Research in culture and psychology: past lessons and future challenges

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Since the dawn of psychology as a science, conceptual and methodological questions have accompanied research at the intersection of culture and psychology. We review some of these questions using two dominant concepts—independent versus interdependent social orientation and analytic versus holistic cognitive style. Studying the relationship between culture and psychology can be difficult due to sampling restrictions and response biases. Since these challenges have been mastered, a wealth of research has accumulated on how culture influences cognition, emotion, and the self. Building on this work, we outline a set of new challenges for culture and psychology. Such challenges include questions about conceptual clarity, within-cultural and subcultural variations (e.g., variations due to social class), differentiation and integration of processes at the group versus individual level of analysis, modeling of how cultural processes unfold over time, and integration of insights from etic and emic methodological approaches. We review emerging work addressing these challenges, proposing that future research on culture and psychology is more exciting than ever. © 2013 John Wiley & Sons, Ltd.

INTRODUCTION

The interest in how culture influences the mind can be traced back to the very beginnings of scientific psychology. Indeed, Wilhelm Wundt—who established the first experimental psychological laboratory in the 19th century—was deeply interested in this subject of cross-cultural variations,[1] as was Lev Vygotsky[2]—whose ideas about cognitive development have been instrumental for modern developmental psychology and education. George Herbert Mead—who was one of many influential students of Wundt and who was one of the founding fathers of social psychology—similarly showed interest in culture and psychology when describing how the interaction patterns in a society define one's individuality.[3] Despite these early interests, mainstream psychology for a long time ignored the relationship between culture and psychology. Only recently did culture gain a mainstream status of psychological inquiry. In the present overview we discuss the progresses that the field of culture and psychology has made since its resurgence, and we summarize some challenges in understanding the dynamic interplay between culture and psychology. We focus on psychological processes related to cultural variations in social orientation and cognitive style, which attracted the largest body of empirical work in culture and psychology of the last 20 years.[4–6]

The Notion of 'Culture' in Cultural Psychology

Scientists from many fields ranging from biology and computer science to philosophy and anthropology have somewhat different notions what culture is and how to study it.[a] Cognitive scientists and psychologists interested in culture define the concept

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as shared knowledge and mutual expectations produced, disseminated, and reproduced among a network of interacting individuals.[7–12] Importantly, the focus of research on culture and psychology is not on defining culture. As Richard Shweder pointed out,[13] central to cultural psychology is the notion that it is impossible to understand psychological processes without the consideration for specific cultural background these psychological processes are embedded. In other words, culture and mind mutually influence each other. To demonstrate this mutual dependence, we next review existing work on how culture influences psychological processes associated with social orientation and cognitive style.

Social Orientation and Cognitive Style

Two key concepts from the last two decades of research on culture and psychology deal with (1) interdependent versus independent *social orientation* and (2) holistic versus analytic *cognitive style*. Independent (vs interdependent) social orientation refers to the degree to which individuals are focused on their personal (vs social) self, acting on the basis of the self's desires, attitudes, and personal goals (vs socially shared norms and values).[14] Independent orientation is associated with a view of the self as bounded and separate from social others, whereas interdependent orientation is associated with a view of the self as interconnected, encompassing important relationships. Initial empirical cross-cultural studies revealed that members of some Western societies (e.g., Canada, Germany, UK, or USA) tend to be independent, as indicated by a relatively greater emphasis of self-direction, autonomy, and self-expression, whereas members of some of the East Asian societies (e.g., Korea, Japan, or China) tend to be interdependent, as indicated by a relatively greater focus on harmony, relatedness, and social connection.[15–19]

Another set of systematic findings concerned analytic versus holistic cognitive style.[20] Analytic cognitive style is characterized by a narrow focus on focal objects in visual field, preference for dispositional explanations of behavior, formal logic in reasoning, and use of rule-based categorization of objects. What unites the elements of the analytic style is a tendency to focus on a single dimension or aspect and a tendency to disentangle phenomena from the contexts in which they are embedded. In contrast, holistic cognitive style is characterized by a focus on contextual information in visual attention and relationships—an emphasis on situational explanations of behavior, dialectical reasoning, and relation-focused categorization of objects. What unites the elements of the

holistic style is a broad attention to context and relationships in visual attention, categorizing objects, and social explanation. Empirical research indicated that members of some of the Western societies tend to be analytic, whereas members of some of the East Asian societies tend to be holistic.

