

Multicultural Minds

A Dynamic Constructivist Approach to Culture and Cognition

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The authors present a new approach to culture and cognition, which focuses on the dynamics through which specific pieces of cultural knowledge (implicit theories) become operative in guiding the construction of meaning from a stimulus. Whether a construct comes to the fore in a perceiver's mind depends on the extent to which the construct is highly accessible (because of recent exposure). In a series of cognitive priming experiments, the authors simulated the experience of bicultural individuals (people who have internalized two cultures) of switching between different cultural frames in response to culturally laden symbols. The authors discuss how this dynamic, constructivist approach illuminates (a) when cultural constructs are potent drivers of behavior and (b) how bicultural individuals may control the cognitive effects of culture.

Although the multiplicity of cultural identities and influences is hardly a new phenomenon, it is one increasingly discussed. In contemporary popular discourse, it is becoming increasingly rare to hear the word *cultural* without the prefix *multi-*. Multicultural experience, however, has been underinvestigated in psychological research on culture, particularly within the most prominent research paradigm of cross-cultural psychology (see Segall, Lonner, & Berry, 1998). There are several reasons for this. First, somewhat obviously, methodological orientations influence a researcher's choice of topics, and culture has been assessed primarily as an individual difference, with the methods for its evaluation developed by clinical and personality researchers to distinguish types of persons. Insofar as the cross-cultural method relies on uncovering differences across cultural groups (usually indexed by nationality), the influence of multiple cultures on an individual merely creates error variance. Second, on a more subtle level, the theoretical assumptions predominant in cross-cultural scholarship have impeded an analysis of the dynamics of multiple cultures in the same mind. The effort to identify the knowledge that varies between but not within large cultural groups has led to the conceptualization of cultural knowledge in terms of very general constructs,

such as individualistic as opposed to collectivist value orientations, which apply to all aspects of life (Segall et al., 1998). With the emphasis on domain-general constructs has come the assumption that the influence of culture on cognition is continual and constant. Cultural knowledge is conceptualized to be like a contact lens that affects the individual's perceptions of visual stimuli all of the time. This conception unfortunately leaves little room for a second internalized culture within an individual's psychology. In sum, the methods and assumptions of cross-cultural psychology have not fostered the analysis of how individuals incorporate more than one culture.

Our introduction of an alternative approach to culture takes as a point of departure a commonly reported experience, which we call *frame switching*, among bicultural individuals. While frame switching, the individual shifts between interpretive frames rooted in different cultures in response to cues in the social environment (LaFromboise, Coleman, & Gerton, 1993). To capture how bicultural individuals switch between cultural lenses, we adopt a conceptualization of internalized culture as a network of discrete, specific constructs that guide cognition only when they come to the fore in an individual's mind. Fortunately, theories and methods have been developed in cognitive and social psychology, such as the technique of cognitive prim-

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ing, to manipulate through experiment which of the constructs in an individual's mind comes to the fore (for a review, see Higgins, 1996). We illustrate in this article how this conceptualization creates a set of new methods that involves bicultural participants testing the consequences of culture. These methods offer greater internal validity than do the quasi-experimental comparisons typically relied on in cross-cultural research. After reviewing studies of cultural frame switching, we then discuss how this approach elucidates other topics, such as the relation between cultural beliefs and action, the role of culture in emotions and motivations, and the process of acculturation. This approach illuminates not only the experiences of bicultural individuals but also the more general roles that culture plays in mental and emotional life.

Frame Switching

Bicultural individuals are typically described as people who have internalized two cultures to the extent that both cultures are alive inside of them. Many bicultural individuals report that the two internalized cultures take turns in guiding their thoughts and feelings (LaFromboise et al., 1993; Phinney & Devich-Navarro, 1997). This is interesting because it suggests that (a) internalized cultures are not necessarily blended and (b) absorbing a second culture does not always involve replacing the original culture with the new one. Classical scholarship on African Americans, for instance, describes movement back and forth between "two souls, two thoughts, two unreconciled strivings, two warring ideals" (DuBois, 1903/1989, p. 5). Ethnographies of Asian Americans and Hispanic Americans, among other groups, describe switches between mindsets rooted in dif-

ferent cultures. Consider, for example, the following experience of a Mexican American individual:

At home with my parents and grandparents the only acceptable language was Spanish; actually that's all they really understood. Everything was really Mexican, but at the same time they wanted me to speak good English. . . . But at school, I felt really different because everyone was American, including me. Then I would go home in the afternoon and be Mexican again. (quoted in Padilla, 1994, p. 30)

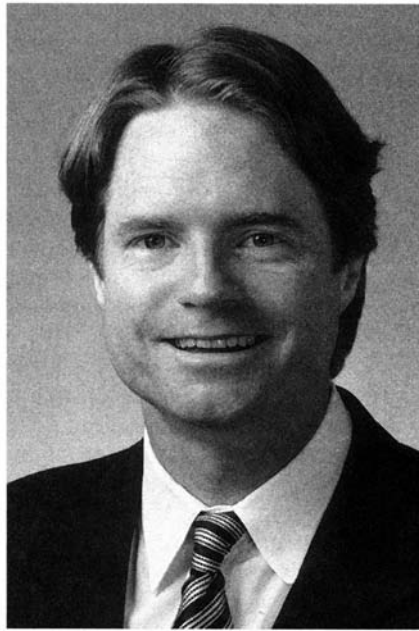
This example illustrates that frame switching may occur in response to cues such as contexts (home or school) and symbols (language) that are psychologically associated with one culture or the other. Reports of frame switching at work are common in the literature on minority or expatriate employees (e.g., Bell, 1991). Similar experiences are reported by ethnographers during fieldwork:

