22

Social Cognition in Real Worlds: Cultural Psychology and Social Cognition

Beth Morling & Takahiko Masuda

Imagine the following scene: an adult approaches a light fixture resting on a table. He bends at the waist and touches a nearby button with his forehead: the light illuminates, and the adult gives a satisfied nod. The 16-month-old human who witnessed this scene soon approaches the table, and though it would be simpler to push the button with her hand, she, too, illuminates the light by using her forehead (Meltzoff, 1995). Furthermore, if the adult responds to the illuminated light with a frown and an "uh oh!" (indicating that he hit the button by accident), 16-month-olds usually do not engage in any imitation (Carpenter, Akhtar, & Tomasello, 1998).

It may not be obvious how this story relates to a chapter about cultural psychology and social cognition. And yet social cognition – both its very existence and its specific manifestations – is fundamentally shaped by culture. Cultural psychology emphasizes the formative power of culture at two levels: first, as a selection pressure that shaped humans as a species; second, as a diverse set of socially transmitted operating instructions that fundamentally shape human psychological functioning. At the first level, many cultural psychologists argue that the historical selection pressures of culture have shaped *species-wide* social cognitions such as those illustrated in the opening story: a capacity for sharing the intentions of others, and imitating goal-directed actions. At the second level, cultural psychologists argue for dramatically content-specific, culturally shaped social cognition across human social groups.

Cultural psychologists work within a theoretical framework that emphasizes the ways human beings are significantly shaped by their adaptive participation with accumulated cultural settings, products, and information (Bruner, 1990; Markus & Hamedani, 2007; Shweder, 1989). Human children are born into a real world of "already-there" cultural content. To take advantage of the power of it, human children bring evolved social cognitive abilities to the table – they must be able and willing to imitate, discern others' intent, be open to cooperation, and represent symbolically (Tomasello, 1993, 1999). Because of these species-wide adaptations, humans are able to acquire and use accumulated cultural knowledge and transmit it in a high-fidelity way (Tomasello, 1993). At the same time, these very adaptations suggest that the human species is destined to be variable. Inherited flexibility has made it possible for humans to adapt to a variety of physical settings around the earth. They develop and then socially transmit effective ways of functioning in variable worlds. In turn, the resulting diversity of cultural content shapes its users in culturally variable ways. Therefore, culture has both shaped human social cognition over phylogeny, and also shapes human social cognition during ontogeny.

In this chapter on social cognition and culture, we will be describing psychological manifestations of

an evolved human reliance on cultural content. The fact of social cognition is a species-wide adaptation. However, their reliance on culture means that, by virtue of being human, people are psychologically diverse (Geertz, 1973). In the next sections, we define cultural psychology and explain other overlaps between social cognition and cultural psychology. We then outline some methods for cultural psychology and review classic and recent empirical work on culturally shaped social cognition. Finally, we reflect on the current concerns of social-cognitive cultural psychology.

WHAT MAKES A CULTURAL PSYCHOLOGIST?

Although they may not always recognize that social cognition is inherently cultural, most social cognitive psychologists are aware of the advent of the field of cultural psychology. Cultural psychology is the study of culture, mind, and increasingly, brain. Cultural psychologists study how both basic and complex psychological phenomena such as memory, attention, person perception, and self-perception are shaped by people's participation in the concrete content of particular cultural settings. In turn, cultural psychologists also study how such culturally shaped people create, amplify, or reinforce such cultural settings by acting and participating in them. Most definitions of the discipline are influenced by Shweder (1989), who described cultural psychology as the study of "…the ways subject and object, self and other, psyche and culture, person and context, figure and ground, practitioner and practice, live together, require each other, and dynamically, dialectically and jointly make each other up" (p. 73). Cultural psychologists' hypotheses are dynamic ones, about people in cultural settings.

The cultural psychological definition of culture reflects this dynamic. Culture is a dynamic pattern of socially transmitted information about how the world works. It is a set of beliefs, norms, values, procedures, and shortcuts that make effective living possible for human beings (Geertz, 1973). Humans both passively inherit and actively participate in cultural patterns, which are considered *products of action* and *conditioning elements of further action* (paraphrased from Kroeber & Kluckhohn, 1952; see Adams & Markus, 2004). This definition points to cultural psychology's goal, which is not simply to take some psychological phenomenon that has been explored in one culture, and then test to see if it "works" in another. Instead, the discipline dynamically investigates how people's psychologies are affected by their networks of cultural meaning, and how people actively construct and transmit those networks.

CULTURAL PSYCHOLOGY: ANNOYANCE OR ALLY?

Although having cultural psychologists around could be perceived to be a nuisance, the two fields also share core theoretical perspectives.

Annoying reminders to study the unfamiliar

Cultural psychologists like to remind more mainstream psychologists that they should conduct their research on a larger variety of populations. For example, two recent cultural reviews point out that the overwhelming majority of psychology research is conducted on less than 5% of the world's population – i.e., the American part (Arnett, 2008). This matters, as one set of authors put it, because most of the participants in psychology research have been WEIRD (Henrich, Heine, & Norenzayan, 2010). That is, they are Western, Educated, Industrialized, Rich, and Democratic undergraduate students who, it turns out, act differently from the rest of the world, even in some very basic cognitive and social tasks. For example, WEIRD and non-WEIRD people perceive the length of lines very differently in the Müller–Lyer illusion (McCauley & Henrich, 2006; Segall et al., 1966). And WEIRD people categorize differently; for example, given a triad of concepts such as *carrot, eggplant,* and *rabbit*, people from WEIRD cultures typically categorize taxonomically, grouping the two vegetables together. In contrast, in many other samples studied, people categorize relationally, grouping the carrot and rabbit together. If cultural differences are this profound for seemingly "basic" cognitive processes involving asocial perception and categorization, how much more variable would social cognitive processes be?

Faced with questions like these, non-culturally oriented social cognitive psychologists could feel nagged. Social cognitive research is hard enough to do at home, much less translate, conceptualize, and conduct in other cultural contexts. But if we take cultural psychology seriously, then much of social cognitive theory is culturally specific. After all, social cognitive psychologists believe that other people matter in cognitive processing. If human social life is infused with culture, then all social cognition is cultural, too.

Social cognitive psychologists who do not consider specific cultural content are not responsibly studying human psychology. In the absence of such analysis, they might as well rename their journals, as Arnett (2008) suggests, to *Journal of Social and Personality Psychology of North Americans,* or *Social Cognition of North Americans.*

Another potential source of discomfort is the unusual language that many cultural psychologists use. Cultural psychologists study and talk about "settings," "practices," and "intersubjectivities" just as much as they study and talk about familiar psychological processes like "thoughts," "feelings," and "behaviors." The language and methods reflect the cultural psychologist's refrain: behavior is made meaningful by content outside the head, and cultural settings are made possible by meanings enacted inside the head (Bruner, 1990). Even these two distinctions (inside and outside the head) are not enough – cultural content includes broad ideas, such as theologies or philosophies; socially manufactured ecologies, such as institutions and products; and daily practices and physical settings (Markus & Kitayama, 2010; Miyamoto, Nisbett, & Masuda, 2006; Morling & Lamoreaux, 2008; Oishi & Graham, 2010). These external layers of historically derived systems of information, cooperative social practices, prescriptive norms, and shared values attempt to describe the "already there" worlds into which humans are born, and through which their psychological responses are shaped. Yet these layers may be unfamiliar to social cognitive psychologists who focus on the individual and his or her immediate social setting.

Allied focus on evolutionary processes, content-shaped cognition, and neuroscience

Despite cultural psychology's nagging reminders about non-universality and its unfamiliar discourse about settings and practices, the cultural approach is accessible to social cognitive psychologists. First of all, the fields of cultural psychology and social cognition study many of the same phenomena, such as self-regulation, attribution, stereotyping, and implicit cognition. And the two fields share more theoretical overlap than they might realize. In particular, both fields have been enriched by adopting an evolutionary perspective (e.g., Baumeister, 2005; Schaller, Norenzayan, Heine, Yamagishi, & Kameda, 2010).

In social psychology, evolutionary models have emphasized how humans have adapted to selection pressures such as mating success (Buss, 2010) and group living (Barkow, Cosmides, & Tooby, 1992). But evolutionary analyses should not be limited to passive adaptations to a historically distant African savanna. The trajectory emphasized in cultural psychology, Dual Inheritance Theory, articulates the power of culture as well as genes in shaping human development (Richerson & Boyd, 2005). According to this argument, it is not enough to explain human behavior in terms of genetically inherited responses to past environments: human societies also owe their sophistication and diversity to transmitted culture. The power of socially transmitted information is illustrated in the case of two Illinois communities who settled identical farming environments yet who have dissimilar beliefs about farm management. German-Catholic immigrants value farming as a lifestyle and hope their children will be farmers; immigrants from other American states value farming for its profit and allow their children to pursue other lifestyles (Richerson & Boyd, 2005). The social transmission of cultural values (rather than genes or a learned response to local environments) is the best explanation for these social patterns.

In cultural models of evolution, inheritance is not passive: through social transmission and participation in culture, humans actively create their own environmental niches. It is a highly adaptive process, because such cultural adaptations evolve more quickly than genes in response to challenging environments. Culture enables humans to thrive in a wide range of environments as well as to participate actively in their own evolution.

The dual inheritance perspective also specifies that species-wide social cognitive abilities such as language, theory of mind, imitation, phenotypic flexibility, the desire to share experiences, and cooperation are adaptations that help humans take advantage of a cultural world, as illustrated in this chapter's opening examples (Richerson & Boyd, 2005; Tomasello, 1999, 2009). One such adaptation is an enhanced motivation and ability to exactly *imitate* a model's behavior (e.g., the child pressed the light with her head, not her hand, imitating the model). Another is the ability to *discern the model's intent* – human children identify and imitate intentional, but ignore accidental, behaviors of a model. Other social cognitive abilities that are uniquely adapted for culture include cooperation, the motivation to teach, and the ability to represent the world using linguistic symbols (Tomasello, 1999, 2009). Arguably, these evolved (social cognitive) abilities are especially well-developed in humans. Lab-reared chimpanzees can imitate a human adult who uses a rake to drag

in some attractive food. But chimpanzees also improvise: some spontaneously flip the rake so the food will not fall through the tines (Nagell, Olguin, & Tomasello, 1993). In contrast, human 2-year-olds persist in imitating the model, even though the model's technique is not the most efficient. In the short run, such imitative learning may seem maladaptive, but over time, the species who can best imitate successful models is most likely to faithfully transmit successful cultural practices, which makes possible the cumulative transmission of cultural information. People imitate other people, improve on these imitations, and then others imitate the better variations (the "ratchet effect"; Tomasello, 1993, 1999, 2009). In sum, social cognition and cultural psychology can be allies in emphasizing humans' evolved abilities as cultural creatures, and articulating the simultaneous power of genes and culture to understand the human mind.

Another similarity is that both social cognition and cultural psychology fundamentally emphasize that cognition is content-dependent. Social cognition was founded on the assumption that social cognition is not always the same as non-social cognition (Fiske & Taylor, 1991, 2008). People do not think about people in the same way that they think about non-social objects, texts, or scenes. As social cognition matured, researchers focused more on how social cognitive processes are fundamentally and pragmatically shaped by immediate goals (Fiske, 1992), social status (e.g., Barreto, Ellemers, & Fiske, 2010), and biologically prepared orientations to others of our species (Fiske & Taylor, 2008). Cultural psychology's most basic message – that the psyche's activities are shaped by (culturally) specific goals and settings – should sound familiar to social cognitive psychologists.