We hasten to point out that such broad concepts as social orientation or cognitive style are by no means monolithic and should not be used to stereotype individuals based on their ethnicity or country of origin. Individuals from most industrialized societies likely have knowledge about behavioral repertoire in terms of both independence and interdependence, as well as analytic and holistic cognition. Moreover, as we review below, within-cultural variations between subcultures, religious groups, social classes, or variations in urbanization also have dramatic impact on one's concept of the self, emotions, thoughts, and behavior. The primary reason why cultural psychologists started with broad cross-cultural characterizations deals with a long-term denial of the meaningful role of culture for cognitive processes by the majority of mainstream psychologists and cognitive scientists.[21] Beyond simply demonstrating cultural differences, the second goal of research on culture and psychology so far has been to identify how one's cultural background and environment make certain behavioral patterns more likely.

LESSONS FROM PAST

Past work on culture and psychology has faced a number of conceptual and methodological problems. In the following section, we discuss several such problems that were particularly important to understanding cultural variations in psychological processes and then review some proposed solutions to these problems.

Toward Diverse Sampling

The first problem concerns the sampling limitations of the initial cross-cultural work: comparisons of social orientation and cognitive style have been largely confined to East Asian (e.g., China, Japan, and Korea) versus Western (e.g., USA, Canada, and Western Europe) geographic regions. The advantage of testing these East Asian and Western samples includes comparable levels of industrialization and the degree of Westernization of educational systems.[22] However, focus on East Asians and Westerners can be problematic when investigating cultural influences on psychological processes. Even when substantial differences in psychological processes between East Asians and Westerners are found, it is difficult to

conclude what may drive such difference, because East Asians and Westerners differ in many aspects ranging from sociocultural contexts to cultural products (e.g., religion or language), to physical condition (e.g., temperature or population density), or even to biological factors (e.g., genetic make-up).

A number of research groups recently addressed this challenge by examining cultural variability beyond the East–west comparisons. Grossmann and colleagues compared social orientation and cognitive style among North Americans with Eastern and Central Europeans.[23–25] Kitayama et al. compared cognitive style and social orientation differences among Americans, British, Germans, and Japanese.[26] Kühnen et al. compared cognitive style differences among Americans, Germans, Russians, and Malay. Overall, these systematic variations in social orientation and cognitive style suggest that the independent versus interdependent social orientation and the analytic versus holistic cognitive style can be applicable to other cultures than those found in East Asia and in North America.[27]

Furthermore, to explore possible factors associated with a preference for a certain social orientation or cognitive style researchers also examined variability within a single ethnic group. These researchers followed the logic that if a critical variable X is associated with social orientation and cognitive style, one can compare several cultural groups that differ from each other only in terms of this variable, but minimally different on other relevant dimensions (e.g., genes, language, or industrialization). Based on this logic, Kitayama et al. tested if the economically motivated voluntary settlement in a wild environment is related to preferences for independent social orientation and analytic cognitive style by comparing the residents of Japanese island Hokkaido (known as the 'Northern Frontier' in Japan) and Mainland Japanese. The results indicated that residents of Hokkaido in Japan showed a relatively greater independence and more analytic cognition than the residents of the mainland Japan, which Kitayama et al. attributed to the history of voluntary settlements among Hokkaido Japanese.[18] Similarly, by looking at the Black sea region in Turkey, researchers demonstrated that sociocultural context related to farming and fishing was linked to holistic cognitive style whereas sociocultural context related to herding was linked to analytic cognitive style.[28]

Taken together, the recent development in cultural psychology tried to overcome initial geographical limitation (East Asia vs North America). In addition, such efforts have contributed to identifying factors that are associated with cultural variations and yet, are not necessarily restricted by geographic regions.

Measuring Social Orientation and Cognitive Style

The second problem concerns various biases in measuring sociocognitive processes, which have historically posed significant problems for research on culture and psychology. For example, some work on social orientation has been conducted via self-report measures. Such subjective reports have been criticized for lack of sensitivity and misleading conclusions when examining social orientation across cultures.[29] First, cross-cultural comparisons of values and properties measured with subjective reports are sometimes vulnerable to a so-called deprivation effect[30]—a tendency to prefer those properties that one feels are lacking in one's cultural environment. To use an example proposed by Peng and colleagues,[30] Americans may report valuing humility more than Chinese, even though humility may reflect greater interdependence (characteristic of Chinese cultures). In contrast, Chinese may report valuing personal choice more than Americans, even though personal choice is a sign of independence. Thus, study of social orientation and cognitive styles based on subjective preferences and values may reflect individual needs that seem underrepresented in a given culture, rather than cultural differences in social orientation or cognitive style per se.

