ONLINE READINGS IN PSYCHOLOGY AND CULTURE
International Association for Cross-Cultural Psychology

Unit 4 *General Psychological Issues in Cultural Perspective*
Subunit 4 *Personality and Values Across Cultures*

Article 1

8-1-2002

Cross-Cultural Research on the Five-Factor Model of Personality

Robert R. McCrae
National Institute of Health, RRMcCrae@gmail.com

Recommended Citation
McCrae, R. R. (2002). Cross-Cultural Research on the Five-Factor Model of Personality. *Online Readings in Psychology and Culture, 4*(4). http://dx.doi.org/10.9707/2307-0919.1038

 ISBN 978-0-9845627-0-1

Abstract

The Five-Factor Model (FFM) is a comprehensive taxonomy of personality traits, which are tendencies to show consistent patterns of thoughts, feelings, and actions. Although it was originally identified in the United States, the model appears to describe personality structure well in a wide variety of cultures, suggesting that personality trait structure is universal. Age changes--decreases in Neuroticism, Extraversion, and Openness and increases in Agreeableness and Conscientiousness from adolescence to adulthood--also appear to be universal, as are gender differences. Current studies comparing the mean levels of personality traits across cultures show systematic patterns, but their interpretation is uncertain. The FFM is currently in use by psychologists around the world in a variety of applications.

Personality Traits and the Five-Factor Model

Personality traits are defined as "***dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions***" (McCrae & Costa, 1990, p. 29). They are familiar to laypersons, who use a huge vocabulary of trait descriptive adjectives (such as ***nervous, enthusiastic, original, accommodating***, and ***careful***) to describe themselves and others. Allport and Odbert (1936) identified some 4,000 trait names in the English language, and similar (although generally smaller) lists of traits have been compiled for many other languages, including Turkish and Chinese (Somer & Goldberg, 1999; Yang & Lee, 1971). It is apparent that trait concepts are important in every human language, and it would clearly be of great interest to compare traits across cultures. Are the same traits found everywhere? Are they organized in similar fashion? Do they show the same course of development and the same correlates? Or are traits products of culture that vary as dramatically as vocabularies and food preferences do?

These intriguing questions have been asked repeatedly by anthropologists and cross-cultural psychologists, but until recently, research was severely hampered by the lack of an agreed-upon taxonomy of traits. It is obviously impossible to conduct cross-cultural studies of each of the 4,000 traits identified by Allport and Odbert, and without a taxonomy, the selection of a subset of traits is likely to be arbitrary. Personality psychologists like Raymond Cattell and Hans Eysenck had long ago noted that traits could be organized into much smaller clusters of similar traits. For example, the terms ***careful, cautious, deliberate***, and ***thorough*** are near-synonyms, and people who are careful are also like to be described as cautious and thorough. In short, personality traits are structured, and a comprehensive yet parsimonious structure would greatly facilitate personality research.

Disputes about which structure was best continued for decades, but toward the end of the last century it became clear to most personality psychologists that most traits could be described in terms of five factors or dimensions. The organization of many specific traits in terms of the five factors of Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C) is known as the Five-Factor Model (FFM; McCrae & John, 1992). Individuals who are high in N are likely to be anxious, easily depressed, and irritable, whereas those who are low in N are calm, even-tempered, and emotionally stable. Extraverts are lively, cheerful, and sociable; introverts are sober and taciturn. Open men and women are curious, original, and artistic; closed people are conventional and down-to-earth. Agreeableness is characterized by trust, compassion, and modesty; Conscientiousness is seen in organization, punctuality, and purposefulness.

Originally, the FFM was discovered through analyses of English-language trait names (Tupes & Christal, 1961/1992), and it is possible to measure individuals' standing on each of the five factors by asking them to rate themselves on a series of adjectives (Goldberg, 1992). But it is also possible to measure traits through the use of personality questionnaires, in which respondents indicate the extent to which they are accurately described by a series of statements about characteristic thoughts, feelings, and behaviors.

