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Values moderate age differences in relationship orientation [☆]

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ABSTRACT

This study tests the postulate that the cultural differences in age-related relationship orientation are moderated by values. The sample included 268 European Americans and 268 Chinese Americans, aged 20–90 years. Age positively correlated with relationship orientation (Ren Qing) among Chinese Americans but not among European Americans. However, values moderated these age differences. The association between age and relationship orientation became positive among European Americans who valued Tradition (seeking group acceptance) more. Conversely, the positive association between age and relationship orientation was weaker among Chinese Americans who valued Hedonism (seeking individual pleasure) more. These findings suggest that people from each culture develop their relationship orientation with age according to what they value.

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1. Introduction

Relationship orientation is defined as refraining from offending others even at the expense of personal pleasure and/or achievement (Cheung et al., 2001). For example, an individual with high relationship orientation may perform at the average level rather than excelling a test, in order not to stand out from the group. Although the construct “relationship orientation” first emerged as the factor “Ren Qing” from factor analyses conducted on indigenous measures developed in China (Cheung, Cheung, Wada, & Zhang, 2003), later studies replicated the factor among several North American samples (Cheung, Cheung, Leung, Ward, & Leong, 2003; Lin & Church, 2004), suggesting that relationship orientation is “important and useful” in capturing individual differences across cultures (John, 1990, p. 67).

Despite this universality, studies on adult development found different patterns of age differences in relationship orientation across cultures. In particular, Fung and Ng (2006) found that while older Chinese endorsed relationship orientation more than younger Chinese did, Canadians did not show these age differences. This study tested whether these cultural differences in age-related

relationship orientation could be accounted for by individual differences in values. We examined age differences in relationship orientation among European Americans and Chinese Americans. We hypothesized that the values endorsed by different cultural groups shaped the age differences in relationship orientation across the groups.

1.1. Aging and relationship orientation

There are two ways to understand age differences in relationship orientation across cultures. From the perspective of cultural psychology, growing older in one culture means living and participating in the culture for a longer period of time. Individuals gradually take on the social norms, values, and practices of the culture (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). To the extent that social norms, values, and practices differ across cultures, the development of the individual with age should be different across cultures as well. Similar arguments also exist in the aging literature. Socioemotional selectivity theory (Carstensen, Isaacowitz, & Charles, 1999) argues that as people age and perceive time as increasingly limited, they prioritize emotionally meaningful goals. Recently, evidence has been found, in the areas of social network composition (Fung, Stoeber, Yeung, & Lang, 2008; Yeung, Fung, & Lang, 2008), memory and attention (Fung et al., 2008; Fung, Isaacowitz, Lu, & Li, 2010), that cultural contexts at least partially define which goals are emotionally meaningful for their members. Only characteristics that are considered to be emotionally meaningful in one culture increase with age in that culture. When different cultures regard different

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characteristics as emotionally meaningful, the specific aging patterns can differ across cultures.

Integrating these two perspectives, one may postulate that cultural differences in age-related relationship orientation may occur if relationship orientation is valued by one culture more than another. In fact, there is evidence to argue that relationship orientation is valued differently across cultures. For example, while people from North American cultures emphasize independence (i.e., they attach a positive connotation to individuals who are autonomous and self-contained), people from East Asian cultures emphasize interdependence (i.e., they define individuals not as separate units that interact with one another, but as parts of the same unit) (see [Markus and Kitayama \(1991\)](#) and [Triandis \(1989\)](#) for reviews). In terms of social relationships, prior studies have shown that North Americans tend to self enhance and promote independence from others, whereas East Asians tend to restrain themselves and self-criticize to maintain interpersonal relatedness and harmony ([Heine, Lehman, Markus, & Kitayama, 1999](#); [Kim & Markus, 1999](#); [Kitayama et al., 1997](#)). Taken together, these findings suggest that relationship orientation is likely to be valued more by East Asians than by North Americans. To the extent that throughout adulthood, individuals from each culture “attune and elaborate” themselves according to their cultural frameworks ([Heine et al., 1999, p. 767](#)) and seek goals that are emotionally meaningful to them ([Fung et al., 2008, 2010](#)), we would expect the East Asians to be more likely to show a positive association between age and relationship orientation than do the North Americans.

