Journal of Cross-Cultural Psychology
http://jcc.sagepub.com/

Acculturation of Personality: A Three-Culture Study of Japanese, Japanese Americans, and European Americans

Derya Güngör, Marc H. Bornstein, Jozefien De Leersnyder, Linda Cote, Eva Ceulemans and Batja Mesquita

Journal of Cross-Cultural Psychology published online 20 December 2012
DOI: 10.1177/0022022112470749

The online version of this article can be found at:
http://jcc.sagepub.com/content/early/2012/12/20/0022022112470749

Published by:
SAGE
http://www.sagepublications.com

On behalf of:
IACCP
International Association for Cross-Cultural Psychology

Journal of Cross-Cultural Psychology
XX(X) 1–18

DOI: 10.1177/0022022112470749
jccp.sagepub.com
SAGE

Acculturation of Personality: A Three-Culture Study of Japanese, Japanese Americans, and European Americans

Derya Güngör[1], Marc H. Bornstein[2], Jozefien De Leersnyder[1], Linda Cote[2,3], Eva Ceulemans[1], and Batja Mesquita[1]

Abstract

The present study tests the hypothesis that involvement with a new culture instigates changes in personality of immigrants that result in (a) better fit with the norms of the culture of destination and (b) reduced fit with the norms of the culture of origin. Participants were 40 Japanese first-generation immigrants to the United States, 57 Japanese monoculturals, and 60 U.S. monoculturals. All participants completed the Jackson Personality Inventory as a measure of the Big Five; immigrants completed the Japanese American Acculturation Scale. Immigrants' fits with the cultures of destination and origin were calculated by correlating Japanese American mothers' patterns of ratings on the Big Five with the average patterns of ratings of European Americans and Japanese on the same personality dimensions. Japanese Americans became more "American" and less "Japanese" in their personality as they reported higher participation in the U.S. culture. The results support the view that personality can be subject to cultural influence.

Keywords

personality, acculturation, Japanese Americans, cultural fit

Does an immigrant's personality change when he or she moves from one culture to another? This is the central question addressed in the current research. Underlying this question is the idea that culture may shape personality, an idea that is consistent with evidence for cultural differences in personality (Allik & McCrae, 2004; Bornstein et al., 2007; McCrae et al., 2005a, 2005b, 2010; Schmitt, Allik, McCrae, & Benet-Martínez, 2007). If personality were subject to acculturation, this would not only be interesting in its own right, but it would also suggest that concurrent cultural influences are likely to shape personality throughout the life span, thus challenging the

[1]University of Leuven, Belgium
[2]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Department of Health and Human Services, Bethesda, MD, USA
[3]Marymount University, Arlington, VA, USA

Corresponding Author:
Derya Güngör, Center for Social and Cultural Psychology, University of Leuven, Tiensestraat 102, bus 3727, 3000 Leuven, Belgium
Email: Derya.Gungor@ppw.kuleuven.be

claim that personality is an innate and stable characteristic of a person (e.g., Conley, 1985; McCrae & Costa, 1994; Poortinga & van Hemert, 2001; Terracciano, Costa, & McCrae, 2005).

To date, two types of evidence suggest that personality may acculturate, but neither provides a complete picture. The first type comes from studies showing that differences in the levels of personality characteristics between Asian-descendent (e.g., Japanese, Vietnamese, and Chinese) immigrants in North America and mainstream European American communities decrease with every generation (Benet-Martinéz & Karakitapoglu-Aygün, 2003; Leininger, 2002; McCrae, Yik, Trapnell, Bond, & Paulhus, 1998). These studies suggest that immigrants' personality structure acculturates toward the culture of destination, rendering genetic explanations for cultural differences in personality less likely. However, they do not provide evidence for acculturation of personality within one generation.

The second type of evidence for acculturation of personality is based on studies relating the average levels on different personality measures to immigrants' exposure to a new culture (e.g., the length of residence, involvement in a mainstream culture) (Eap et al., 2008; Ryder, Alden, & Paulhus, 2000). These studies suggest that different levels of exposure to the new culture are associated with different levels on personality characteristics, but they do not compare personality ratings with ratings by people from the cultures of origin and destination simultaneously, thus failing to provide evidence for the direction of the change. Acculturation is not necessarily a unidimensional process; people may acculturate toward the new culture while remaining similar or becoming dissimilar to the heritage cultural context (Berry, 2002; Ryder et al., 2000). It thus remains unclear whether the acculturative shift in personality takes place toward the new culture, away from the heritage culture, or both: Do Japanese Americans, for example, become more American, less Japanese, or both as they spend more time in the United States?

In the present study, we put the hypothesis to test that, within one generation, immigrant personality acculturates toward the norms of the culture of destination. In addition, we investigate whether personality acculturates away from the norms of the culture of origin as individuals engage with the new culture. The research focuses on Japanese Americans, because the normative personality patterns for their cultures of origin and destination show a stark contrast (e.g., Bornstein et al., 2007). North Americans have been found to be higher on Extraversion and Openness than East Asians, who score higher on Neuroticism and Agreeableness (McCrae et al., 1998). We used a three-culture design consisting of monocultural comparison groups from the culture of destination *as well as* the culture of origin to capture such acculturative influences on personality that may be lost in solely immigrant versus mainstream culture comparisons.

Acculturation Toward the Culture of Destination

The idea that personality is subject to cultural influence is consistent with studies finding cultural differences in personality (Allik & McCrae, 2004; Bornstein et al., 2007; McCrae et al., 2005a, 2005b, 2010; Schmitt et al., 2007), especially when these differences mirror differences in cultural meanings and practices. For example, when compared on "Big Five" personality dimensions, higher levels of Openness to Experience, Extraversion, Conscientiousness, and Agreeableness and lower levels of Neuroticism have been found to characterize the personality patterns of mainstream European and North American societies as compared to those of Asian and African societies (Allik & McCrae, 2004; Bornstein et al., 2007; McCrae et al., 2010; Schmitt et al., 2007). These differences can be explained by greater emphasis on individuality versus uniformity, assertiveness versus self-control, and situational consistency versus appropriateness in the respective cultural contexts (e.g., Heine, 2001).

Additional support for the idea that an individual's personality converges with the cultural norms comes from the literature on cultural fit (Heine & Lehman, 2004; Kitayama, Mesquita, &

Karasawa, 2006). An example comes from cross-national research by Fulmer et al. (2011). These researchers found a relation between personality characteristics, on the one hand, and subjective well-being and self-esteem, on the other, in a study across 28 different countries; higher ratings on a personality characteristic predicted more well-being and self-esteem to the extent that the personality characteristic adhered to the cultural norm. This finding points to a process of cultural reinforcement, whereby the "right" personality traits elicit social validation and support, thus enhancing psychological health.

