The Construct Validity of the Circumplex Model of Marital and Family Systems (VII): Confirmatory Factor Analytic Inter- and Intra-Cultural Cross Validation

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オルソン円環モデルに関する実証的研究は、わが国でも1980年代なかばより、盛んに行われるようになってきた。しかしながら、これらの調査研究では、きずな・かじとり次元の直交性という円環モデルの基本的な仮説についてさえ、支持する結果が得られていない。これは、円環モデルの通文化的な妥当性を否定するものだろうか。本稿では、むしろ問題点は方法論にあると考える。根本的な問題は、調査に用いた尺度がオルソンらの尺度(FACES シリーズ)の和訳版(しかも、個々の研究者によってその訳文が異なる)を用いていることにある。そこで、われわれの研究室では、過去7年間にわたって、家族のきずな・かじとりについて、日本の文化や社会に適合する尺度項目を独自に開発してきた。本稿では、このようにして開発した家族システム評価尺度第二版(FACESKGII)の構成概念妥当性を、二つのサンプルから実証的に検証する。方法としては、FACESKGII を用いて、きずな・かじとりそれぞれの構成概念を、父・母・子のそれぞれの報告から評定した。サンプル1は602家族、サンプル2は437家族である。評定結果は、それぞれのサンプルごとに多特性多方法行列の形にまとめた。つづいて、この多特性多方法行列の因子構造について、特性や方法の因子を想定しないモデル、単一の因子を想定するモデル、複数の因子を想定するモデルなど、特性と方法のそれぞれの因子構造を漸次的に精緻化させた複数の共分散構造モデルを階層状に作成した(Widaman, 1985)。そして、それぞれのモデル間の適合度χ二乗値の差異の検定や、適合度指標(GFI, AGFI, AIC)の比較をおこなった(豊田、1992)。その結果、両方のサンプルで、FACESKGII によって測定されるきずな・かじとりの集束的妥当性・弁別的妥当性を計量的に実証することに成功した。

The Circumplex model (Olson, Sprenkle and Russell, 1979; Olson, Russell and Sprenkle, 1988), at the most abstract level, shares the General Systems Theory paradigm as "a central underlying base" (Olson, Sprenkle and Russell, 1979, p.5) and therefore is assumed to be universal. The model states that an optimal level of family functioning depends on semi-permeable system boundary maintenance as well as a balance between change and stability. Too many or too few transactions to outside systems in comparison to those inside a family system (cf., Kameguchi, 1990 and 1991) would not ensure the healthy psychosocial functioning of individual family members. Similarly, too much or too little responsiveness to situational and developmental changes makes it difficult for a family system to perform its own problem solving and attain a family goal. The Circumplex model assumes that these two system properties, cohesion (semi-permeable boundary maintenance) and adaptability (flexible balance of change and stability), are value free and universally applicable to any form of family

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systems. On the other side of the Pacific, Japanese family researchers attempted to verify this claim since the mid-1980's. However, they failed to support several assumptions of the model. Most notable was the failure to demonstrate the two factor structure of cohesion and adaptability (Ohkuma, Ohtsuka, and Fujita, 1984; Ohkuma, 1985; Iwahashi, 1988; Watanabe, 1989; Kurokawa, 1990; Noguchi et al., 1991; Nagata, 1992). These findings challenge the crosscultural generalizability of the Circumplex model and they cast a doubt about the model's claim for value free universality by virtue of its General System Theory basis. This ultimately leads to a question concerning the theoretical (construct) validity of the Circumplex model.

One possible answer to this potentially crucial problem is methodological rather than substantive. All Japanese family studies on cohesion and adaptability referred to in the above used translations of North American made scales. The translations include Olson's FACES (Ohkuma, Ohtsuka, & Fujita, 1984; Ohkuma, 1985), FACESII (Iwahashi, 1988), FACESIII (Kurokawa, 1990; Sadaki etal., 1991 Nagata, 1992), Bloom's Self-report Measures of Family Functioning (Watanabe, 1989) and Moos' FES (Nakata et al., 1991; Noguchi et. al., 1991). These translated scales did not reproduce theoretically expected inter-scale and inter-item structures by exploratory factor analyses. None of the translated versions of Olson's FACES series and Bloom's SMFF demonstrated a low correlation between the adaptability and cohesion dimensions. Internal consistency reliabilities were moderate at best (Watanabe, 1989; Kurokawa, 1990), low (Iwahashi, 1988; Noguchi, et al., 1991) or, at worst, simply not reported (Ohkuma, Ohtsuka, & Fujita, 1984; Ohkuma, 1985; Nakata et al., 1991). In short, one could not tell whether the differences in questionnaire responses were due to a lack of the universality (i. e., crosscultural generalizability) of the model or simply due to a lack of the reliability and validity of the scale.

The failures of the translated scales to reproduce the expected factor structure indicate that scale items are not crossculturally generalizable: Japanese families respond to the word-to-word translations of the North American family functioning scales in different ways. In a critique to FACESIII, Joanning and Kuehl (1986, p. 165) comment on the cultural specificity of FACESIII items as follows:

> FACESIII "sets families up" to comment on themselves using the "frame" implicit in the instrument rather than the "frame" or world view the family uses in their own lives... The criticism are most apparent when using the scale with Hispanic, Black, and underprivileged Anglo families. These families volunteer comments such as "this test isn't how we see things."

For Japanese families, FACESIII items on support (e.g., "1. Family members ask each other for help."), household chores (e.g., "20. It is hard to tell who does house hold chores.") and discipline (e. g., "10. Parent(s) and children discuss punishment together.") may sound "foreign". These items represent the frame or world view which is implicitly shared only among Judeo-Christian mainstream North American families.

The schema or frames concerning support, household chores, and child rearing are distinctively different in Japan. In 1963, Tanaka Kunio along with Sugiyama Sadao and late Masuda Kokichi studied decision making styles of Kobe couples (Tanaka and Sugiyama, 1964; Masuda, 1965 and 1969; Tanaka, 1973) and compared the result with a similar Detroit study (Wolf, 1959). Masuda (1965 and 1969), Tanaka and Sugiyama (1964) found that American couples prefer Syncratic (i.e., consensual) decision making while Japanese couples prefer Autonomic decision making styles (i. e., division of power and authorities according to traditional views of sex roles). In practice, this means that Japanese husbands tend to frame such tasks as child rearing and household chores as "women's things" and they are reluctant to be involved with the other sex's business (see also Ito, 1960, 1961 and 1985; Kamiko, 1979). Because of this attitude, Japanese husbands were perceived by their wives to be much less involved (Vogel, 1963; Vogel, 1978) and far less supportive (Durrett et al., 1986) in child rearing compared with American husbands. Similarly, an international comparison of the household chore sharing rate among double income couples in Tokyo, New York and London revealed that Japanese husbands hardly share any household chores. For example, 17 % and 14 % of husbands in New York and London respectively shared the responsibility of preparing breakfast while none of Japanese husband shared this chore. Similarly, 73 % and 47 % of husbands in New York and London respectively took garbage out, only 9 % in Tokyo did so (Asahi-Kasei-Kogyo Dual Income Family Research Institute, 1990). With respect to discipline, Vogel (1963) observed that Japanese middle class mothers in a suburb of Tokyo relied on strong emotional bonding with a child when disciplining a child (e.g., "Why are you doing this to Mommy? That makes Mommy very sad. You are a naughty child."). Motomura (1970) also found that the emotionally-laden approach to disciplining was typically associated with middle class mothers in downtown Osaka. On the contrary, Masuda (1969) points out that discipline is rational, rule and contract based in America. Therefore, questions concerning "Discussion on punishment" are conceivable only in the American way of discipline and not the Japanese middle class way.