A wide variety of measures of the FFM have now been developed (De Raad & Perugini, 2002), of which the most widely used is the Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992). The NEO-PI-R assesses 30 specific traits, six for each of the five factors, and has been shown to be a reliable and valid measure for the assessment of normal personality traits.

The FFM Across Cultures

Because the FFM was discovered by American researchers in American samples using instruments based on English-language trait terms, it is reasonable to ask if it is strictly an American structure, or whether it characterizes human beings everywhere. Since 1971, when Guthrie and Bennett (1971) examined the structure of personality perceptions among Philippinos, there has been considerable research on this question. Lexical studies, which examine personality factors in trait adjectives from different languages, have had somewhat mixed results. E, A, and C factors almost always appear, but N and O sometimes do not (Saucier & Goldberg, 2001). It is not clear from these studies whether those factors are missing from the culture, or merely from the set of adjectives studied.

More definitive results come from studies of the NEO-PI-R. That instrument has been translated into more than 40 languages or dialects, and studies of its factor structure have been conducted in more than 30 cultures, from Zimbabwe to Peru (McCrae & Allik, 2002). Because the same instrument is used in each case, a failure to find one or more factors would most probably indicate that those factors were truly absent in that group. But in fact, in every case studied so far, a reasonable approximation to the intended structure has been found when adequate samples and appropriate statistical methods have been used. These results have been replicated when observer ratings of personality (instead of the usual self-reports) are factored (McCrae et al., 2005a).

In this sense, the FFM is a universal structure, and thus should be useful in cross-cultural research. There are two important qualifications to bear in mind, however. First, the fact that these five factors are universal does not necessarily mean that there are not also additional personality factors specific to individual cultures, as Cheung and Leung (1998) have argued. Second, even if all factors emerge when the NEO-PI-R is administered, they may not all be equally important in every culture. For example, individual differences in Openness to Experience may be of little consequence in traditional cultures where life's options are severely limited (Piedmont, Bain, McCrae, & Costa, 2002). The relevance of FFM traits across cultures is discussed at length by Church (2009).

Age and Gender Differences in Personality

Measures of the FFM can be used to address many questions about personality and culture. To date, some of the most important findings have concerned age and gender differences.

Studies of adult personality development in the United States have suggested that there are noticeable changes in the mean level of all five factors between adolescence and about age 30 (McCrae & Costa, 2003): N, E, and O decline, whereas A and C increase. After age 30, the same trends are seen, but at a much slower pace: In terms of personality traits, 30-year-olds resemble 70-year-olds more than 20-year-olds.

These developmental patterns were seen in both cross-sectional age comparisons and longitudinal studies, in which the same participants are followed over years or decades. But their origins were not clear: Were the changes due to features of American culture, with its distinctive patterns of socialization and its role requirements at each age, or were they the result of some intrinsic pattern of maturation, akin to passage through the menopause or the graying of hair?

Cross-cultural studies might shed light here. If very different patterns of age differences were found, we might suspect that age differences are the product of life experiences in different societies with different histories. However, if we find very similar patterns everywhere, it would seem more likely that age changes are intrinsic maturational processes. Data from Germany, Italy, Portugal, Croatia, South Korea, Estonia, Russia, Japan, Spain, Britain, Turkey, and the Czech Republic showed patterns of age differences very similar to those seen in the United States. It appears that age, especially from adolescence to mid-adulthood, tends to make individuals better adjusted, more altruistic, and better organized, but also less enthusiastic and less open to new experience (McCrae et al., 2000). These changes - which are also seen in observer ratings of personality (McCrae et al., 2005a) - appear to be common to people everywhere.

If age differences follow a universal pattern, what about gender differences? Costa, Terracciano, and McCrae (2001) examined that question using data from 26 cultures where the NEO-PI-R had been administered to college-age and adult samples of men and women. In the United States, women typically score somewhat higher than men on both N and A, as well as some specific facets of E and O (e.g., Warmth, Openness to Aesthetics). Men usually score higher on other facets of E and O, namely, Assertiveness and Openness to Ideas. There are few gender differences in C.