A related phenomenon concerns examination of cultural processes based on ratings of oneself. Self-evaluations are rarely done in a vacuum. When asked to rate one's level of independence or cognitive style, we tend to think of somebody to compare ourselves to. Americans are likely to think of their level of independence in comparison to fellow Americans, whereas Japanese are likely to compare themselves to fellow Japanese. This reference group effect[31] can introduce error to comparison of respective processes across cultures, magnifying or decreasing the magnitude of a cultural difference. A solution to this methodological challenge is to make questions concerning self-ratings more concrete—for example, asking individuals to think about specific situations or providing several response options to pick from. The less abstract the question, the less likely participant will compare her/himself to a certain reference group.

Researchers identified another set of methodological challenges, which concern scale-format responses. Ironically, these challenges may be affected by cognitive style differences in the first place. Specifically, holistic reasoning is characterized by a consideration of opposing views on the world and oneself[32] and awareness of change.[33] Such thinking style may involve consideration of compromise

between different response options. Indeed, individuals from cultures groups that have been previously identified as holistic in terms of their cognitive style (e.g., East Asians) are more susceptible to a so-called *moderacy bias*—a tendency to provide responses near the middle of a scale. In contrast, other cultural groups that have been previously identified as relatively analytic (e.g., North Americans of European descent) show an *extremity bias*—a tendency to give responses near the ends of a scale (e.g., 1 or 7 on a 7-point scale). Moreover, holistic consideration of different views on oneself may also result in an *acquiescence bias*—a tendency to agree with all statements, thus shifting the baseline response to the scale items. For instance, in response to self-construal scale items, individual from a relatively holistic culture may think about different situations in which he or she showed signs of both independence *and* interdependence, thus giving higher marks on respective scale items.[34]

These three biases can happen independently of the question content, masking true cultural variability in the social orientation, cognitive style, or other constructs the questionnaire would intend to measure. Acquiescence bias can be partly avoided by reverse-scoring some response items: half of the scale can indicate interdependence, whereas the other half can indicate independence. Moreover, moderacy, extremity and acquiescence biases can be reduced by standardizing responses before conducting the corresponding statistical analysis. Many standardization procedures have been suggested,[35] though there is still no consensus if standardization fully enables cultural comparisons of average level of scale response. Moreover, these biases are less problematic when examining the *relationship* between different sociocognitive processes in different cultures, comparing the direction of the relationship rather than average differences in responses to a single measure.

Finally, it is also important to point out that no single measure alone—be it self-report questionnaire, interview or behavioral observation—is entirely free of a certain cultural response bias. In line with general methodological recommendation for psychological research, examination of sociocultural processes with *multiple measures* representing different levels of observation (e.g., self-report scales, behavioral observations, physiological measures, archival data) is the golden standard in modern research on culture and psychology. Convergence of results across multiple measures, each with different form of imperfection, makes it less likely for findings of cultural influence on psychology to be a measurement artifact.

CHALLENGES FOR FUTURE

Even though past work addressed a number of challenges of doing research on culture and cognition, many methodical as well as conceptual issues remain. We focus on several key themes that may be important for the further development of the field.

Conceptual Clarity

One of the challenges for future research in culture and psychology concerns the conceptual overlap between social orientation and cognitive style. In the past, researchers used the concepts of independent versus interdependent social orientation and analytic versus holistic cognitive style in an idiosyncratic fashion, resulting in lack of conceptual clarity about the meaning and, consequently, about the relationship between them. Some researchers operationalized independent versus interdependent social orientation by using cognitive tasks (e.g., dispositional vs situational attribution; focus on the focal features of an object vs on the context), others used the concept of independent versus interdependent social orientation to explain differences in cognition, and yet other researchers viewed both social orientation and cognitive style tasks as proxies for social norms and values rather than separate psychological constructs.

One of the reasons why researchers have been using social orientation and cognitive style interchangeably may deal with the fact that these constructs are in fact positively related. Such relationship has been recently described within the so-called social orientation hypothesis.[5] According to this hypothesis, tendency of a given culture to orient itself toward interdependence is one of the key factors contributing to cultural-level orientation toward holistic cognitive style. In support of this hypothesis researchers have found that for all cultures examined to date, a culture that is interdependent in social orientation is holistic in cognitive style, whereas a culture that is independent in social orientation is analytic in cognitive style.[5] Extending this analyses to the individual level, a number of experimental studies showed that temporally increasing the salience of independence (e.g., by reading a story in which a person makes a best decision for himself) results in a relatively more analytic performance), whereas increasing the salience of interdependence (e.g., by reading a story in which a person makes a best decision for his family) results in a relatively more holistic performance on a subsequent cognitive style task.[36]