Extending the notion of cultural fit to the acculturation context, we reasoned that the level of fit, or concordance, between immigrants' personality and the modal personality of the mainstream culture might constitute an implicit indicator of personality acculturation. When individuals move from one cultural context to another, characteristic ways of feeling, thinking, and behaving associated with the heritage culture may become less relevant and thus less reinforced in the new culture. Instead, to the extent that heritage and receiving culture norms are dissimilar, increased exposure and involvement in the culture of destination may establish or strengthen personality characteristics that are more relevant and adaptive to the acculturation context.

Consistent with this idea, research has found that personality concordance with the norms of the culture of destination benefit psychological adjustment to cultural change (Ward & Chang, 1997; Ward, Leong, & Low, 2004). Moreover, acculturation research in related domains (self-evaluations, emotions) has shown that immigrants become more concordant with the normative patterns of the mainstream cultural group in the country of destination over time and through contact with the mainstream culture (De Leersnyder, Mesquita, & Kim, 2011; Heine & Lehman, 2004). Our first aim was, therefore, to test the hypothesis that immigrants' personality patterns become more in tune with the normative personality pattern of the culture of destination as they are exposed to the mainstream culture over time and through participation in it (e.g., through social contact, daily practices, identification).

Acculturation Away From the Culture of Origin

Our second aim was to explore whether immigrants' engagement with U.S. culture implies becoming less Japanese. Most acculturation research on personality compares immigrants with the mainstream cultural group in the receiving country; increased resemblance in personality is often thought to signify cultural influences, and a persistent gap between the immigrant and the mainstream group has been interpreted as the result of enduring biological influences. For instance, McCrae et al. (1998) found that Chinese biculturals reared in Canada and Chinese-born immigrants alike were lower on Assertiveness and Activity than European Canadians. The authors interpreted these sustained cultural differences as evidence for stable differences in the temperaments between people of European and Chinese descent. However, acculturation may take place towards the culture of destination or away from the culture of origin, and without a heritage culture comparison, it is unclear if a difference between generations or immigrants with different degrees of exposure to the new culture constitutes an increase or a decrease in a personality characteristic. To illustrate, Kidder (1992) reported that Japanese university students who returned to Japan after spending some time in the United States were "feeling un-Japanese" and experienced lasting adjustment problems. When in the company of peers, these returnees felt different with respect to their physical appearance, behaviors, and interpersonal styles (also see Yoshida et al., 2003, for peer perceptions that matched with self-reported feelings of poor fit). Specifically, Japanese who had lived in Western cultures were more assertive and direct in expressing their opinions, which their homeland peers perceived as inconsiderate and crass (Minoura, 1988). Thus, Japanese Americans may appear to remain Japanese when compared

with European Americans on self-assertion, but they might seem rather American as compared with Japanese, suggesting acculturation of personality away from the heritage culture.

Overview of the Current Study

Based on cultural approaches to personality and related findings from acculturation research, we hypothesized in the present study that the personality patterns of Japanese American immigrants would converge with the normative European American pattern to the extent of the immigrants' exposure to and involvement with the culture of destination. We also explored whether acculturation towards U.S. culture is associated with becoming less Japanese. To this end, we investigated the acculturation of the "Big Five", which structures personality around five largely independent, factor-analytically derived, broadband dimensions that have been borne out by research using different methods, such as self, peer, and clinician reports (John & Srivastava, 1999; McCrae et al., 1998, 2005a). The Big Five have emerged consistently across different cultures (Allik & McCrae, 2004; Bornstein et al., 2007; Heine & Buchtel, 2009). We measured the level of personality concordance between immigrants and monocultural samples by relating Japanese Americans' personality ratings with the average personality pattern of a mainstream culture sample. Therefore, we obtained an actual measure of acculturation because concordance scores reflect similarity to others' self-reported personality ratings, which are not known to the participants (De Leersnyder et al., 2011). We then examined to what extent personality concordance is predicted by Japanese Americans' exposure to and involvement in the mainstream culture.

Method

Participants

Participants were monocultural middle-class Japanese women living in Tokyo, Japan (n = 57), Japanese immigrant women to the United States (n = 40), and monocultural European American women (n = 60) living in the Washington, DC, metropolitan area. Our samples were quite homogenous in terms of age range, socioeconomic status, and social role (first-time mothers of young children) to maximize their comparability and explore the net effect of acculturation.[1] Most Japanese immigrants originated from urban areas on the main islands of Japan, and their mother tongue was Japanese. On average, immigrants were 27.90 years old when they immigrated to the United States (SD = 3.98) and had lived in the United States for 5.83 years (SD = 3.38).[2] European Americans were chosen from a larger sample to achieve sample size and demographic comparability with the Japanese immigrants and yet be representative of the population of middle-class European Americans living in and around Washington, DC. European Americans were either fourth- or fifth-generation Americans (i.e., most or all of their grandparents were born in the United States). The level of education was slightly higher for Japanese Americans and European Americans than for Japanese (Ms = 5.65, 5.63, and 4.60; SDs = .77, 1.38, and 1.02, respectively), $F(2, 154) = 15.8$, $p < .001$, $\eta^2_p = .17$ (on Hollingshead, 1975, education scale; ranging from 1 to 7). Japanese Americans were slightly older than European Americans and Japanese (Ms = 33.28, 30.51, and 30.65; SDs = 4.10, 6.21, and 4.48, respectively), $F(2, 153) = 6.02$, $p = .003$, $\eta^2_p = .07$. Participants were recruited via mass mailings, hospital birth notifications, advertisements in newspapers, advertisements in daycare centers, patient lists of medical groups, and personal contacts.

Measures

Personality. To measure personality, we administered 9 (of 15) subscales from the Jackson Personality Inventory (JPI; Jackson, 1976). Previous (cross-cultural) research had yielded a five-factor

structure for the selected subscales, which largely corresponded to the Big Five factors (Bornstein et al., 2007; Jackson, Paunonen, Fraboni, & Goffin, 1996; Paunonen & Jackson, 1996). For example, Paunonen and Jackson (1996) correlated JPI scale scores of a group of American university students with their NEO Five-Factor Inventory (NEO-FFI) scale scores (Costa & McCrae, 1992); Breadth of Interest and Innovation of the JPI were significantly correlated with Openness; Anxiety and Interpersonal Affect with Neuroticism; Organization and Energy Level with Conscientiousness; Conformity with Agreeableness; and Self-Esteem and Social Participation with the Extraversion dimension of the NEO-FFI.