The family system model may be cross-culturally universal, but the items are not. This paper reports the results from two crossculutural generalizability studies of the Circumplex model using an originally developed scale, Family Adaptability and Cohesion Evaluation Scales at Kwansei Gakuin version two or FACESKGII. FACESKGII was constructed with a specific aim of capturing cohesion and adaptability dimensions in both urban and suburban Japanese middle class families with adolescent children. In the 1990 study (study 1), 602 families with junior-high and high school age children answered FACESKGII. The 1991 study (study 2) obtained FACESKGII responses from 437 families with junior-high school age children. In each study, a father, mother and child all independently answered FACESKGII questions. Thus, scores on two traits, きずな (*kizuna* or cohesion) and かじとり (*kajitori* or adaptability) were obtained through three different family member's viewpoints. The result from each study was then summarized in a multitrait-multimethod matrix. The examination of the construct validity is possible by analyzing a multitrait-multimethod matrix with regard to its convergent and discriminant validity (Campbell and Fiske, 1959). In order to test statistically the convergent and discriminant validity, hierarchically nested confirmatory factor analysis models were constructed (Widaman, 1985). These models were fitted to the study 1 multitrait-multimethod matrix and the goodness of fit was statistically tested. The findings from the study 1 matrix were eventually cross-validated by confirmatory factor analyses from the study 2 multitrait-multimethod matrix.

Study 1

Method

Subjects

Subjects were 602 families with at least one adolescent from urban and suburban areas in the western Japan (Kansai region) including Osaka, Hyogo, and Nara prefectures. Subjects were recruited from the 16 junior-high and 36 high schools in this region, where graduates of Kwansei Gakuin University taught and volunteered to provide subjects from their classes. In total, 2318 out of 3850 families responded to the questionnaire (43.5 % response rate). However, 865 families were excluded for the current study due to a high response bias, such as acquiescence and social desirability bias (Jackson, 1971) in one of the family member's report. Similarly, an additional 851 families were also excluded because at least one family member's report was missing. In other words, the current study selected only those complete cases (602 families) in which father, mother and child reports were all available. On average, fathers were 45.8 years old (S. D.=4.4), mothers 42.8 years old (S. D.=3.8) and children 15.9 (S. D.=1.9). In terms of living arrangement, about 75 % of families were a nuclear family, 17 % of families lived with grandparent(s) and the rest were other categories.

Instrument.

FACESKGII. The development of FACESKGII was prompted by failures of FACES series Japanese translations. FACESKGII was constructed according to the construct validation paradigm (Loevinger, 1957; Jackson, 1970 and 1971; Wiggins, 1973; Tatsuki, 1985; Skinner, 1987). Two master's level students and twelve senior students who attended the author's two year research seminar on family systems theory, prepared an item pool consisting of 2,362 items. 141 items were then chosen and the preliminary scale was administered to 2318 families (5027 individuals). From this, evolved two versions of FACESKGII, a parent version (12 items for cohesion and 16 items for adaptability) and a child version (12 items for cohesion and 18 items for adaptability). Parents rate items such as "When we plan to go out as a family, one parent is always reluctant to go (parent-child coalition in cohesion)" and "In our family, children are not allowed to have long phone calls (rule in adaptability)" on a 1 to 4 scale (1=never applicable to our family, 4=very applicable to our family). More than a three quarters of child version items are the same as the parent version, but it also includes such unique items as "Even on an overnight trip, I can't help phoning home (emotional bonding in cohesion)" and "I have to adjust my own schedule even at the last minute if my parents ask me to do some family business (leadership in adaptability). Internal consistency reliabilities of cohesion are comparable to FACESIII (.77 for father cohesion, .75 for mother cohesion and .72 for child cohesion). The reliabilities for adaptability scales exceed to FACESIII (.85 for father, .83 for mother and .89 for child adaptability). Agreement among family members is consistently low but significant ($p < .001$, N=602 families) ranging from r=.29 for father-child adaptability to r=.39 for mother-father cohesion and adaptability (Hirao et al., 1992).

Response Biases. Acquiescence bias was evidenced by too many missing responses, the same or patterned response keys over a page, and a high response variance to a homogeneous sets of items (Jackson, 1970). Social desirability bias was measured by a 7 item marital/family conventionalization scale adopted from Edmonds' marital conventionalization scale (Edmonds, 1967) and Skinner's FAM (Family Assessment Measure) family conventionalization items (Skinner, Steinhauer, and Santa-Barbara, 1983). Social desirability scale has been used since the first version of FACESKG (Ikeno et al., 1990) and has shown unidimensionality, good internal consistency reliability (.82 for parent and .85 for child) and low to moderate agreement among family members (ranging from .30 for father-mother to .50 for mother-child).

Procedure

Students were given envelopes containing two sets of FACESKGII parent version and one set of child version at school. They were asked to return all questionnaires answered individually by the father, mother and the student at the end of the week. In each questionnaire, cohesion, adaptability and social desirability items were all randomized to avoid order effects. The study was conducted in October to December of 1990.

Results

For each of 602 families studied, a father,

Table 1 Study 1 Multitrait-Multimethod Matrix among Cohesion and Adaptablity Measures with Their Means and Standard Deviations.

	Father		Mother		Child			
Method	Coh.	Adpt.	Coh.	Adpt.	Coh.	Adpt.	Mean	SD
Father Report								
COHESION	(.77)						37	4.7
ADAPTABILITY	.06	(.85)					46	6.0
Mother Report								
COHESION	.39	.04	(.75)				39	4.7
ADAPTABILITY	−.07	.39	.03	(.83)			46	6.0
Child Report								
COHESION	.37	−.04	.32	−.09	(.72)		33	4.6
ADAPTABILITY	−.02	.29	−.10	.35	−.03	(.89)	55	7.5

Note. On-diagonal elements in brackets are internal consistency reliablity coefficients (Cronbach's Alpha) of given measures, while off-diagonal elements are correlations between the two corresponding measures.

Note2. N=602 families.

Table 2 Hierarchical Taxonomy of Confirmatory Factor Analysis Models for Testing Convergent and Discriminant Validities from Multitrait-Multimethod Matrix (cf. Widaman, 1985, p. 6).

Trait Structure	Method Structure A	B	B′	C_n	C
1	Null Model	1 General Method	m methods only (All Orthogonal)	m methods only (n Oblique, m–n Orth. methods, n< m)	m methods only (All Oblique)
2	1 General Trait	2 General Factors	1 General + m methods (All Orthogonal)	1 General + m methods (n Oblq., m–n Orth. methods, n< m)	1 General + m methods (All Oblique)
2′	t traits only (Orthogonal)	1 General + t traits (Orthogonal)	t traits (Orthogonal) + m methods (All Orthogonal)	t traits (Orthogonal) + m methods (n Obliq., m–n Orth. methods, n< m)	t traits (Orthogonal) + m methods (All Oblique)
3	t traits only (Oblique)	1 General + t traits (Oblique)	t traits (Oblique) + m methods (All Orthogonal)	t traits (Oblique) + m methods (n Obliq., m–n Orth. methods, n< m)	t traits (Oblique) + m methods (All Oblique)

Note. A method Strucuture C_n was added to the Widaman's (1985) original taxonomy by the author.

mother and child responded to FACESKGII *kizuna* (Cohesion) and *kajitori* (Adaptability) scales. This provided 6 scores consisting of 2 traits (scales) as measured by 3 methods (father, mother and child reports). Table 1 shows means and standard deviations of these scales. The correlations of these six scale scores produced a multitrait – multimethod matrix and is also presented in Table 1.

