

## Relational Self Versus Collective Self: A Cross-Cultural Study in Interdependent Self-Construal Between Han and Uyghur in China

Marhaba Mamat, Wei Huang, Rui Shang, Tianyang Zhang, Hao Li, Yao Wang, Wei Luo and Yanhong Wu

*Journal of Cross-Cultural Psychology* 2014 45: 959 originally published online 13 April 2014  
DOI: 10.1177/0022022114530558

The online version of this article can be found at:  
<http://jcc.sagepub.com/content/45/6/959>

Published by:



<http://www.sagepublications.com>

On behalf of:



[International Association for Cross-Cultural Psychology](#)

**Additional services and information for *Journal of Cross-Cultural Psychology* can be found at:**

**Email Alerts:** <http://jcc.sagepub.com/cgi/alerts>

**Subscriptions:** <http://jcc.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://jcc.sagepub.com/content/45/6/959.refs.html>

>> [Version of Record](#) - May 27, 2014

[OnlineFirst Version of Record](#) - Apr 13, 2014

[What is This?](#)

# Relational Self Versus Collective Self: A Cross-Cultural Study in Interdependent Self-Construal Between Han and Uyghur in China

Journal of Cross-Cultural Psychology  
2014, Vol. 45(6) 959–970  
© The Author(s) 2014  
Reprints and permissions:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0022022114530558  
jccp.sagepub.com



Marhaba Mamat<sup>1</sup>, Wei Huang<sup>1</sup>, Rui Shang<sup>1</sup>, Tianyang Zhang<sup>1</sup>,  
Hao Li<sup>1</sup>, Yao Wang<sup>1</sup>, Wei Luo<sup>2</sup>, and Yanhong Wu<sup>1,3</sup>

## Abstract

Although differences between independent and interdependent self-construals have been extensively investigated, few studies have considered intra-cultural variability in self-construal in China. In the present research, we aimed at exploring ethnic group differences in interdependent self-construal. We first compared self-reported importance of the private self, relational self, and collective self between the Uyghur and the Han—two ethnic groups in China. The results show that the Han viewed the collective self to be less important than the private self and the relational self, while the Uyghur exhibited a different pattern, rating the collective self as more important than the private self and the relational self (Study 1). Three follow-up self-referential memory experiments provided further support for the difference in interdependent self-construal between the Han and the Uyghur. Specifically, only the Han participants exhibited significantly better memories of mother-referenced information than famous-person-referenced information (Study 2). In contrast, only the Uyghur participants exhibited significantly better memories of group-referenced information (Studies 3 and 4). These marked ethnic differences in interdependent self-construal suggest that the Han privilege the relational self and the Uyghur the collective self, thus highlighting the intra-cultural variability of interdependent self-construal in Chinese populations.

## Keywords

relational self, collective self, Han, Uyghur

The independent self-construal, which is relatively popular in the West, orients individuals to attend to self-focused information, whereas the interdependent self-construal, which is relatively more popular in East Asia, stresses the fundamental social connectedness between people (Markus & Kitayama, 1991). Although Chinese culture has been characterized as an interdependent culture, there are 56 official ethnic groups in China, each of which possesses unique cultural

<sup>1</sup>Peking University, Beijing, China

<sup>2</sup>Chinese Academy of Social Sciences, Beijing, China

<sup>3</sup>Capital Normal University, Beijing, China

## Corresponding Author:

Yanhong Wu, Professor, Department of Psychology, Peking University, 5 Yiheyuan Road, Haidian, Beijing, 10087, China.

Email: wuyh@pku.edu.cn

backgrounds, customs, religious beliefs, and, in some cases, a distinctive language. However, few studies have considered intra-cultural variability in self-construal in China. The aim of the present research is to fill this gap. Specifically, the current research compared the self-construal of Uyghur, a major ethnic group in China, with the Han, the majority ethnic group in China.

### **Relational Self Versus Collective Self**

## Current Studies

To test our hypothesis, in Study 1, we used a paradigm introduced by Trafimow and Finlay (2001) to compare the importance the Uyghur and the Han ethnic groups placed on the three types of self-construals. We predict that the Uyghur will place a greater importance on the collective self than the other two types of self, whereas the Han will place a greater importance on the relational self.

