# Cultural Sharing in a Global Village: Evidence for Extracultural Cognition in European Americans

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The authors examined the effects of exposure to foreign cultural environments and symbols on decision making among European Americans. Although European Americans predicted change less frequently than East Asians did (Pilot Study A), European Americans anticipated greater change when primed with East Asian culturally-laden locations (Pilot Study B and Study 1) and the East Asian yin–yang symbol (Studies 2–7). These effects held in the domains of stock prediction and weather forecasting and were stronger the more familiar European Americans were with the cultural primes, and the longer they had spent overseas. Together, these findings suggest that familiar culturally-laden cues sometimes prime people within one cultural milieu to make so-called extracultural judgments.

Keywords: culture, priming, judgment and decision making, globalization, symbol

The human family now exists under conditions of a "global village." We live in a single, constricted space resonant with tribal drums.

—Marshall McLuhan, The Gutenberg Galaxy: The Making of Typographic Man

As small as McLuhan's world may have seemed in 1962, our world has only continued to contract in the wake of unprecedented technological advances. With the advent of affordable international travel, globalized commerce, and the Internet, Americans are increasingly exposed to foreign cultures both at home and abroad. This year alone, 1 in 10 Americans will travel overseas, 50 million foreign tourists will visit the United States (U.S. Department of Commerce, 2005), and each American will spend, on average, 450 hours accessing the Internet (Nielsen/NetRatings, 2007).

Although a large body of psychological research has explored the powerful effects of situations and cultures on human cognition and behavior, researchers have yet to consider how exposure to foreign cultures influences people living in this global village. We attempted to address this concern by examining the consequences of exposing people from one culture to culturally-laden locations and symbols associated with a second, foreign culture.

According to traditional views of culture, people from different cultural groups hold distinct beliefs or views about how the world

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operates, and cultural change happens slowly and infrequently (see Hofstede & Hofstede, 2005; Moore & Lewis, 1952; White, 1947). Moreover, traditional conceptions of culture assume that cognition is *intracultural*, or situated within a particular cultural context. However, people who have predominantly lived within one culture might sometimes express the cultural worldviews of other cultures. With increasing exposure to foreign cultures, European Americans may not always behave according to the norms of American culture. Instead, their cognitions and behaviors may be affected by foreign cultural stimuli that are transiently present in the environment. Consequently, consistent with the psychological theories of implicit cognition and priming, we sought evidence of *extracultural* cognition in European Americans. We expected people to temporarily incorporate salient foreign cultural worldviews into their cognitions after exposure to the tenets of a foreign culture.

In this article, we begin with a brief review of the literature, which shows the breadth of cross-cultural differences, and a discussion of cultural priming in the domain of biculturalism. Just as bicultural individuals who have lived among two cultures can be primed to adopt one cultural frame to the exclusion of the other (e.g., Hong, Morris, Chiu, & Benet-Martínez, 2000; Wong & Hong, 2005), we suggest that so-called monocultural individuals might temporarily adopt the cognitive styles associated with salient foreign stimuli. Accordingly, we propose an analogy between exposing people to foreign cultural tenets on the one hand and the priming effects reported in the automatic social cognition literature on the other (see Hassin, Uleman, & Bargh, 2005; Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979; Wegner & Bargh, 1998; Wilson, 2002). Specifically, we illustrate the priming effects of

<sup>&</sup>lt;sup>1</sup> We base our use of the terms *intracultural* and *extracultural* in part on the analogous relationship between introversion and extraversion, which describe inward- and outward-focused personality types, respectively. Just as introverts are inwardly focused, intracultural cognition reflects the internal influences of one's home culture; conversely, just as extraverts are outwardly focused, extracultural cognition reflects the external influences of foreign cultures.

exposure to foreign cultures by showing that salient, foreign culturally-laden locations and symbols influence decision making among European Americans.

# The Pervasiveness of Cross-Cultural Differences

Though the world may be shrinking, its diverse cultural groups remain quite distinctive. Over the past 25 years, behavioral scientists have identified a considerable array of dimensions along which cultures differ, including self-construal and cognitive styles (see Betancourt & Lopez, 1993; Fiske, Kitayama, Markus, & Nisbett, 1998; Heine & Norenzayan, 2006; Hofstede & Hofstede, 2005; Moore & Lewis, 1952; Segall, Dasen, Berry, & Poortinga, 1999; Shweder, 1990; Smith, Bond, & Kagitcibasi, 2006; Triandis, 1990).