Confirmatory factor analysis (CFA) of multitrait-multimethod matrix presumes that each observed score is explained by one trait factor, one method factor and a measurement error (Werts and Linn, 1970). Widaman (1985) presented a systematic framework to test statistically convergent and discriminant validity. The tests require a series of covariance structure models of increasing complexity in terms of method and trait structures. For example, convergent validity assumes a model in which a common latent trait influences each individual family member's observable scores. Similarly, a lack of convergent validity is represented by a model which assumes no common latent trait behind the observable scores. Analysis of Covariance Structure programs such as LISREL (Jöreskog and Sörbom, 1988) and SAS CALIS procedure (SAS, 1990) provide a goodness of fit chi-square index which tells how well each model predicts the observed correlations. To test convergent validity, one simply subtracts the chi-square produced by a latent trait model from one by a no latent trait model and subtract their degrees of freedom in the same manner (Kenny, 1976). Significance of this subtracted value which also distributes according to a chi-square distribution confirms the convergent validity or the validity to assume one common trait rather than a no trait model. Like-

Table 3 Goodness of Fit Indices for Covariance Structure Models Estimated from Study 1 Multitrait–Multimethod Matrix (GLS ESTIMATION).

	Likelihood Ratio Test					
	χ^2	df	Prob.	GFI	AGFI	AIC
Null Model (Model 1A)	255.59	19	.0001	.86	.84	218.65
2 Oblique Traits only (Model 3A)	32.29	12	.0012	.98	.97	8.29
2 Oblique Traits & 3 Orthogonal Methods (Model 3B′)	13.97	6	.03	.99	.97	1.97
2 Oblique Traits & Father–Mother Reports Correlated (Model $3C_1$)	8.09	5	.15	.996	.981	−1.91
2 Oblique Traits & Father–Mother & Mother–Child Reports Correlated (Model $3C_2$)	4.20	4	.38	.998	.988	−3.80
2 Oblique Traits & 3 Oblique Methods (Model 3C)	2.64	3	.45	.999	.990	−3.36
3 Orthogonal Methods (Model 1B′)	234.95	13	.0001	.870	.79	208.95
Father–Mother & Mother–Child Reports Correlated (Model $1C_2$)	168.58	11	.0001	.91	.82	146.58
3 Oblique Methods (Model 1C)	100.10	10	.0001	.94	.88	80.10
2 General Traits only (Model 2A)	136.27	13	.0001	.92	.88	110.27
1 General Traits & 3 Orthogonal Methods (Model 2B′)	100.75	7	.0001	.94	.83	86.75
1 General Traits & Father–Mother & Mother–Child Reports Correlated (Model $2C_2$)	53.05	5	.0001	.97	.88	43.05
1 General Traits & 3 Oblique Methods (Model 2C)	9.64	4	.0469	.995	.97	1.64

Note. Measurement errors for father, mother & child were set equal as δ_1 for cohesion and δ_2 for adaptability.

Table 4 Indices of Difference Between Nested Covariance Structure Models as Presented in Table 3.

AIC Comparison	Difference in χ^2	df	Prob.	AIC
Tests of Added Component				
No Trait & No Method (Model 1A) vs 2 Oblique Traits & No Method (Model 3A)	223.3	7	$p < .001$	1A > 3A
2 Oblique Traits & No Method (Model 1A) vs 2 Oblique Traits & 3 Orthogonal Methods (Model 3B′)	18.32	6	$p < .01$	1A > 3B′
2 Oblique Traits & 3 Orthogonal Methods (Model 3B′) vs 2 Oblique Traits & Father–Mother & Mother–Child Reports Correlated (Model $3C_2$)	9.77	2	$p < .01$	3B′ > $3C_2$
2 Oblique Traits & Father–Mother & Mother–Child Reports Correlated (Model $3C_2$) vs 2 Oblique Traits & 3 Oblique Methods (Model 3C)	1.56	1	ns	$3C_2$ > 3C
Tests of Convergent Validity				
2 Oblique Traits & No Method (Model 3A) vs No Trait & No Method (Model 1A)	223.3	7	$p < .001$	3A < 1A
2 Oblique Traits & 3 Orthogonal Methods (Model 3B′) vs No Trait & 3 Orthogonal Methods (Model 1B′)	220.98	7	$p < .001$	3B′ < 1B′
2 Oblique Traits & Father–Mother & Mother–Child Reports Correlated (Model $3C_2$) vs No Trait & Father–Mother & Mother–Child Reports Correlated (Model $1C_2$)	164.38	7	$p < .001$	$3C_2$ < $1C_2$

2 Oblique Traits & 3 Oblique Methods (Model 3C) vs No Traits & 3 Oblique Methods (Model 1C)	97.46	7	$p < .001$	3C < 1C
Tests of Discriminant Validity				
2 Oblique Traits & No Methods (Model 3A) vs 1 General Trait & No Methods (Model 2A)	103.98	1	$p < .001$	3A < 2A
2 Oblique Traits & 3 Orthogonal Methods (Model 3B′) vs 1 General Traits & 3 Orthogonal Methods (Model 2B′)	86.78	1	$p < .001$	3B′ < 2B′
2 Oblique Traits & Father-Mother & Mother-Child Reports Correlated (Model $3C_2$) vs 1 General Traits & Father-Mother & Mother-Child Reports Correlated (Model $2C_2$)	48.85	1	$p < .001$	$3C_2 < 2C_2$
2 Oblique Traits & 3 Oblique Methods (Model 3C) vs 1 General Trait & 3 Oblique Methods (Model 2C)	7.0	1	$p < .01$	3C < 2C

wise, discriminant validity is reflected by a model which presumes a two distinct trait (Cohesion and Adaptability) factor structure. On the contrary, a lack of discriminant validity is demonstrated by a model which assumes only one general trait. To test discriminant validity, one subtracts a goodness of fit chi-square and degrees of freedom produced by a two latent trait factor model from a one general latent trait factor model.