Unlike widely used personality measures that contain single words or short phrases (e.g., Revised NEO Personality Inventory by Costa & McCrae, 1992, or BFI by Benet-Martínez & John, 1998), JPI subscales consists of full sentences (e.g., "It is unusual for me to fall behind in my work"; Organization). As acknowledged by McCrae and Costa (1997), finding the accurate counterpart of a single word in another language is not always easy; culture-specific meanings can be captured better by using contextualized or conditional statements whose translations, in turn, provide a cross-culturally more equivalent set of variables. Thus, the JPI was chosen to maximize cross-cultural comparability of personality dimensions.

Each JPI subscale consists of 20 true (1) and false (0) questions. Half of each subscale is worded in one direction and the other half in the opposite direction to eliminate acquiescence bias. Jackson (1976, 1994) reported psychometric properties of the JPI, including substantial levels of reliability, freedom from desirability and acquiescence biases, and convergent and contrasting group validity.

To compare cultures on personality patterns, cross-cultural structural equivalence of personality assessment is required (McCrae et al., 2005b; Schmitt et al., 2007). We established this condition by testing whether the underlying structure of JPI subscales would replicate the five factors across the three cultural groups. A Simultaneous Components Analysis (SCA; De Roover, Ceulemans, & Timmerman, 2012) on the nine subscales yielded factors that corresponded largely to the factors found in previous studies (Bornstein, Hahn, & Haynes, 2011; Bornstein et al., 2007; Jackson, 1994; Paunonen & Jackson, 1996) and that were highly similar to the well-known Big Five personality domains, with factor weights above .50. Furthermore, there was structural equivalence of the JPI scales, as evidenced by comparisons between the total variance explained by the five-component SCA-ECP solution (i.e., SCA with Equal average Cross-Products constraints) with that by a varimax rotated principal component analysis (PCA) (77% vs. 81%). Explained variances by the five-factor SCA-ECP were 76%, 77%, and 79% for Japanese Americans, Japanese, and European Americans, respectively, as compared to 80%, 82%, and 81% by separate PCAs for the respective groups.[3]

The first common factor, "Openness", obtained through the SCA, involved Breadth of Interest and Innovation because these two facets are related to the intellectual and creative side of intellectual openness. The second factor contained Interpersonal Affect and Anxiety, implying oversensitivity and an anxious need to please others, and was called "Neuroticism". Organization and Energy Level loaded highly on the third factor, which suggested carefulness, thoroughness, and motivation to pursue goal achievement and was called "Conscientiousness". The fourth factor consisted of Social Participation and was named "Extraversion". The fifth common factor, which included Conformity and Self-Esteem, did not seem to replicate the Agreeableness dimension of the Big Five, but it was in line with the finding by McCrae and Costa (1997) that for the Japanese sample a factor representing Submission replaced that of Agreeableness. Therefore, we labeled the fifth factor "Self-Assertion" (vs. Submission) because it reflected tendencies opposing assertiveness to resistance to the influence of others (Conformity items were recoded for subsequent analyses so that high scores implied low conformity). Cronbach's alpha reliabilities were satisfactory for each of the personality dimensions across samples but relatively low for Neuroticism and Conscientiousness among Japanese (Table 1).

Table 1. Cronbach's Alphas for the Personality Dimensions Across Japanese, Japanese American, and European American Samples

	Japanese (n = 57)	Japanese American (n = 40)	European American (n = 60)
Openness	.85	.83	.85
Neuroticism	.65	.83	.78
Conscientiousness	.68	.77	.83
Extraversion	.71	.74	.79
Self-Assertion	.81	.81	.85

Acculturation to U. S. culture. To measure their level of exposure to U.S. American culture, we asked Japanese Americans to indicate how long they had lived in the United States and what their age of migration was. To assess their level of involvement in U.S. culture, Japanese Americans were administered the Japanese American Acculturation Scale (JAAS; Cote & Bornstein, 2000), a 21-item measure that was adapted from the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn & Lew, 1987). The JAAS covers topics such as language use, identity, friendship, behavior, and attitudes. An example item is: "Whom do you now associate with in the community?" Participants answered such items on a scale from 1 (*almost exclusively Japanese*) to 5 (*almost exclusively Americans*), with a midpoint of 3 (*about equally Japanese and Americans*). Acculturation level was calculated by taking the mean of participants' ratings on all 21 items. The JAAS had high internal reliability (α = .91). Immigrants self-identified as Japanese American and were bicultural, as indicated by their scores on the JAAS (M = 2.31; SD = .79).

Personality concordance. To measure an immigrant's personality concordance, we correlated for each personality dimension separately her pattern of ratings (e.g., the ratings on all 40 items of Openness) with the average patterns of ratings of the Japanese and the European American samples, respectively, on the same items (see De Leersnyder et al., 2011). Thus, each Japanese American received two concordance scores: one reflected her similarity to the average Japanese pattern on a given personality dimension, and the other represented her similarity to the average European American pattern on that dimension. We also calculated concordance scores for the monocultural Japanese and European American participants, but in their case, we excluded each participant's own pattern of ratings from the average pattern of her group so as not to have artificially inflated concordance scores.

Relating individuals' patterns of personality ratings to the average pattern of a cultural group as a measure of personality concordance automatically solves some problems associated with mean comparisons. For example, the well-documented tendency toward modesty in self-assessment in Japan (Zax & Takahashi, 1967) might result in inflated mean differences between the personality scores of Japanese and European American samples. Concordance scores are immune to response bias because they reflect the level of similarity of, for instance, Japanese to European Americans, regardless of the mean personality scores of the Japanese sample. In addition, we use concordance scores not only to estimate the magnitude but also the direction of personality acculturation. Thus, for example, a positive significant correlation between the level of concordance with the European American pattern and the numbers of years of settlement in the United States indicates personality acculturation toward fit with the mainstream group over time after migration.

Translations

To arrive at translations that were comparable from a psychological perspective (van de Vijver & Leung, 1997), the JPI and JAAS, originally in English, were first translated into Japanese and then back-translated by bilingual Japanese natives using standard forward- and back-translation techniques. The translated instruments were next checked for preservation of meaning and cultural appropriateness by Japanese psychologists. Then, professionals and bilingual women from each culture who lived in the United States and were not participants in the study were interviewed regarding the cultural validity of scale items. Finally, pilot testing was undertaken to ensure that the instruments were comprehensible and ethnographically valid. Japanese Americans chose the language in which they completed the questionnaires: Thirty-two participants (80%) responded to the Japanese version of the questionnaire.