Finally, cultural psychologists, like social cognitive psychologists, work increasingly in the brain, exploring how cultural differences may be studied in patterns of brain activity (Ames & Fiske, 2010; Chiao & Bebko, in press; Kitayama & Uskul, 2011; Park & Huang, 2010) and in genes (e.g., H. Kim et al., 2010; see also Chapter 26). Neuroscience and genetic techniques are useful tools for both social cognition and cultural psychology. As noted later in this chapter, these techniques can potentially highlight the brain's plasticity (i.e., how cultural experience wires the brain; Park & Huang, 2010), as well as track how the human genome might have adapted as humans migrated to different world regions.

In sum, the overlap in content and theory between social cognition and cultural psychology are fundamental, and we would argue, not normally acknowledged by either side.

RESEARCH METHODS CAN CAPTURE CULTURAL PROCESSES

Cultural psychology pays unique methodological attention to the process of *mutual constitution* – how the culturally-shaped mind shapes cultural content (Shweder, 1989). Social cognitive psychologists, too, have studied how individuals and collectives shape external norms and behaviors (Hogg, 2010; Klein & Snyder, 2003; Sherif, 1935). But cultural psychologists may be more intentional about capturing the full circle of mutual constitution (Cohen, 2007). For example, cultural psychologists often study tangible cultural products and situations. They find, for example, that cultural products such as children's books, magazine ads, and religious texts from East Asia tend to represent more collectivism, and less individualism, than cultural products from North America (Morling & Lamoreaux, 2008). Cultural products studies strive to fit the Shwederian tradition of "mutual constitution."

Cultural psychologists have also measured how people actively produce (or "constitute") cultural settings and products. In choosing which stories or details to model, copy, or share, people participate in shaping the content of culture. For example, one study demonstrated that television and newspaper accounts of Olympic Games athletes were culturally different, focusing on the advice or support of others in Japan and personal characteristics in the United States. Later, the authors asked people in each culture to select appropriate media statements originating in the two countries. Americans preferred to report statements about athletes' personal attributes and unique characteristics, whereas Japanese preferred to report statements about the athletes' coaches, teams, motivation, emotion, and doubts (Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006). Americans and Japanese who are put in the position of (re)creating cultural products produced stories that replicated the cultural settings.

Another method for studying mutual constitution hypotheses is situation sampling (e.g., Kitayama, Markus, Matsumoto, & Norasakkunkit, 1998; Morling, Kitayama, & Miyamoto, 2002). As exemplified in a classic study on self-esteem (Kitayama et al., 1997), the situation sampling method consists of two phases. First, participants (in this case, students from Japan and the United States) described a number of concrete situations in which they experienced success or failure – i.e., self-esteem relevant situations. Second, both American and Japanese participants reported how they would feel in both American and Japanese situations.

By analyzing the situations in the first step, researchers established that Americans listed more self-esteem-increasing situations, whereas Japanese listed more self-esteem-decreasing situations. The second step assessed both cultural people and cultural situations. For example, Americans reported an increase in self-esteem compared to Japanese in both countries' success situations, whereas Japanese reported a decrease in self-esteem compared to Americans in both countries' failure situations. In addition, the cultural origin of each situation mattered. Both American and Japanese participants judged that their self-esteem would decrease relatively more in the "made in Japan" situations and that their self-esteem would increase relatively more in the "made in the US" situations. The findings suggest that American social realities afford self-boosting experiences, whereas Japanese social realities afford self-critical experiences. The method captures the mutual interaction of situations and ontogenetically developed psychological processes (for other examples, see Morling et al., 2002; Savani, Morris, Naidu, Kumar, & Berlia, 2011).

Through developing tools to measure "persons in cultural settings," cultural psychologists have attempted to combine the sophistication of quantitative psychological measurement with the descriptive ideals of ethnography.

SOCIAL COGNITION IN CULTURAL CONTEXT

Research in cultural social cognition is organized by two major interpretive themes:

- cultural self-construals, which are independent or interdependent, organize a variety of research on cognition and emotion (Markus & Kitayama, 1991, 2010).
- the rubric of "analytic vs holistic" world views organizes research on human cognitive and perceptual processes (Nisbett, 2003; Nisbett & Masuda, 2003; Nisbett, Peng, Choi, & Norenzayan, 2001).

These two themes, together, explain a variety of social cognitive phenomena.

Cultural self-construals

Markus and Kitayama (1991) describe two collective understandings of the self that differ across cultures, by now widely recognized as independent and interdependent self-construals. Independent cultural contexts (emphasized in middle-class European-American settings) foster a view of the self as separate from others, who acts independently and, ideally, consistently from situation to situation. The independent self may be a modern cultural product, historically developed in Western intellectual traditions (Taylor, 2007). When this view of self is intersubjectively shared, people may actively look for attributes they are proud of, establish personal preferences and unique characteristics, and value self-consistency. In contrast, interdependent cultural contexts (emphasized in middle-class Asian and Asian-American contexts, and possibly African and South American settings) foster a view of the self as significantly shaped by others, in which agency is conjoined with and attuned to close others (Markus & Kitayama, 1991, 2010). When this view of self is intersubjectively shared, people emphasize the expectations of significant others, correct imperfect and insufficient aspects of the self, and flexibly adapt themselves to the context.

A pattern of diverse research in social cognition, motivation, and emotion has supported Markus and Kitayama's (1991, 2010) self-construal model. When asked to define themselves in an abstract context, North Americans describe themselves using abstract personal attributes, whereas East Asians describe themselves based on social categories and roles (Bond & Cheung, 1983; Cousins, 1989; Rhee, Uleman, Lee, & Roman, 1995). When asked to define themselves across concrete contexts (e.g., home, school, or work), Japanese flexibly change patterns of reference, whereas North Americans tend to keep consistent references across contexts (Kanagawa, Cross, & Markus, 2001). North Americans are more motivated by self-consistency than East Europeans (Cialdini, Wosinska, Barrett, Butner, & Gornik-Durose, 1999), and compared to Hong Kong Chinese, who incorporate the views of close others into their self-concept, North American self-concepts seem immune to the criticism of others (Kim, Cohen, & Au, 2010). North Americans report undiluted emotions, which are experienced as individual events, whereas East Asians experience more mixed emotions, which are experienced as shared events (Uchida & Kitayama, 2009; Uchida, Townsend, Markus, & Bergsieker, 2009). The emotions of European-Americans become more intense when they are reminded of the self, whereas the emotions of Asian-Americans intensify in situations when the social group is salient (Chentsova-Dutton & Tsai, 2010). North Americans have higher self-esteem than non-Western individuals (Heine, Lehman, Markus, & Kitayama, 1999). North Americans remember

their success experiences more than Japanese (Endo & Meijer, 2004) and are motivated to re-engage in a task they are good at, whereas Japanese are motivated to re-engage in a task they are bad at (Heine et al., 2001). North Americans tend to believe that their talent and ability is fixed, whereas Chinese and Japanese tend to believe that their ability is changed by their effort (Azuma, 1994; Stevenson & Stigler, 1992); such beliefs are even encoded in graduation cards (Choi & Ross, 2011). North Americans tend to hold promotion-oriented motivation, whereas Hong Kong Chinese and Japanese tend to hold prevention-oriented motivation (Hamamura, Meijer, Heine, Kamaya, & Hori, 2009; Lee, Aaker, & Gardner, 2000). American political candidates whose photos are judged higher in power (perhaps reflecting independent agency) tend to be elected, whereas Japanese candidates judged higher in warmth (perhaps reflecting interpersonal harmony) tended to be elected (Rule et al., 2010). North Americans report more, and more extreme, instances of influencing the environment (i.e., primary control), whereas Japanese report more, and more extreme, instances of adjustment to the environment (i.e., secondary control; Morling & Evered, 2006; Morling, Kitayama, & Miyamoto, 2002; Weisz, Rothbaum, & Blackburn, 1984). North Americans are more likely than Koreans to express uniqueness (Kim & Markus, 1999). North Americans tend to experience socially disengaged emotions, whereas Japanese tend to experience socially engaged emotions (Kitayama, Markus, & Kurokawa, 2000; Kitayama, Mesquita, & Karasawa, 2006). Self-esteem is strongly associated with North Americans' well-being, whereas the association is weaker outside of North America (Diener & Diener, 1995; Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008). Asian-Americans and Japanese feel a higher life satisfaction when they meet significant others' expectations, compared to when they meet their personal goals (Oishi & Diener, 2003). Focus on others' approval manifests in Asian-American relative preference for name-brand products (Kim & Drolet, 2009). Taken together, most of these cross-cultural research findings can be interpreted as consistent with a culturally held model of self as relatively independent in North America, and relatively interdependent in many other world regions.

Analytic and holistic systems of thought

The dimension of analytic and holistic thought also has explanatory power to interpret and organize a diverse range of cross-cultural differences in social cognition and basic perception (e.g., Nisbett, 2003; Nisbett et al., 2001). Psychologists and anthropologists have long questioned the universality of basic human perceptual processes (e.g. Bruner, 1990; Witkin, 1967). The research builds on this tradition, placing emphasis on the role of cultural world views in shaping people's fundamental cognitive and perceptual processes.

According to Nisbett, analytic thinking is characterized by a focus on objects and their attributes. In this view, objects and people are perceived as existing independently from their contexts. Analytic thinkers focus on the attributes that make up the object or person. To categorize things, analytic thinkers focus on the common attributes among objects and persons. To better predict and explain a given phenomenon, analytic thinkers use a set of fixed, abstract rules. In contrast, holistic thinking is characterized by an orientation to the context as a whole. It is a relational way of thinking, where one's attention goes not only to a particular target object and person but also to the relations among the target and the surrounding context. Formal, abstract rules are less important; people rely on case-by-case experiences.

These organized world views have both economic and social origins. Nisbett and his colleagues maintain that these different cultural patterns were distally rooted to available resources in the physical environment and to economic practices that used those resources. Once such patterns of behavior are institutionalized in a given culture, they may become self-sustaining across generations, as the culture's way of understanding the world is socially transmitted (Nisbett, 2003; Nisbett et al., 2001). For example, recent evidence suggests that Turkish fishermen, farmers, and cattlemen differ in their tendency to use holistic and analytic reasoning (Uskul, Kitayama, & Nisbett, 2008). Their reasoning styles, in part, reflect social practices: communal fishing and farming practices seem to foster holistic thinking; solitary herding practices seem to foster analytic thinking. These economic practices were, in turn, fostered by different local resources and geographies. Again, differences in real worlds help explain and maintain differences in social cognition.

Nisbett (2003) maintains that the cultural variations in cognition observable in contemporary members of Western and East Asian cultures are attributable in part to ancient Greek and ancient Chinese civilizations (which, in turn, may have resonated with their own contemporary economic or social practices). Greek, specifically Aristotelian philosophies teach that things fundamentally exist independently and the characteristics of an object are determined by the object's internal attributes. By contrast, Buddhism, Confucianism, and Taoism in China emphasize the holistic nature of things.

Such a holistic understanding of the world became the foundation of a discourse shared by members of East Asian culture such as China, Korea, and Japan, which affords attention to relationships between objects and their contexts.

