

Research on Culture in Psychology: Taking Stock and Looking Forward

Ype H. Poortinga
Tilburg University

Abstract

Cross-cultural psychology, in both its culture-comparative and its cultural traditions, has been a highly successful enterprise; it has been instrumental in establishing context variation as an essential factor in the study of behavior and has led to a large volume of publications with culture as a key term. At the same time, the question arises whether the further accumulation of findings of often small differences between groups will continue to be a worthwhile pursuit, or whether it is time for a reorientation. Here two widespread assumptions of research on behavior and culture are discussed that are likely to be unsustainable: (i) a focus on cross-cultural differences at the cost of cultural invariance, (ii) the presumed psychological coherence of cultures, especially national cultures, reflected in major dimensions of differences in psychological functioning. It is argued that also emerging methods in cultural neuropsychology continue to place too much emphasis on cross-cultural differences and cultural coherence. With a view to reorientation two ideas are explored: (i) culture-comparative research needs an explicit focus on what humans as a species have in common (psychological invariance) and (ii) explanatory frameworks should have a better theoretical foundation. Research traditions in biology are mentioned that can provide a source of inspiration to researchers in cross-cultural psychology. One such tradition is classical ethology as outlined by Tinbergen (1963) who proposed that in the analysis of behavior patterns researchers should be asking multiple questions about the immediate context (cause), function, ontogenetic development and phylogenetic history.

Keywords: cross-cultural psychology, traditions, groups, culture, history

Investigación sobre cultura en psicología: Actualidad y visión hacia el futuro

Resumen

La psicología transcultural, tanto en comparación cultural como en tradiciones culturales, ha sido una empresa exitosa; ha sido instrumental en el establecimiento de variaciones contextuales como un factor esencial en el estudio de la conducta y ha llevado a la publicación de un gran volumen de textos con la cultura como un término clave. Al mismo tiempo, la pregunta se plantea sobre si la futura acumulación de pequeños hallazgos sobre mínimas diferencias entre grupos continuará siendo una inversión valiosa, o si es tiempo de reorientar los esfuerzos. Aquí se discuten dos suposiciones robustas acerca de la investigación sobre conducta y cultura que se cree que ya no son sustentables: (1) Un enfoque sobre las diferencias transculturales a costa de invarianza cultural, (2) la supuesta coherencia psicológica de las culturas, especialmente culturas nacionales, reflejadas en mayores dimensiones de diferencias en funcionamiento psicológico. Se discute también que métodos emergentes en neuropsicología cultural siguen dando mucho énfasis en diferencias transculturales y coherencia cultural. Con un enfoque hacia la reorientación se exploran dos ideas: (1) La investigación comparativa cultural necesita un enfoque explícito sobre lo que los humanos como especie tienen en común (invarianza cultural), y (2) Marcos conceptuales explicativos deberían tener mejor fundamento teórico. Se menciona que las tradiciones de investigación en biología pueden proveer una fuente de inspiración para los investigadores de psicología transcultural. Una de las tradiciones es la etología clásica tal como la delinea Tinbergen (1963), quien propuso que en el análisis de patrones de conducta los investigadores deberían hacerse múltiples preguntas sobre el contexto inmediato (causa), la función, el desarrollo ontogenético y la historia filogenética.

Palabras clave: psicología transcultural, tradiciones, grupos, cultura, historia

Original recibido / Original received: 16/01/2013 Aceptado / Accepted: 09/105/2013