To control for the effect of demand characteristics and social desirability biases, in Studies 2 to 4, we used the self-reference (SR) paradigm (Rogers, Kuiper, & Kirker, 1977). In this paradigm, participants are first asked to judge whether a trait is suitable to describe either the self (SR) or a famous person (other reference, OR). Subsequently, participants' memory of the trait words was measured in a surprise recognition test. Typically, SR person information is better remembered than OR person information. This difference is called the self-reference effect (SRE; Symons & Johnson, 1997). In addition, the SRE is measured at two levels: remembering (participants are consciously able to recollect specific details of an item that appeared in the viewed list, "R score") and knowing (participants are unable to fully recollect but have a feeling of knowing or having seen the word, "K score"; Tulving, 1999). Furthermore, Johnson et al. (2002) have employed the SR paradigm to explore the collective self and found evidence for what they called the group reference effect (GRE), the phenomenon in which recall of the group-referenced social information is as high as that of SR person information, and recall of both types of information is significantly better than recall of semantic information.

Using the SR paradigm with remembering/knowing judgment (R/K) in Studies 2, 3, and 4, we compared the relative emphasis on the relational self and the collective self between the Uyghur group and the Han group. Our prediction is that the Han participants would show the SRE and a close OR effect due to their emphasis on the relational self, whereas the Uyghur participants would show the SRE and the GRE on information pertinent to collective categories (ethnicity and social role). We expect these studies to provide evidence for the stronger emphasis on relational self-construal in the Han and the stronger emphasis on the collective self-construal in the Uyghur. Finally, the present research also highlights the importance of understanding intra-cultural variability among different ethnic groups in China.

## Study 1

### Method

**Participants.** Forty-eight undergraduates participated in the experiment for compensation. Twenty-four (17 females) of them were Uyghur from Xinjiang and studied at the Minzu University of China. All of them identified themselves as Muslims. The other 24 (18 females) were Han and studied at Peking University. The mean ( $\pm SD$ ) ages of the Uyghur and the Han participants were  $21.42 \pm 1.61$  and  $19.58 \pm 0.77$ , respectively.

**Procedure.** Participants were asked to write down five personal characteristics (e.g., traits), five personal relationships, and five group memberships that were important for their thinking about themselves. The items could be written in any order the participants preferred. Then, the participants rated the importance of each item on a scale from 1 to 99, with larger numbers indicating greater importance.

### Results and Discussion

Table 1 presents the rating for three types of items referencing the private self, relational self, and collective self. The reliabilities of the measures were acceptable. The Cronbach's alpha coefficients

for the mean rating of the private, relational, and collective self in the Uyghur participants were .80, .88, and .81, respectively, whereas those for the Han participants were .83, .84, and .84, respec-

**Table 2.** Means (Standard Deviation) of Rate of Recognition and R/K Judgment as a Function of Ethnic Category and Reference.

	Self		Other		Mother		Father		False alarm	
	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur
Recognition	0.81 (0.13)	0.79 (0.14)	0.65 (0.20)	0.74 (0.15)	0.73 (0.15)	0.75 (0.15)	0.71 (0.17)	0.78 (0.15)	0.09 (0.04)	0.38 (0.20)
R	0.56 (0.21)	0.60 (0.19)	0.41 (0.19)	0.49 (0.20)	0.50 (0.19)	0.57 (0.19)	0.51 (0.21)	0.57 (0.20)	0.03 (0.03)	0.22 (0.17)
K	0.25 (0.22)	0.19 (0.11)	0.24 (0.17)	0.25 (0.15)	0.23 (0.20)	0.18 (0.13)	0.20 (0.19)	0.21 (0.15)	0.06 (0.04)	0.17 (0.10)

Note. Recognition = the number of words participants reported have seen/number of total words in each reference condition; false alarm = the number of words participants reported have seen/number of new words, and calculations are the same in the following studies.

adjective describe your mother?”), father (“Does this adjective describe your father?”), famous person (“Does this adjective describe LuXun or Zurdon Sabir?”). LuXun was a famous Han writer, and Zurdon Sabir was a famous writer of the Uyghur. The responses were made on a 5-point Likert-type scale, with 1 meaning *not fitting at all* and 5 meaning *extremely fitting*. Participants made a response by pressing one of five corresponding keys. The sequence effect of Reference was removed using a Latin Square Design. The experiment consisted of a study phase and a test phase.

**Study phase.** To keep participant unaware of the experimental goal, experimenter informed the participants that the purpose of this study was to evaluate several persons. At the beginning of each reference block, the cue of reference type was presented on the screen for 5,000 ms. There were 30 adjectives for each reference block (i.e., 30 trials). Each trial began with a 500-ms fixation. Next, the adjective and five options were present on the screen for 1,000 ms. Then, the adjective was masked by a black rectangle presented for 2,000 ms. Participants were required to make a response before the mask disappeared. There was a 500-ms inter-trial interval. In the study phase, participants needed to evaluate 120 adjectives.

