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# Validation of the Interpersonal Reactivity Index in a Chinese Context

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*Objectives: Psychometric properties of the Chinese version of the Interpersonal Reactivity Index (C-IRI) for the assessment of empathy in Chinese people were examined. Method: The Interpersonal Reactivity Index (IRI) was translated to Chinese, and an expert panel reviewed its content validity and cultural relevance. The translated instrument (C-IRI) was administered to 189 junior high school students and 391 university students. Results: Confirmatory factor analyses revealed a stable hierarchical three-factor structure that was consistent with structure of the English IRI, but the cognitive and emotional aspects of empathy were combined to form a new factor. The subscales of the C-IRI demonstrated acceptable to good internal consistency and test-retest reliability. Some evidence for the construct validity of the measure was also found. Conclusions: The C-IRI possessed acceptable psychometric properties in Chinese adolescent samples. The present findings suggest that the cognitive and emotional aspects of empathy are not differentiated in Chinese adolescents.*

**Keywords:** *empathy; Interpersonal Reactivity Index; Chinese; scale development*

Empathy is “the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another (person)” (Merriam-Webster, 2003). In psychoanalytic literature, empathy was conceptualized as an innate psychic structure. Empathy involves a preconscious ego process that requires the person to temporarily identify with another person and is communicated as an “effective resonance” between two persons (Kohut, 1978). In more recent literature, empathy is generally conceptualized as an ability to examine another person’s perception, feelings, and experience precisely without making judgment, and to communicate one’s understanding concisely to the person (Berger & Thompson, 2000; Egan, 1998).

Similar to many other psychological constructs, social scientists generally agree that empathy could be dispositional or learned (Duan & Hill, 1996), and empathy

involves the interaction of emotional and cognitive processes (Eisenberg, Shea, Carlo, & Knight, 1991; Strayer, 1987). Based on the work of Hoffman (1977, 1984), Davis (1996) broadly defined empathy as “a set of constructs having to do with the responses of one individual to the experiences of another person” (p. 12). There are four covert intrapersonal processes by which empathetic outcomes are produced in interpersonal relationship. These include (a) automatic cognitive processes, such as perception, matching, labeling of emotions and identification with experience; (b) perspective taking or role taking, which refers to an individual’s cognitive attempt to understand another person’s point of view; (c) empathetic concern, which is an affective reaction that is congruent with the observed emotion of another person; and (d) personal distress, which refers to affective reactions in response to the experience of others.

Empathy is widely recognized as an important factor contributing to successful emotional management, parenting, interpersonal popularity, and prosocial behavior (Eisenberg, Miller, Shell, McNalley, & Shea, 1991). The cultivation of empathy is widely regarded as a critical element of social work education. Empathy facilitates the development of a helping relationship, empowers the client, assists the practitioner to transcend cultural differences, and is an essential therapeutic factor in counseling (Bennett, Legon, & Zilberfein, 1989; Dyche &

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Zayas, 2001; Raines, 1990). Davis's (1996) theoretical framework is an important update of current models of empathy. It delineates the cognitive and affective aspects of empathy and hypothesizes that the ability to fantasize and personal distress are important factors affecting the quality of empathy response. The model could provide important reference in designing training programs in social work education, when social workers assess the level of empathy in clients, or when empathy training is provided to clients.

A wealth of social work literature documented the use of sensitivity groups and communication skills training in teaching empathy to social work students (Erera, 1997; Nerdrum & Lundquist, 1995; Vinton & Harrington, 1994). However, despite the important role of empathy in social work education and professional practice, the assessment of empathy, particularly via rapid assessment instruments, was seldom investigated in social work research. A survey of the literature in the social work abstracts with the search terms of *empathy* and *assessment* shows that there are fewer than 10 papers that directly address the issue of empathy assessment in the social work context.

Davis (1980) developed the Interpersonal Reactivity Index (IRI), a self-reported scale with the following four subscales: Fantasy (FS), Perspective Taking (PT), Empathetic Concern (EC), and Personal Distress (PD). Davis (1980) showed that the IRI subscales had good test-retest reliability for a 2-month retest period (test-retest correlation coefficients ranged from 0.62 to 0.71), and good internal consistency (alpha ranged between 0.71 and 0.77). The validation study by Davis (1983) showed that the IRI subscales correlated in the expected directions and strength with measures of social functioning, self-esteem, emotionality, and sensitivity to others, and the subscales were distinctive aspects of empathy.