Cross-cultural psychology as a recognized field of research started somewhere around the middle of the previous century. The first volume of the *International Journal of Psychology* with a clear cross-cultural flavor was published in 1966. The *Journal of Cross-Cultural Psychology* was established in 1970. The founding conference of the *International Association for Cross-Cultural Psychology* was held in 1972. Their success demonstrated that there was a sufficient number of researchers with a large enough volume of research to sustain these initiatives. A remarkable feature was the variety of researchers who became involved, both in terms of the region of the world where they worked and their research interests. Although the largest contingent of these early cross-cultural psychologists came from North America, other regions were represented, not only Europe but also Africa, Asia and Latin America. Of the countries where psychology was already well established at the time only Russia and the other communist countries did not get involved, and this was for political reasons. These early cross-cultural psychologists investigated a range of topics. There was research in perception with susceptibility to visual illusions and the perception of depth in photographs and drawings (Deregowski, 1980, 1989; Segall, Campbell & Herskovits, 1966). In the broad area of cognition there was research on topics such as the structure of intelligence (Vernon, 1969), cognitive styles (Witkin & Berry, 1975) and the cultural-historical activity tradition of Cole (Cole, Gay, Glick, & Sharp, 1971) building on Vygotsky and Luria. Osgood conducted a large scale project in 30 countries that led to the *Atlas of Affective Meaning* (Osgood, May & Miron, 1975). Diaz-Guerrero (1969, 1990) developed the notion of historic sociocultural premises, such as *machismo* in Mexico, to reflect characteristic themes of a culture. Part of the research was driven by practical concerns, such as the construction of selection methods that could be used with a poorly educated workforce (Biesheuvel, 1954) and the transfer of clinical diagnostic categories including methods of assessment (Marsella & White, 1982). In terms of major fields of mainstream psychology social psychology was overrepresented and developmental psychology underrepresented, despite considerable attention for Piagetian research (Dasen, 1972). An extensive overview of the early topics and issues can be found in the *Handbook of Cross-Cultural Psychology* (Triandis, 1980). A perhaps more objective indicator of the success is the rate of increase in publications that since 1970 has been two times larger for cross-cultural psychology than for psychology in general (Van de Vijver, 2013).

Since 1980 there have been shifts in topics of interest with cross-cultural research in perception going down and other fields gaining more attention. The most important of these shifts has been the growing attention for major value dimensions (Hofstede, 1980, Triandis, 1995; Markus & Kitayama, 1991). There have also been basic changes in orientation that in many respects qualify as a paradigm shift. This is reflected in two complementary developments: (i) the growth of indigenous psychologies (Sinha, 1997) and (ii) the emergence of cultural psychology (Kitayama & Cohen, 2007). Both these movements placed culture inside rather than outside the person, emphasizing cultural construction of the world through meanings and beliefs. With some simplification it may be said that traditional culture-comparative research conceived of culture as a set of

antecedent conditions that had consequences for behavior outcomes. If some difference was observed between two groups there should be an antecedent variable that can account for this. The presumption of invariant antecedent-consequent relationships across all cultures was reflected in the notion of a psychic unity of humankind. In the indigenous and cultural approaches the initial position was that of essential psychic diversity across cultures (Shweder, 1990). In the 1990s the controversy between universalism and cultural specificity dominated much of the theoretical and methodological discussion. Although old controversies are still lingering on, there appears to be a development towards a mainstream cross-cultural psychology that is largely culture-comparative and accepts a wide range of methods (Matsumoto & Van de Vijver, 2011).

Emphasis on differences

Throughout the various traditions of research in the past decades there is one theme that stands out: emphasis on differences between cultural populations. Even cross-cultural researchers who start from presumptions of universality by and large have been conducting research aimed at exploring and explaining differences. Since the days of Tylor (1871/1958) the concept of culture in cultural anthropology has been closely linked to the behavior repertoire of a human population and how this differs from the repertoire of other populations (Rapport & Overing, 2000). Cross-cultural psychology has adopted this tradition and continued to expand it. Here I argue that this emphasis is likely to lead to a distorted view of the extent to which humans function differently. In so far as this viewpoint is correct, cross-cultural psychology as an enterprise is in danger of presenting a stereotyped view of "others". Four points are mentioned to support this allegation.

(i) Design and interpretation of cross-cultural research. Perhaps the clearest illustration of distortion comes from a study by Brouwers, Van Hemert, Breugelmans, and Van de Vijver (2004) who analyzed a set of articles from the *Journal of Cross-Cultural Psychology* and found that much more often differences were postulated and invariance (i.e., absence of significant differences) found than the reverse. In 69% of empirical studies only expected differences were formulated, while in 71% (rather than 29%!) of these studies similarities as well as differences were observed. In addition, there are sample fluctuations (Fontaine, Poortinga, Delbeke, & Schwartz, 2008), and flexibility in data collection, analysis and reporting. All of these contribute to making the likelihood of a false positive result dramatically higher than the confidence level (usually $p = .05$) at which a finding is taken to be significant in 0-hypothesis testing (Simmons, Nelson, & Simonsohn, 2011). The need for replication before accepting results recently advocated for social psychology applies equally to cross-cultural psychology.