I found myself constantly flip-flopping. . . . The longer I lived in Samoa, the more I was able to use the Samoans' cultural resources . . . the flow of my everyday experiences was increasingly filtered through Samoan models. (Shore, 1996, p. 6)

A Dynamic Constructivist Analysis

To understand frame switching in bicultural individuals, we have adopted an approach influenced by constructivist approaches to culture in several disciplines and by contemporary social psychological research on the dynamics of knowledge activation. A first premise is that a culture is not internalized in the form of an integrated and highly general structure, such as an overall mentality, worldview, or value orientation. Rather, culture is internalized in the form of a loose network of domain-specific knowledge structures, such as categories and implicit theories (Bruner, 1990; D'Andrade, 1984; Shore, 1996; Strauss, 1992). A second premise is that individuals can acquire more than one such cultural meaning system, even if these systems contain conflicting theories. That is, contradictory or conflicting constructs can be simultaneously possessed by an individual; they simply cannot simultaneously guide cognition. The key to this distinction is that possessing a particular construct does not entail relying on it continuously; only a small subset of an individual's knowledge comes to the fore and guides the interpretation of a stimulus. This dynamic constructivist approach differs in its conception of culture from cross-cultural psychology, yet it is a complementary rather than a rival approach in that it builds on previous insights and draws attention to novel research questions and novel accounts of phenomena, such as frame switching.

A basic research question relevant to frame switching is how particular pieces of cultural knowledge become operative in particular interpretive tasks. To investigate this question, we have drawn concepts and methods from social psychological research on how stereotypes, schemas, and other constructs move in and out of operation (Fiske, 1998). A key concept is that the pieces of an individual's knowledge vary in *accessibility* (Higgins, 1996; Wyer & Srull, 1986). The more accessible a construct, the more



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likely it is to come to the fore in the individual's mind and guide interpretation.

But what determines whether a piece of knowledge is highly accessible? A long-standing hypothesis in cognitive and social psychology holds that a construct, such as a category, is accessible to the extent that it has been activated by recent use (Bruner, 1957). Abundant evidence for this comes from experiments in which researchers manipulate whether participants are exposed to a word or image related to a construct (a *prime*) and then measure the extent to which the participants' subsequent interpretations of a stimulus are influenced by the primed construct (for a review, see Higgins, 1996). For example, in one experiment (Chiu et al., 1998), participants were primed either with pictures of a masculine man and a feminine woman or with gender-unrelated (control) pictures. Later, in a purportedly unrelated task, they were asked to interpret an ambiguous behavior (e.g., "Donna's friend ordered a coffee, and so did Donna"). Participants primed with gender-related pictures constructed interpretations that showed an influence of gender stereotypes: For example, they judged Donna to be dependent on others in making decisions. Participants in the control condition did not make such interpretations. In this experiment, gender-related pictures activated stereotypes in the minds of participants, which then made it more likely that these stereotypes became operative and guided inferences when participants sought to make sense of the behavioral stimulus.

An important design feature in many priming studies is that the priming is presented to participants as part of an unrelated experiment, and participants are not aware of its influence in the interpretive task. Some studies have primed constructs that are one step removed from the construct that

applies to the interpretive task. For example, priming with words related to African Americans led White participants to interpret hostility in stimulus behavior by race-unspecified actors (Gaertner & McLaughlin, 1983); priming with cues with positive affective valence led participants to subsequently rely on person categories having the same affective valence (Niedenthal & Cantor, 1986). These priming effects rely on the spillover or spread of activation from one construct to other linked constructs within a network of constructs that are psychologically associated for participants (see Anderson, 1976).

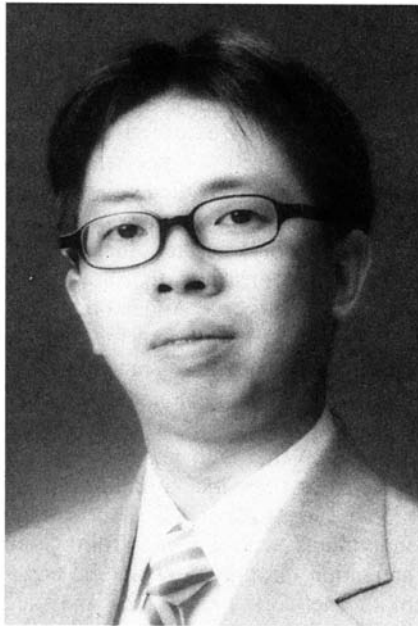
In our research on frame switching, we used the concept of accessibility and the technique of priming to model the phenomenon experimentally. We posited that bicultural individuals who have been socialized into two cultures, A and B, have, as a result, two cultural meaning systems or networks of cultural constructs, which can be referred to as A' and B'. Accordingly, priming bicultural individuals with images from Culture A would spread activation through Network A', elevating the accessibility of the network's categories and the implicit theories the network comprises. Likewise, priming with images from Culture B would spread activation through Network B', elevating the accessibility of the constructs that network comprises. In looking for the ideal primes to test this account, we searched for symbols that would activate constructs central to specific cultural networks yet not so directly related to the interpretive task. Thus, participants could not consciously connect the prime with the stimulus. We turned to iconic cultural symbols.

