



ELSEVIER

Personality traits across cultures

A Timothy Church

Current questions in the study of personality traits across cultures include (a) the universality versus cultural uniqueness of trait structure, (b) cultural differences in trait levels, (c) the consistency and validity of traits and their measures across cultures, and (d) the evolutionary, ecological, and cultural contexts of personality. Although the Five Factor Model (FFM) of personality continues to find cross-cultural support, new research suggests that the model may be difficult to replicate in less educated or preliterate groups and that indigenous social-relational concepts may be distinguishable from the FFM in some cultures. In lexical studies, two or three broad dimensions may replicate better across cultures than alternative models. Substantial evidence suggests that mean trait profiles of cultures may be reasonably accurate. Nonetheless, research on response styles and measurement invariance raises questions about cross-cultural trait comparisons. Findings regarding cultural differences in trait-related consistency and validity are mixed. Researchers are offering innovative theory and research on the evolutionary, ecological, and cultural contexts of personality.

Address

Department of Educational Leadership, Sport Studies, and Educational/Counseling Psychology, Washington State University, Pullman, WA 99164-2136, United States

Corresponding author: Church, A Timothy (church@mail.wsu.edu, church@wsu.edu)

Current Opinion in Psychology 2016, 8:22–30

This review comes from a themed issue on **Culture**

Edited by **Michele J Gelfand** and **Yoshihisa Kashima**

For a complete overview see the [Issue](#) and the [Editorial](#)

Available online 25th September 2015

<http://dx.doi.org/10.1016/j.copsyc.2015.09.014>

2352-250X/© 2015 Elsevier Ltd. All rights reserved.

Introduction

Current questions in the study of personality traits across cultures include (a) the universality versus cultural uniqueness of trait structure, (b) cultural differences in trait levels, (c) trait consistency and validity, and (d) the evolutionary, ecological, and cultural contexts of personality. Trait theorists expect similar trait structure, moderate behavioral consistency, and the ability of traits to predict important outcomes in all cultures [1]. By contrast, cultural psychologists anticipate greater cultural differences in the structure, consistency, and validity of

traits [2]. Previous work is summarized in key reviews [1,3*,4]. The present article highlights recent work.

Trait structure

Researchers investigate the universality versus cultural uniqueness of trait structure by transporting measures across cultures, identifying indigenous dimensions, or a combination of these approaches. These approaches correspond to the *etic/emic* distinction in cross-cultural psychology [5]. The terms derive from the distinction in linguistics between *phonetics* (the study of *universal* sounds in all languages) and *phonemics* (the study of the *unique* or language-specific meanings associated with particular sounds) [6].

Imposed-etic studies. In the *imposed-etic* strategy, researchers transport existing personality models or measures into new cultural contexts to test their universality or cross-cultural equivalence [5]. Much of this work has tested the universality of the Five Factor of ‘Big Five’ Model — comprised of Extraversion, Agreeableness, Conscientiousness, Emotional Stability (vs. Neuroticism), and Openness to Experience/Intellect dimensions [7]. Good replication of the model was demonstrated in educated French-speaking African samples [8], but studies of the Mooré in Burkina Faso [9] and forager-farmers in Bolivia [10**] highlight the difficulty of replicating the Big Five in less educated or preliterate groups. Inventories that measure dimensions that differ somewhat from the Big Five also exhibit good replication across cultures [11], which suggests that transported measures impose their structures to some extent. Finally, how traits are organized within individuals (i.e., personality types) is also important for understanding individuality. In a cluster analysis of Big Five scores, Resilient, Overcontrolled, and Undercontrolled types were replicated across four cultures [12].

Emic (indigenous) studies. In emic approaches, researchers draw on indigenous sources such as native languages and cultural informants to identify culture-specific personality constructs. In the lexical approach, ratings for a representative set of trait terms in a language are factor analyzed to identify indigenous dimensions. [Table 1](#) shows sample terms in a hierarchy of prominent lexical models.

Lexical studies in Western European languages — and a recent study in Polish [13] — support the generalizability of Big Two, Big Three, Big Five and Big Six models. However, in Hindi, three large dimensions recalled the indigenous triguna system rather than the usual Big

Table 1

Sample trait terms in a hierarchy of lexical models.

Big One^a

Diligent, generous, honest, careful, good, happy, kind, patient, responsible, active, brave, conscientious, disciplined, friendly, gentle, helpful, humane, polite versus lazy, selfish, egocentric, envious, greedy, sad, stingy

Big Two^a*Social Self-Regulation*

Honest, kind, generous, gentle, obedient, respectful, diligent, responsible, calm, careful, patient, polite, conscientious, courteous, dutiful, good-natured, humane, industrious, thoughtful versus selfish, egocentric, envious, gossipy, hot-headed, rebellious

Dynamism

Active, brave, bold, lively, daring, dynamic, strong, clever, courageous, enterprising, extraverted, intelligent, talkative, vigorous versus timid, weak, shy, cowardly, fearful, pessimistic, sad, silent, anxious, depressed, dull, introverted, melancholy, taciturn, troubled

Big Three^b*Affiliation*

Humane, good-natured, compassionate, kind, gentle, nice, warm, understanding, helpful, sympathetic, affectionate, caring versus aggressive, revengeful, arrogant, selfish, authoritarian, quarrelsome, ruthless, egocentric

Dynamism

Extraverted, vivacious, talkative, lively sociable, dynamic, cheerful, enterprising, vigorous, unrestrained, energetic, self-confident, active, enthusiastic, spontaneous versus timid, insecure, inhibited, pessimistic, reserved, passive, quiet, sad, introverted, silent

Order

Goal-oriented, self-disciplined, systematic, precise, thorough, stable, organized, responsible, determined, hard-working, logical, rationale, industrious, capable, efficient versus forgetful, frivolous, impractical, inefficient, irresponsible, inconsistent, erratic, hasty

Big Five^c*Extraversion/Surgency*

Extraverted, talkative, assertive, energetic, bold, active, vigorous versus introverted, shy, quiet, reserved, inhibited, timid, bashful