Despite the positive relationship between social orientation and cognitive style, it is reasonable to

assume that the measures of social orientation and cognitive style as conceptually distinct. Central to social orientation is the question how the self is embedded in the social environment (e.g., the view of the self as independent of and separated from others versus the view of the self as interdependent and embedded in social relations). On the other hand, holistic versus analytic cognitive style mainly concerns cognitive strategies enabling contextual versus de-contextualized focus in perception, cognition, or information processing. Theoretically, self-relevant considerations may happen irrespective of one's tendency to process information contextually, whereas cognitive style preference for contextual processing of main features (e.g., objects, entities, or themes) may happen irrespective of the self-relevant considerations. Moreover, past work suggests that the magnitude of association between measures of social orientation and cognitive style is small to moderate in size, and hence collapsing them into a single overarching construct may be problematic. Reducing the level of conceptual ambiguity would be a key to further development of research on culture and psychology, because it would facilitate both accumulation of knowledge and active communication between researchers.

## Within-Versus Between-Culture Variations: Social Class

Whereas the main body of research on culture and psychology so far has been concerned with cross-cultural differences, literature on social class differences within a single society has demonstrated the importance of within-culture or subculture variations. In this literature, social class has been defined in two different ways: one approach emphasizes the subjective meaning of somebody's social status, and the other approach emphasizes such factors as income and education. Whereas the subjective approach to studying social class deals with subjective perception of person's social status, the focus on external factors such as socioeconomic status (*SES*, quantified with income, level of education, or occupational prestige) has been viewed as an 'objective' index of social-economic status, because it can be determined without any reference to a given cultural context. Recent advances in the social class literature integrate these two approaches for the study of variations in social orientation and cognitive style. Researchers found that individuals from working-class contexts show relatively interdependent social orientation in comparison to individuals from middle-class contexts. For example, high SES individuals tend

to make choices based on their personal preferences (indicative of an independent social orientation), whereas low SES individuals also consider normative factors (e.g., a concern for social harmony, which is indicative of interdependent social orientation). Using a different measure of social orientation, Grossmann and Varnum[23] demonstrated that students from well-educated families tend to inflate their self by drawing a social network with a larger 'self' circle in comparison to circles representing their friends.

Parallel to class differences in social orientation, researchers observed class differences in cognitive style tendencies, indicating that individuals from a lower social class environment are relatively more holistic in their cognitive style than individuals from a higher-class environment. For example, students from lower SES background in Russia and USA are more sensitive to situational factors when explaining others' behaviors than students from higher SES background.[23,37] Importantly, reminders of *subjectively* lower status showed comparable effects on social orientation and cognitive style to studies examining class differences via SES markers. A number of studies showed that subjective feeling of relatively lower social rank leads to a more interdependent orientation and a more holistic cognitive style.[38]

Several theoretical frameworks attempted to integrate these subjective and objective components for the understanding of social class differences in cognition.[38–40] For instance, Grossmann and Huynh[40] suggested that objective social class may contribute to social cognitive processes directly via distinct environmental affordances of higher versus lower classes and indirectly via subjective rank perception. Figure 1 illustrates an integrative model of joint influences through external/objective factors and their subjective interpretation. This model indicates that objective class (e.g., measured via one's level of education or income) may activate one's rank awareness. In addition, objective class may act as culture per se, acquired and shaped in interaction with the class-typical environment, and via the socialization of class-related practices. Moreover, environmental affordances can influence the meaning of one's subjective social rank. Thus, within-cultural variations in social class—as measured by markers such as education or income—have a profound impact on social orientation and holistic versus analytic cognition.

Given this broad scope of independent versus interdependent social orientation and analytic versus holistic cognitive style, it would be important to investigate other within-cultural processes in the future. For instance, focus on minorities can be critical in USA, with an increasing Hispanic population.
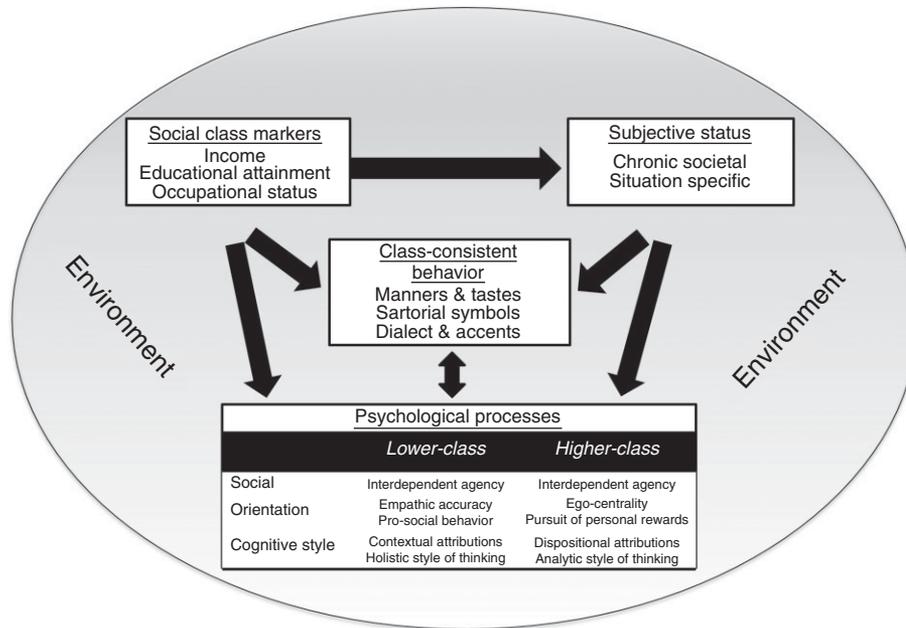
FIGURE 1 | Objective social class contributes to the sociocognitive processes and class-consistent behavior directly and indirectly through subjective rank perception. Environmental affordances influence all relevant processes (e.g., lack of resources due to poverty, or self-directed orientation afforded to middle-class occupations). (Reprinted with permission from Ref. 40 Copyright 2013 Taylor & Francis)