This hypothesis has received preliminary support from [Fung and Ng \(2006\)](#) who found that although Canadians did not show any age differences in relationship orientation, older Chinese endorsed relationship orientation to a greater extent than did younger Chinese. These cultural differences remained unchanged even after statistically controlling for Openness to experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Nevertheless, [Fung and Ng \(2006\)](#) did not directly measure values in their study. This study tested whether the patterns of age differences in relationship orientation vary across cultures according to values.

1.2. The present study

The first objective of this study was to conceptually replicate the findings from [Fung and Ng \(2006\)](#) by examining age differences in relationship orientation among European Americans and Chinese Americans, across a wide age range (20–90 years old). We predicted that, consistent with the findings of [Fung and Ng \(2006\)](#), there would be a positive association between age and relationship orientation among Chinese Americans, but not among European Americans.

The second, and more important, objective of this study was to extend the literature by directly examining whether values indeed moderated age differences in relationship orientation. To the best of our knowledge, the most comprehensive system of values in the literature is the value circumplex proposed by [Schwartz \(1992\)](#). This study focuses on two values, Hedonism and Tradition, which fall on two opposite poles of the same dimension in the value circumplex. Hedonism refers to values emphasizing sensuous pleasure and enjoyment, whereas Tradition refers to values emphasizing acceptance and respect of group norms and customs. Hedonism and Tradition are opposite to each other in the sense that the pursuit of individual pleasure may often be in conflict with paying respect to shared experiences and social customs. Under these definitions, Tradition should encourage relationship orientation while Hedonism should reduce relationship orientation. We thus predicted that although European-Americans as a group would not show any association between age and relationship orientation, those among them who valued Tradition to a greater extent would

show a more positive association. Conversely, we predicted that while Chinese-Americans as a group would show a positive association between age and relationship orientation, such an association would be weaker among those who valued Hedonism to a greater extent.

2. Method

2.1. Participants

Two hundred and sixty-eight European Americans (139 males, 129 females) and 268 Chinese Americans (135 males, 133 females) participated in the study. The age range of both cultural groups was 20–90 years ($M = 51.26$ and $SD = 18.36$). Following the education breakdown recommended by [Snibbe and Markus \(2005\)](#), 1/3 of participants in each cultural group had no more than a high school degree, and 2/3 had at least a college degree. In other words, the distributions of age, sex, and education were matched across the cultural groups. Such distributions were also representative of the population of California, USA ([US Census Bureau, 2000](#)).

Participants were recruited from the community in the San Francisco Bay Area. Given the tremendous variability within the cultural groups, European Americans (E-As) were defined, based on the criteria suggested by [Hofstede \(1980\)](#), as those who: (a) had been born and raised in the United States, (b) had parents who were born and raised in the United States, and (c) had ancestors from England and other individualistic European countries. Chinese Americans (C-As) were defined as those who: (a) had been born and raised either in the US or in a Chinese population (China, Hong Kong, or Taiwan), (b) lived in the US, and (c) had parents who were born and raised in a Chinese population. The results reported below did not differ between C-As who were born in the US and those who were not. To ensure that cultural orientation indeed differed between European Americans and Chinese Americans, we administered the General Ethnicity Questionnaire ([Tsai, Ying, & Lee, 2000](#)) to participants. As expected, European Americans were more oriented to the American culture than were Chinese Americans, across age.

Participants were also screened for major psychopathology with the PRIME-MD ([Spitzer et al., 1995](#)) and for cognitive impairment with the Mini-Mental Status Examination ([Folstein, Folstein, & McHugh, 1975](#)). Individuals who reported any psychiatric symptoms or showed any evidence of cognitive impairment were excluded from the study.