Current literature has suggested that gender and age are related to development of empathy in adolescent and young adulthood. There is abundant empirical evidence that female youths start to have higher empathy than male youths in junior high school (Eisenberg, Miller, et al., 1991), high school (Davis & Franzoi, 1991), and college samples (Davis, 1980). In particular, the differences between male youths and female youths are higher on the measures of affective reactivity (such as the EC and PD scales in the IRI) than cognitive aspects of empathy (Davis, 1996). There are also research findings showing that age is positively related to empathy. With increasing capacity for role taking in childhood, empathy increases rapidly in late childhood and early adolescence (Davis & Franzoi, 1991; Eisenberg, Miller, et al., 1991; Hoffman, 1977). However, although perspective taking and

empathetic concern continue to increase in adolescence and adulthood (Romer, Gruder, & Lizzadro, 1986), increase in perspective taking tends to decrease tendencies such as personal distress or ability to fantasize (Davis, 1983; Davis & Franzoi, 1991). In view of the current empirical evidence on age and gender correlates of empathy, social workers need to be sensitive to gender and age differences in assessment of empathy in clients. A study of the age and gender correlates of empathy in the Chinese context could help to examine if current findings could be replicated in another culture.

A limitation of the existing literature on empathy in the social work context is that most of the existing studies on empathy are Western studies, and there are very few empirical studies of empathy in Chinese populations. A search of the Social Work Abstract Plus database shows that there is only one published article in Chinese populations that compared the empathy level of local and immigrant youth in Hong Kong (Wong, Yan, Lo, & Hung, 2003). Although the concept of empathy originated in the West, there are similar cultural beliefs in the Chinese culture that encourage people to examine others' perspectives by putting oneself in others' situation. These include the cultural beliefs of "*qi suo bu yu, wu shi yu ren*" (do not do unto others that you would not wish others to do on you), "*jiang xin bi ji*" (compare people's hearts with your own), "*she shen chu di*" (put yourself into other people's position), and "*shen tong gan shou*" (experiencing the experience of other people). With the emphases on collectivism and familism (Yang, 1981), taking the views of others is an essential duty, and the lack of consideration to others' perspectives is generally regarded as a lack of virtue in the Chinese culture (Wong, 1998).

However, with increased exposure to Western culture, it is generally observed that the younger Chinese generation tends to value emotional autonomy much more than the older generations. This usually results in a mismatch of expectations on emotional responding between parents and children. Some studies suggested that the promotion of empathy and mutual acceptance between parents and children in Chinese families is related to family harmony and filial piety attitudes (Chau & Landreth, 1997; Cheung, Lee, & Chan, 1994; Yuen, Landreth, & Baggerly, 2002). Empathy training for parents has become an essential element in parent-effectiveness training programs for Chinese populations (Yeung, Chan, Cheung, Au, & Yuen, 1999). Unfortunately, despite the above attempts to examine or apply the concept of empathy in the Chinese culture, no systematic attempts have been conducted to construct objective Chinese measures of empathy.

With reference to the above limitations of the literature, there is clearly a need to develop a standardized measure of empathy for Chinese clients. This need is clearly expressed by Shek (2002) who pointed out that there is a severe lack of rapid assessment instruments for Chinese clients in the social work context. The current study aimed to develop the Chinese version of the Interpersonal Reactivity Index (C-IRI)—an instrument designed to measure different aspects of the construct of empathy. In this validation study, the psychometric properties of the C-IRI were examined. In addition, the demographic correlates of C-IRI scores, including gender and age, were examined.

## METHOD

The current study developed and validated the C-IRI. First, the IRI (Davis, 1980) was translated to Chinese, and expert panel members evaluated its cultural relevance, content validity, and reading level. Second, the current study explored the psychometric properties of the translated measure, particularly its factorial validity and reliability (test-retest reliability and internal consistency) of the subscales. Finally, demographic correlates of the C-IRI scores, including gender and age, were examined to give some indication of the construct validity of the measure (i.e., whether the measure has expected correlation with theoretically relevant variables; Springer, Abell, & Hudson, 2002).

