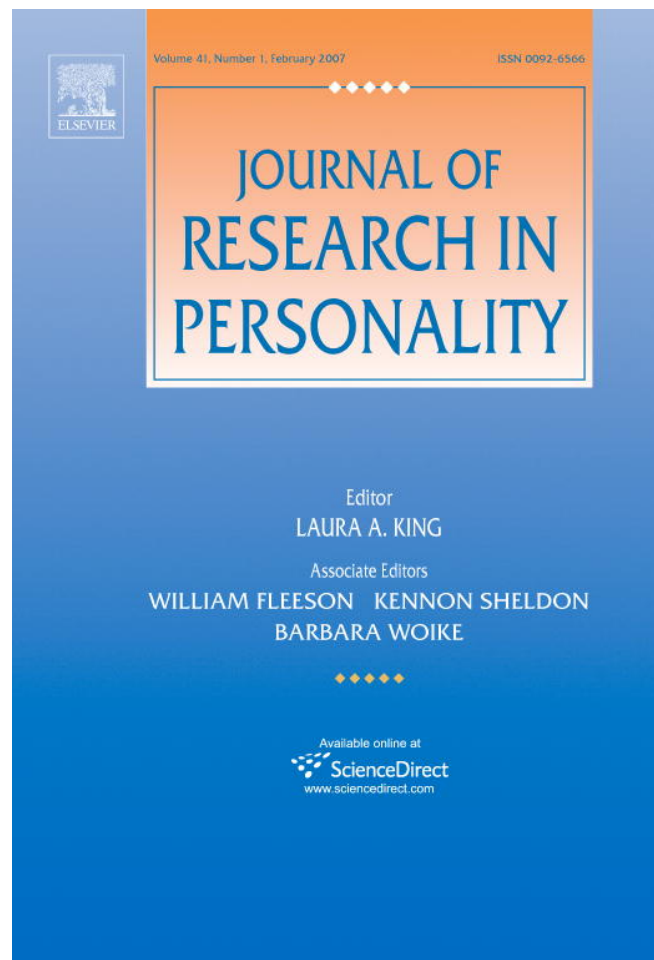


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Brief report

Developing a new measure of independent and interdependent views of the self

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Available online 22 November 2006

Abstract

Following concepts introduced by Markus and Kitayama [Markus, H. R. & Kitayama, S. (1991). Culture and the self: implication for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.], two studies were conducted to develop and test a new scale to measure individualism and collectivism, each with its seven constituent facets. The proposed two-dimensional structure was supported by exploratory factor analyses of Chinese and British samples of general populations. The new Independent and Interdependent Self Scale (IISS) was found to have satisfactory reliability and validity across five independent samples of Chinese and British students and community adults. The strengths and limitations of the present research as well as future directions for research are discussed.

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Keywords: Independent self; Interdependent self; A new scale

1. Introduction

In the past decade, the most notable achievement in the field of culture and self is arguably the proposal of independent and interdependent self-construals (Markus & Kitayama, 1991) as a set of constructs at the individual level to correspond with individualism–collectivism (IC) at the cultural level. To further our understanding of the mutual constitution of culture and the self, we now need a reliable and valid index of individual differences in independent and interdependent self views.

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Triandis (1995) presents various methods of measuring IC, with a specific emphasis on the level of measurement. Oyserman, Coon, and Kemmelmeier (2002) surveyed 27 distinct scales as part of their seminal effort to systematically review the IC literature. Levine et al. (2003) conducted perhaps the only comprehensive review on self-construal scales and concluded that all the existing measures lack validity in light of their meta-analysis and measurement studies. As there already exist these excellent reviews, we will briefly summarize the characteristics of the Singelis (1994) scale, as it is arguably the most widely used measure in the literature of self-construals and both the source of inspiration and impetus for our subsequent efforts.

Singelis (1994) made an intensive effort to measure the constellation of thoughts, feelings, and actions composing independent and interdependent self-construals. The two-dimension structure of the Self-Construal Scale (SCS) was supported in confirmatory factor analyses of two multiethnic samples of American college students. Satisfactory reliability, construct and predictive validity for the 24-item scale were also reported by the author. Although the author aimed to develop a comprehensive measure tapping cognitions, affect, and behaviors, the underlying conceptual facets were not clearly specified. Furthermore, the scale suffered poor reliability ($\alpha = .52-.73$) when recently administered to Chinese and British general populations (Lu et al., 2001), partly because items were written for use with student samples. Levine et al. (2003) also noted that surprisingly little independent validation work has been published on the SCS given the quantity of research using this scale. When they submitted the SCS to a confirmatory factor analysis with data from Korean, Japanese and American students, the acclaimed two-factor model gave only a poor fit to the data. The goal in the present series of studies was thus to develop a scale that would reliably measure independent and interdependent self views as individual difference variables for the general population in any culture.