These historical philosophical influences manifest themselves in an impressive variety of contemporary cross-cultural research on causal attribution, categorization, and judgment about social and physical events. North Americans are more likely to explain an event by referring to internal factors of a target individual; Chinese and Indians pay more attention to the external factors which surround the target (Lee, Hallahan, & Herzog, 1996; Miller, 1984; Morris & Peng, 1994). East Asians are more likely to refer to field information when they explain physical events (Peng & Knowles, 2003). North Americans explain causes of an event by referring to small pieces of information, whereas East Asians refer to peripherally important causes (Choi, Dalal, Kim-Prieto, & Park, 2003), and Canadians equate the size of a cause to the size of the event more so than Chinese (Spina et al., 2010). When categorizing things, North American judgments are based on common attributes, whereas East Asians rely on holistic similarity (Norenzayan, Smith, Kim, & Nisbett, 2002), and relationality (Ji, Peng, & Nisbett, 2000). East Asians are more likely than North Americans to accept contradictions (Choi & Choi, 2002; Koo & Choi, 2005; Peng & Nisbett, 1999; Spencer-Rodgers & Peng, 2004). East Asians are more likely than their North American counterparts to think that even a seemingly stable trend of an event can be reverted (Ji, 2008; Ji, Nisbett, & Su, 2001). Dialectism leads East Asian students to change self-views, rather than self-verify, when feedback is self-discrepant (Spencer-Rodgers, Boucher, Peng, & Wang, 2009).

Such differences in social and non-social cognition are enabled by patterns of attention. For example, Masuda and Nisbett (2001) presented 20-second animated vignettes of underwater scenes to Japanese and American participants. After seeing each video twice, participants were asked to report what they had seen. In their first comments, Americans tended to spotlight the most important scene: "I saw three fish swimming around, one of which had red fins," whereas Japanese tended to refer to the background: "It looks like a deep sea because the water color was much darker than the previous video." Overall, Japanese made more observations about the fields and about relationships between objects and the fields than did Americans. In another experiment, Masuda and Nisbett showed participants images of wildlife, followed by a surprise recall test. In the test, some images showed previously seen wildlife with the original background. Other images showed a previously seen wildlife with a novel background. Although both Japanese and Americans could accurately remember images in their original setting, Japanese were less able to remember the target wildlife with a novel background. The results suggest that Japanese are inclined to memorize the target wildlife by binding it to its scenery. Indeed, eye-tracking data suggest that East Asians alternate their attention to figure and ground more frequently than Americans (Goh, Tan, & Park, 2009).

Analytic and holistic patterns of attention generalize to non-social, abstract images (Ji et al., 2000; Kitayama, Duffy, Kawamura, & Lawson, 2003), as well as to social stimuli. If social experiences are the foundation of the development of attentional patterns, then culturally shaped attention should be intensified when participants observe more social stimuli. Masuda et al. tested this hypothesis by asking Japanese and North Americans to judge the emotions of a target individual who was surrounded by four others (Masuda, Ellsworth, Mesquita, Leu, Tanida, & van de Veerdonk, 2008). In some scenes, the target and the background figures showed congruent facial expressions (e.g., happy target and happy others); other scenes showed incongruent facial expressions (e.g., happy target and sad others). Americans judged the target person's emotion the same in both conditions. However, the Japanese ratings of the emotion were intensified when targets were presented with congruent others than with incongruent others. Eye-tracking data suggested that Japanese allocated their attention to the background figures more often than Americans.

Analytic and holistic cultural patterns are not only carried in individual processes; dominant cultural resources such as artistic conventions also convey analytic or holistic themes to the same and next generation (e.g. Masuda, Gonzalez, Kwan, & Nisbett, 2008). Children may develop analytic or holistic cultural patterns around age 6, perhaps by being exposed to such cultural resources (Duffy, Toriyama, Itakura, & Kitayama, 2009). Therefore, cultural patterns are sustained and carried by cultural products as well as those products' creators (Morling & Lamoreaux, 2008; Richerson & Boyd, 2005; Tomasello, 1999).

Self-construals and systems of thought working together

The independent/interdependent and analytic/holistic dimensions have, to some extent, qualitatively different logic (Spencer-Rodgers & Peng, 2004). However, many researchers find

that both forces, used together, can help explain cultural phenomena. Recent evidence suggests that, at the cultural level at least, interdependent social orientation is associated with holistic cognitive styles, and independent social orientation is associated with analytic cognitive styles (Varnum, Grossmann, Kitayama, & Nisbett, 2010). Next we review three concrete examples: the fundamental attribution error, self-awareness, and social influence.

The fundamental attribution error across cultures

The fundamental attribution error, or correspondence bias, describes how people infer that others' observed behavior was produced by some internal disposition, failing to take into account pertinent contextual information (Nisbett & Ross, 1980). Although robust among North Americans (Henrich et al., 2010), this phenomenon does not work the same in cultural contexts that foster holism and interdependence. The correspondence bias is weaker for Koreans and Japanese than for Americans when the social constraint is made salient (Choi & Nisbett, 1998), when the stimulus essays were made less persuasive (Miyamoto & Kitayama, 2002), and when the perceiver is the inducer of the external constraint (Masuda & Kitayama, 2004). Taken together, these results suggest that East Asians show the correspondence bias under Jones and Harris's (1967) original paradigm, but, unlike Americans, when social constraints are made salient, the effect is weakened (Choi, Nisbett, & Norenzayan, 1999).

Why are East Asians less susceptible than North Americans to this bias? Some researchers maintain that the holistic world view shared by East Asians fosters a greater degree of context sensitivity (Norenzayan, Choi, & Nisbett, 2002). For example, East Asians are more likely than North Americans to change their behavior according to a given situation and are also more likely to believe that people's personalities can be changed (presumably in response to changing life settings or contexts). Tolerance for contradiction can mean that East Asians view their in-groups more ambivalently (Ma-Kellams, Spencer-Rodgers, & Peng, 2011). Similarly, Australians are more likely than Asians to expect attitude–behavior consistency in others (Kashima, Siegal, Tanaka, & Kashima, 1992). In addition to dominant thinking styles, social interdependence and harmony concerns can also explain attributional patterns. After reading a fictional dilemma in which a person disagreed with his respected boss, 87% of Americans thought that the protagonist should attempt to change his boss's opinion, whereas 53% of Japanese thought so (Iwao, 1997). By contrast, 23% of Japanese would have shown a smile and not argued, compared to only 6% of Americans. Thus, many East Asian contexts may foster, or even promote, inconsistency between attitudes and behavior, as a way of maintaining interpersonal harmony.

East Asians' weak motivation to maintain attitude–behavior consistency is also expressed in self-consistency. The foot-in-the door phenomenon (Freedman & Fraser, 1966) and cognitive-dissonance theory (Festinger, 1957) are examples of people's motivation to maintain their self-consistency. However, Japanese show weaker cognitive dissonance than North Americans (Heine & Lehman, 1997). Japanese show dissonance effects mainly when the setting evokes the concerns of the public self, such as in front of an incidental poster of schematic drawings of human eyes (Imada & Kitayama, 2010; Kitayama, Snibbe, Markus, & Suzuki, 2004).

These examples of attitude–behavior consistency, manifested in the fundamental attribution error as well as cognitive dissonance, illustrate how self-construals and reasoning styles might interact at the cultural level. Interdependent construals engage people to pay attention to the external factors that surround and influence a target individual. As Markus and Kitayama (1991) write, "If one perceives oneself as embedded within a large context of which one is an interdependent part, it is likely that other objects or events will be perceived in a similar way" (p. 246). Attention to context also resonates with a holistic understanding of the world in which "everything in the world is related to each other" and no single element can be logically viewed as acting independent of anything else. By contrast, independent self-construals encourage people to think that peoples' behavior emerges based on their internal intention, goals, attitudes, or traits – not other people. In addition, this understanding of others resonates with the analytic way of thinking, which maintains that "things exist independent from their context," so single elements may be viewed without acknowledging anything else. Such similarities in understanding are probably not coincidental. Rather, these understandings of the world could be historically interwoven in a given culture (see Varnum et al., 2010).

More immediate cultural tools can supplement self-construals and systems of thought as explanations for the fundamental attribution error. Specifically, different language patterns shape people's attributions and descriptions (Holtgraves & Kashima, 2008). For example, Korean speakers are more likely to use verbs and English speakers more likely to use adjectives when describing themselves and others (Kashima, Kashima, Kim, & Gelfand, 2006). Verbs tend to emphasize

situational factors; adjectives emphasize personal factors. In this sense, language use is an example of mutual constitution. Pragmatically, language reflects people's habitual ways of thinking about people, but cultural schemas appear to shape people's language patterns, too (Morris & Mok, 2011; Na & Choi, 2009). Syntactically, dominant language structures (verbs vs adjectives) are able to communicate those ways of thinking to others (Holtgraves & Kashima, 2009). Another example is human-made physical settings (specifically, urban and suburban cityscapes), which are more visually complex in Japan than North America (Miyamoto et al., 2006). Exposure to the more complex cities and towns of Japan make people more holistic in attention than exposure to North American towns. Both language and human-made physical settings are created by culturally shaped humans, but in turn they influence human perception and cognition.

Self-awareness across cultures

Cross-cultural research on subjective self-awareness is a second example of how the two dimensions, analytic vs holistic thought and independent vs interdependent self-construals, can work together. When people recall their own experience subjectively, as if they were the actor in the event, their memory is identical to what they saw at the time. But people can also imagine the same scene, including themselves, objectively, from the third-person point of view. Cohen and Gunz (2002) examined systematic variations in the perspective typically taken by East Asians and North Americans by asking them to report their memories for exciting experiences. The results indicated that Asian-Canadians tended to report the event from the third-person perspective, whereas European-Canadians reported from the first-person perspective (see also Leung & Cohen, 2007; Y. Kim et al., 2010). Perspective taking also shapes ongoing events. Cohen and Hoshino-Browne (2005) asked Asian-Canadian and European-Canadian participants to tap out a tune (such as "Happy Birthday") on the table for another participant. They asked participants to estimate how difficult it was for the listener to identify the target song. European-Canadians were overconfident about their guesses compared to Asian-Canadians, arguably because from their own first-person perspective the task is fairly easy. In contrast, Asian-Canadians, who are likely to apply the third-person perspective, can more accurately guess the constraints on the listener (Cohen & Hoshino-Browne, 2005).

We speculate that both self-construals and styles of thought work together to foster first- or third-person perspectives. The independent self-construal encourages people in the idea that they are the center of their social world. By contrast, the interdependent self-construal encourages people to see themselves as part of a larger social context, and not necessarily at the middle of it. Taking the third-person perspective is a strategy for people to see themselves from others' eyes in a given context. In addition, holistic thinkers attend to the relations within a whole event, so they apply the same context-embedded perspective towards themselves. By contrast, if analytic thinkers attend to focal events while ignoring peripheral influences, they may see themselves as a spectator who holds a single, stable viewpoint. In fact, self-construal and styles of thought may have co-evolved over time, mutually influencing each other. Art historians have argued that the development of individualism and the emergence of single-spectator point of view emerged at around the same time (e.g., Giedion, 1964; for another review, see Varnum et al., 2010).

Social influence across cultures

Recent social influence research provides an example of how self-construal models might cause analytic and holistic reasoning in a goal-focused setting. People in interdependent cultural settings tend to adjust themselves to their surroundings, whereas people in independent cultural settings tend to emphasize influencing their surroundings (e.g. Morling et al., 2002; Savani et al., 2011). Adjustment and influence strategies are well adapted to interdependent and independent contexts, respectively; however, these strategies may require or foster holistic and analytic perceptual skills, at least in some cultures. In a recent experiment (Miyamoto & Wilken, 2010), Americans and Japanese were randomly assigned to be either a leader (influence condition) or a matcher (adjustment condition) in a communication game; the leader described 12 abstract figures to the matcher, so that they could put their cards in the same order. In a later task (a modified rod-and-frame task), Americans assigned to the leader's role had better analytic skills. (Japanese performance was not affected by the manipulations.) Apparently, in the North American cultural setting, social influence goals highlight analytic perceptual skills. In related research, Americans who were asked to recall situations in which they had influenced surrounding others tended to show analytic patterns of cognition during a later task, whereas those who were asked to recall situations in which they had adjusted to surrounding others tended to show holistic patterns of attention (Miyamoto & Ji, 2010).