Agreeableness

Kind, cooperative, sympathetic, warm, agreeable, helpful, generous versus cold, distrustful, harsh, demanding, rude, selfish, uncooperative

Conscientiousness

Organized, systematic, thorough, neat, efficient, conscientious, prompt versus disorganized, careless, inefficient, undependable, negligent, inconsistent, sloppy

Emotional stability (vs. Neuroticism)

Relaxed, imperturbable versus anxious, moody, envious, irritable, jealous, touchy, insecure, fearful

Intellect

Intellectual, creative, imaginative, bright, artistic, innovative versus unsophisticated, uninquisitive, shallow, simple

Big Six^d*Extraversion*

Extraverted, cheerful, exuberant, enthusiastic, lively, sociable, talkative, vivacious versus quiet, shy, introverted, reserved, silent, lonely

Agreeableness

Gentle, patient, peaceful, serene, calm, tolerant, forgiving, accommodating versus aggressive, irritable, touchy, quarrelsome, hot-tempered, belligerent, stubborn

Conscientiousness

Conscientious, purposeful, dutiful, industrious, systematic, thorough, responsible, orderly versus disorganized, neglectful, irresponsible, lazy, negligent, absent-minded, disorderly

Emotionality

Resolute, assured, courageous, fearless, decisive, imperturbable, self-confident, stable versus fragile, emotional, vulnerable, insecure, sensitive, fearful, anxious, timid

Intellect

Intelligent, talented, knowledgeable, original, intellectual, artistic, creative versus unimaginative, uneducated, ignorant, unsophisticated

Honesty-Humility

Honest, sincere, truthful, loyal, humane, just, fair, altruistic, generous, understanding, helpful versus boastful, conceited, greedy, calculating, egotistical, smug, pompous

^a See Ref. [16**].

^b Selected from Table 6 in Ref. [17**].

^c Selected from Table 3 in Ref. [72].

^d Selected from Table 8 in Ref. [17**].

Three [14]. Saucier and colleagues [15] culled all terms that can describe a human from the dictionaries of 12 languages (e.g., Wik-Mungkan, Maa, Hopi) selected to be diverse in geographical and cultural context. Only 28 of these human-attribute terms were shared (i.e., had the same English translation) across all of the languages and 41 additional terms were identified in 11 of the languages.

The shared terms provided best support for the universality of morality (e.g., disobedient, evil, love) and competence (e.g., useless, stupid, wise) attributes. Indeed, lexical studies comparing multiple languages have begun to question how well trait models of more than two [16**] or three [17**] dimensions replicate across languages.

Although lexical studies are indigenous in approach, they have focused on replication of existing trait models such as the Big Five. By contrast, an indigenous inventory project in South African ethnocultural groups [18**,19**], and a combined etic–emic inventory project in Chinese populations [20*], have identified social–relational dimensions that are distinguishable from the Big Five. For example, research with the Cross-Cultural (Chinese) Personality Assessment Inventory has revealed an Interpersonal Relatedness factor that is distinguishable from the Big Five and has found that Openness to Experience may not be a distinct dimension in Chinese personality structure [20*].

Trait comparisons

Psychologists compare mean trait levels across cultures in hopes of identifying ecological or cultural influences on personality [21,22]. Gelade [23] reanalyzed multinational data sets and confirmed that nations with more similar Big Five scores have greater geographical proximity. Multinational comparisons have been augmented with studies of profile differences between regions or states within nations. These studies also find geographical patterning of Big Five scores and associated political (e.g., voting patterns), economic (e.g., wealth, social capital), social (e.g., crime, residential mobility), and health (e.g., well-being, life expectancy) outcomes [24*,25,26].

Although evidence suggests that cultural mean profiles are reasonably accurate, studies of culture-level correlates (particularly for Conscientiousness), response styles¹, reference group effects², national stereotypes³, and measurement invariance⁴ raise questions about the validity of cross-cultural trait comparisons (see Table 2). Counterintuitive correlations involving Conscientiousness may be due to the use of country-level behavioral indicators (e.g., postal workers' speed, accuracy of clocks in public banks) that are multiply determined or invalid [27]. Unexpected negative correlations between Conscientiousness and economic development could reflect over-sampling of college students, as Conscientiousness was positively associated with human development and competitiveness in a multinational sample of working adults [28]. The reduced struggle for economic well-being in developed countries may also account for the negative correlations between Conscientiousness and development [29].

Opinions differ on whether response styles (e.g., agreement or extreme response tendencies) reflect measurement artifacts to be controlled or substantive cultural differences in personality or communication styles. Two studies favor an artifactual interpretation. In one, counterintuitive negative culture-level correlations of Conscientiousness with economic development and life expectancy were reduced when response styles were controlled [30]. In the other, controlling for response styles improved the fit of Big Five factor structures to the ideal pattern [31]. However, some researchers report

meaningful correlations between response styles and dimensions of culture or personality [32*,33]. These researchers interpret response styles substantively as culture-based communication filters that influence how individuals express themselves when filling out inventories. Self-enhancement biases could also confound cross-cultural comparisons. However, recent research suggests that the cultural differences observed with traditional self-enhancement indices may be eliminated once perceiver and target effects are controlled [34*,35].

Researchers debate whether trait comparisons are confounded by raters in different cultures using different comparison standards (i.e., reference group effects) [36–38]. McCrae [37] observed that if people use their national average as a reference standard, it would effectively standardize scores within cultures and result in no cultural differences, which is not what is found in cross-national studies. In a 21-country study, ratings of anchoring vignettes revealed only modest cultural differences in standards for Conscientiousness and controlling for these differences did not significantly change cultural rankings or the validity of Conscientiousness scores [38]. The prevalence and size of reference groups effects, and the reference groups raters actually use, remain unclear.