Two studies are reported below. In Study 1, a new scale measuring key elements of independent and interdependent self views was developed and evaluated in a large sample of Chinese students and adults. The two-dimension structure of the scale was tested in exploratory factor analyses. Other psychometric properties were examined. In Study 2, cross-cultural validity of the scale was examined in four samples of Chinese and British students and adults. Construct validity was examined in the cross-cultural context.

2. Study 1: Procedure and results

Existing literatures on IC, idiocentrism and allocentrism, independent and interdependent self-construals were synthesized. Seven facets of the independent self were then tapped: (a) being independent, unique and consistent; (b) expressing oneself; (c) realizing internal attributes; (d) promoting one's own goal; (e) being direct; (f) separation from in-group; and (g) self-reliance with hedonism. The facets (a)–(c) were characteristics of independent self-construal (Markus & Kitayama, 1991), (f) and (g) were individualistic characteristics (Triandis & Gelfand, 1998). Seven facets of the interdependent self were also tapped: (a) belonging and fitting in; (b) occupying one's proper place; (c) engaging in appropriate action; (d) promoting others' goals; (e) being indirect; (f) family integration; (g) interdependence with sociability. The facets (a)–(c) were characteristics of interdependent self-construal (Markus & Kitayama, 1991), (f) and (g) were collectivist characteristics (Cross, Bacon, & Marris, 2000; Triandis & Gelfand, 1998).

Initially, 70 items (5 items for each facet) were written and tested with 344 Chinese and 187 British subjects. Three items with the highest item-scale correlation were chosen and 42-items then formed the Independent and Interdependent Self Scales (IISS). Summation scores were computed to represent endorsement of the independent and interdependent self views.

Respondents were asked to indicate their agreement with the IISS items in a 7-point Likert-type rating scale (1 = *strongly disagree*; 7 = *strongly agree*). Items from Triandis and Gelfand's (1998) scale were included in the test battery. It was hypothesized that an individual's independence score would be positively associated with a higher I score, whereas the interdependence score would be positively associated with a higher C score. The Social Desirability Scale (Crowne & Marlowe, 1964) was also administered. A sample of 606 Chinese students and adults was used (53.5% M, 46.7% F; mean age = 23.83, SD = 8.28). Participation was voluntary.

A principal component analysis was undertaken with the 42 IISS items. A two-factor solution with a varimax rotation was imposed *a priori* based on our theoretical framework. The legitimacy of conducting an EFA was ensured (KMO = .90, Bartlett's test: $p < .001$).

The largest two eigenvalues were 10.37 and 4.08 and they explained a total of 34.41% of the variance. The following values were 2.29, 2.00, 1.65, 1.43, 1.34, 1.18 and 1.04, accounting for an additional 26.02% of the variance. It is thus arguable that there were mainly two large sources of variance underlying the 42 items. Cronbach alpha reliabilities for the independent and interdependent subscales were .86 and .89. As can be seen from Table 1, most of the items had loadings greater than .30, and loaded on only one factor. Consequently, all 42 items were retained. The structure of the subscales was exactly concordant with the *a priori* theoretical framework, comprising seven facets each for independent and interdependent self. The two subscales were weakly correlated ($r = .24$).

There are several indications that the IISS is a valid measure of self views. First, the *face validity* for the two subscales is quite high. As an improvement on previous measures, important facets of independent and interdependent selves were clearly delineated *a priori* for item generation, thus ensuring the comprehensiveness of the IISS. As shown in Table 1, items focus directly on the characteristics that define each facet of the constructs.

Second, *concurrent validity* was examined via relationships among self views and IC. Results showed that interdependent self strongly correlated with C ($r = .75$, $p < .001$), whereas independent self moderately correlated with I ($r = .43$, $p < .001$). On the other hand, interdependent self weakly correlated with I ($r = .24$, $p < .01$), whereas independent self did not correlate with C ($r = .08$, *ns*). These relations confirmed theoretical predictions and supported the convergent and divergent validity of the IISS with an established IC measure.