(ii) Cultural bias. Data in culture-comparative research tend to suffer from a lack of equivalence resulting in cultural bias (Van de Vijver & Leung, 1997). This can occur at the level of concepts (construct inequivalence), at the level of instruments (method inequivalence) and at the level of items (item bias or Differential Item Functioning). Inequivalence will lead to misrepresentation of cross-cultural differences, a point strongly argued by indigenous psychologists who consider definitions of concepts and their operationalization in instruments as

inherently culture-bound. On the one hand, inequivalence can lead to underestimation of group differences in target constructs; raters who are less familiar with other contexts may use their own group as the standard for their judgments, a phenomenon known as the reference group effect (Heine, Lehmann, Peng, & Greenholtz, 2002; van de gaer, Grisay, Schulz, & Gebhardt, 2012). As a consequence the mean scores of various groups may end up being closer together than they should be. On the other hand, most sources of inequivalence will result in overestimation of the size of differences on target constructs (e.g., Van de Vijver & Leung, 1997; Van Hemert, Poortinga, & Van de Vijver, 2007). A variety of such sources have been identified, including effects of response styles and social desirability at the level of instruments and item bias due to inadequate translation at the level of separate items. Of course, bias effects represent true cross-cultural variance rather than measurement error, but differences in the intended target variables are misrepresented distorting our interpretations.

(iii) Importance of differences. Cohen (1994, p. 1001) has warned against taking *significant* effects to be *important* effects:

“a finding reported in the Results section studded with asterisks implicitly becomes in the Discussion section highly significant or very highly significant, important, big”.

In core areas of cross-cultural research differences between cultures are small compared to differences between individuals nested within cultures. For example, in a large data set the between-country variance in the Schwartz Value Scale is approximately 12% of the total variance (Fischer & Schwartz, 2012). Although this is non-negligible variation that varies systematically across value items and countries, the percentage is much lower than even experts anticipate (Fischer, 2013). Similarly, the percentage of between-country variance for the Big Five dimensions in the FFM model of personality is in the order of 11% for self-ratings and even less for ratings by others (McCrae et al., 2005a, b). This is neither to suggest that small differences cannot be important, nor that all differences in psychologically relevant variables are small (see below). However, the importance of cultural variation cannot be derived from statistical significance only.

(iv) Convergent search for supporting evidence. Major distinctions between countries such as Individualism-Collectivism and Independent versus Interdependent Construal of the Self frequently serve in one and the same study as the independent variable on the basis of which cultures (i.e., countries) are selected and as the explanatory variable or mediating variable in the interpretation of findings. Any intergroup difference found with such a design is seen as further evidence for the initial distinction. Needless to say that there is a need for research seeking discriminant validity. The failure to consider alternative explanations has led in the past to an exaggeration of the role of climate and later racial factors in the assessment of IQ (Berry et al., 2011). Cross-cultural psychologists should heed the lessons that can be learned from the past.

In summary, research in cross-cultural psychology appears to be biased towards the detection of group differences. If this opinion has merit, the field needs a reorientation in which the balance between cultural invariance and variations is redefined. I will return to this in the final section.

Presumptions of cultural coherence

There is an explicit or implicit assumption held by many authors to the effect that various aspects of behavior in cultural context should be interrelated. Cultures are supposed to show coherence and this has consequences for the way in which data about cross-cultural differences are being interpreted. A striking example from the literature may illustrate the issue. Shweder (1984, see also Poortinga & Van Hemert, 2001) reports a discussion at a conference in the course of which it was suggested that cultural integration is perhaps more present in ethnographies than in the cultures described. There was a strong reaction by the famous cultural anthropologist Clifford Geertz who argued that culture is neither like a heap of loose sand nor like a highly structured spider's web, but is

"more like an octopus, a badly integrated creature—what passes for a brain keeps it together, more or less, in one ungainly whole" (p. 19).

Of course, the octopus is a highly organized organism with interconnected limbs and organs and a central nervous system, and this is how most cultural anthropologists, and also many psychologists, think about a society's culture. This idea is reflected in the notion of a culture-as-a-system (e.g., a system of meanings, or a system of values) and also in notions such as "mentality" (Fiske, Kitayama, Markkus, & Nisbett, 1998) and "habitus" (lasting, acquired schemes of perception, thought and action, Bourdieu, 1998). In culture-comparative research the notion of a system is only useful if there is a set of common parameters to decide what belongs where in a given system. Otherwise the system notion becomes vague and gratuitous (e.g., everything what you find in America has to be part of American culture).