In sum, a variety of classic and recent research in cultural psychology shows the influence of two

dimensions – interdependence and holistic perception and independence and analytic perception. These patterns work together to explain cultural differences in the fundamental attribution error, self-perception, and social influence.

CURRENT THEMES IN CULTURAL PSYCHOLOGY

A reading of the most current literature in cultural psychology suggests three trends in cultural psychology that are likely to shape its intersection with social cognition in future years. The first trend explores the degree to which a "cultural self-concept" can explain differences in cultural behavior. The second trend is the emerging field of cultural neuroscience. The third trend reflects recent research on how cultural meaning systems develop. We devote more space to the first trend here, because the other two have been recently and thoroughly reviewed in other venues.

Is there a "cultural self" stored inside the head?

In this section, we review several recent commentaries that have focused on how cultural differences – especially in the self – should properly be conceived and measured (Chiu et al., 2010; Kashima, 2009; Zou et al., 2009). As outlined earlier, cultures are proposed to differ in their dominant models of the self as either independent or interdependent (Markus & Kitayama, 1991). For the last 20 years, much of cultural psychology research has been conducted in light of that classic paper on culture and the self. The two authors carefully specified that cultural approaches to self-concept are encoded, afforded, constituted in cultural *settings*. But as research tested its hypotheses, much research attempted to locate these cultural differences inside the head – as an internalized self-*concept* that is either "independent" or "interdependent." For example, some researchers used self-report questionnaires to measure cultural differences, asking about private beliefs, values, or attitudes about the self (e.g., "I enjoy being unique and different from others in many respects" or "It is important to me to respect the decisions made by the group," Singelis, 1994; Triandis, 1996; Triandis, Bontempo, Leung, & Hui, 1990). Researchers have used these scales to test hypotheses derived from (but, notably, not stated by) Markus and Kitayama's paper. For instance, many have hypothesized that Asians and European-Americans should differently endorse independent or individualistic self-concept items. Similarly, some have argued that cultural differences in psychological phenomena (such as conformity, attributional style, or cognitive style) will be mediated by self-concept differences on such measures (e.g., Singelis, Bond, Sharkey, & Lai, 1999). It seems possible that the study of self-construal as self-*concept* was influenced by the schema model in social cognition, which was dominant at that time (e.g., Fiske & Taylor, 1991).

However, data have not provided strong support for this simple prediction. First, sometimes the predicted cultural differences are obtained on these self-concept scales (Oyserman, Coon, & Kemmelmeier, 2002), but sometimes – perhaps more often – not (Chiu et al., 2010; Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009; Matsumoto, 1999; Oyserman et al., 2002; Takano & Osaka, 1999). Second, sometimes cultural psychological phenomena (such as cultural differences in attribution or cultural differences in motivational patterns) are mediated by self-concept measures (Chiao et al. 2009; Lam & Zane, 2004; Na & Kitayama, 2010), other times not. And in some studies, separate aspects of self-concept, such as dispositional attributions, holistic attention, or socially engaged emotions, may not co-occur within a sample of individuals. Correlations among such separate psychological phenomena are sometimes only 0.10 or so within a cultural sample (Kitayama et al., 2009; Na, Grossmann, Varnum, Kitayama, Gonzalez, & Nisbett, 2010).

Some cultural researchers have responded to these findings by addressing methodological problems behind self-report scales – issues such as reference group effects (Heine, Lehman, Peng, & Greenholtz, 2002), response styles (Schimmack, Oishi, & Diener, 2005), and the fact that cultural differences in cultural products are larger than cultural differences in self-reports (Morling & Lamoreaux, 2008). But increasingly, some cultural researchers are disengaging from the search for a cultural self. These cultural psychologists are empirically documenting the idea that cultural differences in independence and interdependence may not be represented by a coherent and internalized "self-concept" stored in the head. There are two aspects of this argument, the "intersubjective culture" model and the "semiotic culture" model.

Intersubjective culture: Culture as common sense

The intersubjective culture or "culture as common sense" argument, outlined by Chiu, Gelfand, Zou, Wan, Morris, Yamagishi, and their colleagues (e.g., Chiu et al., 2010; Wan et al., 2007; Wan, Tam, & Chiu, 2010; Yamagishi, Hashimoto, & Schug, 2008; Zou et al., 2009) has three premises

(Chiu et al., 2010). First, people do not always act according to their internal beliefs and values; instead, they sometimes act according to values and beliefs that they think are common in their culture (Zou et al., 2009). Second, although cultures differ, people do not simply internalize their own culture's norms and influences. People actively negotiate with culture, internalizing some values, ignoring others, attempting to change others (see Sperber, 1996). Third, there can be a mismatch between widespread beliefs and values of a culture and the individual beliefs and values of people living in that culture (Wan et al., 2007).

Chiu and colleagues propose that what may matter in understanding cultural differences in behavior is not what individual members of a culture *personally* believe and value. Instead, what matters is what individuals think *most others* in their culture believe and value. In one study, Zou et al. (2009) empirically demonstrated the first premise of the intersubjective approach. First, they found cultural differences in compliance. Whereas Poles reported being more likely to complete a marketing survey if their peers had (or had not) agreed, North Americans reported being more likely to complete the marketing survey if they had (or had not) usually completed such surveys in the past. The result replicated a past study finding that Poles were more influenced by peers, and North Americans more by consistency concerns (Cialdini et al., 1999). In addition to measuring compliance differences, Zou et al. asked both samples to complete two measures of collectivism: one at a personal level (e.g., how positive participants *personally* thought it was to consult one's family before making an important decision) and one at a collective, or intersubjective level (e.g., how frequent they thought it was *in their country* for people to consult their family before making an important decision). The results for the collectivism measures were twofold. First, there were significant cultural differences in the intersubjective measure (with Poles reporting higher perceived levels of their countrymates' collectivism) but not the measure of personal beliefs (replicating past work by Wan et al., 2007). Second, the intersubjective measure of collectivism (but not the personal measure) mediated the cultural difference in compliance. In three other studies, intersubjective, but not personal, beliefs mediated cultural differences in internal attributions and avoidant regulatory focus. In sum, observed cultural differences in social cognitive behaviors may not be attributable to some coherent *self*-concept stored inside the head. Instead, such behaviors seem to be better explained by the people's concept of what *others* in their culture believe (see Figure 22.1).

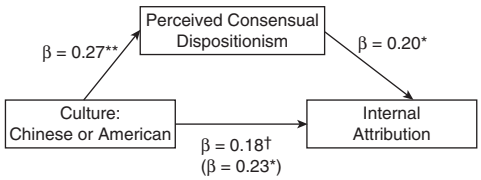

Figure 22.1 Sample result from Zou et al. (2009). People's beliefs about their others' dispositionism, but not their personal beliefs about dispositionism, mediated cultural differences in attributional style. †p<.1; *p<.05; **p .01. (Reproduced with permission from Zou et al., 2009.)

Self as interpretive category

Another version of the argument that cultures are not simply stored in individuals' heads has been articulated by Kashima (2009), who contrasted two possible views of cultural psychology. One he called the "standard model," which proposes that (a) there are culturally different *selves* and (b) these selves *cause* different processes such as attributional reasoning, emotion processing, or compliance. In the standard model, a domain-general psychological construct (such as an interdependent or individualistic "self") exists within people to different degrees depending on the cultural context. In addition, there are cultural differences in several domain-specific constructs (such as attributional styles, holistic or analytic reasoning, compliance, or counterfactual thinking) which are linked to culturally specific demands and tasks. In the standard model, the domain-specific constructs are causally linked to the higher-level construct (such as the independent or interdependent "self").

In contrast, Kashima endorses a semiotic, or interpretive view. In this view, there are still domain-specific psychological constructs which develop as people participate in different cultural tasks such as attending particular schools, using conversational norms, or following particular scripts. And as in the standard model, these domain-specific constructs are distributed differently across cultures (e.g., people in North American cultures are more likely to make dispositional attributions and place blame on individuals rather than groups, whereas people in East Asian contexts are more likely to make situational attributions or place blame on groups rather than individuals). However, participation in cultural tasks does not lead to the development or internalization of a domain-general self. Instead, the domain-general construct emerges simply as an *interpretation* – a meaningful, parsimonious, and accurate

interpretation that an observer makes about the distribution of domain-specific constructs in a culture. These *interpretive constructs* help researchers accurately understand and communicate about the particular distribution of domain-specific constructs in a culture. But the domain-general constructs are not internalized inside of people's heads as "selves," and they are not causally linked to domain-specific constructs (see Figure 22.2 for an illustration of the two models).

Kashima's semiotic model is similar to distributed cognitive processing models. It explains why empirical measures of self-concept as independent or interdependent do not always mediate cultural differences in behavior and cognition (when they should, if an independent or interdependent "self" is something that is stored inside people's heads and explains cultural behavior). It also explains why, though there are cultural differences in several domain-specific constructs, these constructs do not always correlate with each other at the individual level of analysis (Kitayama et al., 2009; Na et al., 2010). Culturally specific tasks and settings prompt psychological adaptations that are situational and fragmented. Patterns across individuals make sense when the interpretive frame of independence or interdependence is applied. However, this interpretive frame does not have to be stored inside people's heads in order to be accurate. Individual people may engage to different degrees with different combinations of cultural tasks (Sperber, 1996), so people do not internally replicate the entire cultural pattern of domain-specific constructs. Therefore, within a culture, correlations between domain-specific constructs may be low, even when such correlations across a set of cultures may be high.

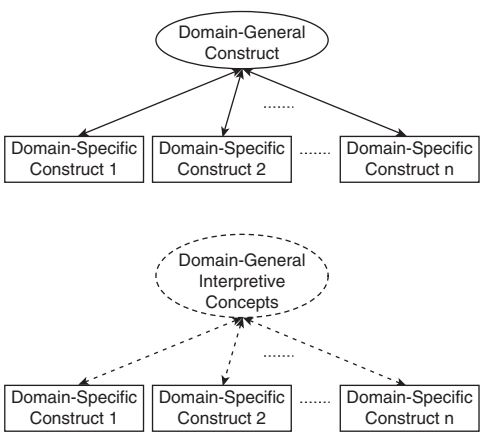

Figure 22.2 Schematic representation of the standard reading (upper panel) and a semiotic reading (lower panel) of the psychological theories of cultural differences. Note: Solid lines indicate *causal links*, with their bibirectional arrows indicating their bidirectional causal relationships. Broken lines indicate *interpretive links*, with their arrowheads indicating an interpretation. (Reproduced with permission from Kashmina, 2009.)

In sum, these two important, emerging perspectives are data-driven, complementary responses that question the empirically undersupported view that self-concepts are stored inside the head and have causal explanatory power for cultural differences. (See Kitayama et al., 2009, for a related explanation about why explicit self-concepts do not correlate with domain-specific cultural "tasks.")