### Study Participants

The current study was conducted in Hong Kong Special Administrative Region (HKSAR), which is a major international city south of province of Canton in People's Republic of China. The participants were recruited from two high schools and one university. The 189 junior high school students came from the seventh and eighth grades, with a mean age of 14.10 ( $SD = .75$ ). Sixty (31.7%) were male youths and 129 (68.3%) were female youths. The 391 university students were first- and second-year undergraduate students from a variety of faculties. Their ages ranged from 18 to 29 years, with a mean of 20.70 ( $SD = 1.63$ ). Of these undergraduates, 174 (55.9%) were men, 137 (44.1%) were women, and 80 students did not provide information on their gender or age when they completed the questionnaires. Among these two groups of participants, 31 high school students and 60 university students joined the study on the test-retest reliability of the instruments.

### Instruments

*The Chinese Interpersonal Reactivity Index (C-IRI).* The 28-item IRI is a self-reported questionnaire consisting of four 7-item subscales, including Fantasy (FS), Perspective Taking (PT), Empathetic Concern (EC), and Personal Distress (PD). Participants are requested to indicate the degree to which each item describes them using a 5-point Likert-type scale, which varied from 0 (*does not describe me well*) to 4 (*describes me very well*). A total score of 28 could be obtained for each of the four subscales, and a higher score in a subscale represents a higher functioning in each aspect of empathy.

The 28-item IRI was translated into Chinese, and an expert panel with 11 members evaluated its content validity and cultural relevance. The IRI was first translated into Chinese (in the Cantonese dialect) and then back translated into English from Chinese by two professional translators. Discrepancies between the English and Chinese versions were evaluated and gradually reduced through an iterative review process. The members of the expert panel include three psychologists, two academics in the field of psychology, and six social work and mental health professionals. The panel members fulfilled at least two of the following criteria: (a) the member had published articles in academic journals related to adolescent mental health, (b) the member had more than 5 years of experience in psychosocial assessment, and (c) the member had more than 5 years of experience providing social work, counseling, or psychotherapy services to adolescents and young adults.

To review the content validity of the translated measure, the experts were requested to complete a self-administered questionnaire that evaluated the content relevance and representativeness of the test items. In the questionnaire, the panel members were requested to indicate how far each item was relevant to their respective theoretical domain on a 4-point Likert-type scale (ranging from *irrelevant* to *relevant*) and provide additional comments if they regarded an item as irrelevant. Open-ended questions were used to examine how far the content domain was adequately represented by the items as a whole, and whether certain content areas were overrepresented, underrepresented, or missing from the instrument.

Most of the experts agreed that the PT and EC subscales were representative of the empathetic response and identified that Personal Distress and Fantasy were antecedents and consequences of empathy. Two experts said that PD and FS might not be relevant to clinical assessment of the empathetic response. In the study of relevance

**TABLE 1: Goodness-to-Fit and Reliability Indices for the Factor Models of the C-IRI**

Model	No. of Items	Items Deleted	Fit Indices						
			$\chi^2$	df	GFI	AGFI	RMSEA	CFI	$\alpha$
Four factor	28	Nil	2471.30	378	.88	.85	.06	.65	.55
Hierarchical four factor	23	1,3,4,19,20	2192.23	276	.88	.86	.11	.68	.62
Three factor	28	Nil	2471.30	378	.87	.86	.06	.69	.55
Hierarchical three factor	22	1,3,4,7,19,23	2146.44	231	.88	.85	.07	.72	.73

NOTE: C-IRI = Chinese Interpersonal Reactivity Index; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; RMSEA = Root mean square error of approximation; CFI = Comparative Fit Index.

of items to theoretical domains, all the items of the PT and FS domains were rated as relevant. Three experts expressed some concerns on the relevance of Items 9, 20, and 22 to the EC domain, and the relevance of Items 10 and 17 to the PD domain. For Item 9, a few experts commented that “the tendency to protect someone being taken advantage of” could be related to tendencies other than empathy, such as a sense of righteousness, or it might be regarded as part of civic responsibility. Some experts commented that Item 20 (“I am often quite touched by things that I see happen”) might be more relevant to the PD instead of EC. For Item 22 (“I would describe myself as a pretty soft-hearted person”), three experts commented that *soft hearted* could have an alternative meaning that a person is easily being influenced by others or a lack of self-confidence in the Chinese culture. Regarding the comments on Items 10 and 17 of the PD domain, experts recommended some improvement in the translation of two items.