While a system potentially covers each and every aspect of behavior, in cross-cultural psychology most comparisons between cultures are in terms of variables. Most popular are broad and inclusive dimensions, such as individualism-collectivism, which Triandis (1996) referred to as a "syndrome". Like a psychiatric syndrome is characterized by a variety of symptoms, individualism-collectivism appears in the behavior repertoire in many ways. It is difficult if not impossible to formulate constraints (i.e., which psychological variables are not influenced by this syndrome?). There is an increasing number of broad sociocultural dimensions (e.g., Hofstede, 2001; Minkov, 2008; Gelfand, 2012), each of which creates a simplified picture of cross-cultural differences (Medin, Unsworth and Hirschfeld, 2007) and is poorly demarcated from dimensions formulated by other authors. Salient is the virtual absence of research that can lead to the possible rejection of such dimensions as valid and useful ways to distinguish between cultures.

This criticism also applies to a new research tradition in cultural psychology, namely cultural neuroscience (Chiao & Ambady, 2007; Han, Northoff, Vogeley, Wexler, & Kitayama, 2013). This school seeks to relate cross-cultural differences, especially between individualist and collectivist societies, to differences in neurotransmitters and electrophysiological indicators. Research on neurotransmitters explores the behavioral consequences of variations in the distributions of allele frequencies across populations as defined in classical anthropology. Some such polymorphisms have been studied in a fairly large

number of populations (see <http://alfred.med.yale.edu>). An example with substantial intergroup variation is the dopamine receptor gene D4. Individual variations have been associated with neuropsychiatric disorders and with a variety of differences in cognition and emotion. However, precise links with overt behavior remain rather unclear. This is not surprising as the excretion and metabolism of neurotransmitters and their effects in the brain are highly varied and complex. This is well illustrated by the Wikipedia site on dopamine (<http://en.wikipedia.org/wiki/Dopamine>). Although it is highly likely that at least some of the genetic population differences are at the basis of cross-cultural differences in behavior, findings to such effect so far are not more than mere suggestions and much more research will be needed to establish in how far cultures reflect group diversity in genetic constitution.

Exciting research has been conducted with fMRI (functional Magnetic Resonance Imaging), a method for measuring changes in blood flow across the brain. Numerous comparative studies have been conducted mainly with samples of students in the USA of European descent and of East Asian descent. Differences across this cultural dichotomy have been pursued with weak designs and post hoc interpretation. Unfortunately, fMRI studies are extremely vulnerable to false positive results or Type II errors (i.e., statistically significant are found that do not exist in the population). Costs of data recording and analysis and the consequent limited sample sizes lead to a high probability of such errors. This probability is enhanced dramatically by the fact that fine-grained distinctions are made with many voxels (volume elements) in the brain. Vul, Harris, Winkelman, & Pashler (2009) have demonstrated how this leads to unreliable outcomes. With no a priori defined neurological pathways for individualism and collectivism the interpretation of ad hoc patterns of differences can hardly be more than tentative.

Dimensions and traits that are somewhat more narrowly defined, like personality dimensions, are more open to critical analysis. For example, the Big Five dimensions for the cultural invariance of which wide support was found (McCrae et al., 2005a, b) have been shown not to provide an optimal representation of the structure of personality in China (Cheung et al., 2001) and South Africa (Valchev, van de Vijver, Nel, Rothmann, & Meiring, 2013). In both cases the social side of individual personality was found to be underrepresented. Definite answers about dimensions of personality structure may still be pending, but extant structures have been questioned on the basis of empirical data that did not show expected fit. Apparently, structures like the Big Five can be challenged.

The kinds of interpretations discussed so far are mainly about stable psychological characteristics of a person that are found more often within a given culture than in other cultures. Interpretations can also be about domains or fields of behavior that are organized in terms of skills or knowledge of procedures (Cole, 1996). Berry et al. (2011) argue that behavior domains are more descriptive and less inferential than traits. Interpretations can be formulated in terms of broad domains, such as literacy which is composed of a large set of skills and procedures, or in terms of small domains. The latter include all kinds of cultural customs, practices and conventions. These are mainly descriptive terms that stay close to direct observation of daily life in a particular society. The term convention

is attractive as it denotes an agreement among members of a group not only about how to do things, but also about what to believe, what to value, etc (Berry et al., 2011; Girndt, 2000).