In the domain of self-construal, individualistic Western cultures tend to construe the self as an entity isolated from other people, whereas collectivistic Eastern cultures tend to construe the self as inextricably tied to others (e.g., Heine, Lehman, Markus, & Kitayama, 1999; Kashima & Kashima, 2003; Markus & Kitayama, 1991; Oyserman, Coon, & Kemmelmeier, 2002; Rhee, Uleman, & Lee, 1996; Schwarz, 2006; Triandis, 1995). Although intranational variations exist (e.g., Kitayama, Ishii, Imada, Takemura, & Ramaswamy, 2006; Oyserman et al., 2002; Rhee et al., 1996; Vandello & Cohen, 1999), most research has focused on the "strikingly divergent construals of the self, others, and the interdependence of the two" (Markus & Kitayama, 1991, p. 224) displayed by Westerners and Easterners. For example, Westerners seek out positive reinforcement and prefer to be regarded positively by others and by themselves, whereas Easterners are often more self-critical and strive to improve their weaknesses (Heine et al., 1999). Demonstrating this distinction, Heine et al. (2001) showed that Japanese participants rated a domain on which they had performed poorly as important and diagnostic of their ability, whereas North Americans rated similar domains as neither important nor diagnostic of their abilities. These effects were confined to the specific domains in which participants received feedback and ultimately reflected divergent lay cultural theories about the value of practice and self-improvement.

In addition to their distinct approaches to self-construal, different cultures appear to express fundamentally different cognitive styles. Compared with Westerners, Easterners are more comfortable reconciling seemingly inconsistent logical claims, and they tend to perceive the world globally rather than focusing on specific aspects of the environment (e.g., Masuda & Nisbett, 2001; Miller, 1984; Morris, Nisbett, & Peng, 1995; Nisbett, Peng, Choi, & Norenzayan, 2001; Peng & Nisbett, 1999). Easterners are also more likely to praise conformity and derogate uniqueness (Kim & Markus, 1999) and less likely to engage in cognitive dissonance (Heine & Lehman, 1997; but see Hoshino-Browne et al., 2005, for a discussion of the conditions that diminish this difference). Easterners also anticipate better fortune for others than for themselves, whereas Westerners tend to predict better fortune for themselves than for others (Chang, Asakawa, & Sanna, 2001). The Eastern approach to individuation also tends to be more complex than the Western approach; contrary to how Westerners view individuality, Easterners often prefer not to stand out from a group (Kwan, Bond, Boucher, Maslach, & Gan, 2002). Easterners also tend not to attribute behavior to dispositions as readily as Westerners tend to do (e.g., Morris & Peng, 1994). For example, Chinese and North American newspapers tended to describe similar crimes quite differently, with Chinese newspapers emphasizing the situational factors and North American newspapers emphasizing the offender's disposition in precipitating the crime. A large body of research on self-construal and social cognition suggests that culture has profound and enduring effects on human psychology.

# Biculturalism

As the population in the United States and other industrialized countries grows increasingly diverse, researchers have become interested in how people respond to living within two distinct cultures (for a review, see LaFramboise, Coleman, & Gerton, 1993). Sociologists originally cast bicultural individuals as marginalized, divided, and disjointed (Park, 1928; Stonequist, 1935), often relegating them to a special category below frequently maligned minority groups. A recent and more favorable viewpoint is the alternation model, which claims that bicultural individuals attain competence in both cultures, transiently adopting one viewpoint just as bilingual individuals choose to speak one language at any given moment (LaFramboise et al., 1993). Competence entails both familiarity with and openness to a culture's tenets, as well as a tendency to think and behave consistently with those tenets without needing to consciously reflect on their influence. Cultural competence is therefore similar to linguistic competence, in which a person who speaks one language gradually learns to speak another language with diminishing effort and increasing ease. Importantly, bicultural competence emphasizes that biculturalism is situational, whereby people express the appropriate cultural approach in each situation. Thus, minority groups that immigrate might choose to express their original cultural beliefs at home, while publicly adopting the cultural beliefs associated with their new home (LaFramboise et al., 1993).