Finally, the possibility of *social desirability bias* was checked. Results indicated that neither independent nor interdependent self correlated with the social desirability score ($r = .06$, *ns* and $r = .05$, *ns*). Thus far, preliminary support was found for reliability and validity of the IISS in the Chinese sample.

3. Study 2: Procedure and results

A standard procedure of back-translation was conducted to ensure the Chinese and English versions of IISS were equivalent. A broad cross-section of university students

Table 1
IISS items and factor loadings

Independent subscale	Facets	Study 1: Chinese (N = 606)		Study 2: British (N = 196)	
		Factor 1	Factor 2	Factor 1	Factor 2
1. I believe that people should try hard to satisfy their interests. 我相信人應該努力實現自己的志趣。	3	.67	.23	.57	.15
2. I believe that people should fully realize their potential. 我相信人應該充分發揮自己的潛能。	3	.65	.29	.66	.11
3. I believe that people should have their own ideals and try hard to achieve them. 我相信人應該有自己的理想，並努力實現。	4	.65	.37	.59	.21
4. I believe that people should fully live up to their capabilities in any circumstances. 我相信人在任何處境中，都應該充分發揮自己的能力。	3	.62	.25	.63	.19
5. I believe that people should face up to challenges in the environment. 我相信我們應該直接面對環境的挑戰。	5	.61	.22	.55	.16
6. I believe that once a goal is set, one should do one's best to achieve it. 我認為自己的目標一旦確定，就應全力以赴。	4	.58	.37	.59	.17
7. I believe that a happy life is the result of one's own efforts. 我相信幸福的人生要靠自己努力。	7	.53	.35	.55	.00
8. I believe that people should pursue their own welfare. 我相信人應該追求自己的福祉。	7	.52	.11	.57	.00
9. I believe that people should express their feelings in interpersonal interactions. 我認為在人際互動中應該表達自己的感受。	2	.51	.19	.52	.11
10. I believe that people should maintain their independence in a group. 我認為團體生活中，人應該保持自己的獨立性。	6	.50	.00	.55	-.19
11. I believe that people should be self-resilient and self-reliant. 我認為人要自立自強，自給自足。	7	.50	.19	.55	.11
12. I believe that interpersonal communication should be direct. 我相信人際溝通應該直接。	2	.47	.17	.48	.00
13. I believe that people should express their opinions in public. 我認為我們應該在公眾場合中發表自己的意見。	5	.47	.00	.48	.00
14. I believe that people should be unique and different from others. 我認為人應該獨特且與眾不同。	1	.47	-.16	.58	.00

15.	I believe that people should retain independence even from their family members. 我認為即使是家人，也應該保持各自的獨立性。	6	.46	.14	.37	-.16
16.	For myself, I believe that others should not influence my self-identity. 對我而言，自我認同應該不受他人影響。	1	.45	.00	.49	-.13
17.	I believe that people should be direct with others. 我相信與人相處應該直接了當。	5	.42	.00	.63	-.17
18.	I believe that family and friends should not influence my important life decisions. 我認為人生的重要決策不應受到親友的影響。	6	.37	.00	.19	-.12
19.	I believe that people should try to achieve their goals at any costs. 我相信人應該不惜一切代價，去達成自己的目標。	4	.33	-.15	.47	.10
20.	I believe that people should stick to their opinions in any circumstances. 我認為在任何情境中，都應該堅持自己的想法。	2	.32	-.02	.42	-.17
21.	I believe that people should be the same at home and in public. 我認為人在外面和在家裡應該一樣。	1	.19	.19	.20	.10

Interdependent subscale

1.	I believe that family is the source of our self. 我認為家庭是我們自我的本源。	6	-.16	.75	.00	.48
2.	I believe that success of the group is more important than success of the individual. 我認為團體的成功比個人的成就更重要。	4	-.23	.74	-.12	.60
3.	We should be concerned about others people's dignity in interpersonal interactions. 人際互動中應照顧到別人的面子。	5	-.24	.72	.23	.25
4.	Once you become a member of the group, you should try hard to adjust to the group's demands. 一旦成為團體的一員，就應該努力適應團體的要求。	1	.14	.71	.00	.52
5.	I believe that people should find their place within a group. 我認為人應該在團體中找到適合自己的位置。	2	-.24	.70	.29	.44
6.	I believe that the group should come first when it is in conflict with the individual. 當個人與團體發生衝突時，我認為應以團體為先。	4	.13	.63	-.13	.55
7.	I believe that it is important to maintain group harmony. 我認為保持團體和諧很重要。	1	.36	.63	.23	.52
8.	We should sacrifice our personal interests for the benefit of the group. 為了所屬團體的利益，我們應該犧牲自己的私利。	4	.10	.60	.29	.59
9.	I believe that the family should be a life unit. 我相信家人應是生命共同體。	6	.34	.58	.17	.32