On the whole, the experts were satisfied with the relevance and representativeness of the IRI items. After improving the translation of Items 9, 10, and 17, the remaining concerns were the relevance of Items 20 and 22 to the EC domain. However, to maintain consistency with the original English version, all 28 items were included in the validation study.

### Procedures

For the junior high school sample, consent was obtained from school administration for the data collection. The researcher or assistant provided a briefing to the teachers and students about the purpose of research and was present throughout the test administration process. All 189 research participants from the two schools completed the C-IRI. The high school and university students participated in the study on a voluntary basis. All the research participants completed the C-IRI and provided information on their gender, age, and level of study or the faculty they belong to. For the study of test-retest reliability, 31 high-school participants and 60 university students

completed the C-IRI for a second time 2 weeks after the first administration.

## RESULTS

### Factor Structure

Using confirmatory factor analysis, we attempted to fit the four-factor model in the original English version (Davis, 1996) to the data. The original four-factor model has four 7-item subscales of FS, PD, EC, and PT. Although different indicators have been proposed to interpret the goodness of fit of findings from confirmatory factor analyses, root mean square of approximation (RMSEA) has been regarded as the most informative indicator in structural equation modeling (Browne & Cudeck, 1993; Byrne, 1998; MacCallum, Browne, & Sugawara, 1996). The values of RMSEA can be interpreted in the following manner: 1 = perfect fit; less than 0.05 = a close fit; 0.05 to 0.08 = a fair fit; 0.08 to 0.10 = a mediocre fit; larger than 0.10 = a poor fit.

Using the computer software program EQS 6.1, we conducted a confirmatory factor analysis on a total of 580 cases and found that the model fit was fairly satisfactory (Goodness-of-Fit Index [GFI] = .88, Adjusted Goodness-of-Fit Index [AGFI] = .85, RMSEA = .06, Comparative Fit Index [CFI] = .65, see Table 1). However, the standardized paths coefficients for five items (Items 1, 3, 4, 19, 20) were small (below 0.30). In post hoc fitting, these five items were removed; however, fit statistics did not improve. We further tried to fit a hierarchical four-factor model. The model fit remained similar although there was an improvement in reliability, as Cronbach's alpha increased from .55 to .62.

As the fit of the data with Davis's (1980, 1983) four-factor model was only fairly satisfactory, we conducted an exploratory factor analysis (principal components analysis with oblique factor rotation) to explore the factor structure. The change of eigenvalues and the scree plot from initial factor extraction suggested a three-factor