Although the original conception of the alternation model suggests that bicultural individuals have the ability to choose between cultural frames, newer evidence casts cultural frame switching as a largely automatic process (e.g., Hong et al., 2000; Wan, Chiu, Peng, & Tam, 2007; Wong & Hong, 2005). For example, in one study, bicultural Westernized Hong Kong-Chinese participants were primed with American or Chinese culturally-laden icons before deciding why one fish was swimming ahead of four others (Hong, Chiu, & Kung, 1997; paradigm originally used in Morris et al., 1995). When primed with American icons such as an American flag, participants behaved like monocultural Americans, whereas they behaved like monocultural Chinese people when primed with Chinese icons such as a Chinese dragon. Specifically, American primes induced internal behavior attributions (the lone fish was leading the others), whereas Chinese primes induced external behavior attributions (the lone fish was being chased by the other fish). Cultural primes therefore led participants to adopt a congruent cultural frame while temporarily ignoring a second cultural frame that might otherwise have influenced their behavior.

# The Present Research: Frame Switching Among Cosmopolitan Monocultural Individuals?

Bicultural individuals have been exposed to two cultures for an extended period, so they are likely to have access to both cultural

worldviews. However, if the world really is a global village (McLuhan, 1962), monocultural individuals might also attain competence with aspects of foreign cultures. Specifically, in the course of exposure to foreign cultures, monocultural individuals might internalize certain aspects of those cultures. Those normally dormant aspects of the foreign culture may occasionally appear in response to cultural priming, where stimuli associated with that foreign culture are presented to individuals with a different cultural background. Accordingly, in this article, we examine whether monocultural European Americans are susceptible to East Asian cultural primes.

The notion that dormant concepts can be activated when brought to mind forms the basis for the now-dominant perspective that many aspects of behavior and cognition are automatic (for reviews, see, e.g., Bargh, 1994; Bargh & Chartrand, 1999; Higgins, 1989; Wegner & Bargh, 1998; Wyer & Srull, 1989). When a stimulus in the environment activates a concept, it has the potential to affect the perceiver's cognitions, judgments, and behaviors (Collins & Quillian, 1969). Thus, for example, a college student might associate the elderly with slower-paced walking, but the student tends not to walk slowly unless a stimulus in the environment primes concepts associated with the elderly (e.g., Bargh, Chen, & Burrows, 1996).

We adopted the cultural priming methodology described above (e.g., Hong et al., 1997, 2000; Trafimow, Triandis, & Goto, 1991). Cultural priming typically involves immersing participants in a culturally-relevant mind-set by asking them to adopt a particular perspective or exposing them to culturally-laden stimuli. To date, researchers have generally adopted the cultural priming paradigm to induce individualistic or collectivistic mindsets (for a review, see Oyserman & Lee, 2007). For example, W. L. Gardner, Gabriel, and Lee (1999) primed participants from America and Hong Kong to adopt an independent or interdependent mind-set that mimicked the individualistic and collectivistic mind-sets embodied in those cultures, respectively. In one study, participants circled words like I or me in the independent condition and us or we in the interdependent condition. In a later phase of the study, participants tended to endorse individualistic values when they circled words like I or me, and collectivist values when they circled words like us or we.

Instead of priming the tenets of foreign cultures per se (e.g., priming interdependence with interdependence-related words), we primed participants with culturally-laden stimuli that implied those tenets. This is an important distinction for our purposes because priming participants directly with the concepts that are valued by a foreign culture (e.g., words like together and we, which imply interdependence) cannot determine whether the observed changes reflect exposure to and familiarity with the foreign culture. Accordingly, participants in our studies were exposed to foreign culturally-laden locations (Pilot Studies A and B, and Study 1) and symbols (Studies 2–7) that are often seen in East Asian foreign culturally-laden locations. We also expected participants to be increasingly susceptible to cultural primes the more familiar they were with the meaning of those primes (Study 4) and to be more amenable to the effects of foreign cultural primes if they had acquired openness to foreign cultures through international travel (Study 7).