Cultural and institutional primes

The intersubjective culture and semiotic models of self provide a lens through which to view recent cultural social cognition studies that have demonstrated "cultural priming" effects. For example, one model of multiculturalism proposed that people with deep experience in two cultures develop two different cultural frames with which to view the world (Hong, Morris, Chiu, & Benet-Martinez, 2000). These frames might be differently active depending on local situation cues and contexts, and they shape how people view the world at that moment. For example, when bicultural Hong Kong Chinese students were exposed to classic American symbols such as the Statue of Liberty, they gave more dispositional answers in an attribution task, but when exposed to classic Chinese symbols such as the Great Wall, they gave more situational answers in the attribution task. Hong et al.'s model (2000) used the language of "frames" or "cultural knowledge structures" to explain how people organize their experiences in two distinct cultures. These knowledge structures may be activated when related concepts, such as flags or symbols, are presented to bicultural people.

Since then, other researchers have demonstrated that cultural primes (e.g., primes for an individual vs a group orientation) can work even among people who are not bicultural, even European-Americans who have never lived abroad. For example, American students who had been primed by circling pronouns that were predominantly self-focused (e.g., "I" or "me") rather than group-focused (e.g., "we" and "us") performed better at an embedded figures task (Kühnen et al., 2001). Dozens of such priming studies have been conducted in the past 10 years. For most tasks, the primes worked similarly in both Western and East Asian samples (Oyserman & Lee, 2008).

Because of these data, Oyserman and colleagues (Oyserman & Lee, 2007, 2008) argue that people in all cultures have access to multifaceted, internalized "mindsets" that may even be contradictory (Oyserman & Sorenson, 2009). According to the model, the commonly observed cultural differences in psychological processes in most studies (such as attributional styles or focus on figure vs ground) can be explained by different relative distributions of cues and primes across cultures. On the one hand, the priming data do provide further evidence in support of Chiu et al.'s (2010) proposition that dominant cultural values are not simply copied into the minds of cultural participants, because people appear to be primable with either individualistic or collectivistic cultural mindsets. On the other hand, the intersubjective culture model proposes that situationally activated mindsets may be less important in explaining cultural behavior than people's beliefs about *others*' mindsets. In addition, Kashima (2009) argues that the primes used in situated cognition studies do not necessarily work because they activate broad, internalized mindsets. Instead, the primes activate isolated domain-specific constructs, which simply prime other domain-specific constructs because the two have been repeatedly activated together in past experience. For example, the pronoun "I" might prime an analytical approach to the embedded figures task in Americans because contexts in which first-person pronouns are used are also contexts in which analytic processing occurs. (For a discussion of how the semiotic model explains cultural priming effects, see Kashima, 2009.)

In addition, the mutual-constitution perspective of cultural psychology raises an additional shortcoming of the situated cognition model. Although priming data indicate that relational or individual elements of knowledge can prime people's behaviors and cognitions, it is silent on the essential, complementary dynamic of how people shape culture. If people's minds house all possible cultural mindsets, then how do culturally different societies, cultural situations, institutions, languages, and other cues come about in the first place? In contrast, cultural psychologists would argue that people socially transmit and recreate local situations and practices as they act in the world – that this is at least half of the explanatory goal. The dynamic argument might also be directed at interpretations of other data. Some work illustrates that cultural differences can be viewed as psychological strategies that respond to different cultural institutions and incentives: for example, the incentive to avoid looking bad in front of others (e.g., Yamagishi et al., 2008) or the tendency of social networks to be stable and cohesive (Schug, Yuki, Horikawa, & Takemura, 2009). Some interpretations of these data argue that cultural differences in social cognitive tendencies are not real (i.e., they do not represent qualitatively divergent psychological processes) because they can be explained away by these culturally different institutions. In contrast, a cultural psychologist would argue that *of course* people's behavior responds to common cultural institutions, incentives, and settings (Oishi & Graham, 2010; Schug et al., 2009), because cultural content definitely matters. However, such critiques commonly neglect to explain the other part of the equation – how the cultural content of institutions, incentives, and practices are actively maintained and created by cultural people.

Summary of the self-concept debate and implications for social cognition

It is clear that a current conceptual issue is the existence, placement, and importance of the self in cultural analyses. It will be essential for future cultural researchers to be clear about the extent to which they wish to endorse internalized, generalized cultural selves (or mindsets) that have causal power. It may well be the case that the existence and explanatory power of cultural self-*construals* (stored in practices, messages, and institutions both outside and between individuals) do not necessarily require that abstract, generalizable cultural self-*concepts* of interdependence and independence be stored inside people's heads. Perhaps independence and independence can be stored as neutral knowledge structures (i.e., Kashima's interpretive concepts) that do not imply some motivational–emotional–evaluative homunculus. And Zou, Chiu, Morris, and others remind us that even if culturally different self-concepts exist, what probably matters more is people's meta-social cognitions about their cultural peers, not what they believe deep down inside.

When the dust settles, how might these internal debates among cultural psychologists impact social cognition researchers? First, it's possible that social cognitive researchers will inherit a new explanatory model about how we cultural creatures act. Perhaps much of human behavior is meta-social cognitive, in that beliefs about the collective mediate social cognition (Chiu et al., 2010; Prentice & Miller, 1994; Zou et al., 2009). (Indeed, this meta-social cognition is a likely capacity of the evolved cultural animal.) Second, Kashima's views of the power of semiotic, negotiated meaning (Holtgraves & Kashima, 2008; Kashima, 2009) might revive social cognitive interest in studying how people work together to create common ground and understanding, and how language shapes this process. Third, if an

internalized, general, explicit "self" is found to have reduced explanatory power in cultural psychology, it might translate into a view of self – even in social cognitive research – that is emergent, compartmentalized, and task-specific. And finally, if cultural psychologists ultimately decide that the self is an emergent and interpretive construct, not a causal one, then it might create an elevated view of description (rather than causation) in social science (Kashima, 2009).

Cultural psychology and the brain

A second recent wave in cultural psychology is cultural neuroscience. This literature has been ably and recently reviewed by many of the key players in this growing field (Ames & Fiske, 2010; Chiao & Bebko, in press; Kitayama & Uskul, 2011, Park & Huang, 2010; see also Chapter 26), so we will not recapitulate their reviews and arguments here. However, all of these reviews acknowledge a basic theme: the brain is not a fixed biological entity – it adapts in response to repeated practice at tasks in the world. Years of specific cultural experience can wire the brain in significant ways (Park & Huang, 2010).

A few examples illustrate the theme. One functional magnetic resonance imaging (fMRI) study showed that among Chinese participants, the medial prefrontal cortex (MPFC) region, known to be active for self-relevant information processing, was active even when people were asked to think of their mothers, whereas North Americans activated the same region only when they think of themselves (Zhu, Zhang, Fan, & Han, 2007). Similarly, using the event-related (brain) potential (ERP) technique, researchers found that British men showed larger frontal lobe amplitude when identifying self-portraits than when identifying their friend's portraits, whereas Chinese men showed the opposite pattern (Sui, Liu, & Han, 2009). Neural differences correspond to behavioral patterns in analytic and holistic processing, too: the brain patterns of a sample of Singapore Chinese worked more efficiently at context-relevant tasks than European-Americans (Goh et al., 2007). As might be expected from studies of brain plasticity, accumulated cultural experience shapes the brain.

Research on how the plastic human brain responds to a single lifetime of cultural experience is complemented by research on genetic diversity, which documents how cultural brains presumably evolved over generations. As humans migrated around the world, their physiologies evolved in response to local physical and social environments. These changes are reflected in different allelic distributions across ethnic populations, some of which are related to psychological function (Chiao & Blizinsky, 2010; Gelernter, Kranzler, & Cubells, 1997). Local culture also shapes allelic expression: certain alleles appear to be expressed differently, depending upon cultural background (e.g., H. Kim et al., 2010). In the coming decade, we expect to see more research in cultural neuroscience, and expect it to promote sophisticated theories about the interaction of culture, mind, and brain.

Cultural origin, maintenance, and change

Finally, cultural psychologists are building theories about how cultural patterns emerge and change over time. In this effort, cultural psychologists are adopting theories of sociologists, economists, marketing researchers, evolutionary biologists, and earlier theories of psychology (Brunswik, 1943; Lewin, 1939). These theories attempt to identify the biological, physical, and social demands in past human populations that made particular patterns of values and behavior more adaptive.

One example is parasite prevalence theory, based on the finding that cultural patterns of collectivism and individualism are correlated with regional differences in the prevalence of infectious disease (Schaller & Murray, 2010). According to the argument, sticking with familiar other people can reduce one's risk of exposure to pathogens, an adaptive behavioral defense where infection risks are high (Schaller, 2006; Schaller & Murray, 2010).

Another example is the idea that individualistic and independent cultural patterns emerged as adaptive responses to frontier exploration (Kitayama et al., 2010; Kitayama & Uskul, 2011). That is, cultural practices favoring self-protection, self-promotion, believing in self-efficacy and hard work (a constellation favoring independence of self from others) are proposed as adaptive reactions to the harsh ecological conditions of the frontiers of Western America and Hokkaido, Japan (Kitayama & Bowman, 2010; Kitayama, Ishii, Imada, Takemura, & Ramaswamy, 2006). A related argument is the residential mobility hypothesis (Oishi, 2010) that people who move a lot endorse and develop more individualistic psychological tendencies.

Such models are complemented by socioecological approaches to culture (Oishi & Graham, 2010), which identify the institutions and economies that underlie psychological patterns. One well-known and clear example is the culture

of honor, found in the Southern United States, in which men respond vehemently, strongly, and clearly in response to insult (Nisbett & Cohen, 1996). The Southern culture of honor may have emerged as an adaptive response to the economic practice of herding (in which one's reputation for defensive violence can affect whether or not one's herd will be rustled), which in turn, was adapted to hilly areas or arid plains. Although the situational supports for cultures of violence may have dropped out (or, at least, changed) since earlier herding times (Daly & Wilson, 2009), cultural practices of violence appear to be shaped and maintained by both social transmission and economic factors.

Oishi and Graham (2010) explain how a socioecological approach complements cultural explanations of behavior. The origins of certain cultural practices and ideas (such as laws sanctioning insult-based violence or practices for self-reliance) are probably rooted in socioecologies (such as the economic practice of herding, or the physical challenges of a frontier), some of which predated their cultural values.

Research on cultural production and change faces some key challenges. One is that there are limits to the influence of a physical ecology on culture. For any given physical or social setting, there may be different possible cultural solutions (Cohen, 2001). An example comes from two Sudanese cultures, the Dinka and the Nuer, who both practice herding in the same physical environment, and yet have developed very different agricultural and kinship traditions (Edgerton, 1971; Richerson & Boyd, 2005). So, physical ecology may not be the strongest single determinant of culture – social transmission matters, too. Another challenge is to predict and explain which new cultural patterns will be adopted. For new cultural patterns to catch on, they must be adaptive – rational and effective – in some existing context. (For example, the pattern of individualism is relatively more adaptive in the context of high residential mobility; Oishi, 2010.) Effective cultural patterns might need to be adopted by key figures in a social group, such as high-status people or highly visible models (for a comprehensive review of these dynamics, see Cohen, 2001). Recent cultural research has begun to study how people's values are influenced by the nonverbal signals of others (Weisbuch & Ambady, 2009), how people's behaviors are implicitly tuned to the social majority (Shytenberg, 2010), and how conversational grounding helps cultural ideas perpetuate (Fast, Heath, & Wu, 2009). Such mechanisms help explain how cultural patterns, once established, may be socially transmitted.

Research on cultural origins and cultural change expands the science of cultural psychology beyond psychologies and cultural settings to a broader level of mutual constitution: how larger cultural patterns and institutions are created, copied, or sustained by culturally shaped people.

