Chapter 20
Cultural Perspectives

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Psychological research has been developed mainly in Western cultures, based primarily on Western samples (Henrich, Heine, & Norenzayan, 2010; Rozin, 2001). A recent analysis of papers published in premier journals in psychology found that, overall, 98% of the first authors were at universities in Western or English-speaking countries and 95% of the samples were from such countries (Arnett, 2008). This suggests that psychological knowledge is built almost exclusively in countries that account for only 12% of the world’s population. Thus, it is an open question whether the knowledge gained through the investigation of this subsample of the world’s population can generalize to the entire human population. Over the past two decades, cross-cultural studies have suggested that many of the psychological processes that had been previously assumed to be universal are grounded in particular socio-cultural contexts and reflect certain cultural values or models (e.g., Fiske, Kitayama, Markus, & Nisbett, 1998; Markus & Kitayama, 1991; Triandis, 1989). For example, well-known psychological phenomena, such as fundamental attribution error and cognitive dissonance, have been shown to reflect models of the self prevalent in Western cultural contexts and found to be attenuated or nonexistent in other cultural contexts (e.g., Miller, 1984; Heine & Lehman, 2002).

The present chapter aims to provide an overview of studies on culture and psychology by reviewing evidence showing cultural differences in various psychological processes, as well as introducing theories and studies that examine processes underlying cultural differences. First, we provide a working definition of culture and its theoretical implications. Next, we review studies showing cultural differences in various psychological processes, including self-concepts, motivation, emotion, and cognition. Then, we outline multi-level processes underlying cultural differences.

What Is Culture?

Following the classic definitions provided by Redfield (1941) and Kroeber and Kluckhohn (1952) and echoed by cultural psychologists (Adams & Markus, 2004; Markus & Hamedani, 2007; Shweder, 2001), we define culture as follows: Culture is explicit and implicit patterns of historically derived and transmitted values and ideas that manifest in institutions, practices, and artifacts, which themselves are produced through behavior.
One feature of this definition is that it is assumed that there are some patterns in values and ideas that have been historically selected within each culture. Although there is a debate as to what extent culture can be considered a coherent system or should be considered a collection of elements (Chentsova-Dutton & Heath, 2009), the accumulating cross-cultural evidence suggests that there are some core values and ideas, such as independence or honor (Markus & Kitayama, 1991; Nisbett & Cohen, 1996), that characterize cultural patterns in a particular society. It is important to note that assuming the existence of such cultural patterns does not imply that all the members of the culture endorse the same values and ideas or that all the institutions, practices and artifacts are coherent with the cultural patterns. Core values and ideas are distributed in a cultural community, and thus some individuals are bound to be exposed to them more than other individuals are (Shweder, 2003). In addition, even though members of a cultural community sometimes do not personally endorse the values and ideas shared in their community, they are often aware of the existence of the shared values and ideas and are influenced by them (Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010).

Another characteristic is that culture is located both inside the head, such as values and ideas, and out there in the world, such as practices and institutions (Fiske et al., 1998; Markus & Kitayama, 1994). Among researchers who study culture, there are differences in the extent to which they focus mainly on what is inside the head or on both what is inside the head and out in the world. This has implications for how they try to identify sources underlying cultural differences in psychological processes. Researchers who focus on internalized values and ideas tend to identify sources in individual factors, such as personally held ideas or beliefs (Matsumoto & Yoo, 2006; Oysemman, Coon, & Kemmelmeier, 2002). On the other hand, researchers who focus on both values and their embodiment in institutions, practices, and artifacts tend to identify sources in contexts and environments. Among them, some researchers focus more on how distal-level situational factors, such as ecological, economic, and socio-structural factors, shape cultural differences (Oishi & Graham, 2010; Yamagishi & Yamagishi, 1994), whereas other researchers focus more on proximal-level situational factors, such as daily practices and interactions, and how such proximal-level situational factors and psychological processes mutually shape each other (Markus & Hamedani, 2007; Shweder, 1990).

A third important aspect is that culture is not defined in terms of ethnic or national identity of groups (e.g., European Americans, Japanese). Although culture is often operationalized in terms of ethnicity or nationality (which is the case for many of the studies discussed in this chapter), culture is not confined to such groups. To the extent that there are explicit and implicit patterns of historically derived and transmitted values and ideas that are embodied in institutions, practices, and artifacts, there is culture. More and more researchers are examining different forms of culture (for review, see A. Cohen, 2009), such as regional differences within a nation or a world region (e.g., northern and southern Italy, Knight & Nisbett, 2007; West Europeans and Central/East Europeans, Varum, Grossmann, Katuna, Nisbett, & Kitayama, 2008), religious groups (e.g., Protestants, Sanchez-Burks, 2002; Jews, Cohen & Rozin, 2001), and social class (e.g., Kraus, Pfiff, & Keltner, 2011; Snibbe & Markus, 2005; Stephens, Markus, & Townsend, 2007).

**Themes That Characterize Cultural Patterns**

Although researchers differ in factors on which they focus to explain cultural differences, there is some convergence in themes ("syndrome", Triandis, 1996, "model", Markus & Hamedani, 2007, or "ethos", Kitayama, Conway, Pietro-monaco, Park, & Plaut, 2010) that they use to characterize different patterns of values and ideas. Among various constructs, independent and interdependent self-construal (Kitayama, Duffy, & Uchida, 2007; Markus & Kitayama, 1991, 2010) and the related dimension of individualism and collectivism (Hofstede, 1980; Triandis, 1989, 1995) are probably the most widely examined constructs. In individualistic cultures (e.g., North America, Western Europe),
the priority is given to personal goals over collective goals. In such cultural contexts, the self is viewed as a bounded entity defined by its internal attributes and separate from social relationships (i.e., independent self-construal). The primary task of such an independent self is to express and realize one's unique internal attributes and pursue self-set goals. On the other hand, in collectivistic cultures (e.g., Japan, China, Korea), relatively more emphasis is given to collective goals. In such cultural contexts, the self is viewed as fundamentally embedded in social relationships (i.e., interdependent self-construal). The primary task of such an interdependent self is to fit-in and adjust to the social context (Morling, Kitayama, & Miyamoto, 2002).

Part of the reason why independence and interdependence (and individualism and collectivism) have been most extensively studied might be because they define the fundamental ways in which the self and others are related (Heine, 2008; Kitayama et al., 2007). At the same time, it is important to note that the models of independence and interdependence (and individualism and collectivism) have been developed, for the large part, based on the comparison of Western cultures with East Asian cultures. It is thus possible that independence and interdependence might be particularly relevant themes for those two cultures, more so than for other cultures. In fact, researchers who study multiple cultures have also proposed other constructs to capture cultural patterns. For examples, based on the responses collected across many countries around the world, Hofstede (1980) identified power distance, uncertainty avoidance, and masculinity, in addition to individualism-collectivism, as important cultural dimensions, and Triandis (1989, 1996) has also proposed tightness-looseness and vertical-horizontal dimensions as additional dimensions, which could be crossed with individualism-collectivism.

Whereas general themes (e.g., individualism and collectivism) that characterize patterns of values and ideas across cultures have been studied extensively, some researchers have also identified and examined more specific patterns of values and ideas that are prevalent in a given culture. For example, a culture of honor has been proposed to characterize patterns of values and ideas prevalent in Southern regions of the United States (D. Cohen, Nisbett, Bowdle, & Schwarz, 1996; Nisbett & Cohen, 1996) and the Protestant ethic has been suggested to characterize Calvinist Protestants' values and behaviors (Sanchez-Burks, 2002; Weber, 1904–1905/1958). In addition, recent studies have shown that dialectical beliefs are prevalent in East Asian cultures and manifest in ways of thinking and feeling (e.g., Miyamoto & Ma, 2011; Peng & Nisbett, 1999; Spencer-Rodgers, Williams, & Peng, 2010).

Methods

Examining psychological processes across cultures requires additional considerations beyond those required for examining psychological processes within a single culture. In this section, we will briefly discuss methodological issues associated with cross-cultural comparisons of psychological processes (for more extensive reviews of methods, see Cohen, 2007; Heine, 2008; Van de Vijver & Leung, 1997). It is important to note though that any single method is subject to certain shortcomings. One way to mitigate the shortcomings is to use more than one method to study the same question. The importance of multiple methods has been especially emphasized in cross-cultural research (Heine, 2008; Triandis, McCusker, & Hui, 1990) in part because of methodological challenges that are involved in cross-cultural comparisons that will be reviewed in this section.