Pilot Studies A and B and Study 1: Effects of Culture and Location on Change Prediction

We began by examining whether European Americans differ from East Asians in their expectations of change and balance. As researchers have shown elsewhere, people from Eastern and Western cultures hold very different views about the nature of change, progression, and balance (e.g., Ji, Nisbett, & Su, 2001; Ji, Zhang, & Guo, in press; Nisbett et al., 2001).

Eastern cultural views emphasize the inevitability of change and balance, particularly between extreme positions such as light and dark or summer and winter. The *I Ching*, also known as the *Book of Changes*, is a central text of East Asian Taoist philosophy that depicts the world as a battleground between the opposing forces of *yin* and *yang* (see Ritsema & Karcher, 1994). When a process reaches its extreme yin state, it begins to return to its yang state, ad infinitum. As such, a full moon begins to wane after waxing for 15 days, and a new moon begins to wax after waning for 15 days. Thus, according to the Taoist worldview, change is constant and nonlinear, as processes perpetually oscillate between extreme end points.

Ancient Chinese philosophy also emphasized the idea that nature exists in a harmonious equilibrium, in which each element achieves balance relative to other elements in the environment (Nisbett et al., 2001; Ritsema & Karcher, 1994). Thus, each person within Chinese society contributes to a larger, balanced, and benign organism that maintains the well-being of each member of the society (Lin, 1936; Munro, 1985). Consistent with this view of balance and harmony, Chinese people are able to reconcile seemingly inconsistent statements more easily than are American people (Peng & Nisbett, 1999). This so-called dialectical approach to reasoning reflects the culturally-laden notion that natural processes are inherently inconsistent and prone to change across time.

Western cultural views, in contrast, hold that change differs from the Eastern conception in both quality and quantity (Logan, 1956). Ancient Greek thinkers, such as Parmenides (ca. 510-450 B.C.E., cited in Ji et al., 2001), argued that all things that exist in the present have always existed and that nothing can emerge from nothingness. As such, change is a rare and unnatural occurrence, and balance is irrelevant to the natural order. Even philosophers who recognized the existence of change argued that it is linear and progressive, moving in one particular direction rather than oscillating between two end points (e.g., Heraclitus, 1962, ca. 535-475 B.C.E.). Indeed, contemporary Western culture continues to imply that change is linear. The ubiquitous and lucrative self-help movement, predominant in Western cultures, implies that people have the capacity to improve toward a nebulous point of selfactualization (Percy, 2000). Similarly, in a four-volume treatise on Western thought, Van Doren (1967) devoted much of his discussion to the concept of progress. The work catalogued the philosophical basis of change in Western philosophy and noted that many Western philosophers conceive of change as a linear path that begins at the present and consistently approaches a future goal. According to Western cultural views, destructive change is similarly monotonic. Religious and corporate Web sites warn that drug use, particularly in teenagers, leads to a so-called downward spiral, from which recovery is difficult or impossible ("Help for Troubled Teens," 2007; Strandberg, 2007).

Given these divergent cultural interpretations of change and balance, we attempted to replicate and extend Ji et al.'s (2001; see also Ji et al., in press) findings showing that Chinese participants anticipate more directional change (i.e., reversal and balance) than do European Americans. Accordingly, we conducted two pilot studies and one study that examined the extent to which participants predicted change in the domains of stock market performance (Pilot Study A and Study 1) and weather conditions (Pilot Study B).

# Pilot Study A: Culture and Stock Predictions

Each day, newspapers around the world print dozens of pages of stock price information, often in the form of graphic stock charts, which play an important role in shaping investors' decisions to buy or sell stocks (Mussweiler & Schneller, 2003). Such stock charts are so common that even disinterested laypeople are exposed to stock charts in newspapers and on television.

In this pilot study, we asked Chinese and European American laypeople to invest a fictional \$1,000 sum across nine stocks, with the aim of maximizing their profit over the following 6 months. A stock chart depicted each stock's performance over the previous 6 months, giving participants a source of information on which to base their decisions. Three of the stocks had unambiguously appreciated over the previous 6 months (previously appreciating stocks), whereas the other six stocks had experienced mixed performance (ambiguous stocks). Since Western cultures emphasize the continuation of existing linear trends, we expected European Americans to invest heavily in the previously appreciating stocks. Conversely, consistent with Eastern philosophies, we expected Chinese participants to prefer the ambiguous stocks in anticipation of an imminent downturn or corrective balance in the previously appreciating stocks.