Icons: Triggers of Cultural Knowledge

Icons have been called "magnets of meaning" in that they connect many diverse elements of cultural knowledge (Betsky, 1997). Like religious icons, cultural icons are images created or selected for their power to evoke in observers a particular frame of mind in a "powerful and relatively undifferentiated way" (Ortner, 1973, p. 1339). The potency and distinctiveness of icons make them ideal candidates for primes that would spread activation in a network of cultural constructs. Some examples of central icons in the mainstream American and Chinese cultural traditions are shown in Figure 1. Exposing Chinese American bicultural individuals to American icons should activate interpretive constructs in their American cultural knowledge network; exposing the same individuals to Chinese icons instead should activate constructs in their Chinese cultural knowledge network.

Interpreting Behavior of Individual and Group Actors: A Litmus Test

Our research also required an interpretive task that is influenced by cultural knowledge in a well-understood manner. Here the legacy of cross-cultural psychology is invaluable in that we can seek to replicate, by priming different cultures within the minds of bicultural individuals, the patterns of differences that have been discovered in previous cross-national comparative studies. Many such patterns



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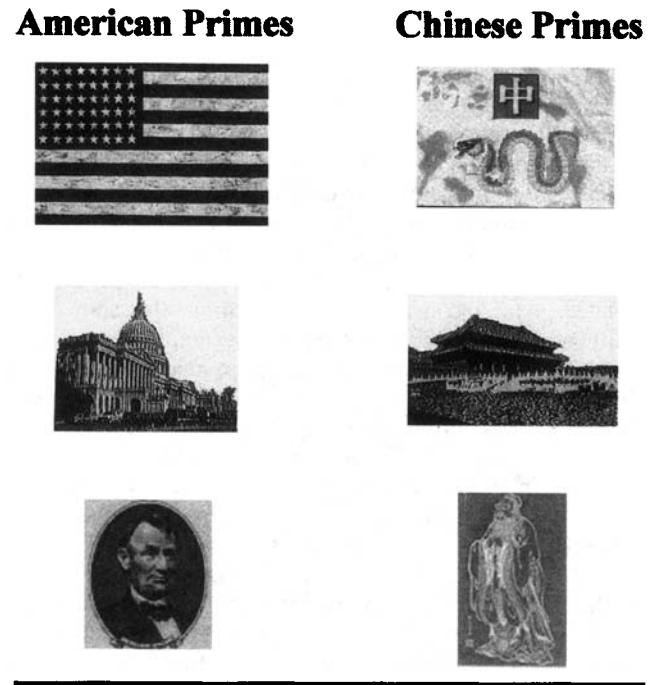
exist. For example, in self-description tasks, North Americans are consistently more likely than Japanese to make self-enhancing statements (Kitayama & Markus, 1994). An important consideration, however, is that many Japanese American biculturals are, no doubt, aware of this difference. Hence, exposing bicultural individuals to cultural icons could affect this difference either through unobtrusive priming of knowledge structures or through demand characteristics. We needed a stimulus task that participants would not consciously connect to cultural icons. In short, the task could not be transparently related to culture.

To develop a test for cultural priming that would be nontransparent to participants, we turned to interpretations of social behavior. Social psychologists have long studied how perceivers attribute the behavior of others to causes, noting systematic biases, such as tracing an individual's actions to personality dispositions rather than other plausible factors such as social context (Heider, 1958; Ross, 1977). Perhaps the most famous evidence for this bias came from studies conducted by Heider and Simmel (1944) in which participants were presented with animated films of geometric shapes, such as triangles and circles, that were moving in patterns suggestive of social interactions. Participants tended to interpret the films by ascribing motives and personalities to an individual shape. Heider (1958) concluded that social information is interpreted by forming units, primarily the unit of an individual person. The person unit then tends to attract most of the perceiver's attention, resulting in causal attributions that overweigh internal personal factors and underweigh factors in the surrounding social situation. Other researchers have studied everyday interactions in which this bias of tracing an individual's behavior to dispositions leads to incorrect interpretations of the individual's behavior and suboptimal ways of interact-

ing with him or her (Jones & Harris, 1967; Morris, Larrick, & Su, 1999). Because of its pervasiveness and consequentiality, this dispositionist bias has been called the *fundamental attribution error* (Ross, 1977).

Recent research has allowed psychologists to identify the role that culture plays in shaping the dispositionist bias in social perception. Prompted by ethnographic accounts of Chinese social understanding (Hsu, 1953), Morris and Peng (1994) investigated the hypothesis that the tendency of perceivers to focus on individuals and interpret behavior in terms of their internal dispositions may be more marked in North America than in China. They reasoned that an implicit theory that individuals are autonomous relative to the pressures of the group is central to American culture, whereas in Chinese culture a more salient implicit theory emphasizes that individuals accommodate the greater autonomy of groups (Su et al., 1999). In studies in which they used several methods, Morris and Peng showed that American participants accorded more weight to an individual's personal dispositions, whereas Chinese participants accorded more weight to an individual's social context. Further evidence for the difference in implicit theories emerged from studies directly measuring generalized beliefs about individuals versus social groups and institutions (Chiu, Dweck, Tong, & Fu, 1997). In a recent review of studies comparing North American and East Asian perceivers, researchers concluded that the sharpest differences in

Figure 1
Examples of Iconic Images in American and Chinese Cultures





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attributions for the cause of an individual's behavior lie in the weight accorded to the contexts of constraints and pressures imposed by social groups (Choi, Nisbett, & Norenzayan, 1999). Consistent with this indication that East Asians accord causal potency to social collectives, in studies of how perceivers attribute actions by groups researchers have found that East Asians make attributions to the dispositions of groups more than Americans do (Memon, Morris, Chiu, & Hong, 1999). In sum, cultural differences in the attributional weight accorded to the dispositions of individuals versus groups are well documented.