Moreover, there are many cultural groups (e.g., Near Eastern cultures, Central and South-American cultures, or most of the African cultures) that have not yet received much attention in the body of research on social orientation or cognitive style processes. Following the example of the work on social class, a future challenge would be to expand research on interdependent versus independent social orientation and holistic versus analytic cognitive style to these and many other (sub)cultures.

Cultural Differences at the Group Versus Individual Level

Another area of future research concerns clarifying the relationship between culture and psychology at the group level and at the individual level. An important finding in culture and psychology is that such constructs as cognitive style (or social orientation) are coherent across cultures when looking at cultural groups as a whole. That is, a cultural group that is analytic in one domain of cognitive style is more likely to be analytic in other domains in the same construct.[4] For example, compared with Americans, Koreans as a group are more holistic not only in attention but also in other domains such as attribution or categorization.

Given such construct-coherence at the group level, one may assume that the same coherence should be expected at the individual level. In other words, one may assume that cultural differences can be

reduced to individual differences[41] and that coherent cultural differences in cognitive style/social orientation are translated into equally coherent individual differences. For instance, an individual who is holistic in attention may be expected to be holistic in other domains (e.g., attribution). Such an assumption is often implied by those researchers who treat cognitive style[42]/social orientation[43] as a trait-level ability. Yet, recent studies cast doubts on veracity of this assumption. In particular, Na and colleagues showed that some measures of cognitive style/social orientation coherently differentiated groups from different culture or groups that differ in terms of socioeconomic background (e.g., highly educated versus poorly educated Americans). Yet, these measures did not correlate among themselves on the level of an individual. As shown in Figure 2a, the correlation between two cognitive style measures dealing with attention and causal attribution was positive and significant at the cultural level ($r = 0.73$). However, the same correlation was negligible at the individual level within and across groups. This pattern of results suggests that coherent differences between cultures and subcultures at the group level are possible without the same corresponding differences at the individual level. As illustrated in Figure 2b, individual profiles are highly idiosyncratic and yet, coherence can be observed at the group level when these idiosyncratic profiles are aggregated. That is, Jaein, a Korean, who is holistic in

(a)

(b)
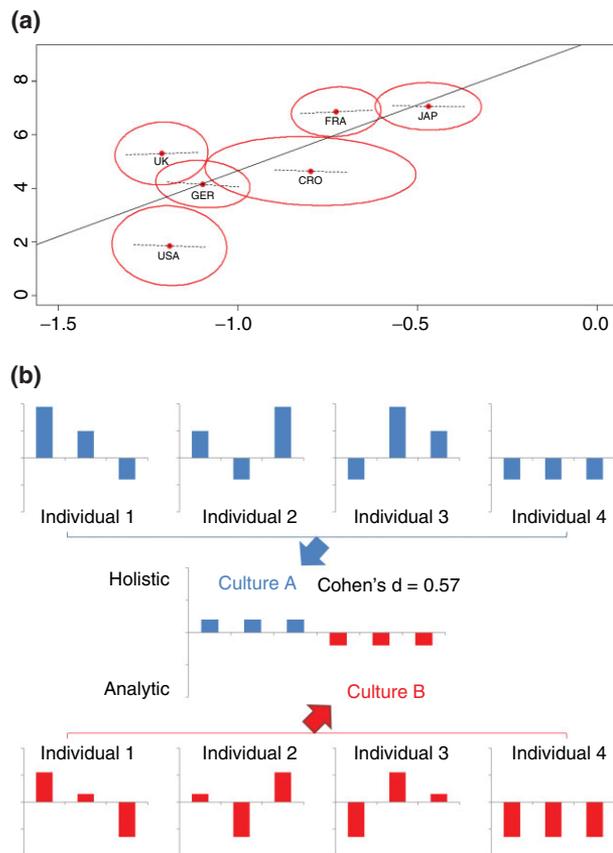
FIGURE 2 | Illustrations of independence between culture at the individual and group level of analysis. (a) An illustration of a multilevel analysis on two cognitive style tasks (Framed-Line-Task, measuring attention to context, and attribution task, measuring situational versus dispositional tendencies to explain behavior) across five cultures. The dotted lines indicate the association between them at the individual level both within each culture and with all cultures collapsed, whereas the solid line indicates the association at the cultural level. The ellipses represent a ±SE around a group mean on each variable and the within-culture correlation influences its orientation. (b) A hypothetical example: even when two groups differ on all measures of a given construct there may be no tendency for an individual in a given group whose score is relatively high on one measure to have scores that are relatively high on other measures. Three bars indicate three different attributes of cognitive style and higher scores on the *y* axis reflect more holistic cognitive style. (Reprinted with permission from Ref. 44 Copyright 2010 U.S. National Academy of Sciences)