Results

Group Differences in Personality Concordance

Our hypotheses were based on the assumption that monoculturals from the cultures of origin and destination show the highest level of cultural fit with the normative personality pattern of their own group and lowest level of fit with the pattern of the other mainstream group. Hence, we conducted two MANOVAs followed by Univariate *F* tests to determine if levels of concordance (Fisher's *z*-transformed coefficients) with European American or Japanese patterns on five personality dimensions would differ across acculturating and monocultural groups. These analyses also allowed us to determine the degree of divergence between European American and Japanese personality patterns as well as how similar Japanese Americans are to the cultural groups of their country of origin and country of destination. It is of a particular importance, however, to realize that correlation coefficients are indices of similarity across all items that constitute that dimension, rather than representing linear shifts on a single dimension of personality (as would be the case for mean scores). Thus, the correlation coefficients per se do not provide information on the shape of the underlying personality patterns but indicate to what extent personality patterns are similar or dissimilar to the reference group pattern.

Partial eta squared (η^2_p) was used as an effect size, where $\eta^2_p \approx .01$ is interpreted as a small effect, $\eta^2_p \approx .06$ as a medium effect, and $\eta^2_p \approx .14$ as a large effect (Cohen, 1988). Results did not change when education and age of the participants were controlled. Here we report the findings of the analyses without these covariates.

As assumed, the average concordance with European American and Japanese personality patterns were highest for the members of the respective cultural groups (Table 2). Furthermore, European Americans and Japanese differed in their normative personality patterns. When compared on their concordance with the average European American patterns, Japanese were significantly less similar to European Americans, with the largest difference emerging for Neuroticism, followed by Consciousness, Openness, and Extraversion, as reflected in large to medium effect sizes. The group difference did not reach significance for Self-Assertion. When compared on their concordance with the average Japanese pattern, European Americans differed from Japanese with large effect size on all personality dimensions.

Immigrants' personality patterns were not more concordant with European American norms than were Japanese monoculturals: As compared with European Americans, Japanese Americans had significantly lower personality concordance scores with the European American pattern for the same four dimensions as Japanese monoculturals. But when

Table 2. Group Differences in the Levels of Personality Concordance With the Mean Personality Scores of Japanese and European Americans (Pearson Correlations)

	Concordance With European American Norms								
	Japanese (n = 57)		Japanese American (n = 40)		**European American** (n = 60)		Group Difference		
	M	*SD*	*M*	*SD*	*M*	*SD*	*F*(2, 153)	η^2_p	*p*
Openness	$.33_a$	.20	$.29_a$	.14	$.36_b$	.19	6.68	.08	.002
Neuroticism	$.17_a$	.16	$.23_a$	.16	$.32_b$	.18	12.06	.14	<.001
Conscientiousness	$.18_a$	.18	$.16_a$	.18	$.30_b$	.17	10.01	.12	<.001
Extraversion	$.22_a$	.22	$.22_a$	.25	$.32_b$	.27	3.29	.04	.04
Self-Assertion	.18	.15	.21	.19	.29	.16	1.82	.02	.17
	Concordance With Japanese Norms								
	Japanese		Japanese American		European American		Group Difference		
	M	*SD*	*M*	*SD*	*M*	*SD*	*F* (2, 153)	η^2_p	*p*
Openness	$.50_a$	.21	$.48_a$	.20	$.15_b$	.16	57.48	.43	<.001
Neuroticism	$.44_a$	.15	$.26_b$	.15	$.13_c$	.13	70.55	.48	<.001
Conscientiousness	$.41_a$	.18	$.27_b$	.18	$.14_c$	.15	36.21	.32	<.001
Extraversion	$.52_a$	.25	$.39_b$	.23	$.22_c$	.22	24.73	.24	<.001
Self-Assertion	$.50_a$	.17	$.40_b$	.18	$.22_c$	.22	31.21	.29	<.001

Note. Means with different subscripts are statistically different.
The exact significance levels are in the last column of the Table 2.

compared on the level of concordance with the average Japanese patterns, Japanese Americans situated themselves in between the two monocultural groups so that they were significantly more Japanese than European Americans yet significantly less Japanese than monoculturals in their homeland—except for Openness, on which the two Japanese groups were similar.

Predicting Personality Concordance From Acculturation Variables

To examine whether Japanese Americans become more American and less Japanese with increased cultural exposure and involvement, we conducted parallel Hierarchical Multiple Regressions for Japanese Americans, first, with their personality concordance with the European American pattern and, second, with their concordance with the Japanese pattern as dependent variables. There were high correlations between the length of residence and the level of acculturation to U.S. American culture and between the actual age of immigrants and their age by migration, rs(29) = .66, ps < .001. To avoid multicollinearity, separate regression analyses were carried out with personality concordance being regressed on the age of migration and the length of residence in the United States (in years) and on the degree of acculturation to U.S. American culture. Age did not correlate with other predictors or dependent variables, but education was negatively and significantly correlated with concordance to Japanese norms on some dimensions. Therefore, we controlled for education in regression analyses to examine unique associations between self-reported and implicit acculturation variables.

Concordance With the Personality Patterns of the Culture of Destination

We tested the hypothesis that, as Japanese Americans acculturate more to U.S. American culture through exposure, assessed by years in the United States and age of migration, and involvement in it, assessed by the JAAS, their personality profile increasingly fits with the normative personality pattern of European Americans. As seen in Table 3, involvement in the mainstream culture was a better predictor than exposure to it for personality concordance with the European American pattern, controlling for education level. In general, the level of cultural fit with the European American pattern increased with greater involvement in the mainstream U.S. culture, confirming our hypothesis. Furthermore, significant relations suggested that the more Japanese Americans endorsed and were involved in U.S. American culture, the more their personalities fit with mainstream European American patterns of Openness, Neuroticism, and Consciousness, on which the cultures of origin and settlement differed most.

As expected, immigrants who lived longer in the United States tended to show greater fit with the Self-Assertion pattern of European Americans ($\beta = .39$, $p = .07$), but unexpectedly, those who migrated at an older age showed greater concordance with the Conscientiousness pattern of their culture of destination.

Concordance With the Personality Patterns of the Culture of Origin

We asked whether acculturation of Japanese Americans toward the U.S. American culture is associated with becoming less concordant with Japanese norms. In predicting Japanese American concordance with the Japanese personality pattern controlling for education level, a higher level of education was related to a lower level of concordance with the Japanese Extraversion and remained so when acculturation variables were entered into the equation. As seen in Table 3, neither age of migration to nor the number of years in the United States was related to the level of personality concordance. However, the more immigrants endorsed American mainstream culture, the lower was their fit with Japanese Neuroticism and Conscientiousness and to a lesser extent with Openness ($p = .08$) and Self-assertion ($p = .09$).

In sum, increased involvement in the mainstream culture was associated with decreased cultural fit with the culture of origin and increased cultural fit with the culture of destination on most personality dimensions. Acculturation took place across four of the Big Five personality domains, except Extraversion, where Japanese and Japanese Americans were already concordant with the European American pattern.