Sample

The first step in conducting research is to determine which cultures to examine. The selection of cultures should be based on a cultural construct (e.g., independent and interdependent self-construal, frontier ethos) researchers assume underlies psychological processes of interest. Choosing cultures
that differ from each other on the critical cultural construct but are similar to each other in terms of other characteristics (e.g., economic development, modernization) makes it possible for researchers to link observed cultural differences in psychological processes to the critical cultural construct. In fact, many cross-cultural studies that use independent and interdependent self-construal as their guiding cultural construct compared Western cultures (e.g., North America, Western Europe) with East Asian cultures (e.g., Japan, Korea). This is partly because those two cultures vastly differ from each other in terms of independent and interdependent self-construal, though they are similar in terms of their level of economic development. At the same time, since cultures are not a randomly assigned variable in such cross-cultural comparisons, one cannot make a causal claim based only on cultural differences in psychological processes. Methods used to illuminate causes of cultural variations will be discussed later in this chapter (see section “Multi-level processes underlying cultural differences”).

Once researchers determine which cultures they should examine, they need to choose which population within each culture they should sample. Researchers typically try to sample populations across cultures that are matched as closely as possible to each other, so that any differences observed between populations can be attributed to the cultural background. For example, by comparing college undergraduates across cultures, researchers generally assume that the samples are matched in terms of background characteristics, such as age and educational background. However, whether the findings found among a certain sample can generalize to the general population in each culture is an open question. To make such a generalization, one needs to have a probability sample from each culture. Although probability samples are harder to obtain and rare in cross-cultural studies, there are few surveys that recruited probability samples across cultures and made their data publicly available (e.g., World Values Survey; Midlife in the United States and in Japan; both are available from ICPSR, www.icpsr.umich.edu).

Translation

If researchers want to administer a study in more than one language, they need to translate materials. One of the common methods of translation in cross-cultural research is back translation (Brislin, 1980). In back translation, a researcher prepares materials in one language (e.g., English). A bilingual translates the materials into another language (e.g., Japanese), and a second bilingual translates the materials back into the original language (e.g., English). The researcher compares the initial materials prepared in the original language with the materials back-translated into the original language (e.g., both English) to see if there are any discrepancies. Another method of translation is the committee approach (Brislin) whereby a group of bilinguals translates materials into another language and compares their translations for accuracy, eventually discussing and resolving discrepancies. In either way, translation works best when materials in the original language can be modified to allow a natural translation into the second language. In contrast, when materials prepared in the original language cannot be modified, the translated materials often appear awkward or unnatural in the second language.

In addition to translating materials into another language, researchers also need to consider how the situations created in the study (e.g., scenarios, experimental setting, etc.) are transferable and whether they have equivalent meanings across cultural contexts. For example, imagine that researchers are interested in examining what behavioral responses people have when they are angry, and researchers create a scenario to invoke the feeling of anger in respondents across cultures. In the scenario, a student is criticized by a teacher in front of the whole class, and respondents are asked to take the perspective of the student and respond with what they would do in the situation. Although such a scenario might provoke the feeling of anger in the U.S., it may mainly induce the feeling of shame in East Asian cultural contexts because of Asians’ common self-critical tendency (Heine &
Hamamura, 2007). If this is the case, researchers might end up comparing Americans’ reactions to anger and Asians’ reactions to shame. Instead, when making the scenarios, it is ideal to first sample situations that elicit the construct of interest (i.e., anger in this example) in each culture and base the scenarios on the situations that are commonly found across cultures, or conduct a pilot test to ensure that the situation activates the same construct across cultures.

**Measures**

Cross-cultural research often involves explicit self-report measures, both close-ended and open-ended questions. However, there are various issues associated with using self-report measures in cross-cultural studies. First, it is known that responses to self-report scales can be influenced by various response biases (Heine, 2008). For example, when making subjective judgments, respondents often compare themselves with people around them, thus each individual may be using a different reference group (i.e., reference-group effect; Heine, Lehman, Peng, & Greenholtz, 2002; Peng, Nisbett, & Wong, 1997). If respondents compare themselves with people in their own cultures, a comparison of the ratings across cultures is not necessary valid because the ratings are based on different reference groups. Second, there is a more fundamental issue associated with a self-report measure that asks respondents to reflect on their own thought processes. That is, people are not always aware of their own cognitive processes that underlie their behavior (Nisbett & Wilson, 1977) and thus may not be able to accurately report them.

Because of these limitations of self-report measures, the importance of online behavioral measures, such as behavioral reactions to an experimental manipulation or physiological reactions to stimuli, has been emphasized (Kitayama, 2002). As will be reviewed in the following section (“Cultural differences in psychological processes”), researchers have used various behavioral measures in the laboratory setting, such as participants’ persistence duration on tasks (e.g., Iyengar & Lepper, 1999) or recognition of objects (e.g., Masada & Nisbett, 2001). Furthermore, more and more studies are showing cultural differences using physiological measures, such as eye-movement tracking (e.g., Chua, Boland, & Nisbett, 2005) or functional magnetic resonance image (e.g., Zhu, Zhang, Fan, & Han, 2007).

In addition to examining respondents’ psychological processes across cultures, cultural psychologists often compare cultural products across cultures. According to our definition and conceptualization of culture, cultural products are the vehicles of cultural ideas and beliefs: cultural products shape and are shaped by psychological processes of individuals who are embedded in cultural contexts (Markus & Hamedani, 2007; Shweder, 1990). Therefore, analysis of cultural products provides important evidence for not only collective manifestation of cultural ideas and beliefs, but also potential sources of such cultural ideas and beliefs. Cultural differences are shown in various cultural products (see Morling & Lamoreaux, 2008, for a meta-analysis), such as mass media coverage (Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006), advertisements (Kim & Markus, 1999), or even townscapes (Miyamoto, Nisbett, & Masuda, 2006), which will be explained more in a later section (see section “Multi-level processes underlying cultural differences”).

**Cultural Differences in Psychological Processes**

In this section, we will provide a brief overview of evidence demonstrating cultural differences in psychological processes, by focusing on self-concepts, motivation, emotion, and cognition. The majority of the studies reviewed in this section focus on comparisons between East Asian cultures (e.g., Chinese, Koreans, Japanese, or Asians Americans) and Western cultures (e.g., Americans,
Canadians, Western Europeans, or Australians) for the reasons specified in the Methods section. It is important to note, though, that there is also growing evidence examining cultures from other regions of the world (e.g., Russia, Grossmann & Kross, 2010; West Africa, Adams, 2005; Latin-America, Holloway, Waldrip, & Ickes, 2009), as well as other forms of cultures (e.g., region, religion, social class). Following how culture is typically operationalized in cross-cultural studies, and in consideration of space limitations, we refer to participants’ culture using ethnic or national identity terms. Furthermore, we often use the shortened term “American” to refer to those members of the culture consisting of people of U.S. nationality who are generally of European descent (and use “European American” when this group is compared to “Asian Americans”).

**Self-Concepts and Knowledge**

One of the most basic ways which psychological processes differ across cultures is in how people view themselves. This is a major foundational theme for much cultural research, as self-construal serves as a basis through which people relate to their social worlds (Markus, 1977; Markus & Kitayama, 1991, 2010).

**Self-Representations**

A long line of work provides evidence for cultural variation in the view of the self, on the one hand viewed as consisting of stable internal attributes, and on the other hand, viewed as adjustable to context. In several studies utilizing the Twenty Statements Task (TST), whereby participants provide 20 responses to the open-ended prompt “I am”, North Americans described themselves with relatively abstract, context-free traits (e.g., “I am easygoing”) whereas Japanese described themselves more often in terms of their social roles (e.g., “I am a college student”) or context-dependent traits (e.g., “I am easygoing with my friends”). These studies suggest that Americans hold self-concepts consisting of stable internal attributes, whereas Japanese hold self-concepts that include social roles and vary depending on the context (Bond & Cheung, 1983; Cousins, 1989). Research employing a modified version of the TST showed the same differences in self-concept patterns in American and Chinese elementary school children (Wang, 2004) suggesting these culturally-modeled self-concept patterns emerge early in life.

Furthermore, there is neuroscientific evidence for internalization of the independent self concept in Western cultures and the interdependent self concept in Eastern Cultures. Chinese and Westerners showed stronger activation of the medial prefrontal cortex (MPFC), the area known to be involved in self-representations, when making trait judgments about the self than when making judgments about a non-close other (i.e., a public figure) (Zhu et al., 2007). However, only the Chinese showed stronger activation of the MPFC in trait judgments about a close other (i.e. their mothers) than the non-close other, pointing to similar activation pattern for the self and close others for Chinese. It appears that the models of the independent self in the West and the interdependent self in the East may be internalized in the neurological system.

One potential consequence of the self-concept variation across cultures is in the different perspectives from which people view themselves. Theorists suggest (Mead, 1934; A. Smith, 1759/1984) that all “social beings” view themselves from the third person perspective in some instances, and in so doing, learn self-control. However, other research suggests that those from Eastern cultures, with interdependent selves requiring careful attention to social norms to maintain harmony, view themselves more often from the third person perspective than independent Westerners do. Researchers have found that, when recalling situations in which they were the central focus (e.g., being in an accident, giving a
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presentation), North Americans remembered situations more from the first person perspective than Asians did, whereas Asians remembered the situations from the third-person perspective more than the North Americans did (D. Cohen & Gunz, 2002; D. Cohen, Hoshino-Browne, & Leung, 2007).