An important feature of attribution differences is that they can be studied with nontransparent methods. One of the methods used by Morris and Peng (1994) adapted Heider's strategy of presenting animated films that participants do not consciously associate with social or cultural topics. Morris and Peng designed animated films of fish featuring an individual and a group in which it was ambiguous whether the individual's differing trajectory reflected internal dispositions or the influence of the group. In one type of display, the individual fish swam outside of the group, leaving ambiguous whether the individual's separation reflected an internal disposition (a leader leading other fish) or pressure from the group (an outcast being chased by other fish). In explaining the individual fish's behavior, Chinese participants attributed less to internal disposition of the fish in front but more to the external (group) factors than did American participants (see Figure 2). This method of measuring cultural differences through the ways social perceptions are anthropomorphically projected onto animals has the advantage that participants are unaware culture is relevant to the task.

Cultural Priming Studies

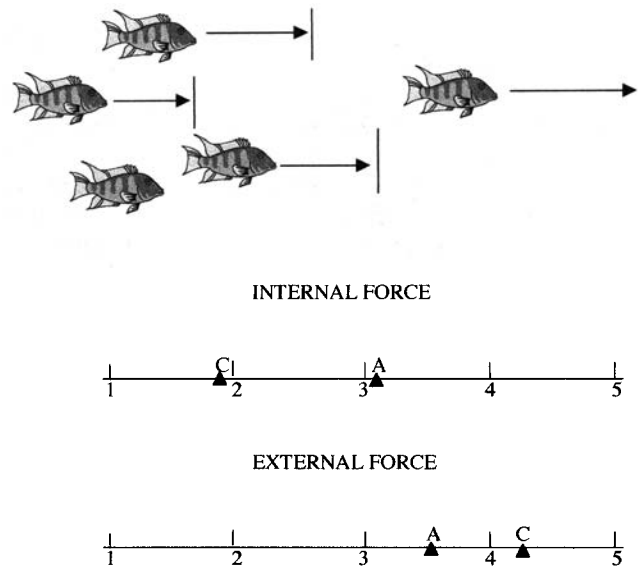
In a series of studies, we experimentally created frame switching among bicultural individuals. Next, we review three of the studies. The first two studies used the priming method to replicate in bicultural individuals the cross-national attribution differences revealed by Morris and Peng (1994). The third study is a conceptual replication of the first two studies, but the dependent measures were attributions for a social event.

Bicultural Participants

Who were the bicultural individuals we recruited in the studies? Our initial studies involved Westernized Chinese students in Hong Kong. Although traditional Chinese values are emphasized in the socialization processes in Hong Kong (Ho, 1986), contemporary university students in Hong Kong are acculturated with Western social beliefs and values (Bond, 1993). This is related to the fact that Hong Kong was a British-administrated territory for more than a century. Before 1997, English, not Chinese, was the official language of instruction in about 80% of the secondary schools (Young, Giles, & Pierson, 1986). Furthermore, large British and American expatriate communities and the salient presence of English-language television, films, and so forth means that Hong Kong Chinese students

Figure 2

A Display Adapted From Morris, Nisbett, and Peng (1995)



Note. Points A and C mark the mean American and Chinese ratings, respectively, on the internal and external attribution scales. From "Causal Attribution Across Domains and Cultures," by M. W. Morris, R. E. Nisbett, and K. Peng, 1995, in D. Sperber, D. Premack, and A. J. Premack, *Causal Cognition: A Multidisciplinary Debate* (pp. 577-612), Oxford, England: Clarendon Press. Copyright 1995 by Clarendon Press. Adapted with permission.

have been exposed to Euro-American social constructs extensively. Yet, although Hong Kong Chinese students are rather Westernized in some aspects of their self-concept and value system (see Bond & Cheung, 1981; Fu, 1999; Triandis, Leung, & Hui, 1990), they maintain their primary social identity as Hong Kong Chinese (Hong, Yeung, Chiu, & Tong, 1999) and subscribe to core Chinese values (Chinese Culture Connection, 1987). In sum, Hong Kong Chinese students in the late 1990s belong to a population of biculturally socialized individuals.

In our later experiment (reported in Hong, Morris, Chiu, & Benet-Martínez, 2000), we tested a different group of bicultural individuals. These were China-born Californian college students who had lived at least five years in a Chinese society and at least five years in North America before attending college. Whereas the Hong Kong bicultural group represented bicultural identification resulting from extensive Westernization of a society, the Chinese American group represented bicultural identification resulting from immigration: These are two primary ways that culture moves across territories to create multicultural societies (Hermans & Kempen, 1998). Although we do not report in this article the study with Chinese American biculturals, results revealed that these participants recognized and were influenced by American and Chinese cultural icons in similar ways as were the members of the Hong Kong bicultural group.

Priming Materials

We presented Hong Kong Chinese students with a set of cultural icons designed to activate the associated social theories that produce cultural biases in attribution. In our research we used several kinds of icons. Some involved symbols (e.g., the American flag vs. a Chinese dragon), legendary figures from folklore or popular cartoons (e.g., Superman vs. Stone Monkey), famous people (e.g., Marilyn Monroe vs. a Chinese opera singer), and landmarks (e.g., the Capitol Building vs. the Great Wall). Several prior studies have demonstrated that exposure to such icons activates the corresponding cultural meaning system. For instance, Hong, Chiu, and Kung (1997, Experiment 1) found that exposure to these Chinese icons led Hong Kong Chinese students to increase their endorsement of Chinese values. Recently, Kimmelmeier and Winter (1998) found that Americans showed an elevated endorsement of independence values after being exposed to the American flag.