Both gender and age stereotypes for traits converge well across cultures [39,40]. In most cultures, women are perceived as slightly higher than men in Agreeableness, Conscientiousness, and Openness to Experience, as well as selected facets of Extraversion and Neuroticism [39]. Regarding age stereotypes, participants across cultures perceive Neuroticism to be highest in adolescents, Extraversion and Openness to Experience to be highest in adolescents and lowest in the old, Agreeableness to be highest among the old, and Conscientiousness to be highest in adults and lowest in adolescents [40]. These age and gender stereotypes are generally consistent with gender and age differences in measured traits, respectively [39,40].

By contrast, trait profiles of cultures do not correlate well with national stereotypes, that is, ratings of typical personality in a cultural group [41]. There are significant questions about the accuracy of national stereotypes, however, so their lack of convergence with cultural mean profiles probably does not refute the validity of these profiles [42**]. More difficult to discount are studies that report measurement noninvariance in personality items across cultures. Studies have found that about 20–40% of items fail to show measurement invariance [43*,44,45] and that item-level noninvariance carries forward to the scale level at which scores are compared [45].

Trait consistency and validity

Consistent with trait theory, studies have found substantial consistency of trait ratings across contexts in a range of cultures [46,47], as well as consistency in daily personality

Table 2

Summary of evidence addressing the accuracy of cultural mean profiles.

Type of evidence	Example findings	Comments/qualifications
<i>Generally supportive evidence</i>		
Convergence between cultural trait means derived in self versus observer data	Generally moderately high correlations across cultures between self and observer data for NEO-PI-R facet scores [22]	Correlations for some facets are modest
Geographical patterning of mean profiles across nations, regions, or states	European and American cultures, as compared to Asian and African cultures, are higher in Extraversion and Openness to Experience [21,29] A 'Relaxed and Creative' cluster, characterized by low Extraversion and Agreeableness, average Conscientiousness, very low Neuroticism, and very high Openness to Experience, is linked to states predominantly in the West, Rocky Mountains, and Sunbelt [24*]	In some less explicable cases, high profile similarity is unexpectedly found between geographically or culturally distant countries or regions
Geographical patterning of scale variances across countries	Within-country variances are generally larger in European and American cultures than in Asian and African cultures [22] Scale variances are smaller in tight cultures [28]	Substantive interpretations are possible (e.g., greater homogeneity of traits in collectivistic cultures, reduced expression of traits in tight cultures, more ambivalent ratings in dialectical cultures), but findings might also reflect cultural differences in response styles and data quality
Sensible correlates of country-level or region-level trait means	Extraversion and Openness to Experience are higher in individualistic countries and countries with low Power Distance (i.e., unequal status); Neuroticism is higher in countries that avoid uncertainty or ambiguity [22,29] Extraversion is related to well-being across countries [29] Conscientiousness is higher and Openness to Experience lower in US states characterized by greater tightness [71**] US states with high means for altruism have less violent crime, greater social capital, and political conservatism [25]	Some counterintuitive correlations have also been reported, particularly involving Conscientiousness (however, see [27,28,30]) Patterns of external correlates differ to some extent for different Big Five measures [28,29] and across self and observer rating data [73]
Generalizability of cultural means across sex and age	High correlations across cultures between female and male means for Big Five scores in both self and observer data; moderately high correlations between age group profiles [22,74]	Findings could reflect, in part, consistencies in response styles or reference groups across sex and age groups
Generalizability of sex differences across cultures	The pattern of sex differences in Big Five domains and facets is generally similar across cultures; consistent with their earlier development, girls take on sex-typed traits at an earlier age than boys [75]	The size of sex differences tends to be larger in more individualistic, prosperous, and egalitarian cultures
<i>Possibly non-supportive evidence</i>		
Limited convergence between country-level Big Five means and correlates when assessed with different instruments	Convergent correlations between culture-level Big Five means from different measures are moderate and variable in size [29] Patterns of external correlates differ to some extent for different Big Five measures [28] and across self and observer rating data [73]	Could reflect measurement biases, sampling differences, slight differences in conceptualizations of the Big Five, and/or the small size of country-level mean differences.
Cultural differences in response styles	Greater acquiescence bias in collectivist cultures [33,76] Greater extreme responding in cultures characterized by high power distance (i.e., acceptance of unequal power or status in society) [76]	Could reflect measurement artifacts to be controlled [30,31] or substantive cultural differences in personality or communication styles [32*,33]
Reference group effects	Self-construal ratings differ depending on the comparison culture used [36]	The prevalence and size of these effects is unclear and some research suggests the effects may be minimal [38]

Table 2 (Continued)

Type of evidence	Example findings	Comments/qualifications
National stereotypes	Mean personality profiles of cultures do not generally correlate well with ratings of the typical personality in a cultural group [41,42**]	Given the questionable accuracy of national stereotypes, their lack of convergence with mean personality profiles probably does not invalidate these profiles [42**]
Measurement invariance	Substantial noninvariance in personality items across cultures [43*,44,45]	Differential item functioning may not cancel out at the scale level [45] and the overall impact on trait means and correlates across cultures is unresolved

¹ Response styles refer to individual differences in patterns of response to items that are independent of item content (e.g., tendencies to agree with items, respond in a socially desirable manner, or use more extreme categories on rating scales).

² Reference group effects occur if raters in different cultures use different comparison standards (e.g., their national averages) in rating their own or others' traits.

³ National stereotypes refer to the mean ratings of respondents who are asked to rate the typical personality traits of a national group.

⁴ Measurement invariance is present when the factor loadings for the items that assess the trait, and the item means for a given level of a trait, are equivalent across cultures, making mean trait comparisons possible.

states [48]. At the same time, within-individual variability across situations is substantial and systematic in a variety of cultures [49]. Cultural psychologists predict that consistency will be reduced and less related to adjustment in collectivist, tight, and dialectical cultures, where behavior is hypothesized to be determined more by relationships, strong situational norms, and greater tolerance of behavioral inconsistency, respectively [46–52]. Cultural differences in consistency have most frequently been reported in comparisons of Americans with selected Asian cultures [46,50,51] and in some studies the differences have been mediated by dialecticism [50,51]. Consistency may be less related to well-being, felt authenticity, or relationship quality in Asians, as compared to European Americans [50–52]. Indeed, in a meta-analysis, the relationship between consistency and adjustment was stronger in individualistic than in collectivist cultures [53]. Cultural differences in consistency could reflect differences in the situations encountered. However, a recent study found considerable similarity in the descriptive profiles of situations reported by respondents in 20 countries [54*].