GOING FORWARD TOGETHER: CULTURAL PSYCHOLOGY AND SOCIAL COGNITION

As social cognition and cultural psychology move forward, we hope that the subdisciplines will continue to influence one another. Such mutual influence is already happening on many fronts. Many social cognitive psychologists not only believe their theories are universal but also test that assumption. For example, the stereotype content model, proposed as a universal, has been tested in dozens of world countries (Cuddy et al., 2009). Warmth and competence organize group stereotypes across cultures, although individualists are more likely to place in-groups in the most positive quadrant (high competence, high warmth). In addition, cultures with more economic inequality place more social groups in ambivalent quadrants (i.e., high competence but low warmth, or low competence but high warmth), perhaps to both placate and justify low-status groups (Durante et al., 2011).

Other social cognitive psychologists are incorporating cultural questions by studying social class culture. Whereas middle-class contexts emphasize uniqueness and individual control, working-class contexts emphasize individual integrity and self-control (Snibbe & Markus, 2005). People from lower social classes also perceive less control over personal outcomes, which is associated with a tendency to notice and use contextual explanations for people's behavior (Kraus, Piff, & Keltner, 2009). Social class is a potentially valuable area for expansion in social cognition – most social cognition models were built on data from European-American, middle-class contexts, but these models may not follow the same logic in lower-class settings. Furthermore, social class is an accessible way for social cognitive researchers to get involved in cultural research – it requires no language translation and has a much smaller travel budget (see Norenzayan & Heine, 2005 on universality testing).

A final example is the rapidly expanding set of research on how specific metaphors and bodily experiences shape social cognition. Embodied cognition research documents ways that social cognition is reflected in or shaped by movements of the physical body. And conceptual metaphors,

a bit more broadly, investigate how metaphorical representations (such as clean vs dirty, or close vs distant) might affect people's behaviors and interpretations (such as moral vs immoral or liking vs disliking, respectively) (Landau, Meier, & Keefer, 2010). This work represents another potential bridge between social cognition and cultural psychology. The metaphors involved (cleanliness, motion, distance, warmth) may in some cases be universally meaningful; in other cases not. For example, warm objects may symbolize social inclusion universally, because physical closeness is literally warm (Zhong & Leornardelli, 2008), and height may symbolize power in most cultural contexts (Landau et al., 2010). But Landau and colleagues noted that other movements – such as head nodding indicating assent, or time being represented by horizontal movement – are culturally specific. For example, a bowed vs upright head posture invokes cognitions related to dishonor and honor, respectively,among men from honor cultures, but not among men from other cultural contexts (Cohen & Leung, 2009). Thus, in different cultural contexts, physical movements are repeatedly practiced in association with particular meanings, so that later, those physical movements prime social cognitive patterns. Once again, real cultural contents – in the form of physical movements and practices – shape social cognition. If embodied or metaphorical social cognitions are grounded in repeated, concrete actions, it re-emphasizes that human cognition, affect, and motivation are best understood as grounded in real worlds, settings, and activities.

Cultural psychology and non-cultural social cognition share the same dedication to describing human cognition as pragmatically situated in real worlds. They share a similar dedication to evolutionary and neural underpinnings of the phenomena they study. And the two fields share an interest in explaining the ways human social cognition is uniquely suited to absorb, transmit, and develop cultural information. In the past, social cognition has outlined a wide topography of research areas for cultural psychologists to study in cultural context. If, in turn, social cognition researchers imitate cultural psychologists in their intent to explain *people in contexts*, the combination could ratchet forward our ability to create comprehensive models of human thought.

ACKNOWLEDGMENT

We thank Vinai Norasakkunkit, Ken Ito, and Sawa Senzaki for their helpful comments on the chapter.

REFERENCES

Adams, G., & Markus, H. R. (2004). Toward a conception of culture suitable for a social psychology of culture. In M. Schaller & C. S. Crandall (Eds.), The psychological foundations of culture (pp. 335–360). Hillsdale, NJ: Erlbaum.

Ames, D. L., & Fiske, S. T. (2010). Cultural neuroscience. *Asian Journal of Social Psychology, 13*, 72–82.

Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist, 63*(7), 602–614.

Azuma, H. (1994). Nihonjin no shitake to kyoiku – hattatsu no nichibeihikaku ni motozuite [Education and socialization in Japan: A comparison between Japan and the United States]. Tokyo: University of Tokyo Press.

Barkow, J. H., Cosmides, L., & Tooby, J. (Eds.) (1992). *The adapted mind: Evolutionary psychology and the generation of culture*. New York: Oxford University Press.

Barreto, M., Ellemers, N., & Fiske, S. T. (2010). "What did you say, and who do you think you are?" How power differences affect emotional reactions to prejudice. *Journal of Social Issues, 66*, 477–492.

Baumeister, R. F. (2005). *The cultural animal: Human nature, meaning, and social life*. New York: Oxford University Press.

Bond, M. H., & Cheung, T. (1983). College students' spontaneous self-concept. *Journal of Cross-Cultural Psychology, 14*, 153–171.

Bruner, J. (1990). *Acts of meaning: Four lectures on mind and culture*. Cambridge, MA: Harvard University Press.

Brunswik, E. (1943). Organismic achievement and environmental probability. *Psychological Review, 50*, 255–272.

Buss, D.M. (2010). Origins of mating behavior. In N. B. Moore, J. K. Davidson, & T. D. Fisher (Eds.), *Speaking of sexuality* (pp. 45–57). New York: Oxford University Press.

Carpenter, M., Akhtar, N., & Tomasello, M. (1998). Fourteen- to 18-month-old infants differentially imitate intentional and accidental actions. *Infant Behavior and Development, 21*, 315–330.

Chentsova-Dutton, Y. E., & Tsai, J. L. (2010). Self-focused attention and emotional reactivity: The role of culture. *Journal of Personality and Social Psychology, 98*, 507–519.

Chiao, J. Y., & Bebko, G. M. (in press). Cultural neuroscience of social cognition. In S. Han & E. Poeppel (Eds.) *Culture and identity: Neural frames of social cognition*. New York: Springer Press.

Chiao J. Y., & Blizinsky, K.D. (2010). Culture–gene coevolution of individualism–collectivism and the serotonin transporter gene. *Proceedings of Biological Sciences, 277*, 529–537.

Chiao, J. Y., Harada, T., Komeda, H., Li, Z., Mano, Y., Saito, D. N., et al. (2009). Neural basis of individualistic and collectivistic views of self. *Human Brain Mapping, 30*(9), 2813–2820.

Chiu, C., Gelfand, M. J., Yamagishi, T., Shteynberg, G., & Wan, C. (2010). Intersubjective culture: The role of intersubjective perceptions in cross-cultural research. *Perspectives on Psychological Science, 5*, 482–493.

Choi, I., & Choi, Y. (2002). Culture and self-concept flexibility. *Personality and Social Psychology Bulletin, 28*, 1508–1517.

Choi, I., Dalal, R., Kim-Prieto, C., & Park, H. (2003). Culture and judgment of causal relevance. *Journal of Personality and Social Psychology, 84*, 46–59.

Choi, I., & Nisbett, R. E. (1998). The situational salience and cultural differences in the correspondence bias and the actor–observer bias. *Personality and Social Psychology Bulletin, 24*, 949–960.

Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin,125*, 47–63.

Choi, K., & Ross, M. (2011). Cultural differences in process and person focus: Congratulations on your hard work versus celebrating your exceptional brain. *Journal of Experimental Social Psychology, 47,* 343–349.

Cialdini, R. B., Wosinska, W., Barrett, D. W., Butner, J., & Gornik-Durose, M. (1999). Compliance with a request in two cultures: The differential influence of social proof and commitment/consistency on collectivists and individualists. *Personality and Social Psychology Bulletin, 25*, 1242–1253.

Cohen, D. (2001). Cultural variation: Considerations and implications. *Psychological Bulletin, 127*, 451–471.

Cohen, D. (2007). Methods in cultural psychology. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology*. New York: Guilford Press.

Cohen, D., & Gunz, A. (2002). As seen by the other…: Perspectives on the self in the memories and emotional perceptions of Easterners and Westerners. *Psychological Science, 13*, 55–59.

Cohen, D., & Hoshino-Browne, E. (2005). Insider and outsider perspectives on the self and social world. In R. M. Sorrention, D. Cohen, J. M Olson, & M. P. Zanna (Eds.), *Culture and social behaviour: The Tenth Ontario Symposium* (pp. 49–76). Hillsdale, NJ: Laurence Erlbaum.

Cohen, D., & Leung, A. K. Y. (2009). The hard embodiment of culture. *European Journal of Social Psychology, 29,* 1278–1289.

Cousins, S. D. (1989). Culture and selfhood in Japan and the U.S. *Journal of Personality and Social Psychology, 56*, 124–131.

Cuddy, A. J. C., Fiske, S. T., Kwan, V. S. Y., Glick, P., Demoulin, S., Leyens, J., et al. (2009). Stereotype content model across cultures: Towards universal similarities and some differences. *British Journal of Social Psychology, 48*(1), 1–33.

Daly, M., & Wilson, M. (2010). Cultural inertia, economic incentives, and the persistence of "Southern violence". In M. Schaller, A. Norenzayan, S. J. Heine, T. Yamagishi, & T. Kameda (Eds.), *Evolution, culture, and the human mind* (pp. 229–241). New York: Psychology Press.

Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology, 68*, 653–663.

Duffy, S., Toriyama, R., Itakura, S., & Kitayama, S. (2009). Development of cultural strategies of attention in North American and Japanese children. *Journal of Experimental Child Psychology, 102*, 351–359.

Durante, F., Fiske, S. T., Cuddy, A. J., Kervyn, N., et al. (2011). *Income inequality increases ambivalence in the stereotype content model: Cross-national patterns*. Unpublished paper.

Edgerton, R. B. (1971). *The individual in cultural adaptation: A study of four East African peoples.* Berkeley, CA: University of California Press.

Endo, Y., & Meijer, Z. (2004). Autobiographical memory of success and failure experiences. In Y. Kashima, Y. Endo, E. S. Kashima, C. Leung, & J. McClure (Eds.), *Progress in Asian social psychology* (Vol. 4, pp. 67–84). Seoul: Kyoyook-Kwahak-Sa Publishing Company.

Fast, N. J., Heath, C., & Wu, G. (2009). Common ground and cultural prominence: How conversation reinforces culture. *Psychological Science, 20*, 904–911.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Fiske, S. T. (1992). Thinking is for doing: Portraits of social cognition from daguerreotype to laserphoto. *Journal of Personality and Social Psychology, 63*(6), 877–889.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York: McGraw-Hill.

Fiske, S. T., & Taylor, S. E. (2008). *Social cognition: From brains to culture*. New York: McGraw-Hill.

Freedman, J. L., & Fraser, S. C. (1966). Compliance without pressure: The foot-in-the-door technique. *Journal of Personality and Social Psychology, 4*, 195–202.

Geertz, C. (1973*). The interpretation of cultures*. New York: Basic Books.

Gelernter J., Kranzler, H., & Cubells, J. F. (1997) Serotonin transporter protein (SLC6A4) allele and haplotype frequencies and linkage disequilibria in African- and European-American and Japanese populations and in alcohol-dependent subjects. *Human Genetics, 101*, 243–246.

Giedion, S. (1964). *Space, time and architecture: The growth of a new tradition* (4th ed.). Cambridge, MA: Harvard University Press.

Goh, J. O., Chee, M. W., Tan, J. C., Venkatraman, V., Hebrank, A., Leshikar, E. D., et al. (2007). Age and culture modulate object processing and object–science binding in the ventral visual area. *Cognitive, Affective & Behavioral Neuroscience, 7*, 44–52.

Goh, J. O., Tan, J. C., & Park, D. C. (2009). Culture modulates eye-movements to visual novelty. *PLoS ONE, 4(12*), e8238.