To conduct CFA of multitrait-multimethod data and to test all potential models as originally outlined by Werts and Linn (1970), one needs to have a minimum of three traits as measured by three methods. CFA of a multitrait-multimethod matrix with smaller dimensions like the current case (two traits and three methods) requires some more restrictive assumptions (Schmitt and Stults, 1986). A standard practice is to assume equal method effects among the father, mother and child report (Schwarzer, 1983; Schmitt and Stults, 1986). However, this assumption contradicts the Olson et al. (1983) U. S. national survey finding concerning family member differences in reporting cohesion and adaptability scores. For example, Adolescent children far underestimated cohesion and adaptability scores than did the parents. On the contrary, wives tended to overestimate cohesion and adaptability. These findings indicate that neither trait or method factor should be restricted to equality. Instead, the current study, like the Marsh and

Hocevar (1983) case, restricted a measurement error for cohesion to be equal among father, mother and child. Likewise an error for adaptability was set to be equal among family members. According to the classical test theory, reliability is defined as a portion of the total variance accounted for by a "true score". Once a "true score" portion is subtracted from the total variance, the remaining portion indicates an error variance (Cronbach, 1990). This means that if different family members' reports on cohesion or adaptability show similar reliabilities, there is a reason to believe that the proportion of error variance is also similar among these measures. The internal consistency reliabilities (Cronbach's alpha) for FACESKGII father–, mother–, and child–reported *kizuna* (cohesion) were .77, .75 and .72, respectively. This means that about 23 % (1–.77) of the total variance in father–reported cohesion, 25 % (1 – .75) in the mother's report and 28 % (1 – .72) in the child's report are accounted for by a measurement error. Likewise, using the internal consistency reliabilities of FACESKGII *kajitori* (adaptability) measures, it is estimated that an error variance accounted for about 15 % (1–.85) of the total variance in father–reported adaptability, 17 % (1–.83) in the mother's report and 11 % (1–.89) in the child's report. In short, error variance estimates for both *kizuna* (cohesion) and *kajitori* (adaptability) measures did not vary much among family members. In the following GLS (generalized least square) co-

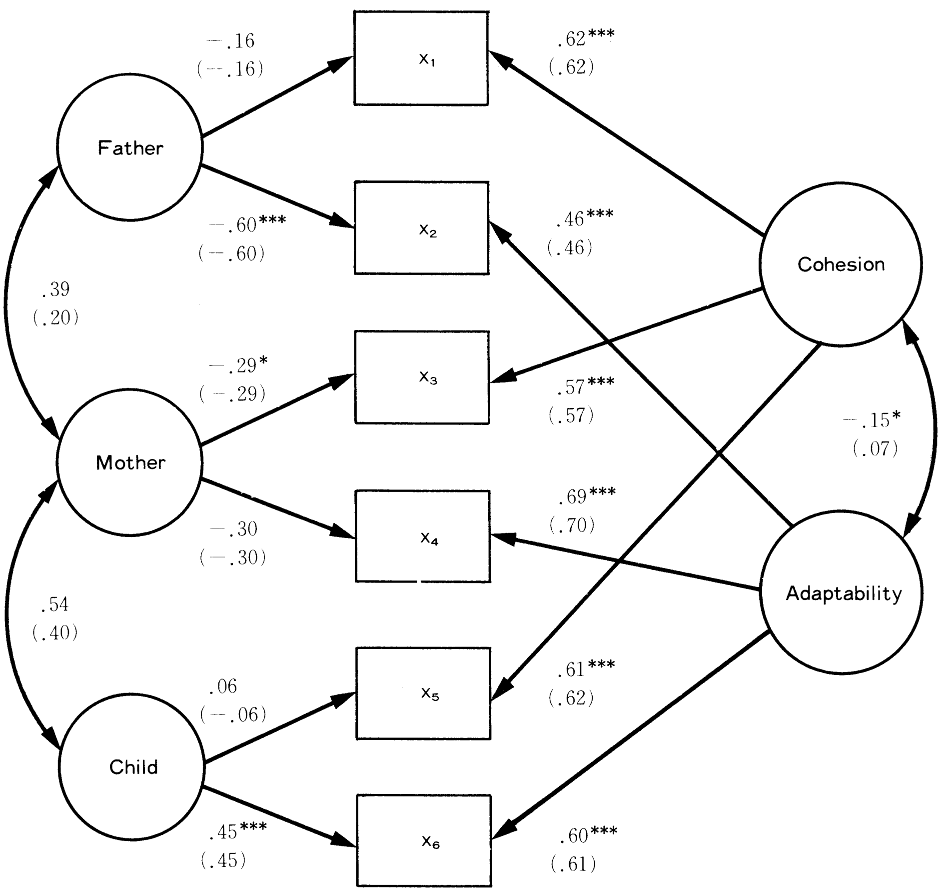

Figure 1 The path diagram representation of Model $3C_2$ estimated from Table 1 FACESKGII multitrait-multimethod matrix. Measurement error for cohesion was .60*** (.60), and that for adaptability .42 (.42). Unstandardized coefficients are shown. Parenthetical figures denote standardized path coefficients.

* P< .05

*** P< .001

variance analyses of linear structural equation (SAS, 1990; Toyoda, 1992), therefore, measurement error estimates for father, mother and child cohesion were set to equal as δ_1 and those for adaptability as δ_2.

Indices of fit of a series of structural models to the multitrait-multimethod correlation matrix are presented in Table 3. Pair-wise comparisons of the fit of these models while controlling the complexity of method structure are presented in Table 4. In Table 3, Models 1A through 3C correspond to the series of models in increasing complexity. Naming of these models generally followed Widaman's (1985) convention. For instance, Model 1A is a null model, which assumes no trait or no method factor influences on observed scores. In comparison, Model 3A presumes trait factors while assuming no method factor influence on scores. Thus Model 3A is a one step more complex model than Model 1A. The rest of the models (Models 1B' through 2C) in Table 3 were prepared for the estimation of the degree of FACESKGII measures' convergent and discriminant validity.

Tests of Added Components

Using Models 1A through 3C, each trait and method component were added in a step-wise fashion, and a difference in goodness of fit chi-squares was tested. The significance in this chi-square test indicates that an addition of a new component to the model significantly improves the fit. The first four rows in Table 4 show these results. In the first comparison, an effect of a two oblique trait component (i. e., cohesion and adaptability are allowed to be correlated) was added to the Null (no trait and no method component) model and this addition (Model 3A) turned out to be significant ($\chi^2 = 223.3$, df=7, p<.001). Similarly, an addition of three orthogonal (uncorrelated) method (Model 3B') to the two oblique trait and no method component structure (Model 3A) was significant ($\chi^2 = 18.32$, df=6, p<.01). Next, in addition to Model 3B' which assumed no correlations (orthogonal) among family members' reports, father-mother and mother-child reports were allowed to be correlated (Model $3C_2$), which significantly improved the goodness of fit ($\chi^2 = 9.77$, df=2, p<.01). Finally, Model $3C_2$ was compared with three oblique method model (Model 3C) in which all family members' reports were allowed to be correlated. It should be noted that the only difference between Models 3C and $3C_2$ was whether the father-child report was also permitted to be correlated (Model 3C) or not (Model $3C_2$). According to Table 3, Model 3C produced the best goodness of fit to the data ($\chi^2 = 2.64$, df=3, p=.45, GFI=.999, adjusted GFI=.990), while Model $3C_2$ was also as good a model as 3C ($\chi^2 = 4.20$, df=4, p=.38, GFI=.998, adjusted GFI=.988). The addition of father-child report correlation, however, did not turn out to be statistically significant ($\chi^2 = 1.56$, df=1, ns). Furthermore, Akaike's Information Criterion (AIC) was smaller in Model $3C_2$ (AIC = −3.80) than in Model 3C (AIC=−3.36). This indicated that two oblique trait, father-mother and mother-child oblique report model (Model $3C_2$) was the most appropriate model of choice (see Figure 1 for the path diagram representation of this model).