2.2. Measures and procedure

Relationship orientation was measured by the Ren Qing subscale of the Cross Cultural Personality Assessment Inventory II (CPAI-II; [Cheung, Cheung, & Zhang, 2004](#)). This 13-item subscale assesses the extent to which the respondent avoids offending others even at the expense of personal pleasure and/or achievement. For instance, one of the items is about trying one's best not to show off too much, in order to avoid offending others. Participants responded either 0 = no or 1 = yes to each of the items. Probably because of the restricted range of ratings, the inter-item reliability (as indexed by Cronbach's α) of this subscale was .53. However, this reliability level is consistent with that found in prior studies using the subscale (e.g., [Cheung et al., 2004](#)). Detailed information on the inter-item and test-retest reliabilities, and predictive and convergent validities of the subscale can be found in prior studies ([Cheung, Leung, Fan, Song, & Zhang, 1996](#); [Cheung et al., 2001, 2003, 2004](#)).

Values. Next, participants completed the Schwartz Value Questionnaire ([Schwartz, 1992](#)). This Questionnaire consists of 56 items, which cover 10 value types. Participants rated the importance of each item on a 9-point scale (–1 = opposite of what I value

Table 1
Inter-correlations among variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	–	.006	–.035	.191**	–.286**	.107	–.213**	–.084	–.194**	.077	.070	.104
2. Sex	–.043	–	.006	–.101	.088	.036	–.085	–.072	–.054	–.215**	–.051	–.021
3. Education	.101	–.053	–	.205**	.039	.228**	.170**	–.048	–.154*	–.120*	–.087	.048
4. Physical health	.175**	–.060	.084	–	–.051	.033	.300**	–.222**	–.031	–.136*	–.271**	.107
5. Hedonism	–.403**	.133*	–.108	–.150*	–	–.011	–.013	.183**	.122*	–.070	.000	–.032
6. Tradition	.155*	–.026	.147*	.189**	.081	–	.062	–.013	–.262**	.099	.065	.174**
7. Neuroticism	–.178**	–.047	.130*	.391**	.062	.196**	–	–.433**	.058	–.320**	–.425**	.172**
8. Extraversion	–.235**	.002	–.120	–.230**	.330**	.084	–.324**	–	.070	.245**	.267**	.003
9. Openness	–.274**	.059	–.133*	–.156*	.197**	–.211**	–.099	.162**	–	–.030	–.045	–.062
10. Agreeableness	.158*	–.163**	–.169**	–.182**	–.139*	.039	–.399**	.171**	.047	–	.277**	.018
11. Conscientiousness	.083	–.259**	–.126*	–.185**	.076	.016	–.349**	.305**	.170**	.242**	–	–.008
12. Relationship orientation (Ren Qing)	.282**	–.002	.071	.151*	–.155*	.082	.088	–.106	–.187**	.126*	–.006	–

Note. The region above the diagonal indicates data obtained from the European American sample; the region below the diagonal indicates data from Chinese American sample.

* $p < .05$.

** $p < .01$.

to 7 = very important). Although participants completed the entire Questionnaire, this study focused only on two of the value types – Hedonism (e.g., pleasure, enjoying life) and Tradition (e.g., humble, accepting my portion of life). The internal reliabilities for Hedonism and Tradition were both .71. The other value types are less conceptually relevant to our hypothesis. Nor did they moderate the association between age and relationship orientation for either cultural groups.

Other measures. Participants reported their demographic information (age, sex, ethnicity, and level of education). They also completed the 42-item Wahler Physical Symptoms Inventory (1983). This scale measures the frequency of physical health problems encountered by the participants. Its internal reliability was .91. Finally, participants completed the short version of the Revised NEO Personality Inventory (NEO-FFI; Costa & McCrae, 1992). The NEO-FFI contains 60 items measuring Neuroticism, Openness, Agreeableness, Extraversion, and Conscientiousness. Participants responded to each item on a 5-point scale (1 = strongly disagree to 5 = strongly agree). The NEO-FFI generates a domain score for each factor (internal reliabilities: .87 for Neuroticism, .78 for Extraversion, .73 for Openness, .71 for Agreeableness, and .81 for Conscientiousness).