# Method

Participants. One hundred eighty-five European American and Chinese students and adults (102 females) completed the stock-prediction questionnaire. Forty-six European American undergraduates in the student campus center at Princeton University in Princeton, NJ (American students), and 89 European American adult professionals at a commercial park dining hall in Lawrenceville, NJ (American adults), volunteered to complete this study. In addition, 26 Chinese students at Huazhong University of Science and Technology in Wuhan, China (Chinese students), and 24 adult professionals in Shanghai, China (Chinese adults), completed a Chinese-translated version of the same questionnaire. As in all the studies reported in this article, participants indicated their places of birth and ethnicities, and we excluded from further analyses those participants who were born outside the country or did not identify with the ethnic group of interest. The reported sample sizes in this study and all subsequent studies reflect the number of participants who satisfied these preconditions. Since there were no gender differences in this or the subsequent studies, we do not discuss gender further.

Materials, design, and procedure. Participants completed a one-page stock investment questionnaire with the aim of investing a fictional sum of \$1,000 across nine stocks to maximize their profit over the coming 6 months. A graphic stock chart represented

each stock's performance over the previous 6 months. The previously appreciating stocks appreciated at least twice as often as they depreciated, whereas the ambiguous stocks appreciated approximately as often as they depreciated. A separate sample of 10 participants confirmed the face validity of this categorization, unanimously labeling the previously appreciating stocks as "good performers" and the ambiguous stocks as "stocks whose performance was unclear." Additionally, we presented only normalized stock charts and omitted company names or actual stock prices, which might have introduced noise to participants' judgments (e.g., Alter & Oppenheimer, 2006).

# Results and Discussion

We began by calculating how much of the \$1,000 sum participants invested in the six ambiguous and three previously appreciating stocks. We submitted participants' investment data to a 2 (cultural background: Chinese vs. American) × 2 (demographic status: student vs. adult) between-subjects analysis of variance (ANOVA). As expected, Chinese participants invested less heavily in the previously appreciating stocks than did Americans, F(1,183) = 25.38,  $p < 10^{-6}$ ,  $\eta_p^2 = .12$  (see Figure 1). Furthermore, American participants invested significantly more than 50% of their \$1,000 sum in previously appreciating stocks, t(134) = 6.94,  $p < 10^{-10}$ ,  $\eta_p^2 = .27$ , and Chinese participants invested marginally less than 50% of their \$1,000 sum in previously appreciating stocks, t(49) = -1.68, p = .09,  $\eta_p^2 = .05$ . Americans were therefore relatively more attracted to the previously appreciating stocks, whereas Chinese participants relatively preferred the ambiguously performing stocks. Students and adults adopted very similar investment patterns, and there was no interaction between participants' cultural background and demographic status (both Fs < 1, both  $\eta_p^2 s < .01$ ).

Consistent with previous research, these results suggest that Chinese people predict more change and balance in existing stock market trends than do European Americans. In Pilot Study B, we sought to identify at least one potential mechanism for the findings in Pilot Study A. Chinese and American people live in environments that differ in their perceptual complexity (Miyamoto, Nis-

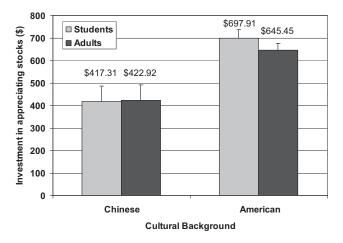


Figure 1. Mean (and standard error [error bars]) investment in previously appreciating stocks in Pilot Study A.

bett, & Masuda, 2006) and convey quite different cultural mores (cf. Markus, Uchida, Omoregie, Townsend, & Kitayama, 2006; Plaut, Markus, & Lachman, 2002). These differences suggest that the cultural differences between these groups might depend, to some extent, on the psychological effects of living in different culturally-laden environments. Thus, in Pilot Study B and Study 1, we collected change predictions from European Americans while they were in either typically American or typically East Asian cultural contexts. This approach was used with similar effect by Miyamoto et al. (2006, Study 2), who found that pictures of Japanese scenes primed European American participants to attend more to contextual features and to therefore perceive changes in a change-blindness task more easily. Similarly, although all participants in our studies were European Americans, we expected features of the East Asian cultural environments to prime typically East Asian cognitive patterns. To generalize and replicate the effect, participants in Pilot Study B completed a weatherprediction task, whereas participants in Study 1 completed a stockprediction task similar to the task used in Pilot Study A.