**Test phase.** After a 15-min resting period, participants were given an unexpected recognition memory test. Participants viewed the 120 old trait adjectives presented during the study phase, as well as 120 new trait adjectives that had not been presented before. For each word, participants indicated (via key press) whether the word was old or new. If the word was old, participants reported whether they remembered that it had appeared in the study phase or they just felt it familiar. There was no time limit for response in the test phase. A total of 240 adjectives were selected from a study of Chinese personality traits (Z. Zhang, Wang, & Qi, 1998); these adjectives were shown to each ethnic group in their native language.

## Results and Discussion

The memory performances of 20 Han and 20 Uyghur participants are shown in Table 2.

We performed a  $4 \times 2$  mixed ANOVA on the *corrected recognition score* (the proportion of recognition minus false alarms), with Ethnicity being the between-participants factor and Reference the within-participants factor.<sup>1</sup> The results showed that both the main effects of Ethnicity and Reference reached significance,  $F(1, 38) = 33.31, p < .001, \eta^2 = .47$ ;  $F(3, 38) = 8.44, p < .001, \eta^2 = .18$ , and so was their interaction,  $F(3, 38) = 2.57, p = .058, \eta^2 = .06$ , suggesting different

patterns of recognition performance for the two ethnic groups. We also performed the same  $4 \times 2$  mixed ANOVA on  $R$  score<sup>2</sup> (the proportion of remember minus false alarms); however, only the main effect of Reference reached significance,  $F(3, 38) = 10.51, p < .001, \eta^2 = .22$ . Thus, we ran a single-factor repeated-measure ANOVA on *corrected recognition score* only for each ethnic group.

The Han participants showed a significant main effect of Reference,  $F(3, 19) = 8.31, p < .001, \eta^2 = .30$ . Post hoc analyses showed that the memory performance was better for SR information ( $M = 0.72, SD = 0.14$ ) than OR information ( $M = 0.56, SD = 0.20$ ), the mother-referenced information ( $M = 0.64, SD = 0.14$ ), and the father-referenced information ( $M = 0.62, SD = 0.18$ ),  $t(19) = 6.22, p < .001$ , Cohen's  $d = 0.99$ ;  $t(19) = 2.29, p < .05$ , Cohen's  $d = 0.57$ ;  $t(19) = 3.37, p < .05$ , Cohen's  $d = 0.63$ . The memory performance of the mother-referenced information was significantly better than the OR information,  $t(19) = 2.17, p < .05$ , Cohen's  $d = 0.50$ . By contrast, the main effect of Reference was not significant for the Uyghur participants.

Our results of the Han participants replicate the findings of previous research; the Han participants remembered both the SR and mother-referenced information better than OR information (Qi & Zhu, 2002; Zhu & Zhang, 2002; Zhu et al., 2007). We extended the previous results by showing that the Uyghur participants remembered the person information equally well in the SR, OR, mother-referenced, and father-referenced conditions. We believe that the importance of the collective self of the Uyghur might have overwhelmed the effect of the relational self. However, the interaction between Ethnicity and Reference was not significant for the  $R$  score. We return to this point in General Discussion. To further confirm our hypothesis of intra-cultural variability in interdependent self-construal, in Study 3, we compared the collective self between the Han and the Uyghur to investigate whether there was a difference in the GRE between them.

## Study 3

### Method

**Participants.** Forty undergraduates participated in the experiment for compensation. Twenty (10 females) of them were Uyghur from Xinjiang and studied at the Minzu University of China, all of whom self-identified as Muslims. The other 20 (10 females) were Han participants and studied at Peking University. The mean ( $\pm SD$ ) ages of the Uyghur and the Han participants were  $21.25 \pm 1.68$  and  $21.8 \pm 2.52$ , respectively.

**Procedure.** We used a  $2 \times 4$  within-group design. One factor was Ethnicity: Han and Uyghur. The other factor was Reference: self, in-group ("Does this adjective describe Han/Uyghur people?"), out-group ("Does this adjective describe Uyghur/Han people?"), and famous person. "Han" was the out-group for "Uyghur," and vice versa. As in Study 2, the experiment consisted of a study phase and a test phase.

### Results and Discussion

The memory performances of 20 Han and 20 Uyghur participants are shown in Table 3.

As in Study 2, we performed a  $4 \times 2$  mixed ANOVA on *corrected recognition score*, with Ethnicity being the between-participants factor and Reference being the within-participants factors. The main effects of Ethnicity and Reference both reached significance,  $F(1, 38) = 12.27, p < .05, \eta^2 = .24$ ;  $F(3, 38) = 26.88, p < .001, \eta^2 = .41$ . However, there was no significant interaction between them. A  $4 \times 2$  mixed ANOVA on  $R$  score showed significant main effects of Ethnicity and Reference,  $F(3, 38) = 13.61, p = .001, \eta^2 = .26$ ;  $F(3, 38) = 24.03, p < .001, \eta^2 = .66$ , as well

**Table 3.** Means (Standard Deviation) of Rate of Recognition and *R/K* Judgment as a Function of Ethnic Category and Reference.