To ensure comparability across cultural groups, the measures of the major variables (i.e., relationship orientation, Tradition and Hedonism) were tested for factorial invariance among European Americans and Chinese Americans. For this, structural equation models (SEM) were calculated with EQS 6.1 for Windows (Bentler & Wu, 1995), following the test procedure described by Byrne (2001, pp. 173), as well as suggestions from Vandenberg and Lance (2000). First, analyses were conducted to determine whether individual model fits for each measure. Then, a baseline model in which all items were randomly parceled without constraining anything was generated and the model fit was calculated. Next, a model with constrained factor loadings and finally, a model with constrained factor loadings and constrained factor variance were generated. The models with constrained factor loadings and constrained factor variance fit the data the best, relationship orientation: $\chi^2 = 48.377$, $df = 35$, CFI = .92, GFI = .97, RMSEA = .027; Hedonism: $\chi^2 = 18.504$, $df = 4$, CFI = .96, GFI = .98, RMSEA = .085; Traditionalism: $\chi^2 = 32.279$, $df = 15$, CFI = .92, GFI = .98, RMSEA = .048, suggesting that the measures showed factorial equivalence across cultural groups.

3. Results

3.1. Preliminary analyses

Table 1 shows the correlation matrix of all variables included in the study, for each cultural group. The possible scores for relation-

ship orientation are from 0 to 1 and those for Tradition and Hedonism are from –1 to 7. The Chinese Americans (C-As) reported higher relationship orientation ($M = .74$, $SD = .16$) than did the European-Americans (E-As) ($M = .61$, $SD = .15$), $t(534) = -9.60$, $p < .001$. For the Big Five factors, the C-As were higher in Neuroticism ($M = 2.62$, $SD = .63$ vs. $M = 2.47$, $SD = .71$), $t(527) = -2.50$, $p < .05$, lower in Extraversion ($M = 3.24$, $SD = .50$ vs. $M = 3.34$, $SD = .57$, $t(521) = 2.31$, $p < .05$), lower in Openness ($M = 3.21$, $SD = .44$ vs. $M = 3.56$, $SD = .55$, $t(508) = 7.86$, $p < .001$), and lower in Agreeableness ($M = 3.68$, $SD = .42$ vs. $M = 3.82$, $SD = .48$, $t(527) = 3.49$, $p = .001$), than did their E-A counterparts. No significant cultural differences were found in Conscientiousness ($M = 3.69$, $SD = .55$ for the E-As and $M = 3.72$, $SD = .50$ for the C-As, $t(529) = -.67$, $p = .50$).

In terms of values, the C-As scored higher on Tradition ($M = 3.38$, $SD = 1.22$ vs. $M = 2.89$, $SD = 1.10$), $t(516) = -4.77$, $p < .001$), and lower on Hedonism ($M = 4.05$, $SD = 1.69$ vs. $M = 4.46$, $SD = 1.30$), $t(469) = 3.02$, $p < .05$), than did the E-As. The two cultural groups did not differ in any of the demographic variables (age, sex, or level of education), so we did not statistically control for them in the analyses described below. Statistically controlling for physical health in the analyses did not alter the results reported below.

3.2. Age differences in relationship orientation

A multiple regression analysis was conducted on relationship orientation with age (continuous), culture (C-As vs. E-As), and their interaction as predictors. Age was mean-centered before calculating the interaction term. A significant Age \times Culture interaction was found, $B = .02$, $SE = .01$, $\beta = .09$, $F(1, 532) = 5.55$, $p = .02$. Separate bivariate correlations between age and relationship orientation were estimated for each cultural group to explore the nature of this interaction. As predicted, age positively correlated with relationship orientation ($r = .28$, $p < .01$) among the C-As, but did not correlate with relationship orientation among the E-As ($r = .10$, $p = .09$). The correlations are reported in Table 1.