Discussion

The present study examined cultural influences on personality in acculturating individuals. We focused on the acculturation of Japanese Americans having moved to the United States from a cultural context where the normative personality pattern contrasts with the European American personality pattern. Unlike the mainstream personality literature, which conceives personality as a constellation of stable characteristics, we regarded personality as a process geared toward fitting in to one's (new) cultural environment. Through examining levels of Big Five concordance between Japanese Americans and monoculturals in their countries of origin and destination and how concordance scores are associated with exposure in and engagement with the culture of destination, we found that personality can be subject to acculturative change.

We hypothesized that immigrants would show greater resemblance to the mainstream society as they become acculturated toward the culture of destination. As expected, in particular higher cross-cultural involvement (as assessed by self-reported acculturation through friendships,

Table 3. Summary of Hierarchical Multiple Regression Analyses in Predicting Japanese Americans' Personality Concordance With Japanese and European American Cultural Groups

	Concordance With European American Norms		Concordance With Japanese Norms	
Variables	β	ΔR^2	β	ΔR^2
Openness				
Analysis 1				
Step 1		.01		.01
Education	–.11		–.09	
Step 2		.08		.09
Education	–.18		.04	
Age of migration	.31		.01	
Years in the United States	.13		.01	
Analysis 2				
Step 1		.01		.01
Education	–.11		–.09	
Step 2		.27 (p = .001)		.09
Education	–.17		–.05	
Acculturation	.52 (p = .001)		–.29	
Neuroticism				
Analysis 1				
Step 1		.01		.12
Education	–.08		–.34	
Step 2		.02		.17
Education	–.11		–.29	
Age of migration	.14		–.33	
Years in the United States	.01		.14	
Analysis 2				
Step 1		.01		.12
Education	–.08		–.34 (p = .03)	
Step 2		.25 (p = .001)		.13 (p = .02)
Education	–.14		–.30	
Acculturation	.50 (p = .001)		–.37 (p = .02)	
Conscientiousness				
Analysis 1				
Step 1		.07		.01
Education	.26		–.10	
Step 2		.21(p = .04)		.16
Education	.13		–.09	
Age of migration	.53 (p = .01)		.13	
Years in the United States	.27		–.32	
Analysis 2				
Step 1		.07		.01
Education	.26		–.10	
Step 2		.28 (p < .001)		.19 (p = .007)
Education	.19		–.04	
Acculturation	.53 (p < .001)		–.43 (p = .007)	

(continued)

Table 3. (continued)

Variables	Concordance With European American Norms		Concordance With Japanese Norms	
	β	ΔR^2	β	ΔR^2
Extraversion				
Analysis 1				
Step 1		.00		.13
Education	–.01		–.37	
Step 2		.03		.03
Education	.02		–.33	
Age of migration	–.06		–.16	
Years in the United States	–.21		.00	
Analysis 2				
Step 1		.00		.13 (p = .02)
Education	–.01		–.37 (p = .02)	
Step 2		.03		.05
Education	–.03		–.34 (p = .03)	
Acculturation	.17		–.23	
Self–Assertion				
Analysis 1				
Step 1		.00		.11
Education	–.01		–.34	
Step 2		.15		.03
Education	–.04		–.31	
Age of migration	.00		–.15	
Years in the United States	.39		.04	
Analysis 2				
Step 1		.00		.11 (p = .04)
Education	–.01		–.34 (p = .04)	
Step 2		.02		.07
Education	–.02		–.30	
Acculturation	.13		–.27	

Note. In Analysis 1 (n = 29), the predictors are education, age of migration, and years in the United States; in Analysis 2 (n = 40), the predictors are education and acculturation orientation towards the United States (vs. Japanese) culture. Significance levels were displayed only for significant effects at $p < .05$.

language, daily habits, and identification) was associated with enhanced cultural fit with the personality patterns of the culture of destination. We also explored whether becoming American implies becoming less Japanese in acculturation. Again, involvement in the U.S. culture predicted decreased fit with the culture of origin. Taken together, immigrants' personality seemed to become more "American" and less "Japanese" as immigrants participated in the mainstream culture in the United States.

Our measurement of psychological acculturation (the JAAS) was most associated with the level of fit with the European American pattern of Openness, Neuroticism, and Conscientiousness, with which the Japanese sample showed the largest differences from European Americans. The stronger link between self-reported acculturation and personality concordance with European American patterns on personality characteristics that distinguish the cultures of heritage and

destination is most in line with Rudmin's (2003) suggestion that the degree of acculturation needed to bridge cultural differences is high to the extent that background and new cultures are experienced as different. Presumably, negotiating a wider cultural gap on some personality domains may require repeated effort of Japanese Americans. As a consequence of active and persistent engagement with the mainstream culture, which is what most self-reported acculturation scales measure, immigrants' personality pattern comes to resemble that of the culture of destination and differ from that of their culture of origin. Yet acculturation toward the new culture and away from the culture of origin did not occur at the same pace, as reflected by the JAAS's differential correlations with the heritage and mainstream groups' patterns on a personality dimension. The JAAS was a unidimensional measure of acculturation that contrasts Japanese and European cultural orientations on the same scale, but the two-sided comparison points to the bidimensionality of personality acculturation. Altogether, the results suggest that a three-culture design allows a better insight into the complexity of acculturation process. In addition, it seems crucial to use a psychological measure of acculturation (involvement with the U.S. culture) because relying solely on the length of residence or age of migration as a proxy for subjective acculturation might obscure significant within-culture differences.

A compelling contradiction emerged in immigrants' concordance or discordance with members of the cultures of origin and destination. On the one hand, Japanese immigrants and Japanese from the monocultural group did not differ from one another with respect to their similarity to the U.S. personality patterns; on the other hand, the personality patterns of Japanese immigrants were more concordant with the culture of origin (Japanese) patterns than were the personality patterns of European Americans, but not quite as concordant as those of the Japanese monoculturals themselves. These findings imply that Japanese Americans may experience a potentially ambivalent situation: They may feel Japanese among European Americans but American in Japan. In addition, this pattern suggests that acculturation is to some degree in the eye of beholder: From a European American perspective, Japanese Americans may seem to retain their heritage cultural patterns, but from the monocultural Japanese perspective, they may seem Americanized. Thus, our findings may help to reconcile some contradictory results—on Asian American resistance to acculturation in migration (e.g., Caudill & Frost, 1972; McCrae et al., 1998) and Japanese returnees' experiences of alienation in their homeland (e.g., Yoshida et al., 2003)—by demonstrating that personality may acculturate in subtle ways that are not easily detectable from the perspective of the culture of destination but that become more evident from the perspective of the culture of origin.