In the history of cross-cultural psychology research on new topics or themes tends to be launched with initial claims of “big and broad” differences in psychological functions and processes. With more precise empirical inquiry such inclusive generalizations usually cannot be upheld. Presumed coherence of cultures and of cross-cultural differences are problematic (e.g., Chiu & Chiao, 2009; Poortinga, 2003). In general, interpretations of cross-cultural differences that are less comprehensive tend to allow more critical empirical scrutiny and they stay closer to the actual data. The notion of cultural conventions has been described here in some detail as it provides a starting point for cross-cultural analysis without implicit assumptions of cultural coherence. More inclusive interpretations are not ruled out; they are attractive because they are more parsimonious (they explain more cultural variance in more variables) and they fit the everyday impression that various aspects of the behavior repertoire are integrated. The point is that causal evidence is needed before coherence of patterns of cross-cultural differences can be accepted. Correlations between variables do not provide strong enough evidence as they are open to multiple interpretations. All in all, a kind of bottom-up analysis starting from domain oriented notions, such as conventions may provide an alternative starting point for research on behavior and culture.

Cross-cultural differences as variations on common themes

As a rule cultural differences are the focus of analysis in cross-cultural psychology; the unity of humankind is only formally recognized. In contrast, such a unity is the explicit starting point in biological approaches where diversity is a derivative of what is common. Contemporary biologists recognize that through evolution development has followed a road with many curves and detours and that the translation of genes into behavior is a complicated process of interactions between organism and environment. Biologists like Gould and Lewontin (1991; Gould, 1979) have started to conceptualize such complexities, pointing to multiple expressions of a single gene (“pleiotropy”), enabling functions beyond those that led to its development originally (spandrels”), and features that now enhance the adaptedness of human to their environment in a different way as in phylogenetic history (“exaptations”). There is much discussion about such concepts and their reach, but any sharp contrast between “nature” and “nurture”, is clearly outdated. Unfortunately, various traditions in the study of behavior and human diversity rooted in evolutionary theory are rarely cited in the cross-cultural literature, although their relevance for our concerns is evident (Keller, Poortinga, & Schölmerich, 2002).

Brown, Dickins, Sear, and Laland (2011) have provided a brief overview of three research fields that span biology and anthropology. Human behavioral ecology studies variation in behavior as reflecting adaptive responses to the environment. It is a core assumption that the individual is aiming at enhancing reproductive fitness, but the models in this field tend to be neutral on the traditional

contrast of genetic versus social-environmental. One topic of research is on patterns of care giving to infants and how these differ for industrialized societies, agricultural societies and hunter-gatherers, and even between various hunter-gatherer groups (Hewlett & Lamb, 2002; Konner, 2005).

Evolutionary psychology (following the earlier school of sociobiology) is postulating specialized psychological mechanisms that are genetic and have evolved in response to selection pressures; the early theorizing tended to be rather deterministic with environmental variation as the almost exclusive force behind behavioral diversity (e.g., Tooby & Cosmides, 1990). Empirical research illustrating how an evolutionary orientation will lead to new insights has been reported by Chasiotis and colleagues (Bender & Chasiotis, 2012; Chasiotis, Bender & Hofer, 2013). Considering developmental stages as evolutionary end products that are preparations for adulthood, they found that the number of siblings is a crucial variable in explaining cultural variance in autobiographical memory and implicit parental motivation; variance previously attributed to sociocultural dimensions.

Cultural evolution is analyzing how cultural practices change over time and how these changes that influence gene-culture co-evolution can be modeled (Boyd & Richerson, 2005; Cavalli-Sforza & Feldman, 1981). Examples of such co-evolution are a relatively high rate of red-green color blindness in groups that gave up hunting and gathering a long time ago and the development of lactose tolerance in populations of herders in colder regions of the world where milk is needed to compensate for low rates of ultraviolet light needed for the production of Vitamin D (see Berry et al., 2011 for more on these examples).

Another biological tradition that can offer inspiration for cross-cultural psychology is classical ethology as established by Lorenz (1965) and Tinbergen (1963). They studied patterns of behavior with systematic observation in field conditions as the main method. Although more time consuming than surveys and questionnaires, this is a method available to students of human behavior. The reason this tradition is being mentioned here is that multiple questions are being asked in the study of a behavior pattern. In a foundational article Tinbergen (1963) postulated four such questions: cause, function, ontogenetic development and phylogenetic development of a behavior pattern.

The question of causation is asking which external factors in the environment and internal factors in the organism (e.g., hormonal excretions) lead to a behavior pattern to happen. The question of function is about how the observed pattern contributes to survival (what is it good for?); analysis begins with extensive observations on how the pattern makes sense in terms of survival value. The question of ontogenetic development seeks to understand changes in the behavior machinery over time. According to Tinbergen the innate and what is being learned are intercalated, with environmental effects often being additive to machinery that is functional already. The fourth and final question is asking about the evolution or phylogenetic development of a behavior pattern; the reconstruction of such changes generally requires comparative analysis between species.

