CPAI personality scales. Results of the MANOVA showed significant differences in the personality dispositions among the three patient groups, Wilks's Λ $F(44, 560) = 3.08$, $p < .01$. The results of the ANOVAs and the multiple comparisons are presented in Table 3. The post hoc analyses between the patients with bipolar disorders and the neurotic patients showed that the former group of patients scored higher on HAR, FAC, T-E, Leadership (LEA), Self- versus Social Orientation (S-S), Logical versus Affective Orientation (L-A), and Defensiveness (Ah-Q Mentality; DEF) and lower on Flexibility (FLE), MOD, and Introversion versus Extraversion (I-E).

Comparison between patients with neurotic disorders and those with schizophrenic disorders showed that the neurotic patients scored higher on EMO, FLE, and I-E and lower on RES, O-P, Meticulousness (MET), HAR, REN, FAC, T-E, S-S, L-A, and DEF. The patients with bipolar disorders differed from the schizophrenic patients primarily on the Social Potency factor scales, scoring higher on LEA, ADV, and Extraversion (i.e., low I-E), as well as on DEF.

Logistic regression. In the first model estimation using only the clinical scales, all 12 CPAI clinical scales were included. The forward stepwise estimation method was used to build the simplest logistic model that was able to distinguish between the normal sample and the clinical patient sample. The results are presented in Table 4.

Six clinical scales were entered in the final model: PAT, DIS, DEP, SEX, ANT, and SOM. This combination of predictors was able to differentiate patients from normal people, $\chi^2(6, N = 652) = 179.39$, $p < .01$, and correctly classified 70.4% of the cases. Model chi-square, improvement chi-square, *B*, Wald, and partial correlation (*pr*) statistics for each predictor are shown in Table 4.

Table 4 also presents the results of the logistic regression analyses conducted with all 22 CPAI personality scales. Eleven personality scales were entered in the final model: MOD, External versus Internal Locus of Control (E-I), I-S, REN, I-E, Family Orientation (FAM), ADV, S-S, T-E, FAC, and L-A. This combination of predictors was able to differentiate patients from normal people, $\chi^2(11, N = 648) = 187.67$, $p < .01$, and correctly classified 70.2% of the cases. Model chi-square, improvement chi-square, *B*, Wald, and partial correlation (*pr*) statistics for each predictor are shown in Table 4.

Table 4
Separate Logistic Regression Models Using CPAI Clinical Scales and Personality Scales as Predictors to Differentiate Psychiatric Patients From the Normal Comparison Group

Predictor	Model χ^2	Improvement χ^2	*B*	Wald	*pr*
		Clinical scales			
Step 1					
Pathological Dependence	121.42**	121.42**	.05	29.26**	.17
Step 2					
Distortion of Reality	154.17**	32.74**	.04	16.13**	.13
Step 3					
Depression	161.55**	7.38**	−.03	7.98**	−.08
Step 4					
Sexual Maladjustment	169.69**	8.14**	.03	8.84**	.09
Step 5					
Antisocial Behavior	174.31**	4.62*	.03	6.34*	.07
Step 6					
Somatization	179.39**	5.08*	−.03	4.99*	−.06
		Personality scales			
Step 1					
Modernization	49.65**	49.65**	−.07	41.88**	−.21
Step 2					
External vs. Internal Locus of Control	73.86**	24.21**	−.07	38.64**	−.20
Step 3					
Inferiority vs. Self-Acceptance	112.20**	38.34**	.05	15.39**	.12
Step 4					
Ren Qing (Relationship) Orientation	130.71**	18.51**	−.04	14.51**	−.12
Step 5					
Introversion vs. Extraversion	151.02**	20.31**	−.04	27.31**	−.17
Step 6					
Family Orientation	158.27**	7.25**	−.03	6.55**	−.07
Step 7					
Adventurousness	167.14**	8.87**	−.05	17.12**	−.13
Step 8					
Self- vs. Social Orientation	173.38**	6.24*	.02	5.56*	.06
Step 9					
Thrift vs. Extravagance	178.52**	5.14*	−.03	8.30**	−.08
Step 10					
Face	183.36**	4.84*	−.03	6.23*	−.07
Step 11					
Logical vs. Affective Orientation	187.67**	4.30*	.02	4.28*	.05

Note. Model χ^2 and improvement χ^2 are estimates at each step; *B*, Wald, and partial correlation (*pr*) are estimates at the final step. CPAI = Chinese Personality Assessment Inventory.
* $p < .05$. ** $p < .01$.