Another potential consequence of this variation in self-representation is in-group identification and associated group processes. Social identity theory (e.g., Tajfel & Turner, 1979, 1986) is a classic theory of group behavior; it suggests that people identify so closely with the in-group that they do not distinguish between the self and the in-group in their representations. This depersonalization phenomenon has been found to account for many group behaviors, at least in Western cultures, including in-group loyalty. It may appear that this phenomenon should hold across Western and Eastern cultures, with Easterners possibly relating more closely to their in-group so they perceive in-group as an even more depersonalized entity. However, Yuki (2003) proposed that, in actuality, the in-group is represented differently across cultures. Consistent with social identity theory, Westerners perceive the in-group as a depersonalized unit. Alternately, Easterners perceive the in-group as consisting of a network of interrelated individuals. In fact, Yuki found that Japanese based their loyalty and identification to the in-group on an understanding of intragroup relational structures and personal connectedness, whereas Americans additionally based their loyalty and identification with in-group on perceived homogeneity of the in-group, with the latter being more consistent with the social identity theory. Furthermore, researchers (Yuki, Maddux, Brewer, & Takemura, 2005) found that when participants had to judge the extent to which they trust strangers in ambiguous situations, Americans based their levels of trust more on categorical membership in groups, whereas Japanese additionally based trust more on potential for relational connection.

Self-Consistency

Another aspect of the self-concept that has been extensively examined is the desire for the self-concept to remain consistent. Classic social psychology research has presumed that remaining consistent is a major human goal (Abelson et al., 1968). However, the cross-cultural studies on self-representations discussed above suggest that whereas Americans do indeed tend to hold stable self-concepts with attributes assumed consistent across contexts, the Japanese seem to link their attributes with social context, suggesting a more variable, less-consistent self-concept. Furthermore, other researchers found that when Japanese participants completed the TST in one of four manipulated situations (i.e., alone, paired with a peer, in a large group of peers, or alone with someone of higher status), they showed more variation in their self-descriptions they provided across the situations than the American participants did (Kanagawa, Cross, & Markus, 2001; see also Suh, 2002).

Though the culmination of work suggests that East Asians tend to show less self-consistency, researchers examined another form of self-consistency (English & Chen, 2007). In addition to self-consistency across relationships, these researchers also examined self-consistency within relationships over time. Although East Asian Americans’ self-views were less consistent across relationships than European Americans’ self-views, East Asian Americans’ and European Americans’ self-views within two different close relationships (e.g., friends, parents) were equally, highly consistent within each relationship over time. Thus, it appears that, for East Asians, self-consistency takes a form of within-relationship, over time, stability, rather than across-relationship stability.

Researchers examined whether self-consistency can extend to consistency in personal preferences over time (Wilken, Miyamoto, & Uchida, 2011). These researchers found that Americans report being more consistent in their personal preferences (e.g., music, hairstyles, actors) over time than Japanese. In addition, the analyses of both surveys and nationally published rankings of consumer goods and baby names showed that Americans are more consistent in collective-level preferences (i.e., trends) than Japanese. Thus cultural differences in consistency can be found in preference consistency at both individual and collective levels.
Motivation

One of the central aims of social psychology is to understand how social factors influence and motivate human behavior. Therefore, social motivation phenomena have been examined for decades and some basic human motivation understandings have been proposed (e.g., Festinger, 1957). Of course, most of this work was sourced in Western cultures and cross-cultural researchers have more recently begun to reveal how these motivation phenomena are grounded in Western cultural contexts and may or may not apply across cultures, or may manifest differently.

Cognitive Dissonance

Cognitive dissonance is one of the most classic social psychology phenomena. This is a situation whereby a state of mental discomfort is induced when two personal elements are at odds with each other, such as one’s self-view and one’s behavior (e.g., Brehm, 1956; Festinger, 1957). When this state of mental discomfort is aroused, people are motivated to reduce that dissonance. For example, in a typical paradigm used to study cognitive dissonance (Brehm), dissonance is induced through requiring participants to choose one of two similarly preferable objects. The dissonance is produced presumably because positive aspects of the rejected object and negative aspects of the chosen object are at odds with participants’ behavior (i.e., choice). Previous studies conducted in Western cultures have repeatedly shown that participants reduce their dissonance by increasing preference for the chosen object and/or decreasing preference for the rejected object after making the choice.

Heine and Lehman (2002) replicated the phenomenon with Canadian participants, but found that Japanese participants did not engage in dissonance reduction, suggesting that those with interdependent self-concepts, which do not require displaying stable, consistent attributes, may not experience cognitive dissonance. However, other research suggests that those with interdependent self-concepts do experience dissonance in situations more threatening to the interdependent self-concept than the independent self-concept. Researchers found that Japanese showed dissonance reduction when they were asked to think about preferences of a “friend” (i.e., a meaningful other) in addition to thinking about their own preferences (Kitayama, Snibbe, Markus, & Suzuki, 2004). Americans in the same paradigm, showed evidence of equal levels of dissonance regardless of whether or not a meaningful other was primed. It appears that the interdependent self can be induced into a state of dissonance when the possibility of judgment by an important other is made salient, but that such salience does not affect the independent self’s dissonance levels. Furthermore, other researchers found that those holding interdependent self-construals (Asian Canadians and Japanese) were more threatened, and thus showed evidence of dissonance, when concerned about making wrong choices for close others, but not when concerned about making wrong choices for themselves (Hoshino-Browne et al., 2005). Alternately, Americans showed the opposite pattern: dissonance ensued when making choices for themselves, but not when making choices for close others.

Adjusting Versus Influencing

Theories and research developed in Western cultures have stressed the importance of exerting personal control over one’s environment (Bandura, 1977; DeCharms, 1968). At the same time, researchers have also suggested that people not only try to influence the environment to fit their goals and wishes, but also try to adjust themselves to fit the circumstances (Rothbaum, Weisz, & Snyder, 1982), and that different cultures place different levels of emphasis on each of these behavioral approaches (Weisz, Rothbaum & Blackburn, 1984). For example, whereas Western mental health therapies tend to emphasize modifying realities to fit one’s wishes, Morita therapy developed in Japan emphasizes
accepting realities and modifying one’s perspective on them (Weisz et al., 1984). Reflecting such different cultural practices, research has shown that North American daily contexts provide more situations to influence the environment, whereas Japanese daily contexts provide more situations that involve adjustment (Morling et al., 2002).

Chronic exposure to situations emphasizing different levels of influence and adjustment may lead to differences in basic motivation to adjust to other people’s preferences or to follow one’s unique preference. For example, researchers have shown that when given choices, whereas Asians more often select objects in the majority, Americans more often select unique objects (Kim & Markus, 1999). Thus Asians seem to prefer to adjust to the majority’s preferences, whereas Americans seem to prefer to act based on their own unique preferences. In fact, a large meta-analysis of conformity studies (based on Asch’s classic paradigm, Asch, 1951, 1956) conducted across 17 countries revealed that those of collectivistic countries showed more conformity tendencies than those of individualistic countries (Bond & Smith, 1996).

**Intrinsic Motivation**

Traditional work on intrinsic motivation has shown that personal choice is intrinsically motivating (Deci, 1981; Deci & Ryan, 1985). This freedom of choice has been considered motivating, in part through satisfying a sense of control over one’s environment (e.g., Rotter, 1966). Given the higher emphasis on the influence motive for Westerners, with whom this work was primarily based, this makes sense. However, with the higher emphasis of the adjustment motive in Eastern cultures, personal choice may be less important. Cross-cultural researchers have found evidence for just that. European American and Asian American elementary school children were either asked to make personal choices regarding an activity in which to participate, or assigned an activity based on their mothers’ choices (Iyengar & Lepper, 1999). American children persisted longer in the personal choice condition, and the Asian Americans persisted longer in the mother-choice condition. This work suggests that personal choice is a more intrinsically motivating factor for Westerners, whereas a close other’s choice is a more intrinsically motivating factor for Easterners.