(continued on next page)

Table 1 (continued)

	Facets	Study 1: Chinese (<i>N</i> = 606)		Study 2: British (<i>N</i> = 196)	
		Factor 1	Factor 2	Factor 1	Factor 2
10. I believe that the success and failure of my family is ultimately related to my self-identity. 我認為家庭的榮辱攸關我的自我認同。	6	.25	.54	.00	.40
11. I believe that people should perform their social roles well. 我認為人應該扮演好自己的社會角色。	2	.37	.51	.17	.27
12. I believe that people should behave appropriately according to different circumstances. 我認為應該視場合或情境的不同，表現適當的行為。	3	.27	.48	.20	.43
13. I believe that people close to me are important parts of my self. 我認為親近的人是個人自我的重要部份。	7	.23	.48	.00	.33
14. I believe that people should behave appropriately according to their different social status and roles. 我認為應該視自己的身份與角色，表現適當的行為。	3	.26	.47	.00	.50
15. Belonging to a group is important to my self-identity, or sense of myself. 團體的歸屬對我的自我認同很重要。	1	.30	.46	.00	.47
16. Acting appropriately is an important principle for me. 進退有據，是我做人的重要準則。	3	.31	.45	.27	.52
17. I believe that intimate relationships could reflect one's self-identity. 我認為親密關係會反應一個人的自我認同。	7	.20	.39	.20	.31
18. In the interest of maintaining interpersonal harmony, communication should be indirect. 為維持人際和諧，應採迂迴溝通的方式。	5	.00	.38	-.20	.34
19. I believe that people should consider the opinions and reactions of the others before making decisions. 我認為在作決定前，應先考慮別人的觀點與反應。	5	.18	.35	.12	.48
20. I have a strong identification with people close to me. 對親近的人我會有很強的認同感。	7	.11	.39	.00	.38
21. My self-identity is the result of my social status. 我的自我認同來自自我的社會身份。	2	.18	.19	.00	.41

Facets for the independent subscale: 1, being independent, unique and consistent; 2, expressing oneself; 3, realizing internal attributes; 4, promoting one's own goal; 5, being direct; 6, separation from in-group; 7, self-reliance with hedonism.

Facets for the interdependent subscale: 1, belonging and fitting in; 2, occupying one's proper place; 3, engaging in appropriate action; 4, promoting others' goals; 5, being indirect; 6, family integration; 7, interdependence with sociability.

Table 2
Summary of psychometric properties of IISS

	Study 1: Chinese ($N = 606$)	Study 2: Chinese ($N = 340$)	Study 2: British ($N = 196$)
<i>The independent subscale (21 items)</i>			
Mean (SD)	110.40 (13.76)	112.30 (12.97)	101.40 (13.54)
Cronbach's α	.86	.83	.85
<i>The interdependent subscale (21 items)</i>			
Mean (SD)	112.07 (15.78)	114.78 (15.26)	91.72 (13.00)
Cronbach's α	.89	.87	.82
Correlation between the two subscales	.24	.26	.28

Note: Score range for both subscales = 7–147.

(196 Chinese, TS; 106 British, BS) and community adults (144 Chinese, TA; 90 British, BA) were recruited in Taiwan and the UK. The pooled Chinese and British samples were similar in age (TW: 30.70, UK: 28.43), years of education (TW: 15.09, UK: 15.58), and % of students (TW: 57.7%, UK: 54.1%). Participation was voluntary.