Discussion

Results of the analyses from Study 1 and Study 2 provide CPAI profiles of Chinese prisoners and psychiatric patients that are distinct from nonclinical samples. In addition, different categories of patients can also be differentiated on the CPAI scales. The studies also identify the CPAI clinical scales and personality scales that would be useful in discriminating between prisoners and the normal population, as well as between psychiatric patients and the normal population. The personality profiles of the prisoners and the psychiatric patients are discussed below in greater detail.

Prisoners

The prison sample consisted of incarcerated offenders who had not been diagnosed with psychiatric disorders. Their personality profiles reflected lifestyles and behavior patterns that were deviant from those of the normative culture. The most prominent personality features of the prisoners were their pathological dependence and antisocial behavior. In the delinquent subculture, lack of impulse control as reflected in the habits of heavy smoking, drinking, drug addiction, and gambling are very common. It is interesting to note that the prisoners' average PAT score was, in fact, higher than their ANT score. The ANT scale comprises items covering family disapproval and social alienation. The moderate elevation on this scale suggests that for the prisoners, family relationship may not have been the most indicative of social deviance. Although most of the personality scale scores were within the normal range, the results show that the prisoners tended to be less responsible and honest than the general population and were more likely to be imprudent in spending money. These personality characteristics complement the psychopathological features depicted in the clinical scales.

In the logistic regression models, a combination of four clinical scales and another combination of seven personality scales was able to differentiate prisoners from the normal comparison group. These models correctly classified 79.9% and 75.5% of the cases, respectively.

Psychiatric Patients

The clinical profiles of the psychiatric patients are generally consistent with the predicted directions. Patients in the psychotic spectrum (schizophrenic disorders and bipolar disorders) had more disturbed profiles than the neurotic patients. Among the psychotic patients, the Behavioral Problem factor scales were also more elevated than the Emotional Problem factor scales. The profiles of the three groups of patients are discussed below.

Given that the patients with bipolar disorders were in manic episodes, the most elevated clinical scales were DIS, HYP, ANT, PAT, PAR, NEE, SEX, and SOM. They displayed high levels of psychological disturbance and tended to act out rather than acknowledge their affect. In their personality make-up, they tended to be extraverted and demonstrated leadership characteristics. However, their social potency was marred by their pathological disturbance. They were also inclined to be conscious of face-saving and would use rationalization as a form of defense mechanism to justify their failures. These defensive mechanisms underlined their acting out behavior and behavioral disturbance. These personality features have been depicted in contemporary Chinese novels to satirize the protective and defensive mechanisms adopted by many Chinese people. The emic personality scales of FAC and DEF were developed specifically to highlight these features.

The most elevated clinical scales among the patients with schizophrenic disorders were DIS, PAR, HYP, PAT, and ANT, scales that mostly load on the CPAI Behavioral Problem factor. In terms of general personality make-up, schizophrenic patients tended to be rigid, constricted, and traditional. Although the mean scores on the clinical scales among the schizophrenic patients were slightly lower than those of patients with bipolar disorders, the differences were not statistically significant. It should be noted that the number of patients with bipolar disorders in this study was small. Previous studies also found that these two diagnostic groups had similar scale elevations on the clinical scales of the Chinese MMPI, although Scale 9 (Hypomania) tended to be more elevated among the manic patients (Cheung & Song, 1989). As the symptomatology of the schizophrenic patients included both positive and negative symptoms, it is possible that their mean profile was not more disturbed as a group compared with the manic patients.

For the patients with neurotic disorders, clinical scales were less elevated than the other two groups. Depression and physical symptoms were the dominant clinical features. These two scales load on the Emotional Problem factor of the CPAI clinical scales. Their mean scores on these two scales were significantly higher than those of schizophrenic patients, but not the patients with bipolar disorders. Despite the presence of psychosomatic symptoms, these patients also admitted their negative affect. Their mean score on the SOM scale was significantly lower than that of the patients with bipolar disorders. With the exception of PAT, their mean scores on all of the scales on the Behavioral Problem factor were significantly lower than those of the bipolar disorder patients. In comparison with schizophrenic patients, their mean scores on all of the Behavioral Problem factor scales were significantly lower with the exception of PAT and NEE.

The personality of these patients with neurotic disorders was characterized by emotionality, pessimism, and lower inclination toward reciprocal interpersonal relationships as reflected by lower scores on two of the indigenous scales, HAR and REN, which depict important attributes in maintaining mutual relationships in Chinese culture. Harmony is emphasized in social relationships among the Chinese people. Reciprocating social favors and maintaining social ties, which are encompassed by the concept of Ren Qing, are important functions in Chinese social relationships. For these patients who are not inclined toward the expected cultural norms in interpersonal relationships, the pressure for meeting the demands of social ties may be a source of strain.