**Self-Improvement Versus Self-Enhancement**

Years of studies have provided evidence that humans are motivated and perform best when they believe in themselves (e.g., Bandura, 1982; Taylor & Brown, 1988). This would be expected for those holding independent self-construals, particularly if the attributes of such selves are believed to be unchangeable (Heine et al., 2001); this inflexibility of attributes is likely to motivate a need to view those attributes positively. Alternately, in the interdependent model, the self is seen as more context-dependent and malleable, thus those subscribing to this sense of self likely believe that the self can be improved (e.g., Chit, Hong, & Dweck, 1997). Heine and colleagues empirically tested the motivation implications of these different belief systems—the independent belief of the self as consisting of unchangeable personal attributes, and the interdependent belief of the self as changeable. European Canadian and Japanese participants were given a task varying in difficulty level: one that would invariably result in failure, and one that would result in success. After completing the task and receiving failure or success feedback, participants were left alone with another such task (as an optional activity) and their persistence on this task was measured. Canadians persisted longer after successful feedback than failure feedback, suggesting positive feedback motivated them. However, the Japanese persisted longer in the failure condition than in the success condition, suggesting negative feedback motivated them. These results propose that Westerners are more motivated by self-enhancement opportunities, whereas Easterners are more motivated by self-improvement opportunities.
Emotion

Emotion is one of the areas where universality and cultural variations have been most heatedly debated. Since Darwin's argument on the evolutionary basis of human emotions (Darwin, 1872), the universality of basic emotions has been extensively examined (Ekman, 1992). This universality has been most typically studied in facial expression of emotions. In these studies, respondents from different cultures are presented with photos of faces expressing different basic emotions (e.g., anger, happiness) and are asked to choose an emotion concept that goes with each photo. The findings have generally shown that people can associate facial expressions with emotion concepts at above chance level, even in a preliterate culture that has minimum exposure to Western media, thus suggesting that there are some basic emotions that can be universally recognized from facial expressions (Ekman, Sorenson, & Friesen, 1969; Izard, 1971; but also see Russell, 1994). On the other hand, researchers who examine cultural differences in ideas and beliefs about emotions have found cultural differences in other aspects of emotion. In this section, we will review three particular types of cultural beliefs and ideas about emotions and how they are associated with emotional experience.

Relationship-Based Versus Individual-Based Models of Emotions

How the self is construed in a certain culture may have consequences on how emotions are viewed (Markus & Kitayama, 1991). Specifically, in independent cultural contexts, emotions might be perceived to be primarily individual phenomena that derive from a person's internal subjective feelings, whereas in interdependent cultural contexts, emotions might be considered to be primarily social phenomena that rest on a person's relationships (Chentsova-Dutton & Tsai, 2010; Mesquita, 2001; Uchida, Townsend, Markus, & Bergsieber, 2009). Supporting this contention, Kitayama and his colleagues have demonstrated cultural differences in the kinds of emotions people experience (Kitayama, Markus, & Kurokawa, 2000; Kitayama, Mesquita, & Karasawa, 2006). They focused on the distinction between socially engaging and disengaging emotions; engaging emotions are the kinds of emotions that foster or regain social interdependence (e.g., friendly feelings, respect, guilt, shame), whereas disengaging emotions are the kinds of emotions that foster or regain one's independence from others (e.g., pride, superiority, frustration, anger). Across both naturally occurring situations and a controlled set of situations, Japanese respondents reported experiencing engaging emotions more intensely than American respondents did, whereas American respondents reported experiencing disengaging emotions more intensely than Japanese respondents did (Kitayama, Mesquita, et al.).

Different models of emotions are reflected not only in what kind of emotions people experience, but also in when people experience emotions. In interdependent cultural contexts, emotions should be more likely to occur when a situation has implications for social relationships. In contrast, in independent cultural contexts, emotions should be more likely to occur in a situation where the self is the primary focus. Consistent with these predictions, researchers (Chentsova-Dutton & Tsai, 2010) found that European American respondents reported experiencing more intense positive emotional reactions than Asian American respondents did after describing their own personalities and past experiences. In contrast, Asian American respondents reported experiencing more intense positive emotional reactions to positive stimuli (i.e., an amusing film clip and pleasant music) than European American respondents did after describing their family members' personalities and past experiences (see also Uchida et al., 2006).

Dialectical Versus Hedonic Cultural Scripts About Positive and Negative Emotions

Different cultures have different cultural scripts about how positive and negative emotions should be experienced and combined. East Asian cultures have historically emphasized dialecticism, which is characterized by a belief that reality is constantly changing and a tolerance of contradictions by
finding the “middle way” (Peng & Nisbett, 1999). Reflecting this dialecticism, there is a cultural script in Eastern cultures, which emphasizes seeking a middle way by experiencing a balance between positive and negative emotions (Leu et al., 2010; Miyamoto & Ma, 2011; Miyamoto, Uchida, & Ellsworth, 2010). On the other hand, in Western cultures, experiencing and showing positive emotions, such as cheerfulness, is valued and emphasized, whereas experiencing and showing negative emotions, such as sadness or distress, is discouraged (Bastian et al., 2012; Kotchemidova, 2005). Thus, in Western cultures, there seems to be a cultural script to maintain or increase positive emotions and to avoid negative emotions.

These different cultural scripts are also evident in how people view emotions. Although positive emotions are generally perceived to be more desirable than negative emotions across cultures, positive emotions are perceived to be more desirable and negative emotions are perceived to be more undesirable in Western cultures than in Eastern cultures (Bastian et al., 2012; Eid & Diener, 2001). Cultural scripts are also reflected in how people view happiness (Uchida & Kitayama, 2009). When asked to describe features of happiness, Americans mainly focus on positive aspects of happiness, such as positive hedonic experience. On the other hand, Japanese also refer to negative aspects of happiness as well, such as the transitory nature of happiness.

Hochschild (1979) suggested that people utilize cognitive management strategies to influence the emotions they experience, not just display, based on socially established norms, or feeling rules. If socially shared norms influence how people manage their emotions, cultural scripts may also guide how people manage their emotions. Specifically, due to cultural scripts involving dialecticism, Easterners might be less likely to maintain or up-regulate their positive emotions after experiencing a pleasant event. In fact, Japanese are more likely than Americans to down-regulate their positive emotions after experiencing a pleasant event and cultural differences are mediated by dialectical beliefs about positive emotions (Miyamoto & Ma, 2011).

Repeated employment of different emotion regulation strategies may result in cultural differences in emotional experiences. When judging emotional experiences over time, Americans show strong negative correlations between positive and negative emotions, suggesting that positive and negative emotions rarely co-exist for Americans, whereas East Asians tend to show weaker negative, or even positive correlations between the two, suggesting that positive and negative emotions may be more likely to co-exist for East Asians (Baggozzi, Wong, & Yi, 1999; Kitayama et al., 2000). Furthermore, a dialectical way of experiencing positive and negative emotions has also been associated with better health profiles in Japan than in the U.S., pointing out the possibility that an emotional style which fits the cultural script may be functionally adaptive (Miyamoto & Ryff, 2011).

Ideal Affect and Low and High Arousal Emotions

Cultural differences also exist in the extent to which people ideally want to feel high-arousal positive states, such as excitement and elevation, or low-arousal positive states, such as calmness or peacefulness (Tsai, 2007; Tsai, Krutson, & Fung, 2006). By asking participants to rate how often they would ideally like to feel various states (i.e., ideal affect), Tsai and her colleagues have shown that Americans are more likely than East Asians to value high-arousal positive states, whereas East Asians are more likely than Americans to value low-arousal positive states. Such cultural differences are shown to be partly rooted in religious backgrounds of each culture. Whereas Buddhism is a dominant religion in many East Asian cultures, Christianity is a dominant religion in many Western cultures. These different religions encourage different ideals; Classic Christian texts (e.g., Gospels) contain more statements endorsing high-arousal positive states (e.g., “Be strong”) than classic Buddhist texts (e.g., Lotus Sutra) do (Tsai, Miao, & Seppala, 2007). Furthermore, reflecting such differences in religious texts, Christian practitioners value high-arousal positive states more and low-arousal positive states less than Buddhist practitioners, across both European American and Asian American groups (Tsai, Maio, et al.).
Cognition

Cultural influences on cognition have been explored for more than a century. Early studies on visual illusion found that Western groups who lived in highly carpentered environments were more susceptible to the Müller-Lyer illusion than non-Western groups who lived in less carpentered environments (Rivers, 1905; Segall, Campbell, & Herskovits, 1966), suggesting that the exposure to carpentered environments underlies the Müller-Lyer illusion. These studies were influential because they demonstrated the power of cultural and ecological environments in shaping basic visual perception.

Other researchers have suggested that there are systematic differences in cognitive styles across cultures (Nisbett, 2003; Nisbett & Miyamoto 2005; Nisbett, Peng, Choi, & Norenzayan, 2001). In independent cultural contexts, people tend to focus on a focal object and their goals with respect to it without being overly constrained by the surrounding context or others’ demands. In interdependent cultural contexts, on the other hand, people tend to attend to relationships and to the context. The former style of cognition has been termed *analytic* or field-independent, whereas the latter style of cognition has been termed *holistic* or field-dependent. These cognitive styles have been demonstrated in various cognitive processes, including attention, categorization, attribution, and communication.