	Self		Other		In-group		Out-group		False alarm	
	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur
Recognition	0.84 (0.14)	0.82 (0.17)	0.68 (0.16)	0.70 (0.16)	0.73 (0.14)	0.76 (0.17)	0.63 (0.21)	0.68 (0.20)	0.23 (0.22)	0.44 (0.17)
<i>R</i>	0.69 (0.17)	0.58 (0.24)	0.49 (0.20)	0.48 (0.20)	0.53 (0.18)	0.56 (0.22)	0.43 (0.17)	0.45 (0.20)	0.10 (0.11)	0.26 (0.16)
<i>K</i>	0.16 (0.15)	0.24 (0.21)	0.19 (0.18)	0.22 (0.18)	0.19 (0.15)	0.22 (0.16)	0.20 (0.15)	0.23 (0.18)	0.13 (0.12)	0.18 (0.13)

as a significant interaction,  $F(3, 38) = 3.18, p = .03, \eta^2 = .07$ , suggesting the presence of different patterns of *R* performance between the two ethnic groups.

We then conducted a single-factor (Reference: self, in-group, out-group, famous person) repeated-measure ANOVA on the *R* score for each ethnic group separately.

The Han participants showed a significant main effect of Reference,  $F(3, 19) = 17.09, p < .001, \eta^2 = .47$ . Post hoc analyses showed that the memory performance of the SR information ( $M = 0.58, SD = 0.19$ ) was better than that of the OR information ( $M = 0.39, SD = 0.23$ ), in-group-referenced ( $M = 0.43, SD = 0.17$ ), and the out-group-referenced information ( $M = 0.33, SD = 0.18$ ),  $t(19) = 4.92, p < .001$ , Cohen's  $d = 0.91$ ;  $t(19) = 4.69, p < .001$ , Cohen's  $d = 0.87$ ;  $t(19) = 8.00, p < .001$ , Cohen's  $d = 1.36$ . The memory performance of in-group-referenced information was also better than that of the out-group-referenced information,  $t(19) = 2.95, p < .05$ , Cohen's  $d = 0.56$ .

The Uyghur participants also showed a significant main effect of Reference,  $F(3, 19) = 8.54, p < .001, \eta^2 = .31$ . Post hoc analyses showed that the memory performance of the SR information ( $M = 0.32, SD = 0.20$ ) was significantly better than that of OR information ( $M = 0.21, SD = 0.15$ ) and the out-group-referenced information ( $M = 0.19, SD = 0.13$ ),  $t(19) = 3.40, p < .05$ , Cohen's  $d = 0.60$ ;  $t(19) = 3.92, p < .05$ , Cohen's  $d = 0.79$ . The memory performance of the in-group-referenced information ( $M = 0.30, SD = 0.16$ ) was also significantly better than the out-group-referenced information and the OR information,  $t(19) = 3.62, p < .05$ , Cohen's  $d = 0.76$ ;  $t(19) = 2.67, p < .05$ , Cohen's  $d = 0.54$ .

The Uyghur participants showed the SRE and GRE in the *R* condition; furthermore, the memories of the SR information and the in-group-referenced information were equally good. These findings demonstrated that the Uyghur people place greater importance on the collective self. On the contrary, for the Han participants, although there were also the SRE and the GRE in the *R* condition, the GRE was less pronounced compared with the Uyghur participants: First, there was no difference in memory performance between the in-group-referenced information and the OR information. Second, the memory performance of the SR information was better than the in-group-referenced information. These results were consistent with previous findings that the ethnic identity of the Han only showed its importance in the intergroup situations (H. Yang & Huang, 2007, 2009; X. T. Yang, Liao, & Huang, 2008). However, according to the self-categorization theory (Turner, Michael, Penelope, Stephen, & Margaret, 1987), whether people regard themselves based on social attribute or personal characteristic partly depends on social context. As the Uyghur is an ethnic minority in China, the Uyghur people's strong collective self-construal could be due to their minority status. In Study 4, to eliminate this alternative explanation, we examined whether or not the strong collective self of the Uyghur could be found in other social categories, such as social roles.



**Table 4.** Means (Standard Deviation) of Rate of Recognition and *R/K* Judgment as a Function of Ethnic Category and Reference.