Hamamura, T., Meijer, Z., Heine, S. J., Kamaya, K., & Hori, I. (2009). Approach–avoidance motivations and information processing: A cross-cultural analysis. *Personality and Social Psychology Bulletin, 35*, 454–462.

Heine, S. J., Kitayama, S., Lehman, D. R., Takata, T., Ide, E., Leung, C., et al. (2001). Divergent consequences of success and failure in Japan and North America: An investigation of self-improving motivations and malleable selves. *Journal of Personality and Social Psychology, 81*, 599–615.

Heine, S. J., & Lehman, D. R. (1997). Culture, dissonance, and self-affirmation. *Personality and Social Psychology Bulletin*, *23*, 389–400.

Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review, 106*, 766–794.

Heine, S. J., Lehman, D. R., Peng, K., & Greenholtz, J. (2002). What's wrong with cross-cultural comparisons of subjective Likert scales: The reference-group problem. *Journal of Personality and Social Psychology, 82*, 903–918.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*(2–3), 61–83.

Hogg, M. A. (2010). Influence and leadership. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *The handbook of social psychology* (5th ed., Vol. 2, pp. 1166–1206). New York: Wiley.

Holtgraves, T. M., & Kashima, Y. (2008). Language, meaning, and social cognition. *Personality and Social Psychology Review, 12*(1), 73–94.

Hong, Y., Morris, M. W., Chiu, C., & Benet-Martínez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*(7), 709–720.

Imada, T., & Kitayama, S. (2010). Social eyes and choice justification: Culture and dissonance revisited. *Social Cognition, 28*(5), 589–608.

Iwao, S. (1997). Consistency orientation and models of social behavior: Is it not time for West to meet East? *Japanese Psychological Research, 39*, 323–332.

Ji, L. (2008). The leopard cannot change his spots, or can he? Culture and the development of lay theories of change. *Personality and Social Psychology Bulletin, 34*, 613–622.

Ji, L., Nisbett, R. E., & Su, Y. (2001). Culture, change and prediction. *Psychological Science, 12*, 450–456.

Ji, L., Peng, K., & Nisbett, R. E. (2000). Culture, control, and perception of relationships in the environment. *Journal of Personality and Social Psychology, 78*, 943–955.

Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology, 3*, 1–24.

Kanagawa, C., Cross, S. E., & Markus, H. R. (2001). "Who am I?": The cultural psychology of the conceptual self. *Personality and Social Psychology Bulletin, 27*, 90–103

Kashima, Y. (2009). Culture comparison and culture priming: A critical analysis. In R. S. Wyer, C. Chiu, & Y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 53–77). New York: Psychology Press.

Kashima, Y., Kashima, E. S., Kim, U., & Gelfand, M. (2006). Describing the social world: Object-centered versus process-centered descriptions. *Journal of Experimental Social Psychology, 42*, 388–396.

Kashima, Y., Siegal, M., Tanaka, K., & Kashima, E. (1992). Do people believe behaviors are consistent with attitudes? Toward a cultural psychology of attribution processes. *British Journal of Social Psychology, 31*, 111–124.

Kim, H. S., & Drolet, A. (2009). Express your social self: Cultural differences in choice of brand-name versus generic products. *Personality and Social Psychology Bulletin, 35*(12), 1555–1566.

Kim, H. S., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology, 77*, 785–800.

Kim, H. S., Sherman, D. K., Sasaki, J. Y., Xu, J., Chu, T. Q., Ryu, C., et al. (2010). Culture, distress, and oxytocin receptor polymorphism (OXTR) interact to influence emotional support seeking. *PNAS Proceedings of the National Academy of Sciences of the United States of America, 107*(36), 15717–15721.

Kim, Y.-H., Cohen, D. & Au, W.-T. (2010). The jury and abjury of my peers: The self in face and dignity culture. *Journal of Personality and Social Psychology, 98*, 904–916.

Kitayama, S., & Bowman, N. A. (2010). Cultural consequences of voluntary settlement in the frontier: Evidence and implications. In M. Schaller, A. Norenzayan, S. J. Heine, T. Yamagishi, & T. Kameda (Eds.), *Evolution, culture, and the human mind* (pp. 205–227). New York: Psychology Press.

Kitayama, S., Conway, L. G., III, Pietromonaco, P. R., Park, H., & Plaut, V. C. (2010). Ethos of independence across regions in the United States: The production–adoption model of cultural change. *American Psychologist, 65*(6), 559–574.

Kitayama, S., Duffy, S., Kawamura, T., & Larsen, J. T. (2003). Perceiving an object and its context in different cultures: A cultural look at New Look. *Psychological Science, 14*, 201–206.

Kitayama, S., Ishii, K., Imada, T., Takemura, K., & Ramaswamy, J. (2006). Voluntary settlement and the spirit of independence: Evidence from Japan's "Northern frontier". *Journal of Personality and Social Psychology, 91*(3), 369–384.

Kitayama, S., Markus, H. R., & Kurokawa, M. (2000). Culture, emotion, and well-being: Good feeling in Japan and the United States. *Cognition & Emotion, 14*, 93–124.

Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective processes in the construction of the self: Self-enhancement in the United States and self-criticism in Japan. *Journal of Personality and Social Psychology, 72*, 1245–1267.

Kitayama, S., Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality and Social Psychology, 91*, 890–903.

Kitayama, S., Park, H., Sevincer, A. T., Karasawa, M., & Uskul, A. K. (2009). A cultural task analysis of implicit independence: Comparing North America, Western Europe, and East Asia. *Journal of Personality and Social Psychology, 97*(2), 236–255.

Kitayama, S., Snibbe, A. C., Markus, H. R., & Suzuki, T. (2004). Is there any "free" choice? Self and dissonance in two cultures. *Psychological Science, 15*(8), 527–533.

Kitayama, S., & Uskul, A. K. (2011). Culture, mind, and the brain: Current evidence and future directions. *Annual Review of Psychology, 62*, 419–449.

Klein, O., & Snyder, M. (2003). Stereotypes and behavioral confirmation: From interpersonal to intergroup perspectives. In M. P. Zanna (Ed.), *Advances in experimental social*

psychology (Vol. 35, pp. 153–234). San Diego, CA: Academic Press.

Koo, M., & Choi, I. (2005). Becoming a holistic thinker: Training effect of Oriental medicine on reasoning. *Personality and Social Psychology Bulletin, 31,* 1264–1272.

Kraus, M. W., Piff, P. K., & Keltner, D. (2009). Social class, sense of control, and social explanation. *Journal of Personality and Social Psychology, 97*(6), 992–1004.

Kroeber, A. L., & Kluckhohn, C. (1952). *Culture: A critical review of concepts and definitions*. New York: Random House.

Kühnen, U., Hannover, B., Roeder, U., Shah, A. A., Schubert, B., Upmeyer, A., et al. (2001). Cross-cultural variations in identifying embedded figures: Comparisons from the United States, Germany, Russia, and Malaysia. *Journal of Cross-Cultural Psychology, 32*(3), 365–371.

Lam, A. G., & Zane, N. W. S. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology, 35*, 446–459.

Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin, 136*, 1045–1067.

Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology, 78*, 1122–1134.

Lee, F., Hallahan, M., & Herzog, T. (1996). Explaining real-life events: How culture and domain shape attributions. *Personality and Social Psychology Bulletin, 22*, 732–741.

Leung, A. K., & Cohen, D. (2007). The soft embodiment of culture: Camera angles and motion through time and space. *Psychological Science, 18*(9), 824–830.

Lewin, K. (1939). Field theory and experiment in social psychology: Concepts and methods. *American Journal of Sociology, 44*, 868–896.

Ma-Kellams, C., Spencer-Rodgers, J., & Peng, K. (2011). I am against us? Unpacking cultural differences in ingroup favoritism via dialecticism. *Personality and Social Psychology Bulletin, 37*(1), 15–27.

Markus, H. R., & Hamedani, M. G. (2007). Sociocultural psychology: The dynamic interdependence among self systems and social systems. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 3–39). New York: Guilford Press.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224–253.

Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution. *Perspectives on Psychological Science, 5*(4), 420–430.

Markus, H. R., Uchida, Y., Omoregie, H., Townsend, S. S. M., & Kitayama, S. (2006). Going for the gold: Models of agency in Japanese and American contexts. *Psychological Science*, *17*, 103–112.

Masuda, T., Ellsworth, P., Mesquita, B., Leu, J., Tanida, S., & van de Veerdonk, E. (2008). Placing the face in context: Cultural differences in the perception of facial emotion. *Journal of Personality and Social Psychology, 94*, 365–381.

Masuda, T., Gonzalez, R., Kwan, L., & Nisbett, R. E. (2008). Culture and aesthetic preference: Comparing the attention to context of East Asians and European Americans. *Personality and Social Psychology Bulletin, 34*, 1260–1275.

Masuda, T., & Kitayama, S. (2004). Perceived-induced constraint and attitude attribution in Japan and in the US: A case for cultural dependence of the correspondence bias. *Journal of Experimental Social Psychology, 40*, 409–416.

Masuda, T., & Nisbett, R. E. (2001). Attending holistically vs. analytically: Comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology, 81*, 922–934.

Matsumoto, D. (1999). Culture and self: An empirical assessment of Markus and Kitayama's theory of independent and interdependent self-construals. *Asian Journal of Social Psychology, 2*, 289–310.

McCauley, R., & Henrich, J. (2006) Susceptibility to the Müller–Lyer illusion, theory-neutral observation, and the diachronic penetrability of the visual input system. *Philosophical Psychology, 19*, 1–23.

Meltzoff, A. (1995). Understanding the intentions of others: Re-enactment of intended acts by 18 month old children. *Developmental Psychology, 31*, 838–850.

Miller, J. G. (1984). Culture and development of everyday social explanation. *Journal of Personality and Social Psychology, 46*, 961–983.

Miyamoto, Y., & Ji, L.-J. (2010). *Influencing others fosters analytic cognition, whereas adjusting to others fosters holistic cognition*. Unpublished manuscript, University of Wisconsin.

Miyamoto, Y., & Kitayama, S. (2002). Cultural variation in correspondence bias: The critical role of attitude diagnosticity of socially constrained behaviour. *Journal of Personality and Social Psychology, 83*, 1239–1248.

Miyamoto, Y., Nisbett, R. E., & Masuda, T. (2006). Culture and the physical environment: Holistic versus analytic perceptual affordances. *Psychological Science, 17*, 113–119.

Miyamoto, Y., & Wilken, B. (2010). Culturally contingent situated cognition: Influencing othersfosters analytic perception in the U.S. but not in Japan. Psychological Science, 21, 1616–1622.Morling, B. cultural "tasks."), & Evered, S. (2006). Secondary control reviewed and defined. *Psychological Bulletin, 132*, 269–296.

Morling, B., & Lamoreaux, M. (2008). Measuring culture outside the head: A meta-analysis of individualism–collectivism in cultural products. *Personality and Social Psychology Review, 12*(3), 199–221.

Morling, B., Kitayama, S., & Miyamoto, Y. (2002). Cultural practices emphasize influence in the United States and adjustment in Japan. *Personality and Social Psychology Bulletin, 28*, 311–323.

Morris, M. W., & Mok, A. (2011). Isolating effects of cultural schemas: Cultural priming shifts Asian-Americans' biases in social description and memory. *Journal of Experimental Social Psychology, 47*(1), 117–126.

Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology, 67*, 949–971.

Na, J., & Choi, I. (2009). Culture and first-person pronouns. *Personality and Social Psychology Bulletin, 35*(11), 1492–1499.