Initial Tests

In one study (Hong et al., 1997, Experiment 2), 303 Hong Kong Chinese undergraduate students were randomly assigned to the American culture priming condition, the Chinese culture priming condition, or the control condition. Participants in the American culture priming condition were shown six pictures of American icons and were asked to answer short questions about the pictures (e.g., "Which country does this picture symbolize?" "Use three adjectives to describe the character of the legendary figure in this picture"). Participants in the Chinese culture priming con-

dition were shown six pictures of Chinese icons and were asked to answer the same short questions. These conditions were designed to inject activation into American and Chinese construct networks, respectively, leading to elevated accessibility of their respective implicit theories about the causality of social events. Participants in the control condition were shown six drawings of geometric figures and asked to indicate where they thought there should be a shade or a shadow. This condition was designed to inject no activation into cultural knowledge networks but to otherwise resemble the cultural prime conditions.

Then, in an allegedly unrelated task, participants were given an attribution task adapted from Morris and Peng (1994). In this measure, participants were shown a realistic picture of a fish swimming in front of a group of fish (see Figure 3) and asked to indicate on a 12-point scale why one fish was swimming in front of the group. A score of 1 on the scale meant *very confident that it is because the one fish is leading the other fish* (an internal cause), and a score of 12 meant *very confident that it is because the one fish is being chased by the other fish* (an external cause). Consistent with the pattern identified in cross-national studies (Morris & Peng, 1994), we expected that participants would be less inclined to interpret the individual fish's behavior in terms of the external social pressure after American priming than after Chinese priming. Indeed, as predicted, participants who were exposed to American pictures were significantly less confident in the external (vs. internal) explanation than were those who were exposed to Chinese pictures (see Figure 4). Participants in the control condition fell midway between the two culture priming conditions.

In a second experiment, we replicated the cultural priming effect with a less constricted measure of causal attributions (Hong et al., 1997, Experiment 3). Participants were 75 Hong Kong Chinese undergraduate students who were randomly assigned to the American culture priming condition, the Chinese culture priming condition, or the control condition. In the American culture priming condi-

Figure 3
Stimulus Material Used as the Attributional Stimulus in the First Two Studies

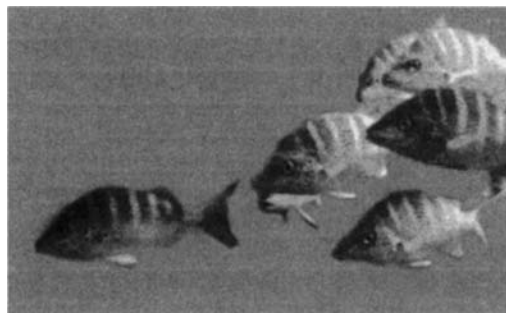
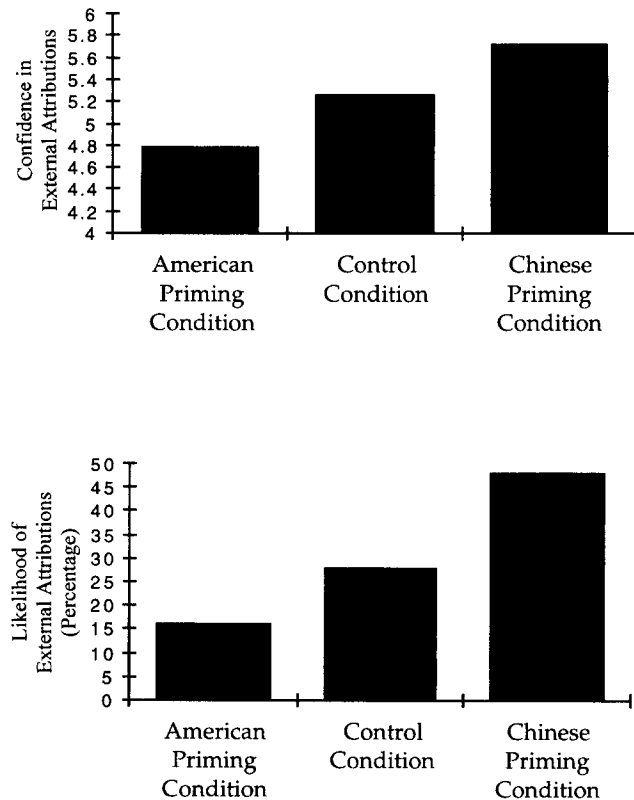


Figure 4
Results From Two Studies That Demonstrated Consistent Cultural Priming Effects in External Attributions About Fish Behavior Among Hong Kong Chinese Bicultural Individuals



Note. Data in the top graph are from Hong et al., 1997, Experiment 2, in which participants interpreted on a scale of 1 (*very confident that it is because the one fish is leading the other fish*) to 12 (*very confident that it is because the one fish is being chased by the other fish*) the social behavior of the fish in Figure 3. Data in the bottom graph are from Hong et al., 1997, Experiment 3, in which participants were asked to provide an open-ended response about the social behavior of the fish in Figure 3. The explanations were coded on the basis of Miller's (1984) coding scheme.