attention, needs not be holistic in other domains (e.g., causal attribution). Likewise, Michael, an American, may be analytic in one domain but not others.

We can conclude that group-level differences between cultures and subcultures may not necessarily correspond to individual-level differences. This finding has important implications for defining social orientation and cognitive style, suggesting that cultural variations in associated psychological tendencies take different forms at the group and

individual level. There is no reason to believe that the origins or even the typical manifestations of the group differences have anything to do with corresponding origins or manifestation of differences within the groups. This insight poses a unique challenge in interpreting cultural differences since behavioral constructs that distinguish among groups do not have to be valid as measures of individual-level processes.

Static Versus Dynamic Aspects of Culture

Previous studies on culture and cognition have focused on identifying *static* differences between cultures. Such sampling of multiple cultural groups can provide a snapshot picture of cultural differences at a given point of time. Even though it can be incredibly useful and effective, snapshot judgments of culture largely ignore the malleability of cultural differences within an individual and over time. Fortunately, recent work on culture and cognition benefitted from methods borrowed from linguistics, anthropology, and cognitive psychology to study the dynamic relationship between culture and psychology.

The study of within-individual variation in social orientation and cognitive style has been recently advanced by borrowing the priming method from experimental psychology, in which participants are exposed to a certain stimulus that may activate a related knowledge structure.[26,45] Using priming, researchers on culture and psychology can *causally* test how culture influences specific behavioral tendencies by presenting culture-specific stimuli to biculturals—individuals who grew up in different cultural contexts and thus have knowledge structures associated with respective cultures. For instance, Hong and colleagues presented Hong Kong Chinese with distinctly Western cultural symbols (e.g., Mickey Mouse, the Stature of Liberty) or distinctly Chinese cultural symbols (e.g., Chinese dragon, the Great Wall of China). Hong Kong Chinese live in a multicultural environment consisting of Chinese and Western cultural symbols; they thus showed more holistic cognitive style when presented with Chinese symbols, and showed a relatively more analytic cognitive style when presented with Western symbols.[46] Another set of priming studies demonstrated that one's social orientation and cognitive style can be temporarily shifted even among individuals from a single culture.[36] This research indicated that repeated exposures to first-person singular pronouns (e.g., I, my, me, mine) or thinking about differences between themselves and close others (e.g., family members or friends) can make people independent in social orientation and analytic in cognitive style, while repeated exposures to first-person plural pronouns (e.g., we, our, us, ourselves)

or thinking about similarities between themselves and close others (e.g., family members or friends) can make people interdependent in social orientation and holistic in cognitive style. Such priming effects may even occur without one's conscious awareness.[47] Together, these priming studies emphasize the availability of knowledge about behavioral patterns associated with interdependent social orientation or holistic cognitive style to individuals from cultures that habitually show independent social orientation or analytic cognitive style (and vice versa).