Studies support the validity of traits and their measures across cultures, while providing mixed support for the cultural psychology hypothesis that traits are less predictive of behavior in collectivist, tight, and dialectical cultures. Emotional stability, as compared to relationship satisfaction, was a stronger predictor of subjective well-being in the U.S., whereas the opposite pattern was observed in Mozambique [55]. Americans and Germans differed in how the Big Five traits relate to aspects of social relationships, perhaps reflecting the greater formality and structure in German society [56]. By contrast, in a meta-analysis, the relationships between Big Five traits and values were not moderated by individualism-collectivism or cultural tightness [57]. In two experience sampling studies, the Big Five traits predicted daily personality states to a similar degree across cultures [48,58].

Thus, broad cultural contrasts such as individualism-collectivism may not reliably moderate trait validity.

Gebauer and colleagues [59**,60**] found support for a more refined social motives perspective predicting differential trait-outcome relationships across cultures. This perspective proposes that communal traits, which reflect motives to *assimilate* to one's cultural context, will predict particular behaviors (e.g., religiosity, prosocial behavior) relatively strongly in sociocultural contexts in which such behaviors are common and relatively weakly in contexts in which such behaviors are uncommon. By contrast, agentic traits, which reflect motives to *contrast* with one's cultural context, will predict particular behaviors relatively strongly in sociocultural contexts in which such behaviors are uncommon and relatively weakly in contexts in which such behaviors are common.

Evolutionary, ecological, and cultural contexts of personality

From an evolutionary perspective, the universality of the Big Five dimensions may reflect recurrent adaptation problems of humans or difference-detecting mechanisms that enable people in all cultures to identify who will best facilitate strategic goals [61*]. Individual differences in traits are plausibly attributed to balancing selection processes, whereby genetic variation is maintained because different levels of a trait are adaptive under different environmental conditions [61*]. Molecular genetics studies link genetic variants to personality traits or cultural dimensions such as individualism-collectivism and tightness-looseness [62–66]. It has proved difficult, however, to identify genetic variants that are significantly and reliably associated with personality trait scores [62,63]. Thousands of common genetic variants, each with very small effects, may underlie particular traits. Camperio Ciani and colleagues [64] proposed a personality gene flow hypothesis, based on selective migration, to account for higher levels of Extraversion and Openness to Experience in Italian mainlanders as compared to inhabitants in a small Italian island population. Cultural neuroscience investigates how culture and genes co-evolve to impact neural architecture, cultural dimensions, and personality

[65]. For example, research has linked prevalence of the short allele of the serotonin transporter gene — associated with sensitivity to negative affective cues — to greater Neuroticism across cultures [66].

Ecological approaches have successfully linked macro-environments (i.e., natural and social habitats) to personality and cultural dimensions [67[•],68^{••},69]. For example, Van de Vliert's [69] climato-economic theory links the interaction of climate demands and economic resources to societal level differences in needs, goals, and agency. Theoretical and empirical work has linked cultural tightness to ecological and historical threats and a variety of personality processes across countries and US states [70^{••},71^{••}]. Cultural tightness has also been linked to reduced variance in Big Five scores, suggesting that in tight cultures people are less free to fully express their traits [28].

Directions for future research

This review suggests a number of directions for research. More studies of trait structure, consistency, and validity are needed in less educated or pre-literate societies, where alternative methods of assessment (e.g., observer ratings, behavioral observations) may be required. Lexical and indigenous inventory projects should be extended to a greater range of languages and cultures. Further investigation of the social-relational constructs identified in indigenous studies will increase understanding of their meaning and uniqueness. Crucial for progress on trait comparisons are studies that reconcile the evidence for and against the accuracy of trait profiles of cultures. Immigrant and acculturation studies may contribute, if, as anticipated, immigrants' profiles change in the direction of the mean trait profiles of their new cultures. To address the unresolved issue of reference group effects, researchers could investigate the comparison groups respondents use when filling out inventories (e.g., using think-aloud protocols) or construct inventories with formats such as forced-choice that avoid reference group effects. Greater confidence in the validity of mean profiles across cultures will also result from studies that clarify the selective migration, social influence, and additional processes that contribute to mean trait differences across geographical regions. Given the limited support for cultural psychology predictions regarding the differential validity of traits across cultures, more refined theoretical and empirical work is needed to account for any cultural differences in the strength of specific trait-outcome relations.

Researchers sometimes assume, at least implicitly, that the direction of causality is from culture to personality, while deemphasizing the possible influence of traits on situations and culture. Accordingly, future research should examine how traits influence individuals' construal of situations; the situational and ecocultural contexts they seek out; the extent to which they internalize,

conform, or adapt to aspects of their cultures; and whether they strive to change their cultures. Whereas psychologists have made significant progress in the cross-cultural study of traits, more research is needed on the structure and assessment of situations across cultures. Researchers should also investigate the situational factors underlying within-individual variability in trait-related behavior and the extent to which these factors differ across cultures. Too few cross-cultural studies have examined within-individual variability in terms of if-then personality or behavioral signatures. Such studies can better integrate trait and social cognitive perspectives on person-situation interactions across cultures.

Finally, to build support for evolutionary perspectives, researchers should investigate the fitness trade-offs associated with different levels of the Big Five traits under different cultural and environmental conditions. Although limited progress has been made to date, molecular genetics studies have the potential to reveal the multiple genetic influences on personality traits. Studies of gene-culture interactions may lead to better understanding of cultural differences in mean trait levels and how heritable traits are differentially manifested across cultural contexts. In time, such research would hopefully address the current scarcity of integrative frameworks encompassing the biological, ecological, and cultural contexts of personality.

Conflict of interest statement

None declared.