**TABLE 2: Results of Exploratory Factor Analysis of the Chinese Interpersonal Reactivity Index (C-IRI)**

Item Number and Item Content in Brief <sup>a</sup>	Factors <sup>b</sup>		
	1	2	3
23. Easily put self in place of character in movie (FS)	.81 <sup>c</sup>	.02	.09
5. Involved with feeling of characters in novel (FS)	.70 <sup>c</sup>	.02	.08
16. Felt like one of the character in play/movie (FS)	.67 <sup>c</sup>	-.06	.07
26. Imagine how I feel if story happening to me (FS)	.67 <sup>c</sup>	.15	.05
12. Rarely become extremely involved in movie or book (FS)	.57 <sup>c</sup>	-.11	-.08
7. Objective in watching movie (FS)	.42 <sup>c</sup>	-.16	-.02
14. Others' misfortunes do not disturb me a lot (EC)	-.18	.61 <sup>c</sup>	-.04
8. Try to look at everybody's argument (PT)	-.13	.60 <sup>c</sup>	-.09
18. Don't feel pity when someone is treated unfairly (EC)	-.21	.60 <sup>c</sup>	.00
9. Protect them being taken advantage of (EC)	-.09	.54 <sup>c</sup>	-.01
28. Imagine how people feel when I criticize them (PT)	.10	.52 <sup>c</sup>	.03
21. Believe there are two sides to each question and try to look (PT)	.06	.48 <sup>c</sup>	-.05
11. Try to understand friends by imagining how they see things (PT)	.19	.43 <sup>c</sup>	-.09
25. Put myself in other's shoes if upset about him (PT)	.13	.39 <sup>c</sup>	.05
15. Don't waste time listening if I'm sure I am right (PT)	-.08	.39 <sup>c</sup>	-.05
2. Concern feelings for less fortunate (EC)	.26	.33 <sup>c</sup>	.04
22. Describe self as soft hearted (EC)	.25	.30 <sup>c</sup>	.14
1. Daydream and fantasize (FS)	.01	.14 <sup>c</sup>	.10
27. Go to pieces if see someone badly in need (PD)	.02	.06	.68 <sup>c</sup>
24. Tend to lose control during emergencies (PD)	.13	-.05	.67 <sup>c</sup>
20. Quite touched by things that I see happen (EC)	.13	.13	.59 <sup>c</sup>
6. Feel apprehensive in emergency (PD)	.13	.06	.54 <sup>c</sup>
13. Tend to remain calm when people get hurt (PD)	-.03	-.09	.51 <sup>c</sup>
17. Being tense in emotional situation scares me (PD)	.09	.20	.51 <sup>c</sup>
10. Feel helpless in a emotional situation (PD)	.14	.15	.48 <sup>c</sup>
4. Don't feel very sorry for others having problems (EC)	.13	.10	-.30 <sup>c</sup>
19. Effective in dealing with emergencies (PD)	-.07	-.11	.26 <sup>c</sup>
3. Difficulty seeing things from others' view (PT)	.06	.07	-.13 <sup>c</sup>
Variance explained:	14.16	9.46	6.49

NOTE: a. The factor to which the item belongs in the original IRI is shown in parentheses: PD = Personal Distress; EC = Empathetic Concern; PT = Perspective Taking; FS = Fantasy Scale.

b. Factor 1 = Fantasy Scale; Factor 2 = Empathy Scale; Factor 3 = Personal Distress Scale.

c. The highest loading among the factors for an item.

solution that could explain 30.11% of the total variance (Table 2). The first factor had six items, which were all from the FS of the IRI. Factor loadings were high (varied between 0.46 and 0.81), and this factor was labeled as Fantasy Scale (PD). The second factor included six items of the PT scale, five items of the EC scale, and an item from FS with insignificant loading of .14. As the PT and EC scales represented the emotional and cognitive aspects of empathy, this factor could be collectively labeled as the Empathy Scale (ES). The third factor composed of seven items of PD, two items of EC, and one item

of the PT (with insignificant loading of .13). The factor loadings were between 0.26 and 0.68, and the factor was labeled the Personal Distress (PD) scale.

To further validate this new three-factor model, we conducted separate exploratory factor analyses on the university ( $n = 391$ ) and high school ( $n = 189$ ) samples. The similarity between the factor solutions obtained from the two samples was evaluated by computing coefficients of congruence across the samples (Harman, 1976; Tucker, 1951). The coefficients were .99 for FS, .95 for ES, and .99 for PD, which indicated the two-factor solutions were highly similar. The high similarity of the factor structures across samples provided support for the three-factor model of the C-IRI.

We then attempted to fit the three-factor model identified from the exploratory factor analysis to the data. The preliminary fit statistics (GFI = .87, AGFI = .86, RMSEA = .06, CFI = .69) was not significantly better than the four-factor model. Six items with insignificant path coefficients (below 0.30) were removed, and a hierarchical three-factor model with better fit (GFI = .88, AGFI = .85, RMSEA = .07, CFI = .72) and internal consistency ( $\alpha = .73$ ) was identified (Figure 1). This hierarchical model has 22 items with the standardized path coefficients ranging between .31 and .75. The three factors of PD, ES, and FS were hypothesized to load on a second-order factor of "interpersonal reactivity".

### Reliability

The internal consistency obtained for the subscales was acceptable to good, as reflected by the Cronbach's alpha of .65 to .70 (.65 for FS, .68 for ES, .70 for PD). The 2-week test-retest reliability, as indicated by Pearson's  $r$ , was between .68 and .83 (.83 for FS, .68 for ES, .72 for PD).