Tests of Convergent Validity

Assuming that Model $3C_2$ was the most appropriate representation of the FACESKGII multitrait-multimethod matrix, tests of convergent validity was performed. The test of convergent validity of Model $3C_2$ involved the comparison of Model $3C_2$ with $1C_2$. Model $1C_2$ is identical to Model $3C_2$ except that Model $1C_2$ assumes no trait factor. In other words, Model $1C_2$ predicts no convergence on the same trait scores among family members due to the lack of a common latent trait behind these scores. This comparison revealed that Model $3C_2$ produced a significantly far better fit to the data than Model $1C_2$ ($\chi^2 = 164.38$, df=7, p<.001). Similarly, AIC for Model $3C_2$ was −3.80 and was far smaller than that for Model $1C_2$ (146.58). This finding suggests that the proportion of covariation among observed measures was uniquely accounted for by cohesion and adaptability trait factors. In every day language, this means that no matter what different family member's report one may use, their scores on cohesion or adaptability are all mutually correlated because there is a reason to believe in common latent traits behind these scores.

Tests of Discriminant Validity

To test discriminant validity, Model $3C_2$ was compared to Model $2C_2$, in which cohesion and adaptability factors had perfect intercorrelations (r=1.0). In other words, Model $2C_2$ assumed one general trait factor and therefore no discriminant validity. This comparison resulted in a statistically significant difference in goodness of fit ($\chi^2=48.85$, df$=1$, p<.001). Likewise, AIC for Model $3C_2$ (-3.80) was much smaller than that for Model $2C_2$ (43.05). This means that although the model of choice ($3C_2$) assumes correlation between cohesion and adaptability traits, each trait contains a unique portion of variance which cannot be predicted from the other trait.

Study 2

Method

Subjects

Subjects were collected as a part of a study on familial influences on the development and maintenance of student apathy among junior high school students in urban and suburban areas of Osaka and Hyogo prefectures (Soda, Takase, and Nakayasu, 1992). The student apathy study recruited subjects from the 12 junior-high schools in this region. 1065 out of 1630 families responded to FACESKGII and the Student Apathy Measure at Kwansei Gakuin (SAMKG) questionnaires (65.3 % response rate). The present study used FACESKGII responses from 437 families in the student apathy study. From the total of 1065 families, 614 families were excluded, as the student apathy study did, due to a high response bias, such as acquiescence and social desirability bias (Jackson, 1971) in one of the family member's report. Furthermore, an additional 14 families were excluded because at least one family member's report was missing. In other words, the current study selected only those complete cases (437 families) in which father, mother and child reports were all available. On average, fathers were 44.3 years old (S. D.=4.3), mothers 41.4 years old (S. D.=3.3). Children were about evenly split among 7th (121 students, 27.7 %), 8th (145 students, 33.2 %) and 9th grade (171 students, 39.1 %) at junior high schools. In terms of living arrangement, about 80 % of families were a nuclear family, 13 % of families lived with grandparent(s) and the rest were other categories.

Instrument.

Two versions of FACESKGII were used. A parent version contains 12 items for cohesion and 16 items for adaptability, and a child version contains 12 items for cohesion and 18 items for adaptability. Both versions are identical to those used in the study 1. Similarly, response biases including acquiescence and social desirability were measured in the same way as the study 1.

Procedure

The same procedure was employed to recruit samples and to collect questionnaires from class rooms as the Study 1. The study was conducted in October to December of 1991.

Table 5 Study 2 Multitrait-Multimethod Matrix among Cohesion and Adaptablity Measures with Their Means and Standard Deviations.

Method	Father Coh.	Father Adpt.	Mother Coh.	Mother Adpt.	Child Coh.	Child Adpt.	Mean	SD
Father Report								
COHESION	(.78)						38	4.6
ADAPTABILITY	.20	(.84)					46	5.5
Mother Report								
COHESION	.53	.13	(.76)				40	4.3
ADAPTABILITY	.06	.55	.12	(.83)			47	5.4
Child Report								
COHESION	.27	.02	.25	.04	(.69)		35	4.2
ADAPTABILITY	.04	.21	.01	.38	.19	(.88)	56	7.2

Note. On-diagonal elements in brackets are internal consistency reliablity coefficients (Cronbach's Alpha) of given measures, while off-diagonal elements are correlations between the two corresponding measures.
Note2. N=437 families.

Table 6　Goodness of Fit Indices for Covariance Structure Models Estimated from Study 2 Multitrait–Multimethod Matrix (GLS ESTIMATION).

Model	Likelihood Ratio Test χ^2	df	Prob.	GFI	AGFI	AIC
Null Model (Model 1A)	297.64	19	.0001	.77	.75	259.64
2 Oblique Traits only (Model 3A)	90.70	12	.0001	.93	.88	66.70
2 Oblique Traits & 3 Orthogonal Methods (Model 3B′)	32.38	6	.0001	.98	.91	20.38
2 Oblique Traits & Father–Mother Reports Correlated (Model $3C_1$)	4.56	5	.4715	.997	.985	–5.44
2 Oblique Traits & Father–Mother & Mother–Child Reports Correlated (Model $3C_2$)	3.72	4	.4456	.997	.985	–4.28
2 Oblique Traits & 3 Oblique Methods (Model 3C)	25.88	3	.0001	.98	.86	19.88
2 Orthogonal Traits & Father–Mother Reports Correlated (Model $2'C_1$)	5.13	6	.5266	.996	.986	–6.87
2 Orthogonal Traits & Father–Mother & Mother–Child Reports Correlated (Model $2'C_2$)	4.18	5	.5232	.997	.987	–5.82
2 Orthogonal Traits & 3 Oblique Methods (Model 2′C)	4.14	4	.3873	.997	.983	–3.86
No Trait & 3 Orthogonal Methods (Model 1B′)	246.15	13	.0001	.81	.70	220.15
No Trait & Father–Mother & Mother–Child Reports Correlated (Model $1C_1$)	172.77	12	.0001	.87	.77	148.77
No Trait & Father–Mother & Mother–Child Reports Correlated (Model $1C_2$)	144.64	11	.0001	.89	.79	122.64

No Trait & 3 Oblique Methods (Model 1C)	125.12	10	.0001	.90	.80	105.12
1 General Traits only (Model 2A)	178.40	13	.0001	.86	.78	152.40
1 General Traits & 3 Orthogonal Methods (Model 2B′)	124.80	7	.0001	.90	.71	110.80
1 General Trait & Father–Mother & Mother–Child Reports Correlated (Model $2C_1$)	54.01	6	.0001	.96	.86	42.01
2 Orthogonal Traits only (Model 2′ A)	101.01	13	.0001	.92	.88	75.01
2 Orthogonal Traits & 3 Orthogonal Methods (Model 2′ B′)	35.73	7	.0001	.97	.92	21.73
1 General Traits & 3 Oblique Methods (Model 2C)	41.22	4	.0001	.97	.83	33.23

Note. Measurement errors for father, mother & child were set equal as δ_1 for cohesion and δ_2 for adaptability.

Results

For each of 437 families studied, a father, mother and child responded to FACESKGII *kizuna* (Cohesion) and *kajitori* (Adaptability) scales. This provided 6 scores consisting of 2 traits (scales) as measured by 3 methods (father, mother and child reports). Table 5 shows means and standard deviations of these scales. The correlations of these six scale scores produced a multitrait – multimethod matrix and is also presented in Table 5.