tion, participants were shown five pictures of American icons and asked to write 10 sentences to describe the pictures in terms of American culture. Participants in the Chinese culture priming condition were shown five pictures of Chinese icons and asked to write 10 sentences to describe the pictures in terms of Chinese culture. In the control condition, participants were shown five pictures of physical landscapes and asked to write 10 sentences about the landscapes. This procedure lasted for 10 minutes. Then, in an ostensibly unrelated task, participants were presented with a picture depicting a fish swimming in front of a school of fish and asked to write down what they thought was the major reason why the fish was swimming in front of other fish. This open-ended response format allowed participants to generate explanations that were not limited

to the options we provided. On the basis of Miller's (1984) coding scheme, the explanations were coded into inferences of internal properties or external properties. Again, participants' likelihood of generating external explanations differed significantly across the three experimental conditions. As predicted, fewer participants in the American culture priming condition than in the Chinese culture priming condition generated explanations referring to the external social context (see Figure 4). The proportion of participants who generated external explanations in the control condition fell midway between the proportions of the two culture priming conditions, much as in the previous study.

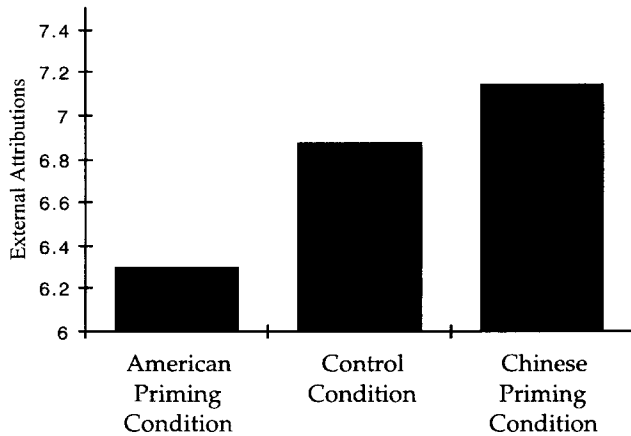
A Conceptual Replication

In our third study, we checked that the priming effect is replicated when the task involves interpreting human actions. We asked participants to make an attribution for a character's deviation from a diet—an action chosen because it has no obvious connection to the cultural icons. We randomly assigned 234 Hong Kong Chinese high school students to one of three priming conditions. Participants in the American culture priming condition saw eight American icons and wrote 10 sentences about American culture. Participants in the Chinese culture priming condition saw eight Chinese icons and wrote 10 sentences about Chinese culture. Participants in the control condition saw pictures of natural landscapes and wrote 10 sentences about the landscapes. This priming manipulation lasted approximately 15 minutes.

Then participants in all conditions read a story about an overweight boy who was advised by a physician not to eat food with high sugar content. One day, he and his friends went to a buffet dinner where a delicious-looking cake was offered. Despite its high sugar content, he ate it. After reading this brief description, participants were asked to respond to three sets of questions. Participants were asked to indicate the extent to which the boy's weight problem was caused by his dispositions. That is, they rated factors such as his personality dispositions (e.g., he lacks the ability to control himself, etc.) on a 10-point scale, ranging from 1 (*has very little influence on his action*) to 10 (*has a lot of influence on his action*). In addition, participants were asked to indicate the extent to which the boy's eating of the cake was caused by pressures and constraints of his external social situation (situational reasons, friends' pressure on him, etc.) on the same 10-point scale.

As in the previous two studies, participants in the three priming conditions differed on the weight accorded to the external, social situations as determinants of the boy's behavior (see Figure 5). As predicted, participants in the American culture priming condition accorded less weight to external social factors than did participants in the Chinese culture priming condition (see Figure 4). On this measure, participants in the control condition fell in between those in the Chinese and American culture priming conditions. Participants in the three priming conditions, however, did not differ on the internal attribution measure. This result is consistent with the conclusions in Choi et

Figure 5
Results From a Study That Demonstrated Cultural Priming Effects in External Attributions About a Boy's Diet Deviation Among Hong Kong Chinese Bicultural Individuals



Note. In this study, participants were asked to rate the suggested external and internal causes of a boy's deviation from his diet on a scale of 1 (*had very little influence on his action*) to 10 (*has a lot of influence on his action*).

al.'s (1999) review that cultural influences on attributions for an individual's behavior originate more from the differential weight placed on the external social context (when these factors are salient) than from the differential weight placed on the actor's internal dispositions.

In sum, through priming bicultural individuals, we have replicated the differences in attribution previously identified in quasi-experimental comparisons of groups in different countries. In so doing, we have experimentally modeled the phenomenon of frame switching in bicultural individuals and have demonstrated that multiple cultures can direct cognition within one individual's mind.

Extending the Dynamic Constructivist Approach

We began by analyzing the experience of frame switching reported by multicultural individuals in terms of a dynamic constructivist view of culture and cognition. We have experimentally modeled the phenomenon through priming experiments and have found support for our predictions. Culturally conferred implicit theories became operative in guiding the interpretation of stimuli to the extent that their accessibility was high because of recent activation. Having documented the fruitfulness of a dynamic constructivist approach to this phenomenon in the experience of bicultural individuals, we now discuss its assumptions and implications more generally as a framework for analyzing the role of culture in psychology.