Figure 1 compares gender differences among adults on the 30 NEO-PI-R facets in the United States (horizontal axis) with the average gender differences seen across the 15 other cultures where adults were assessed (vertical axis). The facets on which men and women score highest are labeled. As Figure 1 shows, in the U.S. and around the world, women score higher than men in Anxiety, Vulnerability, Straightforwardness, and Openness to Aesthetics; men score higher in Competence, Assertiveness, Excitement Seeking, and Openness to Ideas.

These results, which were replicated in the college-age sample and in observer ratings (McCrae et al., 2005a), suggest that gender differences are universal, and may be biologically based. It must be recalled, however, that the differences are relatively small compared to variation within each gender. That is, there are some men who score higher in Anxiety than most women, and some women who score higher in Assertiveness than most men.

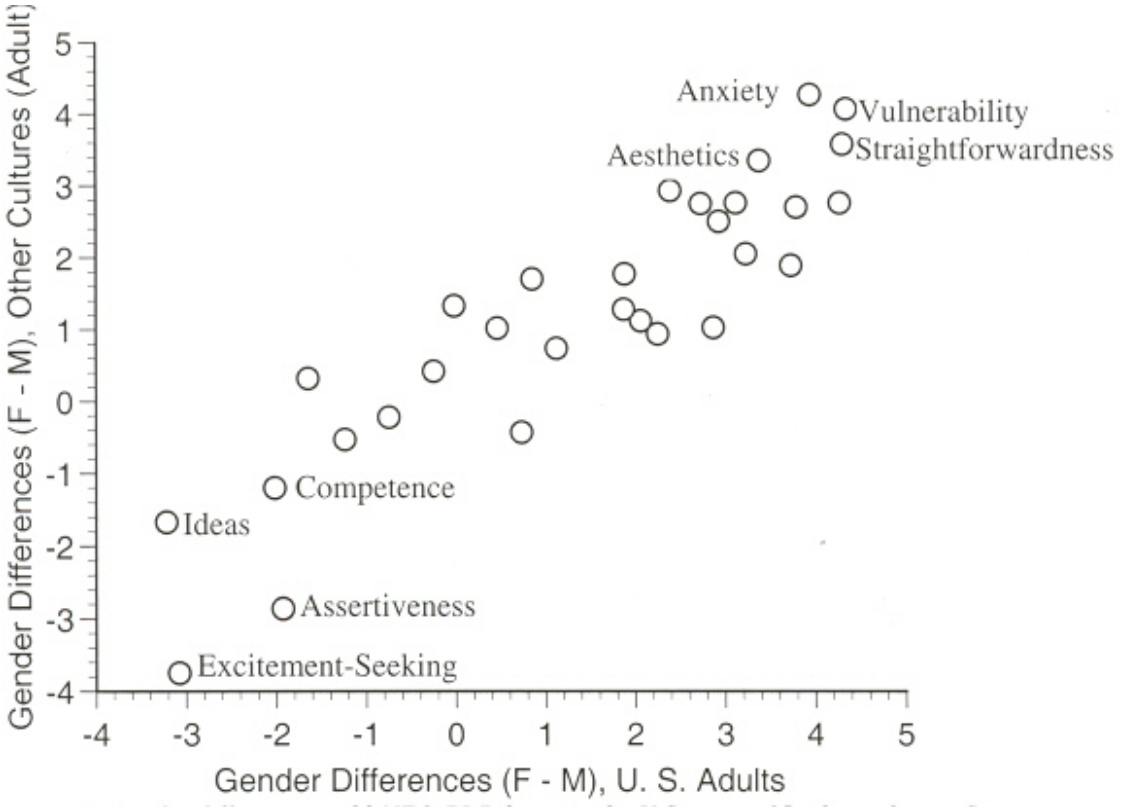

Figure 1. Gender differences in 30 NEO-PI-R facets in the U.S. versus 15 other cultures. Scores are expressed as T-scores with a standard deviation of 10.