# Pilot Study B: Culture, Location, and Weather Predictions

In Pilot Study B, we approached European Americans in the Upper East Side of Manhattan and Chinatown in New York City, NY. Participants completed a short questionnaire in which they predicted the weather on a 3rd day following 2 days of sunny or rainy weather. Since European Americans in Chinatown were temporarily exposed to an environment laden with East Asian cultural stimuli, we expected European Americans in Chinatown to predict more changes in the weather than European Americans in the Upper East Side.

# Method

Participants. Fifty participants (30 females) volunteered to complete the weather-prediction survey. We approached two groups of participants: European Americans in Chinatown (a location associated with Chinese culture) and European Americans in the Upper East Side, a culturally-neutral location in a main-stream American context.

Materials, design, and procedure. The experimenter collected all data on a warm and sunny day to minimize the possibility that participants' responses reflected different prevailing weather conditions. Participants completed a brief questionnaire entitled Weather Predictions. The questionnaire explained that "a new school of meteorology suggests that everyday people might be able to predict the weather as accurately as experts, with very little information." Participants were presented with 2-day weather patterns from six unnamed U.S. cities, and they were asked to predict whether the 3rd day would be sunny or rainy. For each of the 2 days, participants were told whether the weather was sunny or rainy and the temperature on each day. The temperatures, which were uninformative, were counterbalanced across the stimuli and were included to lend the questionnaire a sense of credibility. Of the six patterns, two depicted 2 days of sunshine (the sunny trend), two depicted 2 days of rain (the rainy trend), and the remaining two filler stimuli depicted a day of sunshine followed by a day of rain and a day of rain followed by a day of sunshine, respectively. After each pattern, participants indicated their weather predictions for the 3rd day on a 6-point scale from 1 (definitely rainy) to 6 (definitely sunny). We expected European Americans in Chinatown to anticipate more changes in the weather than European Americans in the Upper East Side. After completing this and all subsequent questionnaires, participants reported their country of birth and ethnicity, to ensure that they were indeed European Americans.

#### Results and Discussion

We began by averaging participants' judgments across the two sunny trends to form a sunny prediction and the two rainy trends to form a rainy prediction. We submitted participants' predictions to a 2 (location: European Americans in the Upper East Side, European Americans in Chinatown)  $\times$  2 (weather trend: sunny prediction, rainy prediction) mixed-design ANOVA.

Not surprisingly, we found a main effect for weather trend, such that participants expected the 3rd day of weather to be sunnier following a sunny trend rather than a rainy trend, F(1, 48) = 48.63,  $p < 10^{-8}$ ,  $\eta_p^2 = .50$  (see Figure 2). In other words, participants generally expected consistent trends to continue.

However, this main effect was qualified by a significant Weather Trend  $\times$  Location interaction, F(1, 48) = 4.62, p < .05,  $\eta_p^2 = .09$  (see Figure 2). This interaction suggested that participants in Chinatown predicted relatively more change in the weather than did participants in the Upper East Side. Follow-up analyses showed that this effect was marginally significant following rainy trends, F(1, 48) = 3.63, p = .063,  $\eta_p^2 = .07$ , but did not reach significance following sunny trends, F(1, 48) = 2.42, p = .126,  $\eta_p^2 = .05$ .