Acknowledgement

Marcia S. Katigbak provided assistance in identifying references and preparing the manuscript.

References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest
- of outstanding interest

1. Church AT: **Current perspectives in the study of personality across cultures.** *Perspect Psychol Sci* 2010, **5**:441-449 <http://dx.doi.org/10.1177/1745691610375559>.
2. Markus HR, Kitayama S: **The cultural psychology of personality.** *J Cross Cult Psychol* 1998, **29**:63-87.
3. Kwan VSY, Herrmann SD: **The interplay between culture and personality.** In *APA Handbook of Personality and Social Psychology, Vol. 4: Personality Processes and Individual Differences*. Edited by Mikulincer M, Shaver PR, Cooper ML, Larsen RJ. American Psychological Association; 2015:553-574.
4. Heine SJ, Buchtel EE: **Personality: the universal and the culturally specific.** *Annu Rev Psychol* 2009, **60**:369-394.
5. Berry JW: **On cross-cultural comparability.** *Int J Psychol* 1969, **4**:119-128.

A good overview of research on culture and personality, broadly defined, addressing historical development; universalist, situationist, interactionist perspectives; cultural values; individualism-collectivism; regional differences; self-views; self-esteem; self-enhancement; social class as culture; cultural change; methodological considerations.

6. Segall MH, Dasen PR, Berry JW, Poortinga YH: *Human Behavior in Global Perspective: An Introduction to Cross-cultural Psychology*. Pergamon Press; 1990.
7. McCrae RR, Allik J (Eds): *The Five-Factor Model of Personality Across Cultures*. Kluwer Academic/Plenum Publishers; 2002.
8. Zecca G, Verardi S, Antonietti JP, Dahourou D, Adjahouisso M, Ah-Kion J, Amoussou-Yeye D, Barry O, Bhowon U, Bouatta C *et al.*: **African cultures and the Five-Factor Model of personality: evidence for a specific pan-African structure and profile?** *J Cross Cult Psychol* 2013, **44**:684-700.
9. Rossier J, Ouedraogo A, Dahourou D, Verardi S, Meyer de Stadelhofen F: **Personality and personality disorders in urban and rural Africa: results from a field trial in Burkina Faso**. *Front Psychol* 2013, **4**:1-11 <http://dx.doi.org/10.3389/fpsyg.2013.00079>.

10. Gurven M, von Rueden C, Massenkoff M, Kaplan H, Vie ML: **How universal is the big five? Testing the five-factor model of personality variation among forager-farmers in the Bolivian Amazon**. *J Pers Soc Psychol* 2013, **104**:354-370.

In a largely illiterate sample of forager-farmers in Bolivia, the researchers failed to replicate the Big Five dimensions using a slightly adapted Big Five inventory. Instead, they described their results as consistent with a unique Big Two interpretable as prosociality and industriousness. Although issues associated with translation, interview administration, and response styles need to be considered, the study points to the strong need to seek replication of hypothesized universal models in additional small-scale societies of this type.

11. Rossier J, Hansenne M, Baudin N, Morizot J: **Zuckerman's revised alternative five-factor model: validation of the Zuckerman-Kuhlman-Aluja Personality Questionnaire in four French-speaking countries**. *J Pers Assess* 2012, **94**:358-365.
12. Alessandri G, Vecchione M, Donnellan BM, Eisenberg N, Caprara GV, Cicciuch J: **On the cross-cultural replicability of the resilient, undercontrolled, and overcontrolled personality types**. *J Pers* 2014, **82**:340-353.
13. Gorbaniuk O, Budzińska A, Owczarek M, Bożek E, Juros K: **The factor structure of Polish personality-descriptive adjectives: an alternative psycho-lexical study**. *Eur J Pers* 2013, **27**:304-318.
14. Singh JK, Misra G, De Raad B: **Personality structure in the trait lexicon of Hindi, a major language spoken in India**. *Eur J Pers* 2013, **27**:605-620.
15. Saucier G, Thalmayer AG, Bel-Bahar TS: **Human attribute concepts: relative ubiquity across twelve mutually isolated languages**. *J Pers Soc Psychol* 2014, **107**:199-216.
16. Saucier G, Thalmayer AG, Payne DL, Carlson R, Sanogo L, Ole-Kotikash L, Church AT, Katigbak MS, Somer O, Szarota P *et al.*: **A basic bivariate structure of personality attributes evident across nine languages**. *J Pers* 2014, **82**:1-14.

In nine diverse languages, representing eight language families, the researchers found that two broad dimensions, labeled Social Self-regulation and Dynamism, are replicable. The study is unique in suggesting that only two broad trait dimensions may replicate across all language groups when a more diverse set of language groups is sampled, including African languages.

17. De Raad B, Barelids DPH, Timmerman ME, De Roover K, Mlačić B, Church AT: **Towards a pan-cultural personality structure: input from 11 psycho-lexical studies**. *Eur J Pers* 2014, **28**:497-510.
- The researchers demonstrate that three broad dimensions, labeled Affiliation, Dynamism, and Order are well replicated across 11 trait taxonomies. Comparable five-dimensional and six-dimensional structures were also evident across cultures, but more culture-dependent.
18. Fetvadjev VH, Meiring D, van de Vijver FJR, Nel JA, Hill C: **The South African Personality Inventory (SAPI): a culture-informed instrument of the country's main ethnocultural groups**. *Psychol Assessment* 2015. <http://dx.doi.org/10.1037/pas0000078>.
 19. Valchev VH, van de Vijver FJR, Meiring D, Nel JA, Hill C, Laher S, Adams BG: **Beyond agreeableness: social-relational personality concepts from an indigenous and cross-cultural perspective**. *J Res Pers* 2014, **48**:17-32.

These two articles report on the development of an indigenous personality inventory in South Africa, with items based on the content of free descriptions of personality in interviews with individuals from eleven ethnocultural groups. The results suggest that salient indigenous social-relational concepts may define factors beyond the Big Five dimensions in some cultural groups.