Social orientation and cognitive style can be studied not only by looking at the individual, but also at cultural products and practices. For instance, interdependent social orientation can manifest itself in advertising themes[48] or via use of words in books,[49] whereas holistic cognitive style can manifest itself in classic art[50] or modern website designs.[51] Focusing on cultural products and practices, researchers were able to model cultural dynamics, observing a dramatic shift toward an independent social orientation over the last 100 years in the U.S. For instance, researchers observed shifts toward independent themes in popular songs over time[52] and shifts in preferences toward more unique baby naming practices, suggesting growing independence.[53] More importantly, recent advances in computer-technology allowed for a massive-scale linguistic analysis of cultural change in such cultural products as books. With the Google Ngram project researchers were able to analyze word frequency in millions of American or British published books,[54] examining the change in frequency of independent versus interdependent words.[55] Indeed, different research groups were able to identify an increasing proportion of words that reflect independence.[56] Such advances provide a unique opportunity to model cultural change and enable us to tackle questions researchers on culture and cognition were not yet able to address. For instance, what are the speed and the magnitude of cultural change toward an independent social orientation in America? What factors accompany and facilitate such shifts toward independence over time? Addressing such questions with massive scale data provide a unique challenge for future research on culture and psychology.

Emic Versus Etic Perspectives on Culture and Psychology

Finally, one of the longest-standing challenges in research on culture and psychology deals with the methodological perspective researchers adopt at the onset of their scientific inquiry. Some researchers take a so-called *etic* perspective. When adopting an etic perspective, one attempts to describe the relationship between culture and psychology in terms of macro-level factors such as variations in economy or ecology, and culturally universal psychological concepts (e.g., trust or identity). Etic researchers tend to believe that studying one's own culture is difficult due to inability to interpret cultural processes impartially. Therefore, they attempt to reduce ethnocentric bias and reach objectivity by simultaneously sampling multiple cultures and studying cultures outside one's own. In this view, one needs to take a step back and become an outsider, because otherwise one would not be able to see the influence of different big picture factors (e.g., economic structure) on psychology. Such big picture factors are often taken for granted in one's own culture, yet by contrasting multiple cultures that differ in such factors, one may be able to detect their systematic influence on psychological processes. Moreover, sampling across multiple cultures allows etic researchers to examine how concepts that are arguably meaningful to all individuals (e.g., trust) manifest themselves in behavioral patterns across cultures. Typically, etic researchers conduct parallel measurement of an isolated construct in a standardized setting, with culture as an independent, quantifiable variable.

Other researchers take a so-called *emic* perspective. When adopting an emic perspective, one attempts to explore how culture influences psychological processes by examining the meaning of local customs and beliefs to the 'native' of this culture. That is, one is interested in the 'subjective' experience of the people living in a culture, and how these people perceive and explain aspects of the world around them (e.g., social norms). Emic researchers tend to believe that studying subjective experiences is central to understanding how culture and the mind influence each other,[57] and that it is impossible to understand how psychological processes manifest themselves in a given culture without accounting for the subjective component. Hence, emic researcher's key methodological tools include in-depth qualitative interviews with focus groups or other types of fieldwork on a single cultural group, in which interviewee reflects on issues raised by the researcher. Emic researchers criticize the etic idea of extracting and quantifying external factors contributing to cultural variations, pointing out that culture itself is never a truly independent variable. On the other hand, etic researchers criticize the emic approach, pointing out that people's personal view on why they behave the way they do is often inaccurate and their narrative self-reflections are more often biased than not.[58]

Etic versus emic approaches to culture and psychology have often led to selective ignorance of research produced within the other tradition.[59] This is unfortunate, because both approaches can clearly build on each other, as previously advocated by Berry[60] and Triandis.[57] For instance, the etic approach can allow for a large-scale comparison of different groups and it can be administered more efficiently on a large scale. A great deal of research on interdependent versus independent social orientation and holistic versus analytic cognitive style has been done in an etic tradition, comparing responses on questionnaires or standardized cognitive tests between individuals from two or more cultural groups. Some of such cross-cultural differences[61] instigated a number of in-depth emic studies of industrialized East Asian societies. These emic studies helped to understand why the industrial East Asian countries were endorsing an interdependent social orientation, which was inconsistent with the dominant theories of modernization of that time.[62] Similarly, emic studies are very important as an initial step in a cross-cultural project, because they can help to identify key components of the cross-cultural study, particularly when one knows little about the peculiarities of one or more cultures of interest.[57] An emic approach can further help etic researchers to create an ecologically valid situation, and thus reduce possible response biases discussed earlier. Though the exact nature of the synthesis between the etic and emic approaches is still up for debate, it seems reasonable to seek both etic insights by focusing on quantitative analyses across multiple cultures, as well as emic insights by exploring the meaning of behaviors within these cultures. The present overview suggests that recent work on social orientation and cognitive style started to do so, integrating etic and emic approaches in a meaningful way. Emerging research on within-cultural differences in social class uses both quantifiable indicators (e.g., level of education; etic component) and subjective meaning of one's own social status (emic component).[40] New studies on cultural change use quantitative methods with a focus on change in such external factors as education or urbanization, but they also emphasize the inter-generational change in meaning systems.[63] Yet, much of this work is still in the onset and it raises at least as many questions as it answers.