To test for the cross-cultural stability of the IISS structure, a principal component analysis was undertaken with the pooled British sample. Following the same technique and procedure used in Study 1, a two-factor solution with a varimax rotation was imposed. The legitimacy of conducting an EFA was ensured (KMO = .81, Bartlett's test: $p < .001$). The largest two eigenvalues were 6.68 and 4.31 and they explained a total of 26.18% of the variance. The following values were 2.35, 2.16, 1.89, 1.70, 1.50, 1.41, 1.38, 1.28, 1.22, 1.16 and 1.06, accounting for an additional 29.50% of the variance. It is thus arguable that there were mainly two large sources of variance underlying the 42 items. The rotated component matrix was very similar to that obtained with the large Chinese sample in Study 1. Again most of the items had loadings greater than .30, and loaded on only one factor. These loadings are shown in Table 1 alongside those obtained for the Chinese sample in Study 1.

Reliability was uniformly good (see Table 2). The *face validity* for the IISS English versions is ensured through consultations with members of the Western culture. In addition, *construct validity* was tested through comparing the relative strength of independent and interdependent self within the Chinese and British participants. Asians are assumed characteristically interdependent and Westerners characteristically independent. Paired t -tests showed that for the Chinese, interdependent self was significantly higher than independent self ($t(305) = 2.65, p < .01$). In contrast, for the British independent self was significantly higher than interdependent self ($t(162) = 7.30, p < .001$). This opposing pattern of relative strength of independent and interdependent self within culture indicated construct validity for the IISS. However, the Chinese scored higher on independent self than the British. This corroborates the finding that North Americans did not score higher than many East Asians on individualism (Oyserman et al., 2002). Overall, reasonable support was found for reliability and validity of the IISS in both the Chinese and British samples. A summary of psychometric properties of the IISS can be found in Table 2.

4. General discussion

The present research constructed and initially validated a comprehensive measure of self views, the IISS that incorporated multiple facets of the constructs. The 42-item measure showed content adequacy, reliability, convergent and divergent validity, and invariance of the two-dimension factor structure across samples and cultures. This preliminary supporting evidence suggests the future utility of the IISS as a reliable and valid measurement of the dual self: independent and interdependent.

The research performed to construct and validate this scale has several strengths. Firstly, although other scales exist that measure independent and interdependent self-construals (e.g. Gudykunst et al., 1996; Singelis, 1994) or idiocentrism and allocentrism (e.g. Matsumoto, Weissman, Preston, Brown, & Kupperbush, 1997; Triandis, Leung, Villareal, & Clack, 1985), none of them was sufficiently comprehensive to encompass multiple defining facets of the independent and interdependent self. The multi-facet IISS thus captures a full breadth of constructs of independent and interdependent self. At present, the value of these facets is more to the comprehensiveness in measurement, so aggregated scores are advised; however, future research using IISS can focus on how the separate facets of independent and interdependent self relate to various attitudes, feelings, and behaviors.

A second strength is that the research consisted of a mono-cultural (Chinese) and a cross-cultural (Chinese–British) study; together they provide a thorough scale-development effort. In addition, using five different samples greatly reduced the potential for sample-specific bias. Data from multiple samples also allowed us to examine the invariance of the IISS performance across samples, as well as across cultures. Such an effort in scale development and evaluation is rare, but crucial for establishing a reliable and valid measure to study members of diverse cultures. Finally, the scale measures two self views and 14 of their constituent facets with only 42-items. Such economy though, does not hamper the scale's psychometric properties.

However, the present research is not without limitations. First, the scale was validated on only two cultures: Chinese and British. Additional cross-cultural work is needed to further establish the scale's utility in diverse cultural traditions. Second, only individualism and collectivism were used as correlates to examine the differential relations with the IISS. Future research should more systematically examine the construct validity of the IISS.

There is also a need for more fine-grained work on the relation between the two self views. Markus and Kitayama (1991) have pointed out that the two self-systems could coexist within an individual. Recent empirical evidence from Chinese studies supports this thesis (Lu & Gilmour, 2004; Lu et al., 2001). Lu (2003) further proposed that an evolving “composite self” can intricately integrate the traditional Chinese “self-in-relation” (interdependence) with the Western “independent and contained self” (independence). For the contemporary Chinese, the neglected, even suppressed, independent self may now be nurtured, developed, elaborated and even emphasized in modern daily life. It is not clear though the relative weighting of the independent and interdependent self and how does the two integrate and function. Our ability to measure independent and interdependent self as two separable and discernible dimensions of the psychological culture thus enables us to study the intricate relation between the two self views embedded in contrasting cultures.

Acknowledgment

This research was supported by a grant from the Ministry of Education, Taiwan, ROC, 89-H-FA01-2-4-2.

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