European Americans and Japanese showed diverging orientations in terms of their levels of concordance with the personality patterns of their own group and with that of one another. Personality patterns of Japanese were relatively more homogenous than those of European Americans, as reflected in average within-group concordance scores. In addition, Japanese showed more concordance with European American norms than did European Americans with Japanese norms, as manifested by relatively low and high effect sizes for group differences in cultural fit with the patterns of their respective groups. For example, Japanese were similar to European Americans in their concordance with the European American pattern of Self-Assertion, but European Americans showed significantly lower concordance than Japanese with the Japanese Self-Assertion pattern. This set of findings might reflect the cultural tightness-looseness phenomenon, which refers to the strength of social norms in a given cultural context (Triandis, 1989). Japan is seen as a tight society, in which norms are communicated very clearly and deviations from norms are sanctioned more severely; the United States is seen as a relatively loose society where deviance and diversity are more tolerated (Gelfand et al., 2011). Gelfand, Nishii, and Raver (2006) suggested that individuals are likely to experience more stress when moving from loose to tight societies because of lower tolerance and negative interpersonal dynamics that

transpire when individuals deviate from others. Thus, an interesting question that arises from our study is what would happen to the personality of Westerners if they were to move to an Asian context. Plausibly, greater emphasis on, for example, conformity and self-control in Japan than in the United States would entail a relative degree of change, resulting in stronger associations between self-reported acculturation and cultural fit with Japanese norms for Westerners so as to negotiate the larger cultural gap. It is also possible that some acculturative shift occurs due to the experience of immigration to any culture. For example, immigrants expect to encounter novelty, and this may foster Openness. Research including immigrants moving to a culture that is more conformist than their own may help to disentangle the effects of the specific immigration context from effects due to the experience of immigration generally.

Greater agreement of Japanese with European Americans on their aggregate level of fit with the European American pattern of Self-Assertion contrasts with previous studies reporting opposing personality profiles between Western and Asian cultures on assertiveness (e.g., McCrae et al., 1998). In general, Asian cultures are thought to highlight "behaving well", self-control, and humility, and Western cultures to promote self-directedness, assertiveness, and self-enhancement (Haines, 1988; O'Reilly, Tokuno, & Ebata, 1986). The fifth factor in our study comprised Conformity (i.e., susceptibility to social influence and group pressure) and Self-Esteem (i.e., self-assurance and confidence in interpersonal relationships). Together (with Conformity reverse-coded) this factor implies assertion of autonomy and uniqueness. Middle-class and more highly educated segments of all societies tend to emphasize these characteristics (Hoffman, 1988; Triandis, 1989). Hence, the level of similarity to the European American pattern among our middle-class and educated Japanese and Japanese American samples may have to do with their "remote acculturation" to Western norms in their homeland through education and globalization (Ferguson & Bornstein, 2012), without necessarily requiring direct cross-cultural contact as emphasized in classical definitions of acculturation (e.g., Sam, 2006). In fact, immigrants' concordance with European American Self-Assertion tended to increase only with longer residence in the United States, implying acculturation of Self-Assertion through repeated cross-cultural exposure (through TV) or indirect contact with the mainstream culture (through spouse or child).

The Japanese sample had relatively low—yet acceptable—levels of internal reliabilities for Neuroticism and Conscientiousness. Low reliability for Neuroticism might have to do with a tendency in East Asian cultures toward emotional dialecticism—that is, experiencing emotions that are opposite in valence (e.g., calm and anxious) as compatible rather than contradictory with each other (Bagozzi, Wong, & Yi, 1999). In line with East Asian dialecticism, Church et al. (2008) reported a positive correlation between positive and negative emotions (measured by Positive and Negative Affect Scale) for their Japanese sample; the correlations were highly negative for other cultural groups, including European Americans. Similarly, when we intercorrelated the positively and negatively worded emotions in the Anxiety scale of Neuroticism, we found strong negative correlations for our European American and Japanese American samples (r = -.57 and -.47, respectively, $p < .001$), but the correlation was less negative for the Japanese group (r = -.25, *ns*), suggesting more compatibility between emotions in opposite directions in the latter group. The co-existence of contradictory emotions in the Anxiety scale might have affected its coherence negatively, leading to a low alpha for Neuroticism among Japanese. The low reliability for Conscientiousness in Japanese is consistent with the cross-cultural studies reporting low relevance of this dimension to the Japanese culture (e.g., Mõttus et al., in press). Overall, the similarity of Japanese Americans to European Americans in higher reliabilities for Neuroticism and Conscientiousness is consistent with the acculturation of personality patterns toward the new culture and away from the heritage culture.

The present study provides evidence for the notion that personality may acculturate. The acculturation of personality would not have been expected on the basis of trait approaches

denying the cultural influence on personality throughout the life course, particularly during adulthood (Costa & McCrae, 1998; McCrae & Costa, 1994; Poortinga, Van de Vijver, & Van Hemert, 2002; Poortinga & van Hemert, 2001; Terracciano et al., 2005). For example, McCrae (2011) posited that "Anthropological views that human nature is plastic and readily shaped by the culture into which one is born appear to be ill-founded. Certainly, beliefs, attitudes, and customs reflect the surrounding culture, but in some sense, personality does not". (p. 210). The cultural perspective that we take suggests that personality tends to be stable across the life span to the extent that an individual's cultural context is stable. Accordingly, our findings suggest that engagement in a new culture promotes cultural fit with the personality patterns prevalent in that new cultural context—while not affecting the fit with the culture of origin to the same degree.

This study has some limitations. First, our explanatory focus was Japanese Americans, whose cultures of origin and destination diverge in their personality patterns, and our samples were limited to a subgroup from each cultural context. Some personality traits may be more stable, and some more pliable, given certain immigrant groups and conditions. Research on immigrants from less dissimilar cultures and on samples with different demographic backgrounds would help test the boundary conditions of personality acculturation. Second, this is a cross-sectional study, so one can say that self-selection may have played a role in immigrants' concordance; that is, those who did not feel fit in their homeland or people with certain personality profile(s) are more likely to immigrate (to the country of their likings), to stay in the receiving country, and more easily acculturate. Longitudinal designs involving pre- and postmigration concordance scores may shed light onto this issue. Third, given its small sample sizes relative to many acculturation studies and comparative studies of personality and its focus on acculturation of personality from the individual's own perspective, the results of the current study should be replicated with larger groups and other-report assessments of personality. Relatedly, the JPI was not explicitly designed to assess facets of the Big Five; thus, studies are needed to determine precisely to what extent the JPI content mirrors the Big Five. Finally, previous research suggests that the language of the questionnaire chosen by Japanese Americans might have primed their personality (Chen & Bond, 2010). The current design did not allow us to tease apart language and other acculturation effects. Yet we have found evidence for acculturation of personality toward the European American pattern and away from the Japanese pattern, despite the fact that most immigrants responded to the Japanese questionnaires (80%). Studies using bilingual participants who answer questionnaires in both heritage and mainstream languages can arrive at safer conclusions about the personality acculturation.