20. Cheung FM, Cheung SF, Fan W: **From Chinese to cross-cultural personality inventory: a combined emic-etic approach to the study of personality in culture**. In *Advances in Culture and Psychology*, vol. 3. Edited by Gelfand MJ, Chiu CY, Hong YY. Oxford University Press; 2013:117-180.

This chapter reviews 25 years of research on the development and validation of the Cross-Cultural (Chinese) Personality Inventory using a combined emic-etic approach. Research suggests the cross-cultural generalizability of an indigenous Interpersonal Relatedness dimension that is distinguishable from the Big Five dimensions, as well as the reduced salience or coherence of an Openness to Experience dimension in Chinese culture.

21. Allik J, McCrae RR: **Toward a geography of personality traits: patterns of profiles across 36 cultures**. *J Cross Cult Psychol* 2004, **35**:13-28.
22. McCrae RR, Terracciano A, 79 Members of the personality profiles of cultures project: **Personality profiles of cultures: aggregate personality traits**. *J Pers Soc Psychol* 2005, **89**:407-425.
23. Gelade GA: **Personality place**. *Brit J Psychol* 2013, **104**:69-82.
24. Rentfrow PJ, Gosling SD, Jokela M, Stillwell DJ, Kosinski M, Potter J: **Divided we stand: three psychological regions of the United States and their political, economic, social, and health correlates**. *J Pers Soc Psychol* 2013, **105**:996-1012.

The researchers identify three psychological regions or clusters of states in the U.S. that are characterized by distinctive profiles of Big Five traits and associated political, economic, social, and health outcomes. The study is the first to cluster U.S. regions based on personality traits and points to the potential mutual influence of traits and culture on each other. The study thus extends the idea of person-situation interaction to the dynamic interaction between traits and environments that go beyond the immediate situation.

25. Rentfrow PJ: **Geographical differences in personality**. In *Geographical Psychology: Exploring the Interaction of Environment and Behavior*. Edited by Rentfrow PJ. American Psychological Association; 2014:115-137.
26. Obschonka M, Schmitt-Rodermund E, Silbereisen RK, Gosling SD, Potter J: **The regional distribution and correlates of an entrepreneurship-prone personality profile in the United States, Germany, and the United Kingdom: a socioecological perspective**. *J Pers Soc Psychol* 2013, **105**:104-122.
27. Allik J: **National differences in personality**. *Pers Individ Differ* 2012, **53**:114-117.
28. Bartram D: **Scalar equivalence of OPQ32: big five profiles of 31 countries**. *J Cross Cult Psychol* 2013, **44**:61-83.
29. Meisenberg G: **Do we have valid country-level measures of personality?** *Mankind Quart* 2015, **55**:360-382.
30. Möttus R, Allik J, Realo A, Rossier J, Zecca G, Ah-Kion J, Amoussou-Yéyé D, Bäckström M, Barkauskiene R, Barry O *et al.*: **The effect of response style on self-reported conscientiousness across 20 countries**. *Pers Soc Psychol B* 2012, **38**:1423-1436.
31. Rammstedt B, Kemper CJ, Borg I: **Correcting big five personality measures for acquiescence: an 18-country cross-cultural study**. *Eur J Pers* 2013, **27**:71-81.
32. He J, Bartram D, Inceoglu I, van de Vijver FJR: **Response styles and personality traits: a multilevel analysis**. *J Cross Cult Psychol* 2014, **45**:1028-1045.

In a study of 30 countries, these researchers found a general response style factor defined at the positive pole by extreme response style and socially desirable responding and at the negative pole by acquiescence response style and midpoint responding. This response style factor correlated positively with aggregate personality traits reflecting competitive tendencies and enjoyment of a rational, data-analytic style of thinking, and negatively with traits associated with affiliative, democratic, and modesty tendencies. This and similar studies have suggested that

response styles may be substantively meaningful rather than entirely artifacts to be controlled in cross-cultural comparisons.

33. Smith PB: **Communication styles as dimensions of national culture.** *J Cross Cult Psychol* 2011, **42**:216-233.
34. Church AT, Katigbak MS, Mazuera-Arias R, Rincon BC, Vargas-Flores J, Ibanez-Reyes J, Wang L, Alvarez JM, Wang C, Ortiz FA: **A four-culture study of self-enhancement and adjustment using the social relations model: Do alternative conceptualizations and indices make a difference?** *J Pers Soc Psychol* 2014, **106**:997-1014.
- In four cultures, the researchers found that the cultural differences in trait self-enhancement frequently found with traditional social comparison and self-insight indices were eliminated after controlling for perceiver and target effects using the Social Relations Model. The study raises questions about the validity of cultural psychology perspectives on self-enhancement.
35. Kim H, Schimmack U, Oishi S: **Cultural differences in self- and other-evaluations and well-being: a study of European and Asian Canadians.** *J Pers Soc Psychol* 2012, **102**:856-873.
36. Heine SJ, Lehman DR, Peng K, Greenholtz J: **What's wrong with cross-cultural comparisons of subjective Likert scales? The reference-group effect.** *J Pers Soc Psychol* 2002, **82**:903-918.
37. McCrae RR: **Exploring trait assessment of samples, persons, and cultures.** *J Pers Assess* 2013, **95**:556-570.
38. Möttus R, Allik J, Realo A, Pullmann H, Rossier J, Zecca G, Ah-Kion J, Amoussou-Yéyé D, Bäckström M, Barkauskiene R *et al.*: **Comparability of self-reported conscientiousness across 21 countries.** *Eur J Pers* 2012, **26**:303-317.
39. Löckenhoff CE, Chan W, McCrae RR, De Fruyt F, Jussim L, De Bolle M, Costa PT Jr, Sutin AR, Realo A, Allik J *et al.*: **Gender stereotypes of personality: universal and accurate?** *J Cross Cult Psychol* 2014, **45**:675-694.
40. Chan W, McCrae RR, De Fruyt F, Jussim L, Löckenhoff CE, De Bolle M, Costa PT Jr, Sutin AR, Realo A, Allik J *et al.*: **Stereotypes of age differences in personality traits: universal and accurate?** *J Pers Soc Psychol* 2012, **103**:1050-1066.
41. Hřebíčková M, Graf S: **Accuracy of national stereotypes in Central Europe: outgroups are not better than ingroups in considering personality traits in real people.** *Eur J Pers* 2014, **28**:60-72.
42. McCrae RR, Chan W, Jussim L, De Fruyt F, Löckenhoff CE, De Bolle M, Costa PT Jr, Hřebíčková M, Graf S, Realo A *et al.*: **The inaccuracy of national character stereotypes.** *J Res Pers* 2013, **47**:831-842.
- The authors provide a cogent analysis of evidence supporting the accuracy of culture-level personality profiles and the inaccuracy of national stereotypes of personality. For example, national stereotypes fail to show geographical patterning, are influenced by metaphorical thinking (e.g., warmer personalities in warmer climates), and show exaggerated differences between countries. The review and accompanying study provide persuasive evidence that national stereotypes fail to provide a valid criteria for judging the accuracy of culture-level personality profiles.
43. Eigenhuis A, Kamphuis JH, Noordhof A: **Personality differences between the United States and the Netherlands: the influence of violations of measurement invariance.** *J Cross Cult Psychol* 2015, **46**:549-564.
- This study of representative U.S. and Dutch samples is the latest to show that a significant number of items in multidimensional personality inventories fail to exhibit measurement invariance across cultures, making cross-cultural comparisons of raw scores on these inventories potentially misleading.
44. Thalmayer AG, Saucier G: **The Questionnaire Big Six in 26 nations: developing cross-culturally applicable big six, big five, and big two inventories.** *Eur J Pers* 2014, **28**:482-496.
45. Church AT, Alvarez JM, Mai NTQ, French BF, Katigbak MS, Ortiz FA: **Are cross-cultural comparisons of personality profiles meaningful? Differential item and facet functioning in the Revised NEO Personality Inventory.** *J Pers Soc Psychol* 2011, **101**:1068-1089.
46. Church AT, Alvarez JM, Katigbak MS, Mastor KA, Cabrera HF, Tanaka-Matsumi J, Vargas-Flores JD, Ibáñez-Reyes J, Zhang H,