The clinical features represented by the CPAI profiles generally fit the expected patterns for the three groups of psychiatric patients. The personality scales associated with the bipolar disorders and neurotic disorders illustrate patterns of behaviors that characterize these patients. In addition to universal personality traits, culturally relevant personality traits such as harmony, face, and Ren Qing, also enrich the understanding of the personality dynamics in these disorders. In the case of schizophrenic patients, the clinical scales define their distinctive personality characteristics more than the normal personality scales. The lack of a strong relationship between normal personality domains and schizophrenia was observed in another study (Yang et al., 1999). This weak

relationship was attributed to the nature of schizophrenic disorders, which was alleged to reflect more disturbances in cognitive and perceptual organization than in personality traits.

In the logistic regression models, a combination of 6 clinical scales and another 11 personality scales was able to differentiate the combined group of psychiatric patients from the normal comparison group. These models correctly classified 70.4% and 70.2% of the cases, respectively.

Relevance of Emic Scales

In the studies of both the prisoners and patients, emic scales of the CPAI were included in the logistic regression models. The SOM scale is one of the clinical scale predictors that differentiate the prisoners and the psychiatric patients from the general population. Similarly, emic personality scales on the CPAI, such as REN, MOD, and T-E, predicted membership in the prisoner group. In addition to these three scales, the emic scales of FAM and FAC also predicted membership of the psychiatric patient group. These emic scales enrich the description of the general personality profiles of the Chinese prisoners and patients. In particular, the Interpersonal Relatedness factor scales, including REN, FAC, and HAR, help to illustrate the social adaptiveness of the clinical groups that forms an important aspect of normality and deviance in the Chinese culture. Intracultural comparison of the CPAI among ethnic Chinese from different regions showed congruence in the structure of the Interpersonal Relatedness factor (Cheung, Cheung, Leung, Ward, & Leong, 2002; Cheung, Leung, et al., 1996). These interpersonal contexts are important considerations in understanding psychopathology and implementing intervention not only for patients in Chinese societies but also for Chinese American patients who are born overseas or who adopt culture-of-origin behavioral patterns.

Conclusion

The present studies are the first attempts to validate the clinical utility of the CPAI. The preliminary findings support the usefulness of a comprehensive personality inventory that includes both etic and emic scales covering normal as well as pathological personality characteristics in the assessment of clinical populations in Chinese societies. The etic scales of the CPAI provide norms that are appropriate to the population. In addition, the emic scales on the CPAI provide culturally meaningful information that is otherwise not available in translated instruments. In particular, the indigenous scales from the Interpersonal Relatedness factor highlight some of the interpersonal contexts that may pose as social stressors in emotional problems, as well as the defensive mechanisms in reaction to perceived threat. These personality attributes are not covered by Western personality measures and would have been missed when translated personality tests are used (Cheung et al., 2001). Although the overall usefulness of the CPAI scales is supported in these exploratory studies, it is also noted that the scale scores on the clinical scales are only moderately elevated among the clinical samples. This range restriction has also been noted in the scores of the Chinese MMPI–2 when the local norms are used for *T*-score conversion (Cheung, Song, & Zhang, 1996). One possible explanation for the modest differences between Chinese normals and Chinese patients may be that the former group is prone to endorse psychopathological items. However, the low raw scores obtained by the normative sample in the standardization study on the clinical scales did not support this explanation. The restriction in score range on the CPAI may also be related to the relatively small number of items and the resultant ceiling effect on each scale. In the restandardization project of the CPAI, the number of items on the clinical scales has been increased to examine the effect on score range for psychiatric patients. The issue of range restriction will be further examined in a large-scale clinical study currently underway.

Given the small sample size of psychiatric patients in the second study, the profiles of the diagnostic subgroups should be taken as tentative. In particular, the lack of significant differences between profiles of the patients with schizophrenic disorders and those with bipolar disorders suggests that more information on the nature and severity of symptoms should be collected on the patients in future studies. For the psychiatric samples included in the present study, the diagnostic categories were assigned by the attending doctors on the basis of their experience and practice. There might be variations in symptomatology within the diagnostic categories. Large-scale studies with more refined diagnoses are needed to establish typical profiles for subgroups of clinical populations. A further study with the CPAI is currently underway with over 2,000 psychiatric patients. More detailed diagnostic information is being collected for *DSM–IV–TR* Axis 1 and Axis 2 classification. With this large-scale study, it will also be possible to explore empirical strategies to derive scales on the CPAI that would produce better discrimination between patients and normal respondents, and among different diagnostic groups of patients.