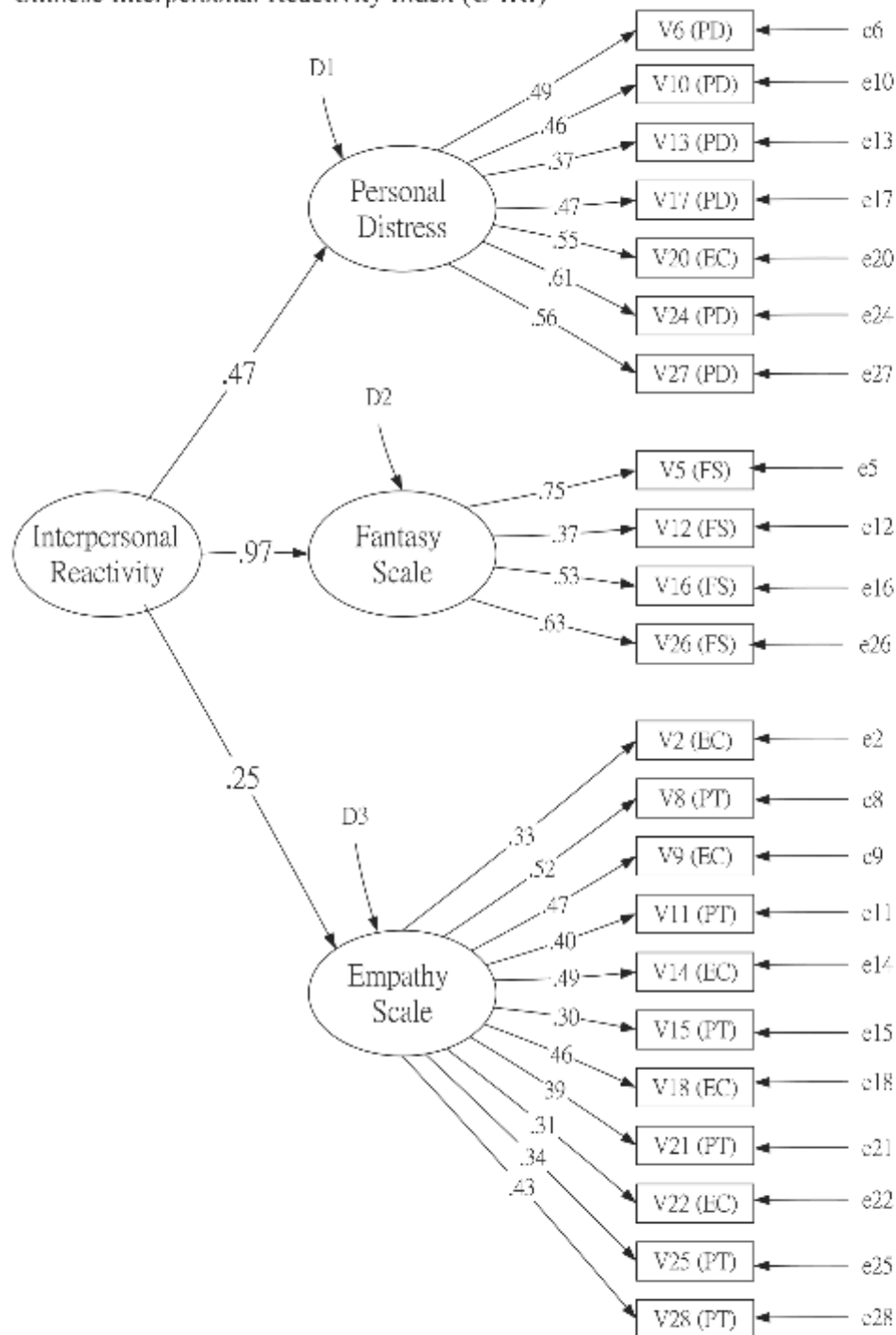
### Relationship Among the C-IRI Subscales

There was a significant positive correlation between the FS and PD ( $r = .32, p < .001, r^2 = .10$ ). There was low correlation between the EC and PD scales ( $r = .12, p < .05, r^2 = .01$ ), and between the EC and FS ( $r = .17, p < .01, r^2 = .03$ ).