Attention and Perception

Evidence showing cultural differences in how people attend to focal versus contextual information has been rapidly accumulating over the past decade. In an illustrative study, Japanese and American participants watched animated video clips of underwater scenes which contained focal fish and background objects (Mesuda & Nisbett, 2001). When asked to describe what they saw in the scenes, Japanese were more likely than Americans to refer to the background and to relationships between focal fish and the background. Such cultural differences in attentional styles have also been observed at the level of eye movements. When viewing pictures containing a focal object and its background (e.g., a tiger in a jungle; a happy-looking person surrounded by sad-looking people), East Asians were more likely than Americans to make saccades (i.e., rapid, ballistic eye movements) to background objects, whereas Americans were more likely than East Asians to fixate on the focal object (Chua et al., 2005; Masuda et al., 2008).

Researchers have also developed visual tasks to measure attentional styles with simple geometric figures. For example, the Framed-Line Task (Kitayama, Duffy, Kawamura, & Larsen, 2003) presents participants with a square frame with a line in it. The task measures the ability to either ignore or incorporate contextual information (i.e., the square frame) when perceiving a focal object (i.e., the line). Americans tend to perform better than Japanese when the task requires them to remember the length of the focal line while ignoring the contextual frame, whereas Japanese tend to perform better than Americans when the task requires them to remember the length of the focal line while incorporating the size of contextual frame.

Categorization

Cultural differences in visual attention to contextual information can be reflected in how people use contextual information when categorizing objects. To examine cultural differences in categorization, previous studies have used a triad categorization task, in which participants are presented with three objects (e.g., a rabbit, a carrot, an eggplant) and asked to choose the two that are mostly closely related (Ji, Zhang, & Nisbett, 2004). Chinese participants were more likely than American participants to group on the basis of thematic relations (e.g., grouping a rabbit and a carrot, because rabbits eat
carrots), whereas American participants were more likely than Chinese participants to group on the basis of categorical relations (e.g., grouping a carrot and an eggplant, because carrots and eggplants are both vegetables).

If Americans rely more on categorical rules to group objects, they may also be more likely to rely on a formal, unidimensional rule to group objects compared to East Asians. In one study, participants were presented with a target object (e.g., flower) and two groups of four objects, and then asked to judge to which group the target object was most similar (Norenzayan, Smith, Kim, & Nisbett, 2002). All members of one group shared a single feature (e.g., shape of the stem) with the target object, whereas all members of the other group shared a larger number of features (e.g., shape of petals, number of leaves) with the target object, though no single feature was shared by all members. The results showed that Americans were more likely than East Asians to choose the former group, which indicates that they were relying on a unidimensional rule, whereas East Asians were more likely than Americans to choose the latter group, which indicates that they were relying more on overall family resemblance.

**Attribution**

How people interpret and attribute the causes of social events has been extensively studied in social psychology (Heider, 1958; Jones & Davis, 1965; Kelley, 1967). Because attention guides attribution, cultural differences in attention should lead to cultural differences in attribution. In fact, cross-cultural studies have suggested that the *fundamental attribution error* (Ross, 1977)—a tendency to overestimate the internal causes (e.g., personal disposition) and underestimate the external causes (e.g., situational forces) of behavior—is especially strong among Westerners, who tend to focus on focal objects. In an early demonstration of cultural differences in attribution, American and Asian Indian adults were asked to describe a behavior of a person they knew and to explain why the behavior was undertaken (Miller, 1984). American adults were more likely to attribute the behavior to general dispositions of the person than to contextual factors, thus demonstrating the fundamental attribution error, whereas Indian adults were more likely to attribute the behavior to contextual factors than to general dispositions. Similar cultural differences were replicated with American and Chinese participants using controlled stimuli (i.e., animated displays of fish behavior; Morris & Peng, 1994).

Such differences in causal attribution are reflected in the type of lexicon people use to describe a behavior. According to the linguistic category model (Semin & Fiedler, 1988), the use of verbs reflects spontaneously made situational inferences because verbs provide information about the situation (e.g., Jessica helps her friend), whereas the use of adjectives reflects spontaneously made dispositional inferences because adjectives provide information about the disposition of an actor that transcends situations (e.g., Jessica is helpful). In line with cultural differences in explicit attribution, researchers found that Japanese used more verbs and fewer adjectives than Italians when describing others (Maass, Karasawa, Politii, & Suga, 2006; for similar findings with Koreans and Australians, see Kashima, Kashima, Kim, & Gelfand, 2006). Moreover, in a memory task, Japanese were more likely to unintentionally transform adjectives into verbs, whereas Italians showed the opposite pattern. These findings suggest that situational inferences can occur spontaneously for Asians, whereas dispositional inferences can occur automatically for Westerners (for relevant findings with Latinos, see Zárate, Uleman, & Voils, 2001).

**Communication**

How people perceive, categorize, and reason may be closely connected to how people communicate. Recent research has illuminated significant differences across cultures in communication styles, particularly regarding the level of verbalization employed in communication. Anthropologists and
communication researchers (e.g., Gudykunst, Ting-Toomey, & Chua, 1988; Hall, 1976) suggested that there are a range of means used to communicate, with those of low-context cultures, such as those in the West, employing relatively verbal means, and those of high-context cultures, such as those in the East, employing relatively nonverbal means. Cross-culture research has provided evidence for such differences, and how they implicate where in communication attention is focused. One such study presented emotion-laden words (e.g., warm) in either a congruent (e.g., positive tone) or an incongruent (e.g., negative tone) vocal tone, and asked participants to judge either the nature of the meaning of the word or the valence of the vocal tone (Ishii, Reyes, & Kitayama, 2003). Japanese were more distracted by the tone in which words were spoken when making judgments regarding the meaning of the words, whereas Americans were more distracted by the meaning of the words when attempting to make judgments about the tone of the words. This suggests that the Japanese pay more attention to vocal tone (a non-verbal cue), whereas Americans pay more attention to verbal content.

More recently, researchers have been looking at how such disparate focus on verbal versus nonverbal content may have implications for relationship quality. For example, when presented with vignettes depicting married couples and friends employing different communication methods, Americans perceived the pairs communicating primarily verbally as having higher relationship quality, whereas East Asians and Japanese chose the pair communicating primarily nonverbally as having higher relationship quality (Eggen, Miyamoto, & Uchida, 2012).

Size of Cultural Differences

Taken together, a body of literature has demonstrated cultural differences in various psychological processes, such as self-concepts, motivation, emotion, and cognition. How large are such cultural differences? According to meta-analyses, the average effect size of East-West differences in self-enhancement across 91 comparisons was $d = 0.84$ (Heine & Hamamura, 2007) and the average effect size of East-West differences in cognition across 93 studies was $d = 0.56$ (Miyamoto, Talhelm, & Kitayama, 2008). Although there is no comprehensive meta-analysis that computed the effect size of cultural differences across all domains, these meta-analyses indicate that the magnitude of the cultural effect is moderate to large at least in the two domains (i.e., self-enhancement and cognition) that have been extensively examined.

Multi-level Processes Underlying Cultural Differences

Thus, there is a considerable amount of evidence documenting cultural differences in a wide range of psychological processes. However, the existence of cultural differences in psychological processes does not explain why there are such cultural differences. More and more researchers are examining various mechanisms underlying cultural differences. Here, we argue that it is important to consider multi-level processes underlying cultural differences. As our definition of culture suggests, culture does not exist either 'inside the head' or 'out there in the world', but exists in the interaction between factors from the two realms. Thus, it is important to identify sources underlying cultural differences at different levels of culture and, further, to explore the interaction between different levels.

Take an example of analytic vs. holistic cognition (Nisbett, 2003). How can we locate sources underlying cultural differences in analytic vs. holistic cognition? Some of the sources of cognitive differences probably lie in values and beliefs individuals hold (e.g., naïve theories about the world),
while other sources may also lie in the nature of proximal-level factors in which individuals are embedded (e.g., daily interactions, perceptual environments) or in distal-level factors in which proximal-level factors are, in turn, embedded (e.g., ecology, social structure). Furthermore, effects of a factor at one level may interact with one or more factors at another level, making it important to consider multiple levels simultaneously. In this section, we will provide an overview of different levels of sources underlying cultural differences and highlight the importance of taking a multi-level perspective to integrate different processes (Miyamoto, in press).

Individual Factors

Cultural themes, such as “independence”, are partly held and sustained by individuals and their actions. Such individuals’ values and ideas that reflect their cultures’ themes should be one set of the important sources of cultural differences in psychological processes. For example, as reviewed above, individuals living in Western cultural contexts are more likely to view themselves as defined by stable internal attributes and independent from contexts compared to individuals who live in East Asian cultural contexts (e.g., Cousins, 1989). Because self-concepts underlie various psychological processes (Markus, 1977), cultural differences in personally held views of the self may partly account for cultural differences in other psychological processes.