The present study demonstrates that a cultural fit approach to acculturation and a three-culture design (i.e., immigrant, sending, and receiving contexts) are usable tools in disentangling cultural from biological influences on basic psychological processes, such as personality, in a person's lifetime.

Declaration of Conflicting Interests

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

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by the European Commission Marie Curie International Outgoing Fellowship awarded to the first author and by the Intramural Research Program of the National Institutes of Health, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, the USA.

Notes

1. Our sample size of 40 exceeds the recommended sample sizes to obtain sufficient statistical power. According to Cohen (1988), 30 participants per cell suffice to obtain .80 power (alpha = .05), given a medium to large effect size in mean comparisons. For regressions, Green (1991) proposes a minimum 31 participants for a three-predictor analysis and 27 cases for two-predictor analyses to obtain a large effect size (.35) with a power of .80. Personality dimensions showed normal frequency distribution, and there was no univariate outlier.
2. Two Japanese Americans' parents were born in the United States, and one Japanese American did not report the birthplace of her parents. When analyses were repeated without these three cases, the pattern of relations remained the same; therefore, we did not exclude them from the analyses.
3. We examined the levels of congruence between the personality dimensions of Japanese and Japanese Americans with those of European Americans by using an alternative method—namely, Tucker's coefficient of phi, an index of factorial agreement between two cultures. With coefficients ≥ .80 representing a good to perfect similarity of factors (Van der Oord et al., 2005), we found phi coefficients of .80, .94, .85, .91, and .89 for Japanese and European American Openness, Neuroticism, Conscientiousness, Extraversion, and Self-Assertion factors, respectively. The respective values were .94, .93, .96, .95, and .86 for Japanese American and European American personality dimensions. Therefore, phi coefficients also confirmed that the factor structure of frequently studied U.S. groups can be generalized to monocultural and acculturating Japanese groups.

References

Allik, J., & McCrae, R. R. (2004). Toward a geography of personality traits: Patterns of profiles across 36 cultures. *Journal of Cross-Cultural Psychology*, *35*, 13-28.

Bagozzi, R. P., Wong, N., & Yi, Y. (1999). The role of culture and gender in the relationship between positive and negative affects. *Cognition and Emotion*, *13*, 641-672.

Benet-Martinez, V., & John, O. P. (1998). Los Cinco Grandes across cultures and ethnic groups: Multitrait–multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology*, *75*, 729-750.

Benet-Martínez, V., & Karakitapoglu-Aygün, Z. (2003). The interplay of cultural syndromes and personality in predicting life satisfaction: Comparing Asian Americans and European Americans. *Journal of Cross-Cultural Psychology*, *34*, 38-60.

Berry, J. W. (2002). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 17-37). Washington, DC: American Psychological Association.

Bornstein, M. H., Hahn, C., & Haynes, O. M. (2011). Maternal personality, parenting cognitions, and parenting practices. *Developmental Psychology*, *47*, 658-675.

Bornstein, M. H., Hahn, C.- S., Haynes, O. M., Belsky, J., Azuma, H., & Kwak, K.*, et al*., (2007). Maternal personality and parenting cognitions in cross-cultural perspective. *International Journal of Behavioral Development*, *31*, 193-209.

Caudill, W., & Frost, L. (1972). A comparison of maternal care and infant behavior in Japanese-American, American, and Japanese Families. In U. Bronfenbrenner (Ed.), *Influences on human development* (pp. 329-342). Hinsdale, IL: Dryden.

Chen, S. X., & Bond, M. H. (2010). Two languages, two personalities? Examining language effects on the expression of personality in a bilingual context. *Personality and Social Psychology Bulletin*, *36*, 1514-1528.

Church, A. T., Anderson-Harumi, C. A., del Prado, A. M., Curtis, G. J., Tanaka-Matsumi, J., & Valdez Medina, J. L.*, et al*. (2008). Culture, cross-role consistency, and adjustment: Testing trait and cultural psychology perspectives. *Journal of Personality and Social Psychology*, *95*, 739-755.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Conley, J. J. (1985). Longitudinal stability of personality traits: A multitrait-multimethod-multioccasion analysis. *Journal of Personality and Social Psychology*, *49*, 1266-1282.

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, Inc.

Costa, P. T., Jr., & McCrae, R. R. (1998). Trait theories of personality. In D. F. Barone & M. Hersen (Eds.), *Advanced personality. The Plenum series in social/ clinical psychology* (pp. 103-121). New York: Plenum.

Cote, L. R., & Bornstein, M. H. (2000). Social and didactic parenting beliefs and behaviors among Japanese American and South American mothers of infants. *Infancy*, *1*, 363-374.

De Leersnyder, J., Mesquita, B., & Kim, H. (2011). Where do my emotions belong? A study of immigrants' emotional acculturation. *Personality and Social Psychology Bulletin*, *37*, 451-463.

De Roover, K., Ceulemans, E., & Timmerman, M. E. (2012). How to perform multiblock component analysis in practice. *Behavior Research Methods*, *44*, 41-56.

Eap, S., DeGarmo, D. S., Kawakami, A., Shelley, N. H., Hall, G. C. N., & Teten, A. L. (2008). Culture and personality among European American and Asian American men. *Journal of Cross-Cultural Psychology*, *39*, 630-643.

Ferguson, G. M., & Bornstein, M. H. (2012). Remote acculturation: The "Americanizaton" of Jamaican Islanders. *International Journal of Behavioral Development*, *36*, 167-177.

Fulmer, C. A., Gelfand, M. J., Kruglanski, A. W., Kim-Prieto, C., Diener, E., Pierro, A., & Higgins, E.T. (2011). On "feeling right" in cultural contexts: How person-culture match affects self-esteem and subjective well-being. *Psychological Science*, *21*, 1563-1569.

Gelfand, M. J., Nishii, L. H., & Raver, J. L. (2006). On the nature and importance of cultural tightness-looseness. *Journal of Applied Psychology*, *91*, 1225-1244.

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., & Lim, B. C*., et al*. (2011). Differences between thight and loose cultures: A 33-nation study. *Science*, *332*, 1100-1104.

Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research*, *26*, 499-510.

Haines, D. W. (1988). Kinship in Vietnamese refugee resettlement: A review of the U.S. experience. *Journal of Comparative Family Studies*, *19*, 1-16.

Heine, S. J. (2001), Self as cultural product: An examination of East Asian and North American selves. *Journal of Personality*, *69*, 881-905.