It should also be kept in mind that the clinical samples in the present studies were obtained from single locations: prisoners from Hong Kong and psychiatric patients from Beijing. We are conscious of possible intracultural differences among the samples. In the original development of the CPAI, the factor structures of the Hong Kong and the mainland Chinese standardization samples were highly congruent. Even though the mainland Chinese standardization sample covered different regions of China, the regional similarities were greater than differences on the scale scores. In the clinical validation study currently underway with psychiatric patients from different regions of China and Hong Kong, the intracultural variability issue will be revisited.

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Appendix

Scales of the Chinese Personality Assessment Inventory

22 Personality Scales

Dependability Factor

Practical Mindedness (PRA)

High score: steady; realistic and practical; works step by step; likes to do work with concrete outcomes; emphasizes actual gains; tends to be prudent, dutiful, and emotionally stable.

Emotionality (EMO)

High score: hot-tempered; impulsive; capricious; temperamental; apprehensive and gloomy; hostile; vulnerable and emotionally unstable.

Responsibility (RES)

High score: serious; solemn; dependable; punctual; prudent; orderly; not afraid of difficulties; persistent; dedicated; starts and finishes projects well.

Inferiority vs. Self-Acceptance (I-S)

Self-accepting: believes in one's own abilities; undaunted by difficulties; dares to take on responsibilities; optimistic and progressive, but sometimes lacking in modesty and awareness of own limitations.

Inferior: timid and weak; self-pitying; lacks self-confidence; compliant; does not have strong opinions of one's own; sees oneself as incompetent; tends to be gloomy, vulnerable, anxious, and emotionally unstable.

Graciousness vs. Meanness (G-M)

Gracious: magnanimous; tolerant; not calculating; bears no grudges; treats others leniently; optimistic and generous; deals with matters flexibly; accepts others easily.

Mean: nitpicking; jealous; overly critical of others; sarcastic; demanding; scathing; seeks opportunities for retaliation; takes pleasure in others' misfortune; hostile and calculating.

Veraciousness vs. Slickness (V-S)

Veracious: sincere; honest and unassuming; true to facts; adheres to principles; speaks from the heart; upright and scrupulous; acts for collective interests; trusting; tends to be uninteresting.

Slick: boastful; emphasizes superficial qualities; suave; smooth; slippery; avoids offending others.

Optimism vs. Pessimism (O-P)

Optimistic: energetic; feels hopeful and confident; bears a positive attitude towards life; gives others a lively and vivid impression.

Pessimistic: low-spirited; weary of the world; disappointed about the present and the future; grumbles passively; often sees the negative side of things; unable to let go of unhappy events.

Meticulousness (MET)

High score: cautious; reliable; serious; scrupulous about every detail; works systematically; arranges life in an orderly way; does things in a rigid manner; excessively concerned with details; tends to be orderly, deliberate, and self-conscious.

External vs. Internal Locus of Control (E-I)

External Locus of Control: emphasizes objective conditions in handling affairs; attributes success and failure to external factors; believes in luck, fortune, and fate; submits to destiny.

Internal Locus of Control: stresses one's own abilities in handling matters; makes internal attributions for success and failure; believes in human control over destiny; takes initiatives.

Family Orientation (FAM)

High score: filial-pious; values family bonding; takes good care of the family; values harmony in the family; positive relations between parents and children.

Interpersonal Relatedness Factor

Harmony (HAR)

High score: values harmony; willing to sacrifice to make peace; makes concessions to appease others; non-competitive; maintain peaceful relations with others; calm and serene.

Ren Qing (Relationship) Orientation (REN)

High score: values old friendships; interpersonally sensitive; courteous; takes the initiative to strengthen interpersonal relationships; caters to others' wishes; may forsake one's own principles in the effort to attend to others' demands.

Flexibility (FLE)

High score: flexible; reacts swiftly; adapts to changing circumstances quickly.

Modernization (MOD)

High score: liberal; dares to challenge traditional ideas; rejects traditional customs; advocates individual freedom; opposes feudalism and superstitions; open to different values.

Face (FAC)

High score: concerned about face; loves to show off; strong sense of self-respect; pays excessive attention to social recognition; self-conscious.

Thrift vs. Extravagance (T-E)

Thrifty: plain and unassuming; stingy; down-to-earth; frugal; unwilling to discard useless old things.

Extravagant: squanders; high consumption; likes to buy expensive things; hedonistic; flaunts one's riches.