	Self		Other		In-group		Out-group		False alarm	
	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur	Han	Uyghur
Recognition	0.74 (0.13)	0.79 (0.17)	0.53 (0.16)	0.68 (0.17)	0.64 (0.18)	0.71 (0.18)	0.60 (0.15)	0.62 (0.20)	0.13 (0.08)	0.24 (0.12)
R	0.59 (0.15)	0.65 (0.24)	0.37 (0.17)	0.53 (0.20)	0.47 (0.19)	0.56 (0.22)	0.44 (0.18)	0.46 (0.23)	0.07 (0.05)	0.15 (0.09)
K	0.15 (0.09)	0.13 (0.13)	0.15 (0.08)	0.15 (0.13)	0.17 (0.12)	0.15 (0.14)	0.15 (0.07)	0.16 (0.12)	0.06 (0.05)	0.09 (0.08)

## Study 4

### Method

**Participants.** Forty undergraduates participated in the experiment for compensation. Twenty (10 females) of them were Uyghur from Xinjiang and studied at the Beijing Normal University; all of them self-identified as Muslims. The other 20 (10 females) were Han and studied at Beijing Normal University. The mean ( $\pm SD$ ) ages of the Uyghur and the Han participants were  $21.7 \pm 1.17$  and  $21.65 \pm 1.87$ , respectively.

**Procedure.** We used a  $2 \times 4$  within-group design. One factor was Ethnicity: Uyghur and Han. The other factor was Reference: self, in-group (“Does this adjective describe students in general?”), out-group (“Does this adjective describe employees in general?”), famous person. “Student” was an in-group reference and “employee” was an out-group reference for both the Han and the Uyghur participants. As in Studies 2 and 3, the experiment consisted of a study phase and a test phase.

### Results and Discussion

The memory performances of 20 Han and 20 Uyghur participants are shown in Table 4.

As in the previous studies, we performed a  $4 \times 2$  mixed ANOVA on *corrected recognition score* and *R* score, with Ethnicity being the between-participants factor and Reference being the within-participants factor. The results showed that both the main effects of Reference and its interaction with Ethnicity were significant—*Recognition*:  $F(3, 38) = 24.61, p < .001, \eta^2 = .39$ ;  $F(3, 38) = 3.56, p = .02, \eta^2 = .09$ ; *R*:  $F(3, 38) = 26.03, p < .001, \eta^2 = .41$ ;  $F(3, 38) = 3.23, p = .025, \eta^2 = .08$ , suggesting the presence of different patterns of recognition performance between the two ethnic groups.

We then ran a single-factor (Reference: self, in-group, out-group, famous person) repeated-measure ANOVA for each ethnic group separately. For the Han participants, the main effect of Reference was significant for both the *corrected recognition score* and the *R* score—*Recognition*:  $F(3, 19) = 16.83, p < .001, \eta^2 = .47$ ; *R*:  $F(3, 19) = 18.44, p < .001, \eta^2 = .49$ . Further post hoc analyses showed that the memory performance of the SR information (*Recognition*:  $M = 0.61, SD = 0.14$ ; *R*:  $M = 0.52, SD = 0.15$ ) was better than the OR information (*Recognition*:  $M = 0.40, SD = 0.13$ ; *R*:  $M = 0.30, SD = 0.16$ ), the in-group-referenced information (*Recognition*:  $M = 0.50, SD = 0.16$ ; *R*:  $M = 0.40, SD = 0.18$ ) and the out-group-referenced information ( $M = 0.46, SD = 0.12$ )—*Recognition*:  $t(19) = 7.09, p < .001, \text{Cohen's } d = 3.25$ ;  $t(19) = 3.41, p = .003, \text{Cohen's } d = 0.73$ ;  $t(19) = 4.37, p < .001, \text{Cohen's } d = 2.01$ ; *R*:  $t(19) = 7.67, p < .001, \text{Cohen's } d = 1.42$ ;  $t(19) = 5.31, p < .001, \text{Cohen's } d = 0.73$ ;  $t(19) = 4.59, p < .001, \text{Cohen's } d = 0.97$ . The memory

performances of the in-group-referenced and out-group-referenced information were both better than the OR information—*Recognition*:  $t(19) = 3.79, p = .001$ , Cohen's  $d = 1.74$ ;  $t(19) = 2.02, p = .058$ , Cohen's  $d = 0.19$ ; *R*:  $t(19) = 3.44, p = .03$ , Cohen's  $d = 0.59$ ;  $t(19) = 1.98, p = .06$ , Cohen's  $d = 0.44$ .