Costa and colleagues also found evidence for cultural differences in the magnitude of gender differences. One might expect that gender differences would be minimized in modern, progressive cultures (like The Netherlands) and maximized in traditional cultures (like South Korea). In fact, however, exactly the opposite pattern was found: The differences were largest in modern European countries. There are several possible explanations for that unexpected effect; one, is related to attribution. In countries where women are expected to be subservient, they attribute their low Assertiveness to their role as a woman rather than their traits. By contrast, European women who are equally low in Assertiveness identify it as a part of their own personality. (An alternative explanation based on within-gender comparisons is offered by Guimond et al., 2007.)

The Personality Profiles of Cultures

Americans are brash, Chinese are modest, Scots are thrifty – or so many people believe. It is not clear how these national stereotypes arise, or whether they are in any respect correct. One more scientific way to characterize the personality profile of a culture would

be by measuring traits in a representative sample of the culture. Because NEO-PI-R data are available from dozens of countries, it should be simple to make these comparisons.

For example, Figure 2 reports average profiles from two cultures. In Figure 2, the five personality factors are plotted on the left; the 30 facet scales (six for each factor) are shown toward the right. Scores are plotted against American norms for the same gender and age group. American norms are set at 50, so it appears that Norwegian women are higher than American women in E and O, and slightly lower in A and C.

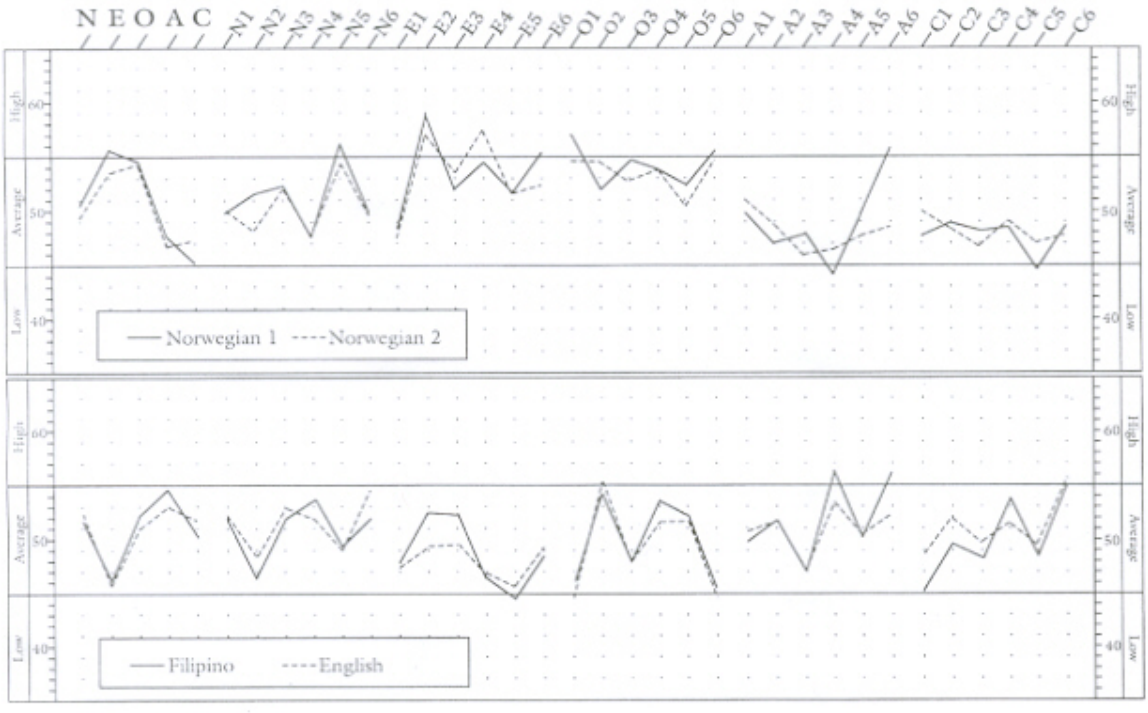

Figure 2. Average personality profiles of adult Norwegian women and college-age Filipino men. Adapted from McCrae (2001).