### Gender and Age Effects on the C-IRI Subscales

A two-way analysis of variance (using general linear model) was conducted to examine the effects of gender and age on the C-IRI subscales (Table 3). The main effects revealed gender differences in PD ( $F = 11.85, p <$

Path diagram and estimated parameter loadings for the hierarchical three-factor model of the Chinese Interpersonal Reactivity Index (C-IRI)



**Note.** Factors are represented by ellipses and manifest (observed) variables by rectangles. The abbreviations in brackets (PD, FS, EC, and PT) which indicate the grouping of the item under the IRI.

Figure 1: Path Diagram and Estimated Parameter Loadings for the Hierarchical Three-Factor Model of the Chinese Interpersonal Reactivity Index (C-IRI)

**TABLE 3:** *Analysis of Variance (General Linear Model) for Chinese Interpersonal Reactivity Index (C-IRI) Scores*

Source	C-IRI Subscales	df	F	p	d <sup>a</sup>
Gender	Fantasy Scale	1	0.13	.723	.000
	Personal Distress	1	11.85	.001**	.025
	Empathy	1	1.07	.303	.002
Age	Fantasy Scale	15	1.95	.018*	.060
	Personal Distress	15	1.69	.049*	.053
	Empathy	15	12.24	.000***	.288
Gender × Age	Fantasy Scale	11	2.03	.024*	.047
	Personal Distress	11	1.91	.037*	.044
	Empathy	11	.94	.506	.022
Error	Fantasy Scale	454	(10.89)		
	Personal Distress	454	(17.51)		
	Empathy	454	(22.14)		

NOTE: a. Effect size *d* was estimated using partial eta squared.\**p* < .05. \*\**p* < .01. \*\*\**p* < .001

.01) but not in FS or ES. Age was a good predictor of all three subscales, including ES ( $F = 12.24, p < .001$ ), FS ( $F = 1.95, p < .05$ ) and PD scale ( $F = 1.69, p < .05$ ). There was also significant interaction between gender and age on the FS scale ( $F = 2.03, p < .05$ ) and the PD scale ( $F = 1.91, p < .05$ ). Further graphical analyses were carried out to examine the interaction effects in the C-IRI scores. Male youths tended to have higher scores in FS in adolescence (between age 13 and 15 years) than female youths. Female youths tended to have higher PD scores than male youths older than age 16 years and had higher ES scores than male youths during adolescence and young adulthood.

## DISCUSSION AND APPLICATIONS FOR SOCIAL WORK PRACTICE

The results indicated that a 22-item hierarchical three-factor solution has the best model fit and internal consistency among the models tested. The 22 items had significant path coefficients and were grouped under three factors of FS, ES, and PD. However, instead of a four-factor model in the IRI, the results from both samples suggested a three-factor solution in which the items under PT and EC factors were combined to form one factor. On the other hand, the observation that female youths had higher EC and PD scores than did male youths in late adolescence to adulthood is consistent with developmental theories and previous empirical findings that female youths score higher on affective aspects of EC. These findings also provide some support for the construct validity of the C-IRI subscales.

As far as the factor structure of the C-IRI is concerned, the three-factor solution obtained from the current study was largely consistent with Davis's theory (1980, 1983) underlying the construction of the IRI and provided support to the multidimensional nature of the empathy response. The multidimensional nature of empathy suggested that a need to assess the tendency to fantasize as well as personal distress in addition to empathy, if we were to understand the empathy of an individual more thoroughly. This also implies that in empathy training, it would be useful to ask trainees to examine their fantasies and the personal distress when they attempt to use empathy. The self-understanding involved in examining one's fantasies and distress could further enhance our ability to empathize with others (Epp, 2000).