The Uyghur participants also showed a significant main effect of Reference for both the *corrected recognition score* and the *R score*—*Recognition*:  $F(3, 19) = 10.98, p < .001, \eta^2 = .37$ ; *R*:  $F(3, 19) = 11.52, p < .001, \eta^2 = .38$ . Further post hoc analyses showed that the memory performance of the SR information (*Recognition*:  $M = 0.54, SD = 0.18$ ; *R*:  $M = 0.51, SD = 0.21$ ) was better than the OR information (*Recognition*:  $M = 0.44, SD = 0.14$ ; *R*:  $M = 0.38, SD = 0.16$ ), the in-group-referenced information (*Recognition*:  $M = 0.47, SD = 0.18$ ; *R*:  $M = 0.41, SD = 0.17$ ), and the out-group-referenced information (*Recognition*:  $M = 0.38, SD = 0.16$ ; *R*:  $M = 0.32, SD = 0.17$ )—*Recognition*:  $t(19) = 3.59, p = .002$ , Cohen's  $d = 1.65$ ;  $t(19) = 3.09, p = .006$ , Cohen's  $d = 1.42$ ;  $t(19) = 5.08, p < .001$ , Cohen's  $d = 2.33$ ; *R*:  $t(19) = 3.55, p = .002$ , Cohen's  $d = 0.70$ ;  $t(19) = 2.73, p = .01$ , Cohen's  $d = 0.53$ ;  $t(19) = 5.47, p < .001$ , Cohen's  $d = 1.00$ . Most importantly, the memory performance of the in-group-referenced information was better than that of the out-group-referenced information—*Recognition*:  $t(19) = 3.21, p = .005$ , Cohen's  $d = 1.47$ ; *R*:  $t(19) = 2.88, p = .01$ , Cohen's  $d = 0.53$ . The memory performance of the OR information was better than that of the out-group-referenced information with *R score*,  $t(19) = 2.00, p = .06$ , Cohen's  $d = 0.36$ .

According to the results above, the Han participants showed the SRE. However, the GRE effect for social role information was not significant. In contrast, the Uyghur participants showed the GRE for social role information. This finding suggests that the Uyghur people's collective self-construal is not confined to ethnicity and that it can exert an influence on other social categories, such as social role. The results of Study 4 confirmed and extended the finding in Study 1 by providing further evidence that the Uyghur participants privilege the collective self-construal and the Han participants the relational self-construal.

## General Discussion

Both the Uyghur and the Han people value the defining characteristics of interdependent self-construal (fitting in, accommodating, and other-focused; Markus & Kitayama, 1991). However, the two groups differ in the relative importance of different forms of interdependent self-construal. In Study 1, the Han participants placed greater importance on the relational self and the private self than the collective self. In contrast, the Uyghur participants valued the collective self more than they did both the relational self and the private self. We also assessed the relational self and the collective self with the SR paradigm. In Study 2, the Han participants showed the SRE and the mother-reference effect, whereas the Uyghur participants showed no difference in memory performance across all four reference conditions. A possible explanation for the latter result was that the strong collective self-construal of the Uyghur overwhelms the better memory performance for relational information. This speculation was confirmed in Study 3, which demonstrated that only the Uyghur participants showed the GRE on ethnicity. Finally, Study 4 showed that the collective self-construal in the Uyghur participants was also present with social role. In short, the present study confirmed our hypothesis and suggested that the Han people tend to emphasize the relational self, whereas the Uyghur people emphasize the collective self.

The current finding highlights the presence of intra-cultural variability of interdependent self-construal in Chinese populations. Following previous studies, which show that Islam emphasizes solidarity (Lu, 2004), the current work provides empirical evidence of this finding by investigating the Uyghur participants who were self-identified Muslims. Moreover, previous studies have shown that interdependent self-construal is relatively popular in China (Qi & Zhu, 2002, Zhu & Zhang, 2002; Zhu et al., 2007). Our results refine this claim and show that the relational self is

more important for the Han participants and the collective self is more important for the Uyghur participants (Brewer & Chen, 2007; Choi & Han, 2009). Our results also offer valuable evidence in favor of the model proposed by Brewer and Chen (2007), by providing empirical evidence of relational and collective self-construals.

However, some limitations of the present study should be noted. First, our results showed differences in memory performance between the two ethnic groups. This can be attributed to two possible confounding factors. First, the materials used for the Uyghur participants, translated into the Uyghur language from Mandarin, had longer words and more characters than the Mandarin materials. Therefore, the length of the words could have led to the poorer memory performance of the Uyghur participants (Wu et al., 2010). Second, the Uyghur participants exhibited a higher false alarm rate than the Han participants,<sup>3</sup> which may be due to the tendency of the Han participants to pursue moderation leading to more conservative judgments (Nicholas, 2001). However, we focused on the interaction between Reference and Ethnicity in the present research; thus, these differences should not affect our conclusion (Wu et al., 2010; Zhu et al., 2007).