Na, J., Grossmann, I., Varnum, M. E. W., Kitayama, S., Gonzalez, R., & Nisbett, R. E. (2010). Cultural differences are not always reducible to individual differences. *Proceedings of the National Academy of Sciences of the United States of America, 107*(14), 6192–6197.

Na, J., & Kitayama, S. (2010). *Trait-based person perception is culture-specific: Behavioral and neural evidence.* Manuscript submitted for publication.

Nagell, K., Olguin, R. S., & Tomasello, M. (1993). Processes of social learning in the tool use of chimpanzees (*Pan troglodytes*) and human children (*Homo sapiens*). *Journal of Comparative Psychology, 107*, 174–186.

Nisbett, R. E. (2003). *The geography of thought.* New York: Free Press.

Nisbett, R. E., & Cohen, D. (1996). *Culture of honor: The psychology of violence in the South.* Boulder, CO: Westview Press.

Nisbett, R. E., & Masuda, T. (2003). Culture and point of view. *Proceedings of the National Academy of Sciences of the United States of America, 100*, 11163–11175.

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic vs. analytic cognition. *Psychological Review, 108*, 291–310.

Nisbett, R. E., & Ross, L. (1980). *Human inference: Strategies and shortcomings of social judgment.* Englewood Cliffs, NJ: Prentice Hall.

Norenzayan, A., Choi, I., & Nisbett, R. E. (2002). Cultural similarities and differences in social influence: Evidence from behavioural predictions and lay theories of behaviour. *Personality and Social Psychology Bulletin, 28*, 109–120.

Norenzayan, A., & Heine, S. J. (2005). Psychological universals: What are they and how can we know? *Psychological Bulletin, 135*, 763–784.

Norenzayan, A., Smith, E. E., Kim, B. J., & Nisbett, R. E. (2002). Cultural preferences for formal versus intuitive reasoning. *Cognitive Science, 26*, 653–684.

Oishi, S. (2010). The psychology of residential mobility: Implications for the self, social relationships, and well-being. *Perspectives on Psychological Science, 5*(1), 5–21.

Oishi, S., & Diener, E. (2003). Culture and well-being: The cycle of action, evaluation and decision. *Personality and Social Psychology Bulletin, 29*, 939–949.

Oishi, S., & Graham, J. (2010). Social ecology: Lost and found in psychological science. *Perspectives on Psychological Science, 5*(4), 356–377.

Oyserman, D., Coon, H., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*, 3–73.

Oyserman, D., & Lee, S. W. (2007). Priming "culture": Culture as situated cognition. In S. Kitayama, & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 255–279). New York: Guilford Press.

Oyserman, D., & Lee, S. W. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin, 134*, 311–342.

Oyserman, D., & Sorensen, N. (2009). Understanding cultural syndrome effects on what and how we think: A situated cognition model. In R. S. Wyer, C. Chiu, & Y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 25–52). New York: Psychology Press.

Park, D. C., & Huang, C. (2010). Culture wires the brain: A cognitive neuroscience perspective. *Perspectives on Psychological Science, 5*(4), 391–400.

Peng, K., & Knowles, E. D. (2003). Culture, education, and the attribution of physical causality. *Personality and Social Psychology Bulletin, 29*, 1272–1284.

Peng, K., & Nisbett, R. E. (1999). Culture, dialecticism, and reasoning about contradiction. *American Psychologist*, *54*, 741–754.

Prentice, D. A., & Miller, D. T. (1996). Pluralistic ignorance and the perpetuation of social norms by unwitting actors. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 28, pp. 161–209). San Diego, CA: Academic Press.

Rhee, E., Uleman, J. S., Lee, H., & Roman, R. J. (1995). Spontaneous self-descriptions and ethnic identities in individualistic and collectivistic cultures. *Journal of Personality & Social Psychology, 69*, 142–152.

Richerson, P. J., & Boyd, R. (2005). *Not by genes alone: How culture transformed human evolution.* Chicago, IL: University of Chicago Press.

Rule, N. O., Ambady, N., Adams, R. B, Ozono, H., Nakashima, S., Yoshikawa, S., et al. (2010). Polling the face: Prediction and consensus across cultures. *Journal of Personality and Social Psychology, 98*, 1–15.

Savani, K., Morris, M. W., Naidu, N. V. R., Kumar, S., & Berlia, N. V. (2011). Cultural conditioning: Understanding interpersonal accommodation in India and the United States in terms of the modal characteristics of interpersonal influence situations. *Journal of Personality and Social Psychology, 100*, 84–102.

Schaller, M. (2006). Parasites, behavioral defenses, and the social psychological mechanisms through which cultures are evoked. *Psychological Inquiry, 17*(2), 96–137.

Schaller, M., & Murray, D. R. (2010). Infectious diseases and the evolution of cross-cultural differences. In M. Schaller, A. Norenzayan, S. J. Heine, T. Yamagishi & T. Kameda (Eds.), *Evolution, culture, and the human mind* (pp. 243–256). New York: Psychology Press.

Schaller, M., Norenzayan, A., Heine, S. J., Yamagishi, T., & Kameda, T. (Eds.) (2010). *Evolution, culture, and the human mind.* New York: Psychology Press.

Schimmack, U., Oishi, S., & Diener, E. (2005). Individualism: A valid and important dimension of cultural differences between nations. *Personality and Social Psychology Review, 9*, 17–31.

Schug, J., Yuki, M., Horikawa, H., & Takemura, K. (2009). Similarity attraction and actually selecting similar others: How cross-societal differences in relational mobility affect interpersonal similarity in Japan and the USA. *Asian Journal of Social Psychology, 12*(2), 95–103.

Segall, M., Campbell, D., & Herskovits, M. J. (1966) *The influence of culture on visual perception.* New York: The Bobbs-Merrill Company.

Sherif, M. (1935). A study of some social factors in perception. *Archives of Psychology, 27*(187), 17–22.

Shweder, R. (1989). Cultural psychology: What is it? In J. Stigler, R. Shweder, & G. Herdt (Eds.), *Cultural psychology: The Chicago Symposia on Culture and Development* (pp. 1–46). New York: Cambridge University Press.

Shytenberg, G. (2010). A silent emergence of culture: The social tuning effect. *Journal of Personality and Social Psychology, 99*, 683–689.

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin, 20*(5), 580–591.

Singelis, T. M., Bond, M. H., Sharkey, W. F., & Lai, C. S. Y. (1999). Unpackaging culture's influence on self-esteem and embarrassability: The role of self-construals. *Journal of Cross-Cultural Psychology, 30*, 315–341.

Snibbe, A. C., & Markus, H. R. (2005). You can't always get what you want: Educational attainment, agency, and choice. *Journal of Personality and Social Psychology, 88*, 703–720.

Spencer-Rodgers, J., Boucher, H. C., Peng, K., & Wang, L. (2009). Cultural differences in self-verification: The role of naïve dialecticism. *Journal of Experimental Social Psychology, 45*(4), 860–866.

Spencer-Rodgers, J., & Peng, K. (2004). The dialectical self: Contradiction, change, and holism in the East Asian self-concept. In R. M. Sorrentino, D. Cohen, J. M. Olsen, & M. P. Zanna (Eds.), *Culture and social behavior: The Ontario Symposium* (Vol. 10, pp. 227–250). Mahwah, NJ: Lawrence Erlbaum.

Sperber, D. (1996). *Explaining culture: A naturalistic approach.* Oxford, UK: Blackwell.

Spina, R. R., Ji, L., Guo, T., Zhang, Z., Li, Y., & Fabrigar, L. (2010). Cultural differences in the representativeness heuristic: Expecting a correspondence in magnitude between cause and effect. *Personality and Social Psychology Bulletin, 36*(5), 583–597.

Stevenson, H. W., & Stigler, J. W. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education.* New York: Summit Books.

Sui, J., Liu, C. H., & Han, S. (2009). Cultural difference in neural mechanisms of self-recognition. *Social Neuroscience, 4,* 402–411.

Takano, Y., & Osaka, E . (1999). An unsupported common view: Comparing Japan and the U.S. on individualism–collectivism. *Asian Journal of Social Psychology, 2*, 311–341.

Taylor, C. (2007) *A secular age*. Cambridge, MA: Harvard University Press.

Tomasello, M. (1993). Cultural learning. *Behavioral and Brain Sciences, 16*, 495–552.

Tomasello, M. (1999). *The cultural origins of human cognition.* Cambridge, MA: Harvard University Press.

Tomasello, M. (2009). *Why we cooperate.* Cambridge, MA: MIT Press.

Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist, 51*, 407–415.

Triandis, H. C., Bontempo, R., Leung, K., & Hui, C. K. (1990). A method for determining cultural, demographic, and personal constructs. *Journal of Cross-Cultural Psychology, 21*, 302–318.

Uchida, Y., & Kitayama, S. (2009). Happiness and unhappiness in east and west: Themes and variations. *Emotion, 9*, 441–456.

Uchida, Y., Kitayama, S., Mesquita, B., Reyes, J. A. S., & Morling, B. (2008). Is perceived emotional support beneficial? Well-being and health in independent and interdependent cultures. *Personality and Social Psychology Bulletin, 34,* 741–754.

Uchida, Y., Townsend, S. S. M., Markus, H. R., & Bergsieker, H. B. (2009). Emotions as within or between people? Cultural variation in lay theories of emotion expression and inference. *Personality and Social Psychology Bulletin, 35*, 1427–1439.

Uskul, A. K., Kitayama, S., & Nisbett, R. E. (2008). Ecocultural basis of cognition: Farmers and fishermen are more holistic than herders. *Proceedings of National Academy of Sciences of the United States of America, 105*, 8552–8556.

Varnum, M. E. W., Grossmann, I., Kitayama, S., & Nisbett, R. E. (2010). The origin of cultural differences in cognition: The social orientation hypothesis. *Current Directions in Psychological Science, 19*(1), 9–13.

Wan, C., Chiu, C., Peng, S., & Tam, K. (2007). Measuring cultures through intersubjective cultural norms: Implications for predicting relative identification with two or more cultures. *Journal of Cross-Cultural Psychology, 38*(2), 213–226.

Wan C., Tam K.-P., & Chiu C.-Y. (2010). Intersubjective cultural representations predicting behavior: The case of political culture and voting. *Asian Journal of Social Psychology, 13,* 200–273.

Weisbuch, M., & Ambady, N. (2009). Unspoken cultural influence: Exposure to and influence of nonverbal bias. *Journal of Personality and Social Psychology, 96*, 1104–1119.

Weisz, J. R., Rothbaum, F. M., & Blackburn, T. C. (1984). Standing out and standing in: The psychology of control in America and Japan. *American Psychologist, 39*, 955–969.

Witkin, H. A. A. (1967). Cognitive-style approach to cross-cultural research. *International Journal of Psychology, 2*, 233–250.

Yamagishi, T., Hashimoto, H., & Schug, J. (2008). Preferences versus strategies as explanations for culture-specific behavior. *Psychological Science, 19*(6), 579–584.

Zhong, C., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion literally feel cold? *Psychological Science, 19*(9), 838–842.

Zhu, Y., Zhang, L., Fan, J., & Han, S. (2007). Neural basis of cultural influence on self-representation. *NeuroImage, 34*, 1310–1316.

Zou, X., Tam, K., Morris, M. W., Lee, S., Lau, I. Y., & Chiu, C. (2009). Culture as common sense: Perceived consensus versus personal beliefs as mechanisms of cultural influence. *Journal of Personality and Social Psychology, 97*(4), 579–597.