To test whether certain individual values or ideas that reflect cultural themes underlie cultural differences in psychological processes, two main approaches have been taken. One approach consists of experimentally manipulating values or ideas and examining their effects on the pertinent psychological processes; the other involves measuring individual values or ideas and examining whether they mediate cultural differences in the pertinent psychological processes.

Manipulating Core Values and Ideas

If endorsement of certain core cultural values or ideas is one of the sources of cultural differences in psychological processes, directly activating and inducing (i.e., “priming”) such values or ideas in individuals’ minds should lead to the same corresponding psychological processes. Such priming procedures could be used to activate not only declarative knowledge (e.g., concepts) but also procedural knowledge (e.g., ways of thinking; Bargh & Chartrand, 2000; E.R. Smith, 1994). In the priming procedure, researchers work with a critical construct that is proposed to underlie cultural differences in certain psychological processes. Participants are typically asked to first work on a task that activates the critical construct, and subsequently work on another (ostensibly unrelated) task. Researchers examine if the primed construct influences participants’ responses on the subsequent task. If those primed with the same construct produce the same responses that parallel cultural differences, it suggests that the primed construct could be a potential source of the cultural differences.

The cultural ideas that have been most frequently examined using the priming procedure are independent and interdependent self-construal or individualism and collectivism. Multiple procedures have been proposed to prime individualism and collectivism. For example, Traifimow, Triandis, and Goto (1991) asked participants to either think of what makes them different from their family and friends (i.e., individualism-primed condition), or think of what they have in common with their family and friends (i.e., collectivism-primed condition). Other researchers have also developed a way to prime individualism without explicitly asking participants to think about the self or others. Gardner, Gabriel, and Lee (1999) asked participants to read a paragraph and simply circle all of the pronouns...
appearing in the paragraph. In the individualism-primed condition, all the pronouns were first-person singular pronouns (I, my, me, mine), whereas in the collectivism-primed condition, all the pronouns were first-person plural pronouns (we, our, us, ours). These cultural priming tasks have been shown to influence various psychological processes, such as self-concepts, emotions, and cognitive styles (for a meta-analysis, see Oyserman & Lee, 2008).

Another type of priming procedure is bicultural priming. Bicultural priming relies on the fact that some individuals are bicultural (e.g., Asian Americans) and thus might have internalized two cultural knowledge systems (e.g., Asian and American cultural meaning systems), either of which can be primed with cultural cues. For example, after being exposed to Chinese cultural icons, such as a Chinese dragon, Hong Kong Chinese have been found to make more situational attributions (i.e., holistic cognition) than after being exposed to American cultural icons, such as the American flag (Hong, Morris, Chiu, & Benet-Martínez, 2000).

Although the priming procedure provides a way to test whether the primed construct causes a certain psychological response, one limitation of the priming procedure is that the existence of the priming effect does not prove that the primed construct actually is responsible for cultural differences in the psychological process of focus (D. Cohen, 2007). There is a possibility that cultural differences are driven by another factor. For example, even if participants who are primed with the feeling of hunger show an analytic attention style, cultural differences in attention styles are likely not due to the feeling of hunger. In addition, the existence of the priming effect in one context may not necessarily generalize to another context or different culture. In fact, research showed that the bicultural priming effects are moderated by social context (Wong & Hong, 2005). Nonetheless, the priming procedure provides a useful way to examine a causal link between a critical construct and psychological processes in a given context.

**Mediation by Core Values and Ideas**

Another way to attempt to show that personally held values and ideas underlie cultural differences in certain psychological processes is to measure the personally held values and ideas and test whether they mediate cultural differences in the pertinent psychological processes (Matsumoto & Yoo, 2006). In this approach, as in the priming procedure, researchers first identify a critical construct (e.g., individualism v. collectivism) that is supposed to underlie cultural differences in certain psychological processes (e.g., analytic and holistic cognition). Researchers then conduct a cross-cultural study, where they measure individual differences in the endorsement of the critical construct as well as the psychological processes of interest. Then, they examine whether the level of endorsement of the critical construct mediates cultural differences in the psychological processes, typically following the statistical procedure proposed by Baron and Kenny (1986).

This provides a persuasive way to show a source underlying cultural differences in a given psychological process. At the same time, there is a practical problem associated with this method. This method requires researchers to measure individual differences in personally held values or ideas, typically through explicit self-report measures of general cultural themes, such as the interdependent and independent self-construal scale (Singelis, 1994) or the individualism and collectivism scale (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). However, such explicit self-report measures that require participants to reflect on their personal endorsement of core cultural themes often fail to show the expected cultural differences (Oyserman et al., 2002). Such a failure might be partly due to the reference-group effect (Heine et al., 2002; Peng et al., 1997), as described above (see section “Methods”). Another reason why explicit self-report measures of core cultural themes sometimes fail to show cultural differences might be because such core cultural themes might be tacit and implicit (Bond, 2002; Kitayama, 2002). An alternative method to address this concern is the use of intersubjective perceptions rather than personally held beliefs, which is explained below.
Mediation by Intersubjective Beliefs

Whereas the above approach focuses on the role of personally held beliefs and values, some researchers have recently highlighted the role of intersubjective perceptions—beliefs and values that members of a culture perceive to be widespread in their culture (Chiu et al., 2010; Zou et al., 2009). This approach assumes that individuals perceive that certain beliefs and values are widely shared in a culture, and individuals’ actions are sometimes guided by these intersubjective beliefs and values, rather than by personal beliefs and values. For example, Zou and colleagues examined whether cultural differences in compliance are mediated by intersubjective beliefs about collectivism and individualism. Americans, who live in an individualistic culture, were more likely than Poles, who live in a collectivistic culture, to comply with a request when it was in line with their own past behavior, whereas Poles were more likely than Americans to comply with a request when it was in line with others’ behavior. More importantly, cultural differences in compliance were mediated by participants’ perception of their cultural members’ endorsement of collectivism-individualism, rather than participants’ own endorsement of collectivism-individualism.

The intersubjective approach locates the source of cultural differences not exclusively either inside the head of individuals or out in the world. Rather, it locates cultural differences in the intersection of them, by focusing on the role of individuals’ subjective perception of collective reality out in the world. Such attention to multi-level processes broadens approaches to the study of underlying mechanisms. A growing number of researchers are employing such an intersubjective approach to examine the sources of cultural differences (e.g., Gelfand et al., 2011; Schug, Yuki, & Maddux, 2010).

Distal-Level Situational Factors

Although showing how specific values and ideas underlie cultural differences in particular psychological processes can identify individual-level mechanisms, such evidence does not explain why there are cultural differences in such values and ideas and through what processes they influence individuals. Thus, some researchers examine how values and ideas derive from and manifest in institutions and practices, and try to identify sources underlying cultural differences in them. Here, we distinguish distal-level situational factors, such as ecological, economic, and socio-structural factors, that surround a society, from proximal-level situational factors, such as practices and artifacts, to which individuals are directly exposed and in which they are embedded (Fiske et al., 1998; Markus & Kitayama, 1994). We will first review distal-level factors that have been proposed to underlie cultural differences.

Ecological Threats

Recent studies have suggested that distal ecological threats, such as the extent to which infectious diseases have been prevalent in a society, underlie cultural differences in beliefs and values. By comparing more than fifty geographical regions across the world, researchers found that regions that have higher pathogen prevalence are more likely to endorse higher collectivism (Fincher, Thornhill, Murray, & Schaller, 2008). This is presumably because collectivism serves an anti-pathogen defense function by limiting exposure to out-group members, who might bring novel pathogens, and by increasing conformity to traditions and norms, which can buffer against pathogen transmission. Research that examined a larger number of ecological and historical threats (e.g., population density, resource scarcity, territorial conflicts, natural disasters, pathogen prevalence) across 33 nations also
found that nations that have experienced greater ecological and historical threats have stronger expectations to conform to norms (Gelfand et al., 2011). A recent study further showed that a link between historical pathogen prevalence and collectivism is mediated by genetic variations in serotonin transporter genes (Chiao & Blizinsky, 2010), pointing to a possibility that genetic selection might partly underlie cultural variations in collectivism.

**Economic Activities**

Ecological environments can give rise to different types of economic activities, which in turn lead to cultural variations. Dov Cohen and his colleagues (D. Cohen et al., 1996; Nisbett & Cohen, 1996) have shown that societies historically based on herding (e.g., Southern regions of the United States where the settlers came mainly from herding communities on the fringes of Britain) tend to endorse violence to protect one’s reputation and property (i.e., “culture of honor”) because one’s wealth can be easily stolen by others while law enforcement is inadequate to prevent theft in remote areas. Such values and ideas not only manifest in individuals’ beliefs and behaviors (e.g., higher aggression after insult), but are also encoded in the laws and social policies of southern states (e.g., looser gun control, less restricted self-defense laws).