Another limitation is the inconsistency in our results regarding the interaction between Ethnicity and Reference in the *R* score, which was significant in Studies 3 and 4 but not in Study 2. Typically, *R* is considered as representation of a conscious recollection of the specific details of an item, which appeared in a list presented earlier in the experiment, whereas *K* is a feeling of knowing or familiarity (Conway & Dewhurst, 1995; Tulving, 1999). However, some researchers (Squire, Wixted, & Clark, 2007) have proposed that *R/K* judgments index memory strength and are not reliable markers of qualitatively different processes such as recollection and familiarity. John Dunn argued (see Dunn, 2004) that *R/K* judgments simply index the confidence level rather than two separate components of memory. The mixed results of our present research might reflect the unsolved debate about whether *R/K* reflects different memory processes. Thus, further studies are needed to clarify this issue.

Future research could begin from several aspects. First, previous neural imaging studies about self-representation have focused mainly on the comparison between the independent self and the interdependent self (Ng, Han, Mao, & Lai, 2010; Zhu et al., 2007). Few of these have considered the intra-variability of these two forms of self-construals. Hence, future research could compare the self-representations of the Han and Uyghur to determine whether the difference between the relational and collective self-construals can be found at the neurological level. Second, the current study shows the intra-cultural variability of interdependent self-construal in a collective culture such as that found in China. Future studies should explore whether the intra-cultural variability of self-construal is present between other ethnic groups in China and other countries.

In summary, although differences between independent and interdependent self-construals have been investigated by many studies, few have considered the intra-cultural variability of interdependent self-construal in China. Our study fills this research gap by providing strong evidence for variance in the manifestation of interdependent self-construal in China. Such variance demonstrates that interdependent self-construal in China is not one-size-fits-all, thereby suggesting the need for a more detailed anthropological and psychological approach to ethnicities in collective cultures.

With this study, we made an important contribution to cross-cultural independent–interdependent literature as well as multi-cultural psychology literature. We also made a methodological contribution by employing the SR paradigm to provide implicit measures for the three types of self. Our findings strongly suggest that future multi-cultural psychological studies should not only consider the differences between independence and interdependence at a national level but also the cultural impact of different ethnic groups within a country.

## Acknowledgments

We thank Fang Fang, Xin Zhang, and anonymous reviewers for their valuable comments; we also thank Ke Meng, Xin Zou, and Philip Blue for their help in collecting the data and revising the manuscript.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the National Natural Science Foundation of China (No. 31070982, 30770711), the National Social Science Foundation of China (No. 12AZD116), and the Beijing Key Laboratory of Learning and Cognition.

## Notes

1. Both the main effect of Gender and its interaction with other variables were not significant in Studies 2, 3 and 4. Therefore, we excluded the factor of Gender in further analyses.
2. For the  $K$  measure, both the main effects and the interaction were not significant in Studies 2, 3 and 4.
3. The difference in the false alarm rates between Uyghur and Han participants were significant in terms of Recognition and  $R$  score in Studies 2, 3, and 4—Study 2:  $t(38) = 6.36, p < .001$ , Cohen's  $d = 2.06$ ;  $t(38) = 4.79, p < .001$ , Cohen's  $d = 1.55$ ; Study 3:  $t(38) = 3.38, p = .002$ , Cohen's  $d = 1.10$ ;  $t(38) = 3.61, p = .001$ , Cohen's  $d = 1.17$ ; Study 4:  $t(38) = 3.48, p = .001$ , Cohen's  $d = 1.13$ ;  $t(38) = 3.15, p = .003$ , Cohen's  $d = 1.02$ .

## References

- Breckler, S. J., & Greenwald, A. G. (1986). Motivational facets of the self. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition* (pp. 145-164). New York, NY: Guilford Press.
- Brewer, M. B., & Chen, Y. R. (2007). Where (who) are collectives in collectivism? Toward conceptual clarification of individualism and collectivism. *Psychological Review, 114*, 133-151.
- Brewer, M. B., & Gardner, W. (1996). Who is this "we"? Levels of collective identity and self representations. *Journal of Personality and Social Psychology, 71*, 83-93.
- Choi, B., & Han, G. (2009). Commentary: Psychology of selfhood in China: Where is the collective? *Culture & Psychology, 15*, 73-82.
- Conway, M. A., & Dewhurst, S. A. (1995). The self and recollective experience. *Applied Cognitive Psychology, 9*, 1-19.
- Dunn, J. C. (2004). Remember-know: A matter of confidence. *Psychological Review, 111*, 524-542.
- Fei, X. (1948). *Rural China*. Shanghai, China: Guancha.
- Gao, X. (2002). A study on the characteristics of self-esteem among college students of different nationalities (in Chinese). *Journal of Gansu Lianhe University (Social Sciences Edition), 18*, 19-23.
- Greenwald, A. G., & Pratkanis, A. R. (1984). *The self*. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 1, pp. 129-178). Hillsdale, NJ: Erlbaum.
- Han, S., Mao, L., Gu, X., Zhu, Y., Ge, J., & Ma, Y. (2008). Neural consequences of religious belief on self-referential processing. *Social Neuroscience, 3*, 1-15.
- Ho, D. (1995). Selfhood and identity in Confucianism, Taoism, Buddhism, and Hinduism: Contrasts with west. *Journal for the Theory of Social Behavior, 25*, 115-139.
- Hu, W. (2000). A cross-cultural study of the self-concept of college students of the Uyghur and Han nationalities (in Chinese). *Journal of Qinghai Nationalities Institute (Social Sciences), 26*, 117-122.
- Johnson, C., Gadon, O., Carlson, D., Southwick, S., Faith, M., & Chalfin, J. (2002). Self-reference and group membership: Evidence for a group-reference effect. *European Journal of Social Psychology, 32*, 261-274.