However, there are many reasons to be skeptical of this straightforward interpretation of the data, and some writers (e.g., Poortinga, Van de Vijver, & Van Hemert, 2002) believe it is best to assume for now that there are no real differences in mean levels of traits across cultures – that all apparent differences are artifacts. Among the issues to be concerned about are these: Are translations of the instrument equivalent? Are the items equally relevant in all cultures? Are response sets – for example, endorsing socially desirable items or tending to agree with all items (acquiescence) – the same across cultures? Do cultural norms of self-presentation affect scores – for example, do Americans exaggerate their good qualities while Chinese minimize theirs? Are the samples representative of their culture, or only of some subgroup (like adult women)?

All of these are excellent reasons to use great caution in comparing personality scores across cultures, but there is some evidence that they do not pose insuperable obstacles to interpreting scores. For example, the details of the translation do not seem to matter much. The two Norwegian samples in Figure 2 completed two different Norwegian

translations made by different researchers, and one Filipino sample completed the NEO-PI-R in English, another in Filipino. Yet the profiles within each culture look very similar. Again, the issue of sampling does not seem to present major problems. McCrae (2001, 2002) found that the profiles of men and women within each culture were similar, as were the profiles of adults and college-age respondents. And at least some response sets, like acquiescence, are not relevant to the NEO-PI-R, because all its scales have balanced keying, which controls the effects of acquiescence.

Further, the culture-level (i.e., average) personality data seem to make sense. For example, mean levels of N and E predict mean national levels of subjective well-being, just as they do in individuals, and Hofstede's (2001) Individualism-Collectivism is associated with E and O (McCrae, 2001). Trait profiles also are meaningfully arranged geographically: For example, Taiwan and South Korea have similar profiles, as do Germany and Switzerland (Allik & McCrae, 2004).

Perhaps most convincing is evidence of convergent validity of the culture-level scores (the mean scores for each trait for different cultures). McCrae and colleagues (2005b) showed that culture means derived from self-reports were significantly and substantially related to culture means derived from observer ratings of college-age and adult targets; this finding was subsequently replicated using observer ratings of adolescents aged 12 to 17 (McCrae et al., 2010). research.

However, mean personality profiles are essentially unrelated to national stereotypes (Terracciano et al., 2005). The British are thought to be very reserved, but in fact they score among the highest nations in the world in Extraversion. Because of this disparity between stereotypes and assessed trait levels, some researchers are sceptical about the validity of culture-level means, and this line of research remains controversial (Heine, Buchtel, & Norenzayan, 2008; Perugini & Richetin, 2007; McCrae, Terraciano, Realo, & Allik, 2007).

Other FFM Research

McCrae and Allik (2002) edited a book on ***The Five-Factor Model of Personality Across Cultures***. In it, 35 contributors discussed the replicability, validity, and applicability of the FFM in some 40 cultures. Among the topics covered are the relation of personality factors to emotions, the relation of traits to cultural goals among Vietnamese Americans, and cultural differences in the place of Impulsiveness in the FFM. This volume also pointed to some major questions that remain in cross-cultural research on personality: Do trait levels match national character stereotypes, and if not, why not? What are the effects of acculturation on mean levels of personality traits? Are individual differences in adult personality stable around the world, as they are in the United States?

In addition to these studies in personality and culture, the FFM is also being used around the world in practical applications. Black (2000), for example, has shown that the NEO-PI-R is useful in police selection, adding incremental validity above and beyond cognitive testing. As a result, police applicants in New Zealand are now routinely screened with the instrument. Jang, McCrae, Angleitner, Riemann, and Livesley (1998) showed that

patterns of heritability for personality traits were similar in Canada and Germany. Yang and colleagues (2002) have shown that NEO-PI-R scores are valid predictors of clinician ratings of personality disorders in Chinese psychiatric patients. Halim (2001) used the NEO-PI-R to study coping and quality of life in Indonesian breast cancer patients. Blickle (1996) demonstrated that personality traits predict learning style and college grades among German students. Draguns, Krylova, Oryol, Rukavishnikov, and Martin (2000) used the FFM to understand personality and adjustment among the children of Russian Arctic reindeer herders.