The on–diagonal elements in brackets in Table 5 are internal consistency reliability coefficients (Cronbach's Alpha) for father–, mother–, and child–reported *kizuna* (cohesion) and *kajitori* (adaptability). These reliability results are comparable to the study 1, indicating that the proportion of error variance is similar among family members' reports on cohesion or adaptability. In order to identify covariance structure models, therefore, the study 2 also restricted parameters in the same way as the study 1: A measurement error for cohesion was set to be equal as δ_1^* and that for adaptability as δ_2^* among family members.

Indices of fit of hierarchically nested structural models to the study 2 multitrait–multimethod correlation matrix are presented in Table 6. Pair-wise comparisons of the fit of these models while controlling the complexity of method structure are presented in Table 7.

Tests of Added Components

Using Models 1A through 3C, each trait and method component were added in a step-wise fashion, and a difference in goodness of fit chi–squares was tested. The first seven rows in Table 7 show these results. In the first comparison, an effect of a two orthogonal trait component (i.e., cohesion and adaptability are not allowed to be correlated) was added to the Null (no trait and no method component) model and this addition (Model 2'A) turned out to be significant ($\chi^2 = 196.63$, df = 6, $p < .001$). Similarly, an addition of three orthogonal (uncorrelated) method (Model 2'B') to the two orthogonal trait and no method component structure (Model 2'A) was significant ($\chi^2 = 65.28$, df = 6, p<.

Table 7 Indices of Difference Between Nested Covariance Structure Models as Presented in Table 6.

AIC Comparison	Difference in χ^2	df	Prob.	AIC
Tests of Added Component				
No Trait & No Method (Model 1A) vs 2 Orthogonal Traits & No Method (Model 2′A)	196.63	6	$p < .001$	1A > 2′A
2 Orthogonal Traits & No Method (Model 2′A) vs 2 Orthogonal Traits & 3 Orthogonal Methods (Model 2′B′)	65.28	6	$p < .001$	2′A > 2′B′
2 Orthogonal Traits & 3 Orthogonal Methods (Model 2′B′) vs 2 Orthogonal Traits & Father–Mother Reports Correlated (Model 2′C_1)	30.60	1	$p < .001$	2′B′ > 2′C_1
2 Orthogonal Traits & Father–Mother Reports Correlated (Model 2′C_1) vs 2 Orthogonal & Father–Mother & Mother–Child Reports Correlated (Model 2′C_2)	.95	1	n. s.	2′C_1 < 2′C_2
2 Orthogonal Traits & Father–Mother Reports Correlated (Model 2′C_1) vs 2 Orthogonal Traits & 3 Oblique Methods (Model 2′C)	.99	2	n. s.	2′C_1 < 2′C
2 Orthogonal Traits & Father–Mother Reports Correlated (Model 2′C_1) vs 2 Oblique & Father–Mother & Reports Correlated (Model 3C_1)	.57	1	n. s.	2′C_1 < 3C_1

2 Oblique Traits & Father-Mother Reports Correlated (Model 2′ C_1) vs 2 Oblique Traits & 3 Oblique Methods (Model 3C)	20.74	3	$p < .001$	2′ C_1 < 3C
Tests of Convergent Validity				
2 Orthogonal Traits & No Method (Model 2′ A) vs No Traits & No Methods (Model 1A)	196.63	6	$p < .001$	2′ A < 1A
2 Orthogonal Traits & 3 Orthogonal Methods (Model 2′ B′) vs No Trait & 3 Orthogonal Methods (Model 1B′)	210.42	6	$p < .001$	2′ B′ < 1B′
2 Orthogonal Traits & Father-Mother Reports Correlated (Model 2′ C_1) vs No Trait & Father-Mother & Reports Correlated (Model 1C_1)	167.63	6	$p < .001$	2′ C_1 < 1C_1
2 Orthogonal Traits & Father-Mother & Mother-Child Reports Correlated (Model 2′ C_2) vs No Trait & Father-Mother & Mother-Child Reports Correlated (Model 1C_2)	140.45	6	$p < .001$	2′ C_2 < 1C_2
2 Orthogonal Traits & 3 Oblique Methods (Model 2′ C) vs No Trait & 3 Oblique Methods (Model 1C)	120.98	6	$p < .001$	2′ C < 1C
Tests of Discriminant Validity				
2 Oblique Traits & No Method (Model 3A) vs 1 General Traits & No Methods (Model 2A)	87.71	1	$p < .001$	3A < 2A

2 Oblique Traits & 3 Orthogonal Methods (Model 3B′) vs 1 General Trait & 3 Orthogonal Methods (Model 2B′)	92.42	1	$p<.001$	3B′ < 2B′
2 Oblique Traits & Father–Mother Report Correlated (Model $3C_1$) vs 1 General Trait & Father–Mother Report Correlated (Model $2C_1$)	120.24	1	$p<.001$	$3C_1 < 2C_1$
2 Oblique Traits & 3 Oblique Methods (Model 3C) vs 1 General Traits & 3 Oblique Methods (Model 2C)	15.35	1	$p<.001$	3C < 2C
2 Orthogonal Traits & No Method (Model 2′A) vs 1 General Trait & No Method (Model 2A)	77.39	0	–	2′A < 2A
2 Orthogonal Traits & 3 Orthogonal Methods (Model 2′B′) vs 1 General Trait & 3 Orthogonal Methods (Model 2B′)	89.07	0	–	2′B′ < 2B′
2 Orthogonal Traits & Father–Mother Report Correlated (Model $2'C_1$) vs 1 General Trait & Father–Mother Report Correlated (Model $2C_1$)	48.88	0	–	$2'C_1 < 2C_1$
2 Orthogonal Traits & 3 Oblique Methods (Model 2′C) vs 1 General Traits & 3 Oblique Methods (Model 2C)	37.08	0	–	2′C < 2C

001). Next, in addition to Model 2'B' which assumed no correlations (orthogonal) among family members' reports, father-mother reports were allowed to be correlated (Model $2'C_1$). This addition significantly improved the goodness of fit (χ^2= 30.6, df=1, p<.001). Model $2'C_1$ was then compared with two other orthogonal trait Models $2'C_2$ (father–mother and mother–child reports correlated) and 2'C (all three reports mutually correlated). These comparisons, however, did not show any significant differences. Finally, model $2'C_1$ was compared with oblique trait models 3 C_1 (father–mother reports correlated), $3C_2$ (father–mother and mother–child reports correlated) and 3C (all three reports mutually correlated). Differences again were not significant in these comparisons. Tests of added component, thus, indicated that a model which assumed an independence of cohesion and adaptability as well as parents report correlation most parsimoniously fits the study 2 multitrait–multimethod matrix. Table 6 shows goodness of fit indices of all the models tested. According to these indices, almost equally as good as Model $2'C_1$ (χ^2= 5.13, df=6, p=.53, GFI=.996, adjusted GFI=.986) were Model $2'C_2$ which assumed an independence of cohesion and adaptability with correlated father-mother as well as mother-child reports (χ^2=4.18, df = 5, p =.52, GFI =.997, adjusted GFI =.987) and