- Lu, M. (2004). The emphasis on earnest and sincere incorporation of Islam (in Chinese). *Chinese Muslim*, 6, 22-23.
- Ma, Z. (2003). Trace back to the origin of Islam ethnic viewpoint (in Chinese). *China Muslim*, 5, 16-19.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224-253.
- Ng, S. H., Han, S., Mao, L., & Lai, J. C. (2010). Dynamic bicultural brains: FMRI study of their flexible neural representation of self and significant others in response to culture primes. *Asian Journal of Social Psychology*, 13, 83-91.
- Nicholas, P. (2001). Response bias and public and private self-consciousness in Chinese. *Social Behavior and Personality*, 29, 733-742.
- Niu, X. (2007). Equality, toleration, incorporation, and peace—Sociology explanation of Islam concept of harmony (in Chinese). *China Religion*, 10, 62-64.
- Qi, J., & Zhu, Y. (2002). The self-reference effect of Chinese college students (in Chinese). *Psychological Science*, 25, 275-280.
- Rogers, T. B., Kuiper, N. A., & Kirker, W. S. (1977). Self-reference and the encoding of personal information. *Journal of Personality and Social Psychology*, 35, 677-688.
- Squire, L. R., Zola-Morgan, J. T., & Clark, R. E. (2007). Recognition memory and the medial temporal lobe: A new perspective. *Nature Reviews Neuroscience*, 8, 872-883.
- Symons, C. S., & Johnson, B. T. (1997). The self-reference effect in memory. *Psychological Bulletin*, 121, 371-394.
- Tang, D. (2008). The group integration function of Islam (in Chinese). *Journal of Ningxia Normal University (Social Science)*, 1, 91-97.
- Trafimow, D., & Finlay, K. A. (2001). The accessibility and importance of group memberships. *European Journal of Social Psychology*, 31, 37-43.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506-520.
- Tulving, E. (1999). On the uniqueness of episodic memory. In L. G. Nilsson & H. J. Markowitsch (Eds.), *Cognitive neuroscience of memory* (pp. 11-42). Göttingen, Germany: Hogrefe and Huber.
- Turner, J. C., Michael, A. H., Penelope, J. O., Stephen, D. R., & Margaret, S. W. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.
- Wagar, B. M. (2003). Culture, memory, and the self: An analysis of the personal and collective self in long-term memory. *Journal of Experimental Social Psychology*, 39, 468-475.
- Wu, Y., Wang, C., He, X., Mao, L., & Zhang, L. (2010). Religious beliefs influence neural substrates of self-reflection in Tibetans. *Social Cognitive and Affective Neuroscience*, 5, 324-331.
- Yang, H., & Huang, X. (2007). A cross-cultural study on the group-reference effect (in Chinese). *Psychological Science*, 39, 235-241.
- Yang, H., & Huang, X. (2009). Group-reference effect in Chinese (in Chinese). *Acta Psychologica Sinica*, 32, 1287-1290.
- Yang, H. S., Liao, Q. M., & Huang, X. T. (2008). Minorities remember more: The effect of social identity salience on group-referent memory. *Memory*, 16, 910-917.
- Zhang, S. Y. (2005). *An introduction to philosophy*. Beijing, China: Peking University Press.
- Zhang, Z., Wang, L., & Qi, M. (1998). Basic dimensions of Chinese personality traits: A factor analysis of the self description in a sample of Chinese college students (in Chinese). *Acta Psychologica Sinica*, 30, 85-92.
- Zhu, Y., & Zhang, L. (2002). An experimental study on the self-reference effect. *Science in China (Series C)*, 45(2), 120-128.
- Zhu, Y., Zhang, L., Fan, J., & Han, S. (2007). Neural basis of cultural influence on self-representation. *NeuroImage*, 34, 1310-1316.