Heine, S. J., & Buchtel, E. E. (2009). Personality: The universal and the culturally specific. *Annual Review of Psychology*, *60*, 369-394.

Heine, S. J., & Lehman, D. R. (2004). Move the body, change the self: Acculturative effects on the self-concept. In M. Schaller & C. Crandall (Eds.), *Psychological foundations of culture* (pp. 305-331). Mahwah, NJ: Lawrence Erlbaum.

Hoffman, L. W. (1988). Cross-cultural differences in child-rearing goals. In R. A. LeVine, P. M. Miller, & M. M. West (Eds.), *Parental behavior in diverse societies* (Vol. *40*, pp. 99-122). San Francisco: Jossey-Bass.

Hollingshead, A. B. (1975). The four-factor index of social status. Unpublished manuscript, Yale University.

Jackson, D. N. (1976). *Jackson Personality Inventory: Manual*. Port Huron, MI: Research Psychologists Press, Div. Sigma Assessment Systems.

Jackson, D. N. (1994). *Jackson Personality Inventory–Revised manual*. Port Huron, MI: Research Psychologists Press.

Jackson, D. N., Paunonen, S. V., Fraboni, M., & Goffin, R. D. (1996). A five-factor versus six-factor model of personality structure. *Personality and Individual Differences*, *20*, 33-46.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality:Theory and research* (2nd ed., pp. 102-138). New York: Guilford.

Kidder, L. H. (1992). Requirements for being "Japanese": Stories of returnees. *International Journal of lntercultural Relations*, *16*, 383-394.

Kitayama, S., Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality and Social Psychology*, *91*, 890-903.

Leininger, A. (2002). Vietnamese-American personality and acculturation: An exploration of relationships between personality traits and cultural goals. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model across cultures* (pp. 197-225). New York: Kluwer Academic/Plenum Publishers.

McCrae, R. (2011). Personality theories for the 21st century. *Teaching of Psychology*, *38*, 209-214.

McCrae, R. R., & Costa, P. T. (1994). The stability of personality: Observation and evaluations. *Current Directions in Psychological Science*, *3*, 173-175.

McCrae, R. R., & Costa, P. T. (1997). Personality trait structure as a human universal. *American Psychologist*, *52*, 509-516.

McCrae, R. R., & Terracciano, A., & 78 Members of the Personality Profiles of Cultures Project. (2005a). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology*, *88*, 547-561.

McCrae, R. R., & Terracciano, A., & 79 Members of the Personality Profiles of Cultures Project. (2005b). Personality profiles of cultures: Aggregate personality traits. *Journal of Personality and Social Psychology*, *89*, 407-425.

McCrae, R. R., Terracciano, A., De Fruyt, F., De Bolle, M., Gelfand, M. J., & Costa, P. T., Jr*., et al*. (2010). The validity and structure of culture-level personality scores: Data from ratings of young adolescents. *Journal of Personality*, *78*, 815-838.

McCrae, R. R., Yik, M. S. M., Trapnell, P. D., Bond, M. H., & Paulhus, D. L. (1998). Interpreting personality profiles across cultures: Bilingual, acculturation, and peer rating studies of Chinese undergraduates. *Journal of Personality and Social Psychology*, *74*, 1041-1055.

Minoura, Y. (1988). The psychological reorganization of overseas experience after returning to Japan. *Shakai Shinrigaku Kenkyuu*, *3*, 3-11.

Mõttus, R., Allik, J., Realo, A., Rossier, J., Zecca, G., & Ah-Kion, J*., et al*. (in press). The effect of response style on self-reported conscientiousness across 20 countries. *Personality and Social Psychology Bulletin*.

O'Reilly, J. E., Tokuno, K. A., & Ebata, A. T. (1986). Cultural differences between Americans of Japanese and European ancestry in parental valuing of social competence. *Journal of Comparative Family Studies*, *17*, 87-97.

Paunonen, S., & Jackson, D. N. (1996). The Jackson Personality Inventory and the five-factor model of personality. *Journal of Research in Personality*, *30*, 42-59.

Poortinga, Y. H., van de Vijver, F. J. R., & van Hemert, D. A. (2002). Cross-cultural equivalence of the Big Five. In R. R. McCrae & J. Allik (Eds.), *The Five–Factor Model of Personality across cultures* (pp. 281-302). New York: Kluwer Academic/ Plenum Publishers.

Poortinga, Y. H., & Van Hemert, D. A. (2001). Personality and culture: Demarcating between the common and the unique. *Journal of Personality*, *69*, 1033-1060.

Rudmin, F. W. (2003). Critical history of the acculturation psychology of assimilation, separation, integration, and marginalization. *Review of General Psychology*, *7*, 3-37.

Ryder, A., Alden, L., & Paulhus, D. (2000). Is acculturation unidimensional or unidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology*, *79*, 49-65.

Sam, D. L. (2006). Acculturation: Conceptual background and core concepts. In D. L. Sam & J. W. Berry (Eds.), *Cambridge handbook of acculturation psychology* (pp. 11-26). Cambridge, UK: Cambridge University Press.

Schmitt, D., Allik, J., McCrae, R. R., & Benet-Martínez, V. (2007). The geographic distribution of Big Five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology*, *38*, 173-212.

Suinn, R. M., & Lew, S. (1987). *Suinn-LewAsian Self-Identity Acculturation Scale*. Unpublished manuscript, Colorado State University, Department of Psychology.

Terracciano, A., Costa, P. T., Jr., & McCrae, R. R. (2005). Personality plasticity after age 30. *Personality and Social Psychology Bulletin*, *32*, 999-1009.

Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, *96*, 506-520.

van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: Sage.

Van der Oord, S., van der Meulen, E. M., Prins, P. J., Oosterlaan, J., Buitelaar, J. K., & Emmelkamp, P. M. (2005). A psychometric evaluation of the social skills rating system in children with attention deficit hyperactivity disorder. *Behaviour Research and Therapy*, *43*, 733-746.

Ward, C., & Chang, W. C. (1997). "Cultural fit": A new perspective on personality and sojourner adjustment. *International Journal of Intercultural Relations*, *21*, 525-533.

Ward, C., Leong, C. H., & Low, M. (2004). Personality and sojourner adjustment: An exploration of the Big Five and the cultural fit proposition. *Journal of Cross-Cultural Psychology*, *35*, 137-151.

Yoshida, T., Matsumoto, D., Akiyama, T., Moriyoshi, N., Furuiye, A., & Ishii, C. (2003). Peers' perceptions of Japanese returnees. *International Journal of Intercultural Relations*, *27*(6), 641-658.

Zax, M., & Takahashi, S. (1967). Cultural influences on response style: Comparisons of Japanese and American college students. *Journal of Social Psychology*, *71*, 3-10.