In contrast, no significant Age \times Culture interaction effect was found on any of the Big Five factors: $B = .02$, $SE = .03$, $\beta = .02$, $F(1, 525) = .32$, $p = .57$, for Neuroticism; $B = -.04$, $SE = .02$, $\beta = -.07$, $F(1, 526) = 2.50$, $p = .12$, for Extraversion; $B = -.01$, $SE = .02$, $\beta = -.02$, $F(1, 525) = .22$, $p = .64$, for Openness; $B = .02$, $SE = .02$, $\beta = .04$, $F(1, 525) = .66$, $p = .42$, for Agreeableness; and $B = .003$, $SE = .02$, $\beta = .01$, $F(1, 527) = .01$, $p = .91$, for Conscientiousness.

3.3. The moderating roles of tradition and hedonism

To examine the moderating roles of values, we conducted multiple regressions, regressing relationship orientation on age

(continuous), culture (C-As vs. E-As), value (Tradition and Hedonism; continuous), and their interactions. The four-way Age \times Tradition \times Hedonism \times Culture interaction on relationship orientation was not significant, $B < .001$, $SE = .01$, $\beta < .05$, $F(1, 498) < .01$, and $p = .97$. Instead, two three-way interactions, the Age \times Tradition \times Culture interaction, $B = -.02$, $SE = .01$, $\beta = -.10$, $F(1, 509) = 5.92$, and $p = .02$, and the Age \times Hedonism \times Culture interaction, $B = -.02$, $SE = .01$, $\beta = -.11$, $F(1, 505) = 5.40$, and $p = .02$, on relationship orientation were found.

To explore the source of these interactions, we then regressed the relationship orientation on age, Tradition, and their interaction for each cultural group. The Age \times Tradition interaction was significant for the E-As only, $B = .02$, $SE = .01$, $\beta = .14$, $F(1, 258) = 4.88$, and $p = .03$, but not for C-As, $B = -.01$, $SE = .01$, $\beta = -.08$, $F(1, 250) = 1.46$, and $p = .23$. We then performed a simple slope analysis to explicate this interaction (Aiken & West, 1991). As shown in Fig. 1, for E-As with low Tradition (at $-1 SD$), age was negatively related to relationship orientation; but for those with high Tradition (at $+1 SD$), age was positively associated with relationship orientation.

Similarly, we regressed the relationship orientation on age, Hedonism, and their interaction for each cultural group. The Age \times Hedonism interaction was significant for C-As only, $B = -.02$, $SE = .01$, $\beta = -.14$, $F(1, 246) = 4.30$, and $p = .04$, not for E-As, $B = .02$, $SE = .01$, $\beta = .08$, $F(1, 258) = 1.72$, and $p = .19$. As displayed in Fig. 2, for C-As with low Hedonism (at $-1 SD$), age was positively related to relationship orientation, but such a relationship was negative for those with high Hedonism (at $+1 SD$).

4. Discussion

In this study, we examined age differences in relationship orientation, and the moderating role of values in these age differences among C-As and E-As. Findings revealed that, across a wide age range (aged 20–90 years), a positive association between age and relationship orientation was observed among C-As, but not among E-As. Such cross-cultural differences were not found for any of the Big Five. This set of findings conceptually replicated the findings from Fung and Ng (2006) that older Chinese endorsed relationship orientation to a greater extent than did younger Chinese, but Canadians did not. Taken together, these findings, though cross-sectional, suggest that the patterns of age differences in relationship orientation differ across cultures. Chinese and C-As, who are more interdependent (e.g., Oyserman, Coon, & Kimmelmeier, 2002), may emphasize relationship orientation to an increasingly greater extent with age. Canadians and E-As, who are more independent (Oyserman et al., 2002), may not show this pattern with age.

Moreover, we directly measured values in this study and found that values indeed moderated age differences in relationship orientation for both E-As and C-As. E-As as a group did not show any association between age and relationship orientation. Yet, those among them who accepted more of and paid greater respect to group norms and customs (i.e., Tradition) showed a positive association between age and relationship orientation. Conversely, C-As as a group showed a positive association between age and relationship orientation. But the association became weaker and even