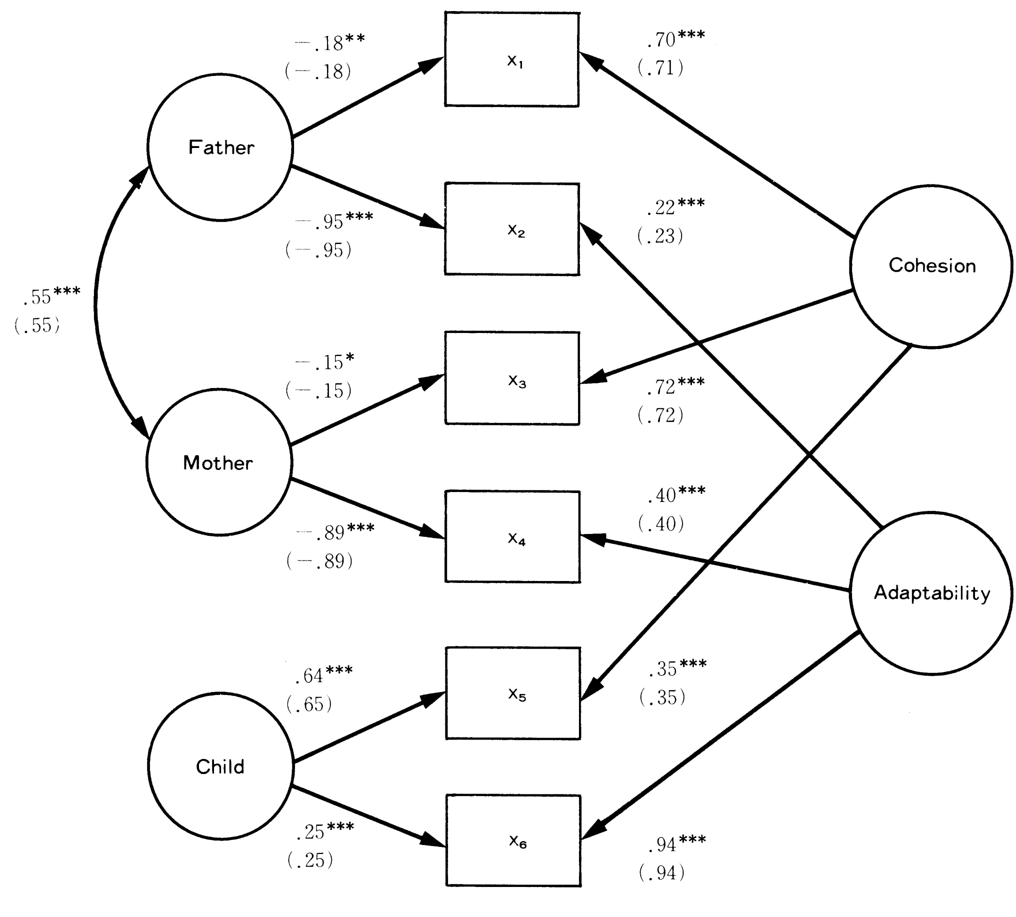

Figure 2 The path diagram representation of Model $2'C_1$ estimated from Table 5 FACESKGII multitrait–multimethod matrix. Measurement error for cohesion was .46*** (.46), and that for adaptability .05 (.05). Unstandardized coefficients are shown. Parenthetical figures denote standardized path coefficients.

* P< .05
** P< .005
*** P< .001

Model $3C_1$ which assumed correlation of cohesion and adaptability with correlated father-mother reports ($\chi^2=4.56$, df=5, p=.47, GFI=.997, adjusted GFI=.985). In terms of Akaike's Information Criterion or AIC values, Models $2'C_1$, $2'C_2$ and $3C_1$ all produced considerably small AIC's (-6.87, -5.82 and -5.44, respectively) but Model $2'C_1$ AIC value was the smallest among all. The AIC comparisons also supported the decision made from tests of added components. Therefore this model was chosen as the best-fitted model (see Figure 2 for the path diagram representation of this model).

Tests of Convergent Validity

Tests of convergent validity involve a comparison of a two orthogonal trait model with a corresponding no trait model with differing degrees of a method structure complexity. The method structures range from the least restrictive no method structure (Model A's), through three orthogonal method structure (Model B's), to oblique method structures (Model C_n's and C's). At each method structure level, a comparison produced significant chi-square values. Similarly, AIC's for two orthogonal trait models were smaller than no trait models at each method structure level. This meant that no matter what different family member's report one may use, their scores on the same trait (cohesion or adaptability) were all mutually correlated because there is a reason to believe in a common latent trait factor behind these scores. The convergent validity of FACESKGII scores were clearly cross-validated from the Study 1 to the study 2.

Tests of Discriminant Validity

To test discriminant validity, a two distinctively different trait model was compared to one general trait model with differing degrees of a method structure complexity. When traits were allowed to be correlated (oblique), a comparison produced significant chi-square values at each method structure level (the first four comparison tests of discriminant validity). When comparison involved two orthogonal trait models with one general trait models, chi-square tests could not be conducted because a difference in degrees of freedom became zero. Even in these cases, however, AIC for two trait models were consistently far smaller than one general trait models. This meant that each trait contained a unique portion of variance which cannot be predicted from the other trait. The discriminant validity of FACESKGII scores were again cross-validated from the Study 1 to the Study 2.

Discussion

This paper empirically verified the cross-cultural generalizability of the Circumplex Model's two postulated dimensions, family cohesion and adaptability among Japanese families. It also confirmed the convergent and discriminant validity of FACESKGII *kizuna* and *kajitori* scales, which were designed to tap corresponding cohesion and adaptability constructs among urban and suburban middle-class Japanese families. This finding was clearly cross validated by the second study.

It should be noted that this paper used the terms *kizuna* and *kajitori* to refer to the observed variables while "cohesion" and "adaptability" referred to the corresponding latent traits. *Kizuna* (きずな) in the old days literally meant a *bond* which was used to tie domestic animals. Later, the meaning was shifted to refer to an affectionate *bond* among people which cannot be *unbound*. The term was aimed to tap family members' emotional *bonding* and system's *boundary* concepts, core notions in the cohesion construct. *Kajitori* (かじとり), on the other hand, originally meant the act of steering a boat with a rudder or a pilot at the stern. The term was designed to capture both positive and negative *cybernetic* feedback in a family system. It is well known that Wiener (1948) coined the term *cybernetics* from the Greek word *kybênetikê* meaning a *kajitori* or *pilot*.

Joanning and Kuehl (1986) warned that FACESIII items tend to force families to comment on themselves using the frame or world view shared only by the Judeo-Christian main stream North American families. Cumulative failures of Japanese translations of FACES series unambiguously illustrated that literal word-to-word dictionary translations of concepts as well as items were obviously contaminated by Judeo-Christian biases and, therefore, did not validly produce the theoretically expected covariance structure. In contrast, FACESKGII *Kizuna* and *kajitori* measures successfully demonstrated a good fit to the theoretically expected covariance structure. It should be mentioned that FACESKGII items were not meant to measure cohesion or adaptability as framed by North American culture. Rather, the items were originally written with the specific aim of capturing the degree of *kizuna* and *kajitori* among Japanese middle class families. Because of this culturally accommodative approach to scale construction, FACESKGII *kizuna* and *kajitori* scales provided socioculturally more "niche" representations of General Systems Theory based cohesion and adaptability constructs in Japanese society.