For cross-cultural psychology an approach as outlined by Tinbergen (1963) looks promising, since it requires simultaneous analysis of a behavior pattern from multiple perspectives (Poortinga, 2011). This comes with an increase in

complexity, but also in the quality of interpretation. Ethology, like the other schools mentioned in this section, starts from the explicit recognition that humans are a single species, assuming common themes underneath local variations. The most relevant set of questions in cross-cultural psychology may partly differ from ethology; notably of interest is the question of development of behavior patterns in historical time. If anything, this question strengthens further the principle that answers to multiple questions are likely to enhance the quality of interpretation.

It should be recognized that Tinbergen's four questions have been criticized because there is overlap between them and his views on evolution may be somewhat outdated. Still, much of Tinbergen's legacy is being upheld today also in biological research with non-human species (e.g., Bolhuis & Verhulst, 2009; Bolhuis & Wynne, 2009) where the neurological and physiological machinery of a behavior pattern is more directly accessible and drastic experimental manipulation of the environment is deemed ethically permissible. While in some respects more limited in the range of available methods, psychology has the advantage that humans can produce self-reports and reports about past events. Perhaps the most serious difficulty for psychology is the definition of one behavior pattern in distinction of other patterns; in research with non-human species salient patterns with a sequence of steps, like food gathering or courtship behavior and mating, are identified and distinguished more easily from other patterns than in humans.

Conclusion

Cross-cultural psychology is a dynamic field, continually reflecting on past research and raising further questions (Van de Vijver, Chasiotis, & Breugelmans, 2011). This overview is meant to contribute to such reflection. Usually the primary focus of cross-cultural psychology is on differences in behavior across cultures. It can be argued that traditions have grown where some difference is treated as a given and used to interpret other differences. To avoid the danger of over-interpretation it is advocated here that the explicit starting point of research on culture and behavior should be based in cross-cultural invariance or how human psychological functioning is similar across cultures. Human beings can be said to possess a disposition, or set of dispositions, enabling the construction of an elaborate and complex niches with important local variations that we tend to call cultures. Much of the intellectual ancestry of cross-cultural psychology is based in cultural anthropology. Perhaps it is time to look for more balance between biological and anthropological viewpoints on human nature and human culture. Cross-cultural psychologists can contribute uniquely to help create such a balance.

References

- Bender, M., & Chasiotis, A. (2011). Number of siblings in childhood explains cultural variance in autobiographical memory in Cameroon, PR China, and Germany. *Journal of Cross-Cultural Psychology, 42*, 998-1017.

- Berry, J. W., Poortinga, Y. H., Breugelmans, S. M., Chasiotis, A. & Sam, D. L. (2011). *Cross-cultural psychology: Research and applications* (3rd ed.). Cambridge: Cambridge University Press.
- Biesheuvel, S. (1954). The measurement of occupational aptitudes in a multi-racial society. *Occupational Psychology*, 18, 189-196.
- Bolhuis, J. J., & Verhulst, S. (Eds.) (2009). *Tinbergen's legacy: Function and mechanism in behavioral biology*. Cambridge: Cambridge University Press.
- Bolhuis, J. J., & Wynne, C. D. L. (2009). Can evolution explain how minds work? *Nature*, 458, 832-833.
- Boyd, R., & Richerson, P. J. (2005). *The origin and evolution of cultures*. New York: Oxford University Press.
- Brouwers, S. A., Van Hemert, D. A., Breugelmans, S. M., & Van de Vijver, F. J. R. (2004). A historical analysis of empirical studies published in the Journal of Cross-Cultural Psychology. *Journal of Cross-Cultural Psychology*, 35, 251-262.
- Brown, G. R., Dickins, T. E., Sear, R., & Laland, K. N. (2011). Evolutionary accounts of human behavioural diversity. *Philosophical Transactions of Royal Society (Series B)*, 366, 313-324.
- Cavalli-Sforza, L. L., & Feldman, M. (1981). *Cultural transmission and evolution: A quantitative approach*. Princeton: Princeton University Press.
- Chasiotis, A., Bender, M. & Hofer, J. (2013, in press). Childhood context explains cultural variance in implicit parenting motivation: Results from two studies with six samples from Cameroon, Costa Rica, Germany, and China. *Evolutionary Psychology*, in press.
- Chiao, J. Y., & Ambady, N. (2007). Cultural neuroscience: Parsing universality and diversity. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 237-254). New York: Guilford Press.
- Chiu, C-Y, Chiao, M. M. (2009). Society, culture, and the person: Ways to personalize and socialize cultural psychology. In R. S., Wyer, C-Y Chiu, & Y-Y Hong (Eds.), *Understanding culture; Theory, research, and application* (pp. 457-466). New York: Psychology Press.
- Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, 49, 997-1003.
- Cole, M. (1996). *Cultural psychology: A once and future discipline*. Cambridge, Mass.: Belknap.
- Cole, M., Gay, J., Glick, J., & Sharp, D. (1971). *The cultural context of learning and thinking*. New York: Basic Books.
- Dasen, P. R. (1972). Cross-cultural Piagetian research: a summary. *Journal of Cross-Cultural Psychology*, 7, 75-85.
- Deregowski, J. B. (1980). *Illusions, patterns and pictures: A cross-cultural perspective*. London: Academic Press.
- Deregowski, J. B. (1989). Real space and represented space: Cross-cultural perspectives. *Behavioral and Brain Sciences*, 12, 51-119.
- Díaz-Guerrero, R. (1967). Socio-cultural premises, attitudes and cross-cultural research. *International Journal of Psychology*, 2, 79-87.