Our assumption that cultural knowledge exists at the level of domain-specific categories and theories derives

from the constructivist tradition that knowledge must be specific enough to constrain interpretations of stimulus information (Bruner, 1957; Heider, 1958). Bruner (1990) and others have explicated a constructivist view of cultural knowledge as a toolbox of discrete, specific constructs that differs from the dominant view in cross-cultural psychology that cultural knowledge exists as an integrated, domain-general construct. Several contemporary anthropologists (Shore, 1996; Sperber, 1996) and sociologists (DiMaggio, 1997) have staked out similar positions within their disciplines, challenging more general conceptions of cultural knowledge as foundational schemas or value orientations. However, our approach goes beyond these other constructivist approaches to culture in its emphasis on the dynamics of knowledge activation.

In describing the dynamics of cultural knowledge, we see great potential in drawing on research concerning construct accessibility. Whereas the cross-cultural literature generally explains judgment and decision outcomes in terms of whether individuals in a given cultural group possess a given knowledge construct, we see the possession of a construct as a less critical variable than whether the construct is highly accessible (cf. Trafimow, Triandis, & Goto, 1991). Our guess is that the most important implicit theories about the social world are possessed by people everywhere; the variance across cultural groups probably lies in the relative accessibility of particular implicit theories, not in whether the theories are possessed. In our experiments concerning frame switching in bicultural individuals, the emphasis was on *temporary accessibility* of a construct caused by the priming of related constructs. Equally useful in theories of culture may be the related notion that some constructs attain *chronic accessibility*, in part because accessibility is maintained by frequency of use (Higgins, King, & Mavin, 1982; for a review, see Higgins, 1996). Some findings in the cross-cultural literature that have been interpreted in terms of whether participants possess a construct (i.e., a performance difference reflects which self-concepts individuals possess in Culture A vs. Culture B) might be fruitfully reframed in terms of chronic accessibility (i.e., a performance difference reflects which self-concepts are made chronically accessible in Culture A vs. Culture B). Another virtue of an account based on accessibility is that it points to how factors outside of the individual person—such as institutions, discourse, or relationships—might prime cultural theories and keep these theories prominent in the minds of culture members.

Cross-cultural researchers have been troubled at times that the influence of a given cultural construct does not emerge consistently when tasks are run under different conditions. Accessibility may provide an important clue to understanding this observation. Social cognition researchers have found that some conditions create an epistemic motivation for a quick reduction of ambiguity (the need for cognitive closure), and this increases the extent to which perceivers work top-down from accessible constructs, such as cultural theories, when constructing interpretations (Kruglanski & Webster, 1996). Consistent with the notion

that the need for closure amplifies cultural influence, in recent research it has been found that a high need for closure fosters the tendency to make attributions to individual dispositions among North Americans and the tendency to make attributions to the dispositional properties of a group among Chinese perceivers (Chiu, Morris, Hong, & Menon, 2000). More generally, cultural psychology may benefit from the incorporation of many of the insights in social cognition research about the moderating factors (e.g., need for cognition, availability of cognitive capacity) that determine when constructs become accessible and when accessible constructs have the most influence on cognition. Many of the processes and conditions that moderate perceivers' reliance on stereotypes and other knowledge structures may also affect their reliance on cultural theories. Stronger support may emerge for models of the consequences of culture once the moderating factors are better specified.

Implications for Other Research Areas

Methodology

The research reviewed here shows that it is possible to conduct experimental studies on culture. In the same way that quasi-experimental cross-cultural studies added a new tool for cultural research with some advantages over ethnographic observation, priming experiments offer a new tool for cultural research that has advantages over the preexisting methods. A first use of the priming method is to explore the content of cultural knowledge. This is usually done by analyzing the content of samples of conversation and other texts. An alternative method is to analyze the content of thoughts elicited by priming with cultural icons. For example, by priming North American perceivers with pictures of the American flag and querying their associations, Kemmelmeier and Winter (1998) have been able to analyze the constellation of values associated with this cultural icon. Similarly, exposing Hong Kong Chinese to pictures of Chinese cultural icons leads to elevated endorsement of certain social values (Hong et al., 1997, Experiment 1). Thus, the culture priming technique creates a new way to uncover content of cultural knowledge.

A second role of priming lies in establishing the causal consequences of cultural knowledge. Experiments with the priming method allow for true random assignment of participants to cultural conditions, thus providing tests of culture's consequences with greater internal validity than that of tests provided by the quasi-experimental method of cross-national studies. Hence, the priming method complements cross-cultural comparisons in isolating the causal role of culture.

Language as Prime

Aside from cultural icons, language could also be an effective means of activating cultural constructs. In fact, considerable research evidence shows language effects in bilingual individuals' responses to a wide range of psycho-

logical inventories such as measures of personality (Earle, 1969; Ervin, 1964), values (Bond, 1983; Marín, Triandis, Betancourt, & Kashima, 1983), self-concept (Trafimow, Silverman, Fan, & Law, 1997), emotional expression (Matsumoto & Assar, 1992), or even other-person descriptions (Hoffman, Lau, & Johnson, 1986). A compelling explanation for these findings has been that for bilingual individuals, the two languages are often associated with two different cultural systems. In Bond's (1983) and Earle's (1969) studies, for instance, the responses of bilingual Chinese were more Western when they responded to the original (English) questionnaire than when they responded to a Chinese translation of it. Interestingly, Earle explained these results in dynamic constructionist terms. According to him, these bilingual individuals had learned Chinese at home and English at school and had, at the same time, acquired two distinct sets of cultural constructs reflecting the two languages' cultures. The Chinese version of the questionnaire activated the Chinese language culture, and the English version, the English language culture (see Krauss & Chiu, 1998). As such, the dynamic constructivist approach could help researchers to better understand the research on sociopersonality factors in bilingualism.