Social Potency Factor

Leadership (LEA)

High score: ambitious; decisive; seeks challenges; independent; believes in one's own capacity to influence others; willing to adopt the leading role in a group; actively takes initiatives.

Adventurousness (ADV)

High score: bold; willing to try new things; dares to take risks; has the courage to reform; explores the unbeaten paths; dares to be original; excitement-seeking; may act rashly.

Introversion vs. Extraversion (I-E)

Introverted: solitary; likes to be alone; quiet; retreating; unsociable; shy.

Extraverted: sociable; talkative; enjoys social gatherings; has many friends; assertive; warm.

Individualism Factor

Self- vs. Social Orientation (S-S)

Self-oriented: self-centered, not afraid of solitude; unwilling to join cooperative activities; does not conform to the crowd; selfish; does things alone; independent; does not like others' interference; unwilling to receive help from others.

Socially oriented: gets on well with others; feels comfortable in a group; willing to cooperate with others in activities.

Logical vs. Affective Orientation (L-A)

Logical: objective; emphasizes logic; good at controlling emotions; analytic; makes judgments of truth vs. falsehood.

Affective: sentimental; relies on intuition; acts according to emotions; easily agitated; makes judgments of good vs. evil.

Defensiveness (Ah-Q Mentality; DEF)

High score: likes to boast; passive-aggressive; likes to show off accomplishments; bullies the weak and fears the strong; lacks the courage to confront failure; indulges in fantasies to comfort oneself; rationalizes to conceal one's sense of inferiority; tends to be narrow-minded.

12 Clinical Scales

Among the clinical scales, the I-S scale may be used as both a personality and a clinical scale. Descriptions of the remaining 11 clinical scales are below.

(*Appendix continues*)

Emotional Problem Factor

Depression (DEP)

High score: dejected; melancholic; gloomy; lethargic; fatigued; disillusioned; adopts a negative and pessimistic view toward problems in life; lacking in confidence; self-reproaching; shows minimal interest in most activities.

Physical Symptoms (PHY)

High score: frail and susceptible to illness; experiences various physical symptoms such as dizziness, headache, choking sensation in the chest, muscular cramps; suffers from insomnia; fails to concentrate.

Anxiety (ANX)

High score: excessively worried; lacks composure; restless; overwhelmed by various concerns; nervous; unable to focus attention on a task; confused and perturbed; occasionally shows obsessive thoughts or behavior.

Somatization (SOM)

High score: presents somatic complaints that may arise from psychological conflicts; expresses distress through somatic presentation; shops around for medical advice; uses physical problems to gain others' concern; may lack insight into psychological problem.

Behavioral Problem Factor

Hypomania (HYP)

High score: impatient; hot-tempered; impulsive; out-going; bursting with energy; talkative and active; affable; cheerful; passionate; excitement-seeking; impetuous; has wide interests; participates in many activities, but without clear goals in mind; has poor self-control.

Antisocial Behavior (ANT)

High score: rebellious; undisciplined; rejects social values; disobedient; engages in aggressive behavior; not bound by social and legal norms; may break the law and infringe upon others' interest in pursuit of personal benefits; conflicts with family.

Need for Attention (NEE)

High score: dependent; self-centered; needs constant attention and recognition; attention-seeking; behaves in a pretentious and affected manner; histrionic; enjoys the limelight.

Pathological Dependence (PAT)

High score: undisciplined; engages in bad habits such as drinking, smoking, gambling, drug abuse; dependent on various habits heavily, frequently, profusely, and without control.

Distortion of Reality (DIS)

High score: bizarre thought patterns; disorganized and irrational thinking; eccentric and peculiar; solitary; does not enjoy contact with others; indulges in fantasy; loses touch with reality; has narrow interests; experiences visual and auditory hallucinations.

Paranoia (PAR)

High score: sensitive; suspicious; makes a fuss over minor problems; skeptical; calculating; lacks trust in others; hostile; hard to get along with; self-aggrandizing.

Sexual Maladjustment (SEX)

High score: fears contact with the opposite sex; uncomfortable with sexuality; suffers sexual dysfunctions; has an unsatisfactory sex life; may engage in abnormal sexual behavior.

3 Validity Scales

Infrequency (INF)

High score: indicates that the respondent is answering in an opposite manner to the majority of respondents, and may reflect peculiar behavioral patterns.

Good Impression (GIM)

High score: reflects attempts to give a good impression and earn positive evaluation by exaggerating good qualities and concealing weaknesses.

Response Consistency Index (RCI)

High score: indicates that the respondent is answering the questions in a consistent manner.

Low score: An excessively low score indicates that the respondent is answering the questions in a careless and inconsistent manner.

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