- Díaz-Guerrero, R. (1990). *Psicología del Mexicano* [Psychology of the Mexican] (6^a ed.). México, DF: Trillas.
- Fischer, R. (2013). *People overestimate cultural differences in human values*. Unpublished manuscript/Manuscript submitted for publication.
- Fischer, R., & Schwartz, S. (2012). Whence, differences in value priorities? Individual, cultural or artifactual sources. *Journal of Cross-Cultural Psychology, 42*, 1127-1144.
- Fiske, A., Kitayama, S., Markus, H., & Nisbett, R. (1998). The cultural matrix of social psychology. In D. Gilbert, S. Fiske & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 915-981). New York: McGraw-Hill.
- Fontaine, R. J. R., Poortinga, Y. H., Delbeke, L., & Schwartz, S. H. (2008). Structural equivalence of the values domain across cultures: Distinguishing sampling fluctuations from meaningful variation. *Journal of Cross-Cultural Psychology, 39*, 345-365.
- Gelfand, M. J. (2012). Culture's constraints: International differences in the strength of norms. *Current Directions in Psychological Science, 21*, 420-424.
- Girndt, T. (2000). *Cultural diversity and work-group performance: Detecting the rules*. PhD thesis. Tilburg: Tilburg University.
- Gould, S. J. (1991). Exaptation: A crucial tool for evolutionary psychology. *Journal of Social Issues, 47*, 43-65.
- Gould, S. J., & Lewontin, R. C. (1979). The spandrels of San Marco and the Panglossian paradigm: A critique of the adaptationist programme. *Proceedings of the Royal Society of London (Series B)*, 205, 581-598.
- Han, S., Northoff, G., Vogeley, K., Wexler, B. E., & Kitayama, S. (2013). A cultural neuroscience approach to the biosocial nature of the human brain. *Annual Review of Psychology, 64*, 335-359.
- Heine, S. J., Lehman, D. R., Peng, K., & Greenholtz, J. (2002). What's wrong with cross-cultural comparisons of subjective Likert scales? The reference-group effect. *Journal of Personality and Social Psychology, 82*, 903-918.
- Hewlett, B. S., & Lamb, M. E. (2002). Integrating evolution, culture and developmental psychology: explaining caregiver-infant proximity and responsiveness in central Africa and the USA. In H. Keller, Y. H. Poortinga, & A. Schölmerich, (Eds.) (2002), *Between culture and biology: Perspectives on ontogenetic development*. (pp. 241-269). Cambridge: Cambridge University Press.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills: Sage
- Keller, H., Poortinga, Y. H., & Schölmerich, A. (Eds.) (2002). *Between culture and biology: Perspectives on ontogenetic development*. Cambridge: Cambridge University Press.
- Kitayama, S., & Cohen, D. (Eds.) (2007). *Handbook of cultural psychology*. New York: Guildford Press.
- Konner, M. (2005). Hunter-gatherer infancy and childhood: The !Kung and others. In B. S. Hewlett, M. E., & Lamb (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental and cultural perspectives*. Brunswick, NJ: Aldine transaction.