Shen J *et al.*: **Self-concept consistency and short-term stability in eight cultures.** *J Res Pers* 2012, **46**:556-570.

47. Katigbak MS, Church AT, Alvarez JM, Wang C, Vargas-Flores JD, Ibáñez-Reyes J, Mazuera Arias R, Rincon BC, Wang L, Ortiz FA: **Cross-observer agreement and self-concept consistency across cultures: Integrating trait and cultural psychology perspectives.** *J Res Pers* 2013, **47**:78-89.
48. Ching CM, Church AT, Katigbak MS, Locke KD, Vargas-Flores JD, Ibáñez-Reyes J, Morio H, Wenmei S, Mastor KA, Roslan NA *et al.*: **Cross-cultural generalizability of the Personality and Role Identity Structural Model (PRISM): implications for trait and cultural psychology.** *J Res Pers* 2013, **47**:894-907.
49. Church AT, Katigbak MS, Ching CM, Zhang H, Shen J, Mazuera Arias R, Rincon BC, Morio H, Tanaka-Matsumi J, Takaoka S *et al.*: **Within-individual variability in self-concepts and personality states: applying density distribution and situation/behavior approaches across cultures.** *J Res Pers* 2013, **47**:922-935.
50. Boucher HC: **The dialectical self-concept II: cross-role and within-role consistency, well-being, self-certainty, and authenticity.** *J Cross Cult Psychol* 2011, **42**:1251-1271.
51. English T, Chen S: **Self-concept consistency and culture: the differential impact of two forms of consistency.** *Pers Soc Psychol B* 2011, **37**:839-849.
52. Church AT, Katigbak MS, Ibáñez-Reyes J, Vargas-Flores JD, Curtis GJ, Tanaka-Matsumi J, Cabrera HF, Mastor KA, Zhang H, Shen J *et al.*: **Relating self-concept consistency to hedonic and eudaimonic well-being in eight cultures.** *J Cross Cult Psychol* 2014, **45**:695-712.
53. Bleidorn W, Ködding C: **The divided self and psychological (mal) adjustment — a meta-analytic review.** *J Res Pers* 2013, **47**:547-552.
54. Guillaume E, Baranski E, Todd E, Bastian B, Bronin I, Ivanova C, Cheng JT, de Kock FS, Denissen JJA, Gallardo-Pujol D *et al.*: **The world at 7:00: comparing the experience of situations across 20 countries.** *J Pers* 2015. <http://dx.doi.org/10.1111/jopy.12176>.
- These researchers found greater cultural similarities than differences in the average situational profiles reported by respondents in 20 countries. The study is the first to compare situational experiences using a large number of countries and a standard situational assessment instrument.
55. Galinha IC, Oishi S, Pereira C, Wirtz D, Esteves F: **The role of personality traits, attachment style, and satisfaction with relationships in the subjective well-being of Americans, Portuguese, and Mozambicans.** *J Cross Cult Psychol* 2013, **44**:416-437.
56. Nezlek JB, Schütz A, Schröder-Abé M, Smith CV: **A cross-cultural study of relationships between daily social interaction and the five-factor model of personality.** *J Pers* 2011, **79**:811-840.
57. Parks-Leduc L, Feldman G, Bardi A: **Personality traits and personal values: a meta-analysis.** *Pers Soc Psychol Rev* 2015, **19**:3-29.
58. Ching CM, Church AT, Katigbak MS, Reyes JAS, Tanaka-Matsumi J, Takaoka S, Zhang H, Shen J, Mazuera Arias R, Rincon BC *et al.*: **The manifestation of traits in everyday behavior and affect: a five-culture study.** *J Res Pers* 2014, **48**:1-16.
59. Gebauer JE, Bleidorn W, Gosling SD, Rentfrow PJ, Lamb ME, Potter J: **Cross-cultural variations in big five relationships with religiosity: a sociocultural motives perspective.** *J Pers Soc Psychol* 2014, **107**:1064-1091.
60. Gebauer JE, Sedikides C, Ludtke O, Neberich W: **Agency-communion and interest in prosocial behavior: social motives for assimilation and contrast explain sociocultural inconsistencies.** *J Pers* 2014, **82**:452-466.
- In these two studies, the researchers propose a more refined theoretical perspective for predicting differential trait–outcome relationships across cultures. They report good support for a social motives perspective, which proposes that communal traits will predict particular behaviors (e.g., religiosity, prosocial behavior) relatively strongly in sociocultural contexts in which such behaviors are common or normative and relatively weakly in contexts in which such behaviors are uncommon (i.e., communal social assimilation). By contrast, agentic traits will

predict particular behaviors relatively strongly in sociocultural contexts were such behaviors are uncommon or non-normative and relatively weakly in contexts in which such behaviors are common (i.e., agentic social contrast).