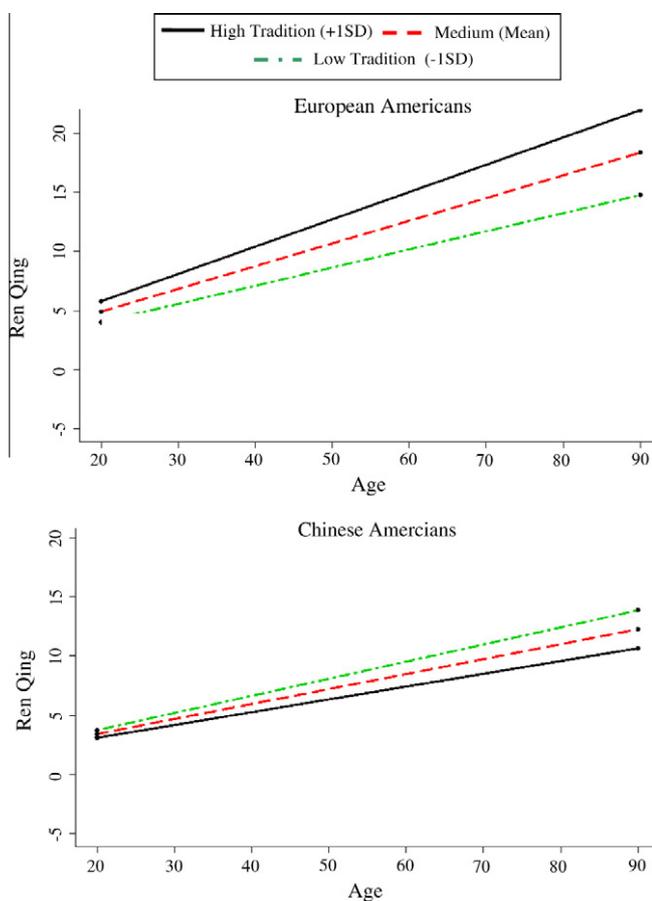


Fig. 1. Tradition moderated the relationship between age and relationship orientation (Ren Qing; standardized scores).

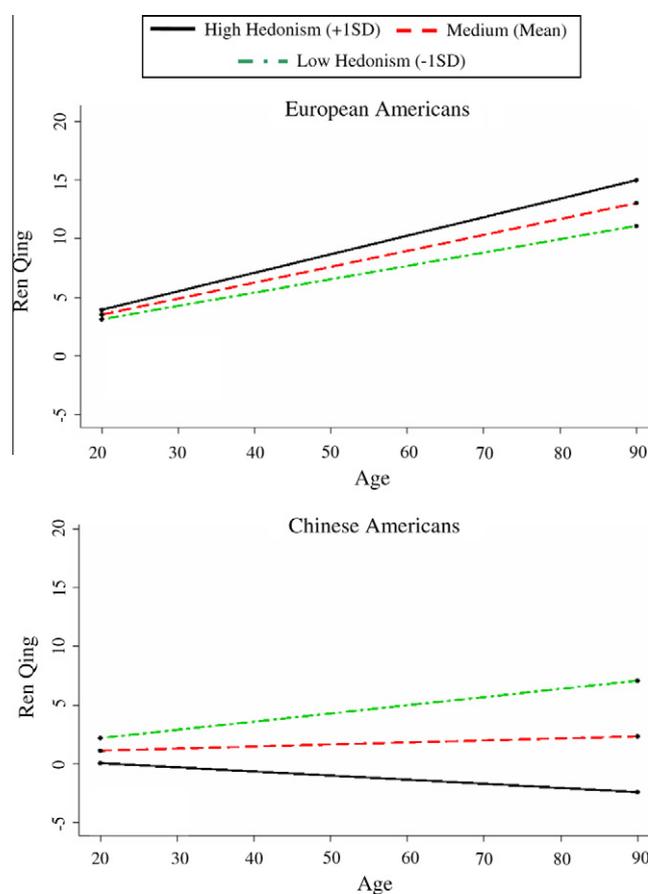


Fig. 2. Hedonism moderated the relationship between age and relationship orientation (Ren Qing; standardized scores).

negative for those among them who valued individual pleasure and enjoyment (i.e., Hedonism) to a greater extent. It should be noted from Table 1 that the two value types – Tradition and Hedonism – only correlated weakly with relationship orientation in each cultural group, suggesting that the moderation effects were not driven by the three variables all measuring the exact same construct. Moreover, when we repeated the analyses with relationship orientation as a predictor and value types as the dependent measures, we did not find the same pattern of results as reported above. These suggest that our measures of values and relationship orientation were empirically distinct.