- Lorenz, K. (1965). *Evolution and modification of behaviour*.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion and motivation. *Psychological Review*, 98, 244-253.
- Marsella, A. J., & White, G. M. (Eds.) (1982). *Cultural conceptions of mental health and therapy*. Dordrecht, NL: Reidel.
- Matsumoto, D., & Van de Vijver, F. J. R. (Eds.) (2011). *Cross-cultural research methods in psychology*. Cambridge: Cambridge University Press.
- Medin, D. L., Unsworth, S. J., & Hirschfeld, L. (2007). Culture, categorization, and reasoning. In S. Kitayama and D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 615–644). New York: Guilford Press.
- Minkov, M. (2008). Self-enhancement and self-stability predict school achievement at the national level. *Cross-Cultural Research*, 42, 172-196.
- Osgood, C. E., May, W. H., & Miron, M. S. (1975). *Cross-cultural universals of affective meaning*. Urbana, Ill.: University of Illinois Press.
- Poortinga, Y. H. (2003). Coherence of culture and generalizability of data: Two questionable assumptions in cross-cultural psychology. In J. Berman & J. Berman (Eds.), *Cross-cultural differences in perspectives on the self*, Vol. 49 of the Nebraska Symposium on Motivation (pp. 257–305). Lincoln, Nebr.: University of Nebraska Press.
- Poortinga, Y. H. (2011). Research on behavior-and-culture: Current ideas and future projections. In F. J. R. Van de Vijver, A. Chasiotis, & S. M. Breugelmans (Eds.), *Fundamental questions in cross-cultural psychology*. (pp. 545-578). Cambridge, UK: Cambridge University Press.
- Poortinga, Y. H., & Van Hemert, D. A. (2001). Personality and culture: Demarcating between the common and the unique. *Journal of Personality*, 69, 1,033–1,060.
- Rapport, N., & Overing, J. (2000). *Social and cultural anthropology: The key concepts*. London, United Kingdom: Routledge.
- Segall, M. H., Campbell, D. T., & Herskovits, K. J. (1966). *The influence of culture on visual perception*. Indianapolis: Bobbs-Merrill.
- Shweder, R. A. (1984). Anthropology's romantic rebellion against the enlightenment, or there's more to think than reason and evidence. In R. A. Shweder and R. A. LeVine (Eds.), *Culture theory: Essays on mind, self and emotion* (pp. 27–66). Cambridge: Cambridge University Press.
- Shweder, R. A. (1990). Cultural psychology – What is it? In J. W. Stigler, R. A. Shweder & G. Herdt (Eds.), *Cultural psychology: Essays on comparative human development* (pp. 1-43). Cambridge: Cambridge University Press.
- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, 22 (11), 1359-1366.
- Sinha, D. (1997). Indigenizing psychology. In J. W. Berry, Y. H. Poortinga, & J. Pandey (Eds.), *Handbook of cross-cultural psychology* (2nd ed., Vol. 1, pp. 129-169). Boston: Allyn and Bacon.
- Tinbergen, N. (1963). On aims and methods of ethology. *Zeitschrift fuer Tierpsychologie*, 20, 410–433.

- Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology*, *11*, 375-424.
- Triandis, H. C. (Ed.) (1980). *Handbook of cross-cultural psychology*. Boston: Allyn and Bacon.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, Colo.: Westview.
- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, *51*, 407-415.
- Tylor, E. B. (1958). *Primitive culture*. New York, NY: Harper. (Original work published 1871).
- Valchev, V. H., van de Vijver, F. J. R., Nel, J. A., Rothmann, S., & Meiring, D. (2013). The use of traits and contextual information in free personality descriptions across Ethnocultural Groups in South Africa. *Journal of Personality and Social Psychology*. Advance online publication. doi: 10.1037/a0032276
- Van de gaer, E., Grisay, A., Schulz, W., & Gebhardt, E. (2012). The reference group effect: An explanation of the paradoxical relationship between academic achievement and self-confidence across countries. *Journal of Cross-Cultural Psychology*, *43*, 1205-1228.
- Van de Vijver, F. J. R. (2013). Contributions of internationalization to psychology. *American Psychologist*, in press.
- Van Hemert, D., Poortinga, Y. H., & Van de Vijver, F. J. R. (2007). Emotion and culture: A meta-analysis. *Cognition & Emotion*, *21*, 913-941.
- Vernon, P. E. (1969). *Intelligence and cultural environment*. London: Methuen.
- Vul, E., Harris, C., Winkielman, P., & Pashler, H. (2009). Puzzlingly high correlations in fMRI studies of emotion, personality and social cognition. *Perspectives on Psychological Science*, *4*, 274-290.
- Witkin, H., & Berry, J. W. (1975). Psychological differentiation in cross-cultural perspective. *Journal of Cross-Cultural Psychology*, *6*, 4-87.