CONCLUSION

Questions about the role of culture for psychology have been around for a long time, and they have been approached both from an etic perspective

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BOX 1

CULTURAL NEUROSCIENCE

Cultural neuroscience is one of the emerging frontiers in studying culture, focusing on the dynamic interplays between culture and the brain. Cultural neuroscience is based on two premises: (1) cultural differences arise through socialization processes whereby individuals from different cultures habitually engage in culturally-sanctioned practices and (2) sustained experiences can cause functional and structural changes of one's brain.[68] Combining these two premises leads to a conclusion that cultural differences are embodied or *embrained*. That is, not only can culture influence the brain, but also the brain can play a significant role in sociocultural dynamics in which individuals navigate their cultural worlds.

As in other domains, independent versus interdependent social orientation and analytic versus holistic cognitive style also dominate this emerging literature of cultural neuroscience. For example, Zhu and colleagues[69] found that there was no difference in brain representation between the self and important others (e.g., mother) for Chinese participants but not for American participants (i.e., increased activation in medial prefrontal cortex in self-reference judgments and mother reference judgments for Chinese & increased activation in mPFC only in self-reference judgments for Americans). Not only that, evidence is mounting that cultural differences in social orientation and cognitive style have neural bases as well as neural consequences. Cultural neurosciences can be a great area for future interdisciplinary research in studying culture in that it tackles the interaction between macro-processes like culture and micro-processes like the brain.

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of cross-cultural variation on psychological universals and an emic perspective of culture-specific characteristics.[64] Despite the long history of these questions, modern research on culture and psychology is more exciting than ever. In part, it is exciting because research on culture and psychology accumulated a wealth of systematic observations in cultural variations in independent versus interdependent social orientation and analytic versus holistic cognitive style, as well as the meaning of the respective constructs for a number of cultures. Yet, it is mostly exciting because many challenges still lie ahead, waiting to be

mastered. Some challenges require careful conceptual framework of the research phenomena: Is it mainly concerning a group level, and individual level or both? Other challenges involve integration of etic with emic approaches to culture, illustrated with new lines of research on social class and cultural change.

Though we focused on social orientation and cognitive style as main examples throughout this overview, we urge researchers to examine other cultural constructs, too. For instance, concepts such as tightness versus looseness, prevention-focus versus promotion-focus, and past versus future temporal focus show systematic variability across cultures and are distinct from social orientation and cognitive style.[65–67] Future efforts may be best invested in exploring the diversity of cultural constructs and relationship of these different processes to each other, rather than attributing every possible cultural difference back to the social orientation or cognitive style scales. Ultimately, the greatest challenge for the future research on culture and psychology lies in mastering the shift from identifying static cultural differences in isolated constructs toward the more dynamic view of the relationship across cultural and individual processes (Boxes 1 and 2).

BOX 2

CULTURAL VERSUS LANGUAGE EFFECTS

Researchers on culture and psychology often compare psychological processes among individuals from different cultures, yet cultures also differ in languages primarily spoken by their members. Language plays a critical role in cognitive development[70] and cognitive processing in general. Thus, one may wonder if the difference in psychological processes between cultures are due to differences in languages per se, rather than cultural difference in social orientation or cognitive style.

Recent cultural psychological research attempted to address this question. Simultaneously testing cultural and linguistic effects on cognition, researchers found effects of culture even after controlling for language effects.[71] Other studies examined how social orientation and cognitive style relate to each other across cultures from heterogeneous linguistic groups.[5] Researchers found that cultures that tend to be more interdependent in social orientation also tend to be more holistic in cognitive style, irrespective of linguistic regions. Together, these studies indicate that language differences alone may be insufficient to explain cultural variability in such dimensions as social orientation and cognitive style.

Moreover, it is noteworthy that language can be viewed both as a tool for disseminating cultural knowledge between individuals, but also as a product of culture on its own. For instance, in English, 'you' is used regardless of status and age differences between the speaker and the listener. However, in several languages from cultures with a predominantly interdependent social orientation, such as Korean, Russian or Japanese languages, there are many types of 'you' and people must use an appropriate form depending on the status and age of the speaker and the listener, as well as the situational context. Greater pronoun specificity in interdependently-oriented cultures may both facilitate greater context-orientation, suggesting that language difference drive cognitive differences. However, language differences may also be a functional product of cultural differences in levels of attention to the social context.[72] Because language is a product of culture, separating language from other aspects of culture effects may not always be meaningful.

NOTE

[a] Readers interested in the question how psychological processes influence the definition of culture may consult classic ethnographies by Renato Rosaldo or Katherine Ewing.

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