Different types of economic activities have also been linked to conformity and processing of contextual information. Researchers compared three communities within Turkey that engage in different types of economic activities: farming, fishing, and herding (Uskul, Kitayama, & Nisbett, 2008). Farmers and fishermen, whose activities require close cooperation among the family members, were more likely to show a holistic cognitive style than were herders, whose activities require individual decision making and autonomy.

**Affluence and Social Class**

Affluence and availability of material resources have been suggested as one set of factors that foster individualistic values because they provide individuals with more freedom and less need to rely on others for survival (Triandis, 1995). Supporting this argument, cross-national comparisons have shown that the wealth of a country, measured by gross national product (i.e., GNP), is positively associated with individualism (Hofstede, 1980; Kashima & Kashima, 2003) and with higher levels of secular and self-expression values (Inglehart & Baker, 2000).

Even within the same country, people who live in different socioeconomic contexts have different amounts of material resources available to them. Such differences in socioeconomic status (SES) or social class might also lead to variations in psychological processes. Individuals from working-class backgrounds have been found to tend to value similarity to (rather than differentiation from) others compared to individuals from middle-class backgrounds (Stephens et al., 2007). In addition, compared to higher class individuals, lower class individuals use more nonverbal cues that signal social engagement during an interaction (e.g., head nods, laughs; Kraus & Keltner, 2009). SES contexts have been linked to cognitive styles as well. Compared to people with higher SES backgrounds, those with lower SES backgrounds are more likely to show a holistic cognitive style (Grossmann & Varnum, 2011; Kraus, Piff, & Keltner, 2009; Miyamoto & Ji, 2011; Na et al., 2010). Furthermore, Kohn indexed social class with occupational conditions and examined how occupational conditions are linked to various psychological processes. For example, jobs that allow occupational self-direction lead to cognitive functioning, including analytic cognitive processing, and a self-directed (i.e., independent) orientation to self and society (Kohn & Schooler, 1982)
Voluntary Settlement

Societies and regions rooted in a history of voluntary settlement have also been linked to development of independent cultural values (Kitayama et al., 2010). Voluntary settlement in a frontier, which is motivated by pursuit of personal wealth and freedom, has been theorized to foster social structures which place few restraints on individuals and promote independent agency (Turner, 1920). To examine the effects of voluntary settlement, Kitayama and his colleagues compared a voluntary settlement society in Japan (i.e., Hokkaido) with a non-voluntary settlement society in Japan (i.e., mainland). Those who were born in Hokkaido were more likely than those in mainland Japan to show an independent social orientation (indicated by association between happiness and personal achievement-related emotions) and an analytic pattern of cognition (Kitayama, Ishii, Imada, Takemura, & Ramaswamy, 2006). Furthermore, voluntary settlement seems to have led North American societies to be even more independent than Western European societies. North Americans showed a more independent social orientation and an analytic cognitive style compared to Western Europeans, who in turn showed a more independent social orientation and an analytic cognitive style than did Japanese (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009).

Mobility

The extent to which people freely move between relationships, groups, or locations within a society is another distal-level factor that underlies cultural values and ideas (Adams, 2005; Oishi, 2010; Schug et al., 2010; Yamagishi & Yamagishi, 1994). The mobility of a society has been linked to how people view and relate to others. Because trusting other people in general helps people move out of their existing relations to seek new opportunities, Yamagishi and Yamagishi showed that a sense of general trust toward others is higher in a high mobility society (i.e., the United States) than in a low mobility society (i.e., Japan). Furthermore, signaling one's commitment to a partner, such as disclosing one's secrets, might be more important in highly mobile communities because relationships may dissolve without active maintenance. Supporting this possibility, research showed that people were more likely to self-disclose to a close friend in the United States than in Japan, and this cultural difference was mediated by perceptions of the extent to which people in their community are mobile (Schug et al.).

In addition to societal-level mobility (i.e., how frequently people in one's community move), researchers have also linked individual-level mobility (i.e., how frequently one moves) to how people relate to others. Compared to students who had moved before attending college, students who had never moved showed more unconditional group identification with their college (Oishi, Ishii, & Lun, 2009). Furthermore, individual-level mobility has also been linked to how people view themselves. Students who had moved before attending college viewed personal selves (i.e., personality traits) to be more central to their self-descriptions than collective selves (i.e., group affiliations) were, whereas students who had not moved before attending college viewed both personal and collective selves to be equally central to their self-descriptions (Oishi, Lun, & Sherman, 2007).

Proximal-Level Situational Factors

Distal-level situational factors, such as ecological, economic, and socio-structural factors, influence the core values and ideas of a society, which are shared and embodied in proximal-level situational factors surrounding individuals in their daily lives, such as social interactions, practices, and artifacts (Fiske et al., 1998; Markus & Kitayama, 1994). By participating in and engaging with such
proximal-level situational factors, individuals attune their behavior to the affordances of the situations. Prolonged and repeated participation in and engagement with such factors may shape their habitual ways of behaving, thinking, and feeling. It is important to note that individuals are not mere passive recipients of situational influences. In order for proximal-level situational factors to exist and exert influence on individuals, individuals need to participate in them and sustain them. Situational and individual factors thus mutually shape and sustain each other (Fiske et al., 1998; Shweder, 1990). In this section, we will review proximal-level factors that have been found to underlie cultural differences and dynamic relationships between such proximal-level factors and psychological processes.

Cultural Differences in Products and Practices

Cultural ideas and beliefs are embodied in cultural products to which individuals are exposed in their daily lives (see Morling & Lamoreaux, 2008, for a meta-analysis). For example, different models of self are reflected in mass media coverage. When covering Olympic athletes, American mass media focused more on personal characteristics of athletes (e.g., athletic strength, personality), whereas Japanese mass media focused more on the athletes’ backgrounds and other people (e.g., previous experiences, encouragement from coaches; Markus et al., 2006). Different models of emotion are also reflected in cultural products, such as children’s storybooks. Reflecting culturally divergent models of ideal affect (Tsai et al., 2006), best-selling storybooks in the United States depicted larger smiles and more excited (as opposed to calm) expressions than best-selling storybooks in Taiwan (Tsai, Louie, Chen, & Uchida, 2007). Being repeatedly exposed to such cultural products may lead people to think and behave according to the models embodied in those products. Moreover, individuals are not only passively influenced by cultural products but also actively shape the products. When asked to take photographs or to draw landscape pictures, East Asians included a larger amount of context or background than Americans did (Masuda, Gonzalez, Kwan, & Nisbett, 2008).

Cultural ideas and beliefs are also embodied in parental practices. When talking with their children about past events, American mothers were more likely than Chinese mothers to engage in independently oriented conversation (e.g., talking about children’s personal preferences or judgments), whereas Chinese mothers were more likely than American mothers to engage in interdependently oriented conversation (e.g., talking about social moral standards and behavioral expectations; Wang, 2001). Cultural differences in parental practices were also found in the way mothers play with toys. Japanese mothers were more likely than American mothers to engage infants in social routines, such as greeting and exchange, whereas American mothers were more likely than Japanese mothers to label toys for infants (Fernald & Morikawa, 1993; Tamis-LeMonda, Bornstein, Cyphers, & Toda, 1992). American mothers’ emphasis on labeling objects could be said to lead infants to focus on objects, thus fostering analytic cognition, whereas Japanese mothers’ emphasis on social practices could direct infants’ attention to relationships or to the context in which an object is located, thus fostering holistic cognition.

Affordances

How do such culturally divergent products and practices shape psychological processes? When people are exposed to, and participate in, their specific cultures’ practices, people may attune their behavior to the affordance of such practices. Kitayama, Markus, Matsumoto, and Norasak-kunkit (1997) developed a situation sampling method to demonstrate such affordances. Building on previous findings which suggest that Americans tend to engage in more self-enhancement than Japanese do (for a review see Heine & Hamamura, 2007), they examined whether the tendency to self-enhance can be afforded by culturally specific situations. They first sampled situations from the United States and
Japan by asking American and Japanese participants to list situations in which their self-esteem increased or decreased. They then presented those situations to another group of American and Japanese participants and asked them to judge how their self-esteem would be affected in each situation. The results showed that situations sampled from United States afforded more self-enhancement than did situations sampled from Japan. These findings suggest that culturally-specific features of situations afford particular psychological processes.

Culturally divergent perceptual environments can also afford particular psychological processes. Miyamoto et al. (2006) reasoned that cultural differences in holistic and analytic cognitive styles may be partly afforded by cultural differences in the nature of perceptual environments. By randomly sampling townscapes in small, medium, and large cities in both Japan and the United States, they first showed that Japanese perceptual environments are more complex and ambiguous than American perceptual environments. Next, they exposed American and Japanese participants to either American or Japanese perceptual environments and measured their cognitive styles in a subsequent task. They found that participants who were exposed to Japanese perceptual environments showed more holistic cognitive performance compared to those participants who were exposed to American perceptual environments.