Pilot Study B therefore suggested that European Americans who are temporarily immersed in an Asian cultural milieu adopt the typically East Asian tendency to perceive change and balance, suggesting that culturally-laden locations might prime people from

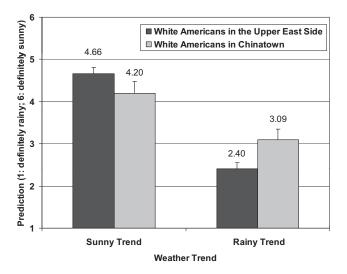


Figure 2. Mean (and standard error [error bars]) weather predictions following sunny and rainy trends in Pilot Study B.

a second culture to temporarily adopt cognitive styles more typically expressed by people in the primed culture.<sup>2</sup>

Since the two European American samples in Pilot Study B were approached in different parts of New York City, the observed effects may have been, to some extent, caused by irrelevant demographic confounds that were difficult to control. For example, European Americans who frequent Chinatown may be more cosmopolitan than those in the Upper East Side, which may have enhanced our effects. Thus, in Study 1, we sought to show that culturally-laden locations influence cognition, while matching the two samples on as many dimensions as possible.

# Study 1: Anticipating Change in the Asian Supermarket

European American participants completed an abbreviated version of the stock-prediction questionnaire described in Pilot Study A as they were exiting or entering an Asian or American supermarket. Like Chinatown, the Asian supermarket contains numerous symbolic markers that might activate the East Asian cultural tenets of change and balance. For example, various products in the supermarket contained the yin–yang symbol, which explicitly conveys the notions of balance and change. Accordingly, consistent with the previous studies, we expected participants who had already been exposed to the culturally-laden Asian supermarket (Asian supermarket exiters) to invest less heavily in the previously appreciating stock than participants who had not yet entered the supermarket (Asian supermarket enterers).

To rule out the possibility that exiters responded differently merely because they had spent money or time shopping, we included parallel conditions in which participants had not yet entered (American supermarket enterers) or were exiting an American supermarket (American supermarket exiters). Since we did not expect the act of shopping in an American supermarket to influence participants' investment decisions, we did not expect American supermarket exiters to invest differently from American supermarket enterers.

#### Method

Participants. Seventy-three European American adults (43 females) volunteered to complete a brief questionnaire before entering or after exiting an Asian supermarket located in Mercer County, NJ, or before entering or after exiting an American supermarket also located in Mercer County. The experimenter ensured that all participants in the Asian supermarket and American supermarket enterer conditions intended to enter the supermarket once they completed the questionnaire.

Materials, design, and procedure. Participants completed a truncated version of the stock investment questionnaire described in Pilot Study A under one of four conditions (2 [entering or exiting a supermarket] × 2: [American or Asian supermarket]). This version of the questionnaire depicted two of the previously appreciating stock charts and two of the ambiguously performing stock charts from Pilot Study A. We shortened the questionnaire to ensure that participants devoted adequate attention to the task. The experimenter confirmed that all participants correctly invested a total of \$1,000 across the stocks.

# Results and Discussion

We began by conducting a  $2 \times 2$  between-subjects ANOVA to examine the effects of supermarket type and whether the participant was entering or exiting the supermarket on investment behavior. Neither variable exerted a significant main effect on investment, although participants who were entering the supermarkets invested marginally more in the previously appreciating stocks than did participants who were exiting the supermarkets, F(1, 69) = 3.27, p = .08,  $\eta_p^2 = .05$  (see Figure 3).

Most importantly, however, this marginal main effect was driven by a significant interaction between supermarket type and entering/exiting status, F(1, 69) = 7.10, p = .01,  $\eta_p^2 = .09$ . As expected, simple effects analyses showed that participants who were exiting the Asian supermarket invested significantly less in the previously appreciating stocks than did participants who were entering the Asian supermarket, F(1, 31) = 8.23, p < .01,  $\eta_p^2 = .22$ . In contrast, participants who were entering and exiting the American supermarket did not adopt significantly different investment patterns from each other (F < 1, p > .5).

Finally, to show that the interaction between supermarket type and entering/exiting status was driven by Asian supermarket exiters, we conducted a follow-up contrast comparing investment in the previously appreciating stock among participants in the Asian supermarket exiters group with the other three groups. Consistent with our expectations, participants who were exiting the Asian supermarket invested less heavily in the previously appreciating stocks than did participants in the remaining three conditions,  $F(1, 71) = 9.82, p < .01, \eta_p^2 = .12$ . A test of the residual means squared confirmed that this contrast explained the majority of the variance, as the residual variance across the four conditions did not significantly predict participants' investment patterns (F < 1, p = .56).