Researchers who favor indigenous approaches sometimes argue that imported psychological constructs are likely to be inferior to constructs derived within each culture. Ultimately, this may prove to be true. Certainly it is the case that personality traits are expressed differently in different cultures, and it is unlikely that a single set of questionnaire items would be optimal in every culture. However, the FFM and the NEO-PI-R have shown themselves to be serviceable tools in a wide variety of cultures. Their universality means that we need not start from scratch in each culture to develop a viable trait psychology. The fruits of research anywhere can now be enjoyed everywhere.

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.

Allport, G. W., & Odbert, H. S. (1936). Trait names: A psycho-lexical study. *Psychological Monographs, 47* (Whole No. 211).

Black, J. (2000). Personality testing and police selection: Utility of the 'Big Five'. *New Zealand Journal of Psychology, 29,* 2-9.

Blickle, G. (1996). Personality traits, learning strategies, and performance. *European Journal of Personality, 10,* 337-352.

Cheung, F. M., & Leung, K. (1998). Indigenous personality measures: Chinese examples. *Journal of Cross-Cultural Psychology, 29,* 233-248.

Church, A. T. (2009). Prospects for an integrated trait and cultural psychology. *European Journal of Personality, 23,* 153-182.

Church, A. T., & Katigbak, M. S. (2002). The Five-Factor Model in the Philippines: Investigating trait structure and levels across cultures. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model across cultures* (pp. 129-154). New York: Kluwer Academic/Plenum Publishers.

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.

Costa, P. T., Jr., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81,* 322-331.

De Raad, B., & Perugini, M. (Eds.). (2002). *Big Five assessment*. Goettingen, Germany: Hogrefe & Huber Publishers.

Draguns, J. R., Krylova, A. V., Oryol, V. E., Rukavishnikov, A. A., & Martin, T. A. (2000). Personality characteristics of the Nentsy in the Russian Arctic. *American Behavioral Scientist, 44,* 126-140.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure *Psychological Assessment, 4,* 26-42.

Guimond, S., Brunot, S., Chatard, A., Garcia, D. M., Martinot, D., Branscombe, N. R., et al. (2007). Culture, gender, and the self: Variations and impact of social comparison processes. *Journal of Personality and Social Psychology, 92,* 1118-1134.

Guthrie, G. M., & Bennett, A. B. (1971). Cultural differences in implicit personality theory. *International Journal of Psychology, 6,* 305-312.

Halim, M. S. (2001). *Coping and quality of life in Indonesian breast cancer patients*. Unpublished doctoral dissertation, Catholic University of Nijmegen.

Heine, S. J., Buchtel, E. E., & Norenzayan, A. (2008). What do cross-national comparisons of personality traits tell us?: The case of conscientiousness. *Psychological Science, 19,* 309-313.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage.

Jang, K. L., McCrae, R. R., Angleitner, A., Riemann, R., & Livesley, W. J. (1998). Heritability of facet-level traits in a cross-cultural twin sample: Support for a hierarchical model of personality. *Journal of Personality and Social Psychology, 74,* 1556-1565.

McCrae, R. R. (2001). Trait psychology and culture: Exploring intercultural comparisons. *Journal of Personality, 69,* 819-846.

McCrae, R. R. (2002). NEO-PI-R data from 36 cultures: Further intercultural comparisons. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model of personality across cultures* (pp. 105-126). New York: Kluwer Academic/Plenum Publishers.

McCrae, R. R., & Allik, J. (Eds.). (2002). *The Five-Factor Model of personality across cultures*. New York: Kluwer Academic/Plenum Publishers.

McCrae, R. R., & Costa, P. T. (1990). *Personality in adulthood*. New York: Guilford.

McCrae, R. R., & Costa, P. T., Jr. (2003). *Personality in adulthood: A Five-Factor Theory perspective* (2nd ed.). New York: Guilford.

McCrae, R. R., Costa, P. T., Jr., Ostendorf, F., Angleitner, A., Hebrí ková, M., Avia, M. D., Sanz, J., Sánchez-Bernardos, M. L., Kusdil, M. E., Woodfield, R., Saunders, P. R., & Smith, P. B. (2000). Nature over nurture: Temperament, personality, and lifespan development. *Journal of Personality and Social Psychology, 78,* 173-186.