These findings, though cross-sectional, suggest that people from different cultures may change their levels of relationship orientation with age according to their own values, resulting in different patterns of age-related relationship orientation across cultures. This argument is consistent with recent findings from the self enhancement literature (Sedikides, Gaertner, & Toguchi, 2003) that independent individuals self-enhanced on individualistic attributes – for example, arguing for their own position and against that of the group – whereas interdependent individuals self-enhanced on collectivistic attributes – for instance, avoiding open confrontation with their group. Given that self enhancement, to a certain extent, guides the direction of self development, it makes sense for Chinese and C-As, as well as E-As who valued Tradition to a greater extent, to show age-related increases in collectivistic attributes such as relationship orientation.

It is beyond the scope of this study to examine exactly how individuals change their levels of relationship orientation with age based on their values. But two mechanisms can be proposed. First, socioemotional selectivity theory (Carstensen et al., 1999) postulates that as people age, they increasingly pursue goals that they find emotionally meaningful. These goals guide their cognition (attention, memory) and social relationships. Applying this theory to the area of age-related relationship orientation, we can speculate that values may, at least in part, determine which goals are considered to be emotionally meaningful. Individuals then pursue these goals throughout adulthood and may change their levels of relationship orientation as a result. Cultural differences in age-related relationship orientation may occur when different cultural groups perceive different goals as emotionally meaningful. Alternatively, it may be the case that values, at least in part, determine which behaviors are reinforced and punished in each cultural context. Growing older involves participating in a specific cultural context for a longer period of time. To the extent that values differ across cultures, the specific behaviors that get reinforced and punished also differ, leading to different patterns of development (including changes in relationship orientation) with age across cultures. Future studies should explore these two mechanisms.

Other limitations of the study should also be acknowledged. The study was cross-sectional. The age differences in relationship orientation we found might reflect cohort differences rather than or in addition to developmental changes. Moreover, we only examined age differences in relationship orientation between two ethnic groups within the American culture. This limitation was minimized by the fact that our findings replicated those from a prior study that compared Chinese with Canadians (Fung & Ng, 2006), and the observation that studying ethnic groups within the same culture was actually a more stringent test of our hypotheses given that many other cultural variations that were common in cross-national studies were controlled for (Cohen, 2007). Nevertheless, future studies should attempt to examine age-related relationship orientation longitudinally in diverse cultures. Finally, the reliability of our relationship orientation measure was low. Despite these limitations, our findings contribute to the literature by providing support to the argument that values shape age differences in