**Prolonged Exposure**

Exposure to culturally specific practices may not only afford certain responses in specific situations, but may also have long-term effects by shaping habitual ways of thinking and behaving. To examine the effect of prolonged exposure to cultural contexts, researchers have examined the developmental trajectory of cognitive styles. If extended exposure to cultural practices shapes children's habitual cognitive styles, cultural differences in cognitive styles should become larger as children grow older and gain more experiences in their divergent cultures. Developmental studies have provided supporting evidence of this process. Miller (1984) examined reasoning styles of both adults and children (ages 8, 11, and 15 years) in India and the U.S. Although the American adults showed more analytic reasoning styles than did the Indian adults, the cultural differences were smaller among 15- and 11-year-olds, and no cultural differences were observed among 8-year-olds. Interestingly, younger children in both cultures showed a more holistic reasoning style than an analytic reasoning style. Similar developmental patterns were observed for predictions of changes (Ji, 2008) as well as for perceptual processing (Duffy, Toriyama, Takaku, & Kitayama, 2009). Together, these various findings suggest that children start out with a relatively holistic cognitive style across cultures and that children increasingly acquire patterns of cognition consistent with their cultural backgrounds as they grow older and accumulate experiences in their cultural contexts.

On the other hand, evidence of how exposure to a new culture shapes psychological processes (i.e., acculturation) is surprisingly limited. Cross-sectional studies have generally shown that Asians who live in North America show tendencies that are in-between Asians who live in Asia and European Americans/Canadians (e.g., self-esteem, Heine, Lehman, Markus, & Kitayama, 1999; categorization, Norenzayan et al., 2002; perception, Kitayama et al., 2003). However, such findings may be partly driven by self-selection rather than by the effect of acculturation. There are only a few longitudinal studies that found changes in psychological processes over time (Heine & Lehman, 2004). The findings of these, together with studies that employed other methods such as cross-sectional methods, are mixed. Such lack of evidence for changes over time due to exposure to a new culture is in stark contrast to emerging evidence showing early developmental changes in culturally divergent cognitive processes. This may imply that there is something akin to a sensitive period in changing one's habitual psychological processes (Cheung, Chudek, & Heine, 2011; Minoura, 1992). Our research examined Asian international students longitudinally over their first year at the University of Wisconsin and found that although their attitude toward the host culture (e.g., preferences for American artifacts,
participation in American cultural traditions, desire to associate with Americans) did not change or slightly worsened over the course of the year, their self-construals (i.e., independent and interdependent self-construals) changed to fit the host culture (Eggen, Ma, & Miyamoto, 2012). Such findings suggest the possibility that there are particular domains which vary in level of susceptibility to change in response to exposure to new cultural environments.

Whereas developmental and acculturation studies show how prolonged exposure to cultural contexts in general can shape habitual ways of thinking, other researchers have focused on specific cultural practices, such as Oriental medicine training practices. Oriental medicine embodies core aspects of East Asian holistic thinking, such as attention to relations between parts and the whole, and an emphasis on maintaining balance. Engaging in the practices of Oriental medicine may foster holistic ways of thinking. In fact, Korean students of Oriental medicine showed a more holistic cognitive style than did those studying psychology (Koo & Choi, 2005). Furthermore, the longer the students trained in Oriental medicine, the more holistic their cognitive styles were.

**The Rocky Road from Distal-Level Situational Factors to Psychological Processes**

Distal-level situational factors, such as ecological, economic, and socio-structural factors, are generally considered to shape the core values and ideas of a society, which are embodied in proximal-level situational factors, which in turn influence individuals’ psychological processes (Fiske et al., 1998; Markus & Kitayama, 1994). This seems to suggest that distal-level situational factors are the ultimate cause of cultural differences in psychological processes of individuals. However, the relationships between distal-level situational factors and individuals’ psychological processes may not necessarily be deterministic. Part of this is due to the role of construal, or subjective meaning that actors attach to situational factors; the impact of “objective” situational factors depends on how actors construe their meaning (Ross & Nisbett, 1991). To predict the effect of a certain distal-level situational factor, one needs to know how the situational factor manifests in proximal-level situations and how the actors interpret it in relation to their goals, values, and beliefs. Furthermore, the individuals’ construals can be influenced by the existing cultural contexts in which the individuals and the situational factors are embedded. Thus, to understand how a situational factor influences psychological processes, it is imperative to examine how the situational factor is experienced and construed by individuals in each cultural context. The same situational factor may have divergent effects on psychological processes in different cultures, if people of the different cultures construe it differently. Particularly, several studies have shown that the effects of social structure on psychological processes sometimes depend on cultural context because existing cultural contexts provide culturally-specific meaning to the social structure.

For example, cohesiveness of social structure has been linked to attitudes toward violence, but the link depends on cultural context. As previously discussed, Southern regions of the United States have been characterized by a culture of honor (D. Cohen et al., 1996; Nisbett & Cohen, 1996). In Southern societies, where violence is collectively endorsed as a means to protect one’s honor against insult, people who are in close-knit traditional families are more likely to endorse honor-related violence compared to those who are not in close-knit families. In contrast, in Northern societies, people who are in more traditional nuclear families and who are closer to their families are less likely to endorse honor-related violence than those individuals who are not in such traditional family arrangements or who are less close to their families (D. Cohen & Vandello, 1998). Such patterns suggest that the close-knit, cohesive social structure can be associated with either more or less honor-related violence depending on the cultural context in which individuals and the social structures are embedded.

In addition, researchers who examine the effects of occupational conditions across cultures on psychological processes have found that, while some job characteristics (e.g., occupational...
self-direction) have the same effects across cultures, some are culturally contingent. Specifically, occupying higher hierarchical positions at work lead to greater authoritarian conservatism, greater idea conformity, and less personally responsible standards of morality in Japan (Naoi & Schooler, 1985), though there are no such effects of hierarchical positions in the United States (Kohn & Schooler, 1982). It is possible that those in positions of power may be especially likely to endorse such values in cultural contexts where conformity to social structure is valued, as it is in Japan, which indicates that the effects of power on psychological processes may depend on cultural context.

Furthermore, researchers have also shown that cultural contexts can moderate the effects of interpersonal power on cognitive processes. Miyamoto and Wilken (2010) suggested that interpersonal power requires a perceptual style that serves respective cultural imperatives. They assigned participants to be either a leader or a follower and had them interact with each other. When assigned to be a leader, Americans showed a more analytic perceptual style than when assigned to be a follower, presumably because such an analytic perceptual style allows them to focus on their own goals without being overly distracted by surrounding contexts. Such effects of power on a perceptual style were absent or even slightly reversed among Japanese; those who were assigned to be a leader showed a holistic perceptual style, which presumably allows them to fit into social contexts. Thus, interpersonal power seems to lead to divergent perceptual styles depending on cultural context (i.e., "culturally contingent situated cognition"; Miyamoto & Wilken).

These findings suggest that, to understand how exactly social structures influence psychological processes at the individual-level, it is important to examine how such social structures are experienced and construed by individuals in proximal-level situations in each cultural context. This illustrates how distal-level factors (i.e., social structures) may influence individual psychological processes in a rather indirect, non-deterministic manner through proximal-level situational factors and how this influence is dependent upon cultural context.

Conclusion

Cross-cultural research accumulated over the past two decades has demonstrated cultural differences in a wide range of psychological processes, including self-concepts, motivation, emotion, and cognition. These studies have delineated the nature and scope of cultural differences. For example, cultural differences are shown to be moderated by various contextual factors, and the magnitude of cultural differences tends to be moderate to large. Furthermore, emerging evidence shows mechanisms underlying cultural differences at different levels; some researchers examine distal-level situational factors (e.g., economic and social structure), while some explore proximal-level situational factors (e.g., cultural practices and products), and some others focus on individual factors (e.g., personal beliefs and values).

At the same time, we believe that it is important to examine multi-level processes underlying cultural differences by paying attention to proximal-level processes that bridge the gap between distal-level processes and psychological processes at an individual level. Recent findings suggest that proximal-level factors sometimes interact with distal-level factors to shape psychological processes, highlighting the importance of taking multiple levels into consideration at once. Understanding more fully how individuals think, feel, and behave in proximal-level situations would be a fruitful way to disentangle the nexus of culture and psychological processes. Furthermore, understanding proximal-level processes will also shed light on the reciprocal relationship between situational factors and individual psychological processes. Although cross-cultural studies have focused mainly on how situational factors shape individuals, an understanding of the nature of proximal-level situational factors encourages attention to the processes through which such situational factors are shaped and sustained by individuals. It is our hope that these endeavors will contribute to a better and richer understanding of the intricate relationship between culture and psychological processes.
References