Moving Beyond Cognition

Heretofore, we have discussed the application of the dynamic approach to culture solely in the study of cognition. Clearly, however, the priming method can be used in analogous ways to study emotions. This experimental technique can be used to investigate the emotions triggered by exposure to cultural icons, and this may prove more incisive than trying to infer culture-emotion relationships from cross-national comparisons. Although research could commence with the study of a single culture, it would be interesting to see whether culturally distinct emotional states could be induced in bicultural individuals through priming with different icons.

It is also interesting to explore the other side of this question: What emotions lead people to embrace cultural icons and cultural ideas more generally? Some evidence that cultural icons have more than a cold cognitive impact comes from work by Greenberg, Porteus, Simon, Py-szczynski, and Solomon (1995), in which they demonstrated that individuals led to think about their mortality are subsequently more respectful toward iconic cultural objects (e.g., a flag or crucifix). Central cultural symbols play a key role in the motivated identification of self with enduring cultural traditions.

At the same time that the dynamic constructivist approach can be extended more broadly, it is also important to note that this model of culture in terms of an individual's knowledge structures obviously does not capture all the manifestations of culture that matter. Culture exists in many forms other than knowledge in an individual's head (see Kitayama & Markus, 1994). Other carriers of culture, such as practices, have been identified by psychological researchers using the sociocultural approach (see Rogoff, 1990) and by sociologists studying relationship patterns

and institutions (see Morris, Podolny, & Ariel, 1999). Hence, although the activation of cultural knowledge may have important influences on emotions and motives as well as judgments and decisions, many interesting aspects of culture may not be mediated by knowledge activation at all. A complete understanding of culture and psychology requires that the dynamic constructivist approach be complemented by analyses that are less knowledge-oriented.

Also, to a large extent, cultures are shaped in relation to each other, so the tension between cultures needs to be part of a comprehensive account of any single culture. This is particularly relevant in understanding the dynamics of a multiply acculturated individual. In our studies, we chose individuals identified with two cultures (North American and Chinese) that for the most part are not antagonistic to each other. If the two cultural groups an individual has been extensively exposed to involved intense political antagonism (such as Serbs and Muslims in Bosnia), presenting cultural icons of one culture may elicit reactive identification with the opposite culture (see Krauss & Chiu, 1998). Two conclusions can be drawn from this point. First, even within studies of culture and cognition, researchers need to proceed with an awareness of the intergroup and political connotations of particular cultural group membership. Second, reaction against unwanted reminders of a culture may be amenable to a dynamic constructivist analysis. One possibility is that antagonism leads to a psychological linking of the two cultural networks, so that activation of the constructs from the antagonist culture spreads to the other culture. Another possibility is that individuals actively control the dynamics of construct accessibility rather than being passively affected by them. Then, activating the antagonist culture may cause active suppression and thus would not yield any cultural priming effect. These possibilities can be explored in future research.

The Process of Acculturation

In addition to creating an understanding of internalized culture as an antecedent variable, the dynamic constructivist approach may lead to fresh insights about how culture gets inside minds in the first place, in other words, the psychology of acculturation. Theoretical models proposed by Berry (1988), Birman (1994), LaFromboise et al. (1993), and Phinney (1996) are useful in describing the behavioral (e.g., how active one is in ethnic organizations and social groups), motivational-attitudinal (e.g., how much value is given to assimilating into the mainstream culture), or phenomenological (e.g., how much conflict or discrimination is experienced in the new culture) aspects of the acculturation process. These models, however, focus on the *outcome* of acculturation more than on the process. Individuals are scored on the extent to which they have absorbed the new culture or retained the original one. The dynamic constructivist approach could supplement the traditional approach by emphasizing the process of internalizing a new culture, highlighting dynamics such as frame switching that many people experience in the process.

More important, a dynamic constructivist approach lends itself to viewing acculturation as a more active process. The end result—thinking and behaving like a member of the host culture—is seen as a state, not a trait. This state will occur when interpretive frames from the host culture are accessible. We submit that individuals undergoing acculturation, to some extent, manage the process by controlling the accessibility of cultural constructs. People desiring to acculturate quickly surround themselves with symbols and situations that prime the meaning system of the host culture. Conversely, expatriates desiring to maintain the accessibility of constructs from their home culture surround themselves with stimuli priming that culture. For example, one of the current authors, who is Spanish but has lived for some years in the United States, often surrounds herself with Spanish music, food, and paintings to keep alive her Spanish ways of thinking and feeling. Active processes of priming oneself may help multicultural individuals in their ongoing effort to negotiate and express their cultural identities. Future research should investigate not only the outcome of acculturation but also the processes through which individuals navigate cultural transitions.

Conclusion

We have proposed a dynamic constructivist approach to culture and cognition and have reported supportive evidence. A distinctive contribution of this approach is in describing how a given individual incorporates multiple cultures and in describing how and when particular pieces of cultural knowledge become operative in guiding an individual's construction of meaning. This less monolithic view of culture seems particularly appropriate at this time of increasing cultural interconnection. Across the world, there is a drift toward culturally polyglot, pluralistic societies. Yet, in part because of the strain of negotiating cultural complexity, a countervailing resurgence of efforts to separate individuals into culturally "pure" groups also exists. By experimentally modeling frame switching among bicultural individuals, our model shows that research on "uncontaminated" cultural groups is not the only viable way to identify cultural effects on cognition. In sum, a dynamic constructivist approach may open new possibilities in understanding culture and transcultural experiences.

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