relationship orientation. This may be one mechanism underlying the cultural differences in aging.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks: Sage.
- Bentler, P., & Wu, E. (1995). *EQS for windows user's guide*. Encino, CA: Multivariate Software.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Carstensen, L. L., Isaacowitz, D., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165–181.
- Cheung, F. M., Cheung, S. F., Leung, K., Ward, C., & Leong, F. (2003). The English Version of the Chinese Personality Assessment Inventory. *Journal of Cross-Cultural Psychology*, 34(4), 433–452.
- Cheung, F. M., Cheung, S. F., Wada, S., & Zhang, J. X. (2003). Indigenous measures of personality assessment in Asian countries: A review. *Psychological Assessment*, 15, 280–289.
- Cheung, F. M., Cheung, S. F., & Zhang, J. X. (2004). What is “Chinese personality?” Subgroup differences in the Chinese Personality Assessment Inventory (CPAI-2). *Acta Psychologica Sinica*, 36, 491–499.
- Cheung, F. M., Leung, K., Fan, R. M., Song, W. Z., & Zhang, J. P. (1996). Development of the Chinese Personality Assessment Inventory. *Journal of Cross-Cultural Psychology*, 27, 181–199.
- Cheung, F. M., Leung, K., Zhang, J. X., Sun, H. F., Gan, Y. Q., Song, W. Z., et al. (2001). Indigenous Chinese personality constructs: Is the five factor model complete? *Journal of Cross-Cultural Psychology*, 32, 407–433.
- Cohen, D. (2007). Methods in cultural psychology. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 196–236). The Guilford Press: New York, NY.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five Factor Inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). “Mini-mental state”: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 12(3), 189–198.
- Fung, H. H., Isaacowitz, D. M., Lu, A., & Li, T. (2010). Independent self-construal moderates the age-related negativity reduction effect in memory and visual attention. *Psychology and Aging*, 25, 321–329.
- Fung, H. H., Isaacowitz, D. M., Lu, A., Wadlinger, H. A., Goren, D., & Wilson, H. R. (2008). Age-related positivity enhancement is not universal: Older Hong Kong Chinese look away from positive stimuli. *Psychology and Aging*, 23, 440–446.
- Fung, H. H., & Ng, S. K. (2006). Age differences in the sixth personality factor: Age Differences in Interpersonal Relatedness among Canadians and Hong Kong Chinese. *Psychology and Aging*, 21, 810–814.
- Fung, H. H., Stoeber, F. S., Yeung, D. Y., & Lang, F. R. (2008). Cultural specificity of socioemotional selectivity: Age differences in social network composition among Germans and Hong Kong Chinese. *Journal of Gerontology: Psychological Sciences*, 63, P156–P164.
- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, 106, 766–794.
- Hofstede, G. H. (1980). *Culture's consequences, international differences in work-related values*. Beverly Hills, CA: Sage Publications.
- John, O. P. (1990). The “Big Five” factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 66–100). New York, NY, US: Guilford Press.
- Kim, H., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology*, 77, 785–800.
- Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective process of self esteem management: Self-enhancement in the United States and self-depreciation in Japan. *Journal of Personality and Social Psychology*, 72, 1245–1267.
- Lin, E., & Church, A. T. (2004). Are indigenous Chinese personality dimensions culture-specific? An investigation of the Chinese Personality Assessment Inventory in Chinese American and European American samples. *Journal of Cross-Cultural Psychology*, 35, 586–605.
- Markus, H. R., & Kitayama, S. (1991). Cultural and self: Implications for cognition, emotion and motivation. *Psychological Review*, 98, 224–253.
- Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analysis. *Psychological Bulletin*, 128, 3–72.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). New York: Academic Press.
- Sedikides, C., Gaertner, L., & Toguchi, Y. (2003). Pancultural self-enhancement. *Journal of Personality and Social Psychology*, 84, 60–79.
- Snibbe, A. C., & Markus, H. R. (2005). You can't always get what you want: Educational attainment, agency, and choice. *Journal of Personality and Social Psychology*, 88(4), 703–720.
- Spitzer, R. L., Williams, J. B. W., Kroenke, K., Linzer, M., deGruy, F. V., Hahn, S. R., et al. (1995). *Primary care evaluation of mental disorders*. New York: Pfizer.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506–520.

- Tsai, J. L., Ying, Y., & Lee, P. A. (2000). The meaning of "being Chinese" and "being American": Variation among Chinese American young adults. *Journal of Cross-Cultural Psychology*, 31, 302–322.
- US Census Bureau. (2000). *California DP-2 Profile of Selected Social Characteristics: 2000*. Retrieved from <http://factfinder.census.gov/servlet/QITable?_bm=n&lang=en&q_r_name=DEC_2000_SF3_U_DP2&ds_name=DEC_2000_SF3_U&geo_id=04000US06>.
- [Vandenberg, R. J., & Lance, C. E. \(2000\). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3, 4–70.](#)
- Wahler, H. J. (1983). *Wahler physical symptoms inventory manual* (1983 ed.). LA: Western Psychological Services.
- [Yeung, D. Y., Fung, H. H., & Lang, F. R. \(2008\). Self-construal moderates age differences in social network characteristics. *Psychology and Aging*, 23, 222–226.](#)