61. Buss DM, Penke L: **Evolutionary personality psychology**. In **APA Handbook of Personality and Social Psychology: Personality Processes and Individual Differences**, vol 4. Edited by Mikulincer M, Shaver PR, Cooper ML, Larsen RJ. American Psychological Association; 2015:3-29.

An excellent overview of evolutionary personality psychology addressing the mutual importance of evolutionary and personality psychology for each other, personality from an evolutionary perspective, the evolutionary genetic origins of personality, and evolutionary conceptualizations of traits.

62. Genetics of Personality Consortium: **Meta-analysis of genome-wide association studies for neuroticism, and the polygenic association with major depressive disorder**. *JAMA Psychiatry* 2015:E1-E9 <http://dx.doi.org/10.1001/jamapsychiatry.2015.0554>.
63. de Moor MHM, Costa PT, Terracciano A, Krueger RF, de Geus EJC, Toshiko T, Penninx BWJH, Esko T, Madden PAF, Derringer J et al.: **Meta-analysis of genome-wide association studies for personality**. *Mol Psychiatr* 2012, **17**:337-349.
64. Camperio Ciani AS, Edelman S, Ebstein RP: **The dopamine D4 receptor (DRD4) exon 3 VNTR contributes to adaptive personality differences in an Italian small island population**. *Eur J Pers* 2013, **27**:593-604.
65. Chiao JY, Cheon BK, Pornpattananangkul N, Mrazek AJ, Blizinsky KD: **Cultural neuroscience: progress and promise**. *Psychol Inq* 2013, **24**:1-19.
66. Minkov M, Blagoev V, Bond MH: **Improving research in the emerging field of cross-cultural sociogenetics: the case of serotonin**. *J Cross Cult Psychol* 2015, **46**:336-354.
67. Murray DR, Schaller M: **Pathogen prevalence and geographical variation in traits and behavior**. In *Geographical Psychology: Exploring the Interaction of Environment and Behavior*. Edited by Rentfrow PJ. American Psychological Association; 2014:51-70.

This chapter reviews recent research linking greater historical pathogen prevalence in countries or regions to selected traits (i.e., lower Extraversion and Openness to Experience, higher conformity) and cultural dimensions (i.e., greater collectivism) that would tend to reduce the risk of exposure to pathogens and transmission of disease. The findings provide an intriguing and important example of the role that ecological factors may have in accounting for geographical differences in individual and cultural traits.

68. Oishi S: **Socioecological psychology**. *Annu Rev Psychol* 2014, **65**:581-609.

This article reviews studies linking aspects of physical (e.g., climate, green space, pathogen prevalence), interpersonal (e.g., population density, residential mobility, sex ratio), economic (e.g., economic threats, inequality, economic activities) and political (e.g., democracy, welfare spending) environments that impact such societal level aspects of personality as violence, impulse control, stress sensitivity, cognitive style, extraversion, openness, conformity, prosocial behaviors, interpersonal trust and civility, authoritarianism, psychological differentiation, prejudice, and subjective well-being. The review is important in showing how objective aspects of macro-environments can impact aggregate personality profiles at societal levels.

69. van de Vliert E: **Climate-economic habitats support patterns of human needs, stresses, and freedoms**. *Behav Brain Sci* 2013, **36**:465-521.
70. Gelfand MJ: **Culture's constraints: international differences in the strength of social norms**. *Curr Dir Psychol Sci* 2012, **21**:420-424.
71. Harrington JR, Gelfand MJ: **Tightness-looseness across the 50 United States**. *PNAS Proc Natl Acad Sci U S A* 2014, **111**:7990-7995.

These two articles report research linking cultural tightness-looseness, across nations and US states, to ecological and historical threats, the prevalence of situations with strong norms for behavior, and personality processes involving greater self-regulation, self-monitoring, impulse control, and need for structure. The research provides a cogent theoretical framework for integrating ecological, cultural, and personality processes.

72. Goldberg LR: **The development of markers for the Big-Five factor structure**. *Psychol Assessment* 1992, **4**:26-42.
73. McCrae RR, Terracciano A: **The five-factor model and its correlates in individuals and cultures**. In *Multilevel Analysis of Individuals and Cultures*. Edited by van de Vijver FJR, van Hemert DA, Poortinga YH. Lawrence Erlbaum Associates; 2008:249-283.
74. McCrae RR: **NEO-PI-R data from 36 cultures: further intercultural comparisons**. In *The Five-Factor Model of Personality Across Cultures*. Edited by McCrae RR, Allik J. Kluwer Academic/Plenum Publishers; 2002:105-125.
75. De Bolle M, de Fruyt F, McCrae RR, Löckenhoff CE, Costa PT Jr, Aguilar-Vafaie ME, Ahn C-K, Ahn H-N, Alcalay L, Allik J et al.: **The emergence of sex differences in personality traits in early adolescence: a cross-sectional, cross-cultural study**. *J Pers Soc Psychol* 2015, **1**:171-185.
76. Johnson T, Kulesa P, Cho YI, Shavitt S: **The relation between culture and response styles: evidence from 19 countries**. *J Cross Cult Psychol* 2005, **36**:264-277.