With few exceptions (Gehring and Feldman, 1988; Edman, Cole and Howrd, 1990), the current results differ from the previous empirical validation attempts involving cohesion and/or adaptability dimensions (Cromwell, Klein, and Wieting, 1975; Russell, 1979 and 1980; Bilbro and Dreyer, 1981; Alexander, Johnson, and Carter, 1984; Oliveri and Reiss, 1984; Green, Kolevzon, and Vosler, 1985; Sigafoos, Reiss, Rich, and Douglas, 1985; Kog, Vertommen, and Vandereycken, 1987; Dickerson and Coyne, 1987; Schmid, Rosenthal, and Brown, 1988; Hampson, Beavers, and Hulgus, 1988; Fristad, 1989). Like ill-fated Japanese validational studies, the inconsistencies again seem to be caused by methodological shortcomings or deviations from the original Campbell and Fiske (1959) multitrait-multimethod experimental conditions.

The Campbell and Fiske (1959) experimental conditions urge that researchers prepare multiple sets of psychometrically established measures which are designed specifically to measure each of multiple traits and all of which are constructed within the same theoretical framework. For convergent validation, measures of the same traits should be as maximally different as possible (Campbell and Fiske, 1959). Because the covariation between the two measures never exceeds the crossproduct of the two reliability estimates (Cronbach, 1990), a researcher should prepare instruments with as high reliability and content saturation as possible. Discriminant validation, on the other hand, is better tested if the measures are as similar as possible (Baggozi and Yi, 1991). This will cause the stronger method covariance among the same measures of different traits: Despite the strong method covariance, trait yariance for different measures is expected to contain as much uniqueness as possible so that the observed scores do not covary much. Again, high reliability and content saturation are the key factor to demonstrate discriminant validity.

Three types of deviations from the Campbell and Fiske (1959) experimental conditions are observed in the previous construct validation studies. The first group of studies relied only on one family member's self-report (usually a college student son or daughter) (Schmid, Rosenthal and Brown, 1988; Hampson, Beavers and Hulgus, 1988). The second group used measures with low reliability, agreement and content saturation (Cromwell, Klein, and Wieting, 1975; Russell, 1979 and 1980; Kog, Vertommen and Vanderreychken, 1987; Bilbro and Dreyer, 1981; Alexander, Johnson, and Carter, 1984; Oliveri and Reiss, 1984; Fristad, 1989). The last group administered a hodge-podge of instruments which were assumed to tap the same construct but were derived from different family models (Russell, 1979 and 1980; Green, Kolevzon, and Vosler, 1985; Sigafoos, Reiss, Rich, and Douglas, 1985; Dickerson and Coyne, 1987). The Campbell and Fiske (1959) criteria for convergent and discriminant validation look simple and elegant, but "it takes a lot of work to make things appear simple" (Green, Harris, Forte, and Robinson, 1991, p.82).

In contrast, the current study carefully prepared the subjects and instruments in order to adhere to the Campbell and Fiske (1959) experimental conditions. First, for testing convergent validity, it used different family members' reports on their family system, which are known to produce only low correlations among the members (Bernard, 1972; Alexander, Johnson and Carter, 1984; Olson, Portner, and Lavee, 1985). Second, for testing discriminant validity, it used the same format self-report instruments, in which considerable amount of covariance was expected due to the similarity of the measure (insider subjective report). Finally, unlike the previously mentioned "dog's breakfast" approach to test battery selection, the current study used multiple sets of psychometrically sound instruments (high reliability and content saturation) all of which were constructed within the same theoretical framework of the Circumplex Model.

With regard to the reports which previously claimed the construct validity of the Circumplex Model, Gehring and Feldman's (1988) result should be cautioned because they did not employ confirmatory tests on convergent and discriminant validity but rather relied on subjective and intuitive judgements in establishing construct validity. In this respect, Edman, Cole and Howard (1990) should be acknowledged that they are the first ones to introduce the Confirmatory Factor Analysis (CFA) approach to construct validation of the Circumplex model. However, although they refer to Widaman (1985), they did not particularly adhere to the Widaman's (1985) systematic framework to test convergent and discriminant validity and pitched in ad hoc parameters, also known as "wastebasket" (Browne, 1984) or simply "garbage" parameters (Widaman, 1985), to make the result look more artificially appealing. A more fundamental problem, however, is that they used an average of a husband's and a wife's scores on cohesion and adaptability. Averaging family members' scores is a valid procedure only if there is no evidence for unique method variance in each family member's perspective. This presupposition can be easily tested by comparing two covariance structure models, one with unique method component (such as Models $3C_2$ and $2'C_1$ in the current studies) and the other without the method component (such as Models 3A and 2'A in the current studies). The difference in a goodness of fit chi-squares turned out to be statistically significant ($\chi^2=27.99$, df=8, $p<.001$ for Study 1 and $\chi^2=95.88$, df=7, $p<.001$ for Study 2), indicating that there is a reason to believe in the unique method component. The path diagrams in both Figures 1 and 2 show that both parents tend to underestimate the *kajitori* (adaptability) score biasing toward parents-led authoritarian rigid leadership style. Meanwhile, the child overestimates the *kajitori* score, biasing toward more power on the child's side. Likewise, both parents tend to underestimate a level of *kizuna* (cohesion) in their family. On the other hand, the child tends to overestimate a level of *kizuna* (cohesion). These perspective differences might be responsible for seemingly low agreement among family members. Averaging family members' scores water down all these unique perspective differences and therefore will not allow the estimation of the true covariance structure.

Related to the above is that a significant method factor correlation emerged between the father and mother report in the both studies (r=.39 with t=1.9 and r=.55 with t=3.61 for studies 1 and 2, respectively). These results tell that parents not only share their view on the family cohesion and adaptability (as evidenced by convergent and discriminant validity), but also the similar parental biases when responding to family cohesion and adaptability items (as evidenced by a method factor correlation). These findings contradict a long held stereotypic view since the 1960's that the solely dominant and close relation in Japanese middle class families is between the mother and her child alone (Vogel, 1963; Masuda, 1969; Vogel, 1978; Tamura and Lau, 1992). According to this stereotypic view, one would expect that only a mother-child pair converge their views of the family cohesion and adaptability as well as the direction of the response biases. This prediction was empirically nullified by the present two studies. With regard to the characteristics of the studied Japanese middle class families, therefore, this may indicate that the Father (husband) / mother (wife) relation is not a negligible part among Japanese middle class families with adolescent children in the 1990's.

Noting the observed discrepancies about their perceptions of marital life, Bernard (1972) once concluded that there is a "his marriage" and "her marriage". However, the current study casts a doubt on Bernard's (1972) assertion. The evidence of convergent validity indicated that family cohesion and adaptability are shared constructs. It is true that discrepancies (low correlations) exist among family members' reports. However, this is mainly caused by unique method effects. Once the method variance was removed from the total variance, there emerged a substantive portion of the covariation which was accounted for by common latent traits. Furthermore, because these latent traits are a family system or transactional level constructs, they can be used as family system level variables to explain the degree of psycho-social functioning of individual family members in future family study research. As a result, the structural analysis with latent variables paradigm (e.g., Thomson and Williams, 1982; Miller, Rollins and Thomas, 1982; Lavee, McCubbin, Patterson, 1985; Lavee, McCubbin, and Olson, 1987; Kamptner, 1988; Bollen, 1989), as partly outlined in the current study will eventually overcome the theoretical and methodological contradiction between "transactional theories and individaul assessment" in family research (Fisher, 1982). This research paradigm will help integrate the knowledge from multisystems level, multitraits, multiperspective, and multimethod assessment of a family system (Cromwell, Olson, and Fournier, 1976; Gurman and Kniskern, 1981; Cromwell and Peterson, 1983).

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