McCrae, R. R., & John, O. P. (1992). An introduction to the Five-Factor Model and its applications. Journal of Personality, 60, 175-215.

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 Persoanlity 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., Terracciano, A., Realo, A., & Allik, J. (2007). On the validity of culture-level personality and stereotypes scores. *European Journal of Personality, 21,* 987-991.

Perugini, M., & Richetin, J. (2007). In the land of the blind, the one-eyed man is king. *European Journal of Personality, 21,* 977-981.

Piedmont, R. L., Bain, E., McCrae, R. R., & Costa, P. T., Jr. (2002). The applicability of the Five-Factor Model in a Sub-Saharan culture: The NEO-PI-R in Shona. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model of personality across cultures* (pp. 155-173). New York: Kluwer Academic/Plenum Publishers.

Poortinga, Y. H., Van de Vijver, F., & Van Hemert, D. A. (2002). Cross-cultural equivalence of the Big Five: A tentative interpretation of the evidence. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model across cultures* (pp. 273-294). New York: Kluwer Academic/Plenum Publishers.

Saucier, G., & Goldberg, L. R. (2001). Lexical studies of indigenous personality factors: Premises, products, and prospects. *Journal of Personality, 69,* 847-879. doi:10.1111/1467-6494.696167

Somer, O., & Goldberg, L. R. (1999). The structure of Turkish trait-descriptive adjectives. *Journal of Personality and Social Psychology, 76,* 431-450.

Terracciano, A., Abdel-Khalak, A. M., Adam, N., Adamovova, L., Ahn, C.-k., Ahn, H.-n., et al. (2005). National character does not reflect mean personality trait levels in 49 cultures. *Science, 310,* 96-100.

Tupes, E. C., & Christal, R. E. (1992). Recurrent personality factors based on trait ratings. *Journal of Personality, 60,* 225-251. (Original work published 1961)

Yang, J., Dai, X., Yao, S., Cai, T., Gao, B., McCrae, R. R., & Costa, P. T., Jr. (2002). Personality disorders and the Five-Factor Model of personality in Chinese psychiatric patients. In P. T. Costa, Jr. & T. A. Widiger (Eds.), *Personality disorders and the Five-Factor Model of personality* (2nd ed., pp. 215-221). Washington, DC: American Psychological Association.

Yang, K. S., & Lee, P. H. (1971). Likeability, meaningfulness and familiarity of 557 Chinese adjectives for personality trait description. *Acta Psychologica Taiwanica, 13,* 36-37. (in Chinese)

About the Author

This article was originally written when I was Research Psychologist, Personality Stress and Coping Section, Gerontology Research Center, National Institute on Aging, National Institutes of Health. As an undergraduate at Michigan State University I majored in Philosophy. I received my doctorate in Personality Psychology from Boston University in

1976, and worked as a full-time researcher, for most of my career at NIA. My research has focused on personality structure and assessment and the application of trait psychology to an understanding of health, well-being, and aging. With Dr. Paul T. Costa, Jr., I am co-author of the Revised NEO Personality Inventory. My interest in cross-cultural psychology began in the 1990s when colleagues around the world began to translate the NEO-PI-R and share their findings. I was initially astounded to find that the factor structure of the instrument was replicated almost perfectly, but over the past decade I have come to expect that all basic features of trait psychology are universal, and that personality traits are a characteristic of the human species. E-mail: RRMcCrae@gmail.com .

Questions for Discussion

1. McCrae and colleagues (2000) argue that personality trait structure is universal because it is biologically based. What other factors could explain universal structure?
2. Gender differences in personality traits are found in both progressive and traditional cultures. What does this suggest about the role of gender socialization for the development of traits?
3. What additional information would peer ratings provide on the personality profiles of cultures? How do mean peer ratings of individual members of a culture differ from judgments of national character?
4. What are some possible reasons why Norwegian women would score higher than American women on Extraversion? Are they really more extraverted?
   5. Assuming that there are real differences in the mean levels of traits in different societies, how might that affect features of culture? For example, what form of government might be developed by a society of individuals high in Openness to Experience?
5. How could indigenous methods complement the imported FFM in understanding personality?