Nevertheless, the current findings showed that the cognitive and affective aspect of empathy appear to fuse in Chinese adolescents. Concerning the fusion of the cognitive and affective aspects of empathy, there are two possible explanations. Firstly, the factor solutions of the IRI and C-IRI may differ because of cultural differences. The fusion of the cognitive and emotional dimensions implies that Chinese people might not perceive the items from the two dimensions as too different in nature. Actually, there are previous studies showing that the factor structures of Chinese-translated scales are not consistent with those of the original English version. For example, in an examination of the factor structure of the Chinese Self-Report Family Inventory, Shek (1998, 2001) found that Chinese people have a less differentiated view in their perceptions of family functioning. Similarly, Shek (1988, 1991) showed that instead of the presence of four factors in the Chinese version of the State-Trait Anxiety Inventory, there was an additional factor intrinsic to the scale. In the present context, because Chinese people are rather inhibited in their emotions, it is not unreasonable to find that the perspective taking items merged with the empathetic affective responses items.

The second explanation for the merging of the perspective taking and empathetic emotional responses is that there are still debates concerning the boundaries of emotional and cognitive processes underlying empathy (Cliffordson, 2002). Eisenberg, Shea, et al. (1991) showed that the causal relationships between cognitive and emotional processing underlying empathy are not simple or unidirectional, and attempts to delineate emotional and cognitive processing in empathy could return to a chicken-and-egg dilemma.

Another observation from the results of factor analysis is that Item 20 (that originally belonging to the EC subscale of the IRI) was grouped under the PD scale



instead of the EC scale. From a careful examination of the content of these items, it is noted that this item could tend to elicit feelings of distress. Item 20 ("quite touched by things I see happen") is concerned with a sense of personal sympathy toward others, and its grouping to the PD scale was consistent with the opinion of expert panel review. These results suggested that the respondents perceived only a thin line between empathetic concern and personal distress in this item. If the item on empathetic concern tends to elicit strong feelings of distress, respondents may see the item as sympathy or a need for altruistic justice.

There are several implications of the study for social work research and practice. First, the development of the C-IRI and the accumulation of research findings on the psychometric properties of the C-IRI enable social workers to assess different aspects of empathy in the Chinese culture in an objective manner. The scale can also be used to evaluate the outcomes of social work training programs. This contribution is important because there are few available measures of psychosocial functioning in the Chinese culture (Shek, 2002). For social workers who are interested in getting more details about the C-IRI, they can simply communicate with the authors.

The second implication of the findings is that the employment of the original IRI subscales in Chinese adolescent clients must proceed with caution. Because there has been a tremendous increase in the number of Chinese people migrating to North America in the past 2 decades, the demand for adolescent and family service for Chinese Americans has also increased. The current findings suggest that social workers must be cautious in using and interpreting the subscales scores of the IRI gathered from Chinese clients. If we look at the factor structure of the C-IRI, the current findings suggest that the original dimensions of the IRI are not empirically supported, and there are three stable and reliable aspects of the C-IRI instead of four dimensions in the original English version of the scale. It was also recommended that social work researchers should conduct more studies to further examine the factor structure of the original English IRI.

The third implication of the current findings is that they reinforce the argument that it is absolutely necessary to validate Western measures when they are translated into other languages and used in a non-Western context (Shek, 1998, 2001). In the current case, although the findings generally support the psychometric properties of the C-IRI, the factor analytic data suggest that the dimensionality of the C-IRI might differ from those based on the original English version. This implication is important because it is common for social workers in Hong Kong

and other Chinese contexts to use translated assessment tools developed in the West without rigorously validating their psychometric properties.

Finally, the observation that gender and age were related to the C-IRI subscale scores has implications on clinical practice. The related findings suggest that it is important to be sensitive to gender and age differences in the assessment and training of empathy. In addition, the findings suggest that different norms should be developed for male and female Chinese adolescent clients with different ages.

There are three limitations of the current study. First, the research findings reported in the current study are based on adolescents in Hong Kong who do not represent Chinese populations around the world. Thus, there is a need to replicate the findings obtained and to assess the generalizability of the findings in samples of different Chinese communities as well as samples living in non-Chinese contexts (e.g., Chinese Americans). Second, although the current findings provided some good evidence for the factorial validity and peripheral evidence for the construct validity of the C-IRI, more central evidence on other aspects of the validity of the measure, including convergent and discriminant validities, were not collected in this study (Springer et al., 2002). Finally, although the reliability estimates of the C-IRI scores were acceptable to satisfactory, further replication work should be done.

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