Study 1 therefore replicated Pilot Study B, suggesting that people from one culture sometimes transiently manifest the decision-making styles of people from a foreign culture in culturally-laden environments that convey the tenets of the foreign culture. Since participants who were entering and exiting the American supermarket invested similarly to those who were entering the American supermarket, we were able to eliminate the possibility that merely spending money in a supermarket led Asian supermarket exiters to prefer the ambiguous stocks.

# Summary of Pilot Studies A and B and Study 1

In Pilot Study A, we found that Chinese participants were more likely to anticipate changes in stock prices than were European Americans. This study replicated Ji et al.'s (2001) finding that Easterners anticipate change more readily than do Westerners.

<sup>&</sup>lt;sup>2</sup> Note that the same predictions hold regardless of whether an East Asian environment primes the concept of change or balance. In both the weather and the stock paradigms, participants anticipated the continuation or cessation of a formerly consistent outcome (either a consistent appreciation in stock performance or a consistent weather pattern). If participants were primed with the concept of change, they should have anticipated a change in those outcomes; similarly, if they were primed with the concept of balance, participants should have predicted an opposing outcome (a downturn in stock performance or a change in weather) to balance the existing outcome.

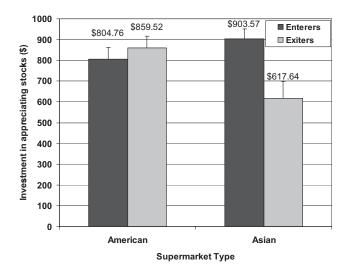


Figure 3. Mean (and standard error [error bars]) investment in previously appreciating stocks by Asian supermarket enterers and exiters and American supermarket enterers and exiters in Study 1.

Going beyond previous research, we extended those findings in Pilot Study B and Study 1 by showing that European Americans who temporarily inhabit East Asian culturally-laden environments transiently anticipate more change than their European American counterparts in more culturally-neutral locations. These studies suggested that exposure to foreign cultures has the potential to influence cognition among people from a second culture.

Nevertheless, these results raise the question of how foreign culturally-laden environments influence cognition. Consistent with theories about the difference between American and East Asian cultures, these studies suggested that Chinese cultural stimuli activate thoughts of change and balance among European Americans. We therefore adopted an approach popular among anthropologists (e.g., Ortner, 2003; Thompson & Juan, 2006) and asked 10 European Americans who had previously visited Chinatown to list the stimuli in that environment that most strongly invoked the cultural atmosphere of Chinatown. The most common responses were the "visual symbols" and "icons."

Symbols may serve as powerful cultural primes for a number of reasons: First, symbols are rich in meaning, sometimes conveying more semantic information than vast tracts of text (Butz, Plant, & Doerr, 2007; Cohen, 1979; Hassin, Ferguson, Shidlovsky, & Gross, 2007; Hong et al., 2000). Second, symbols are processed very quickly, as soon as they attract perceivers' attention (e.g., Firth, 1973). Third, symbols are prominent in corporate logos and have long played a pervasive role in American society. In addition, foreign cultural symbols are increasingly familiar to contemporary European Americans, many of whom travel internationally and have access to the Internet and other international news sources (Nielsen/NetRatings, 2007; U.S. Department of Commerce, 2005).

Symbols and icons, particularly those associated with language and communication, also play an important role in perpetuating and conveying cultural beliefs (Nisbett et al., 2001). Furthermore, since symbols remain consistent across time, they are an effective vehicle for conveying beliefs from earlier to later generations (Hong et al., 2000). Just as foreign culturally-laden environments

exerted distal effects on cognition in Pilot Study B and Study 1, we expected foreign symbols to exert similar proximal effects on cognition in the remaining studies. The use of foreign symbols with different meanings also allowed us to address the concern that the mere foreignness of the Asian market and Chinatown led participants to anticipate more change and balance. Accordingly, in the remaining studies, we sought to show that people from one culture can be induced to adopt the tenets of a foreign culture when exposed to a familiar culturally-laden symbol from that culture.

Although symbols are generally rich in meaning (Betsky, 1997; Cohen, 1979), we chose to focus on the yin-yang, a symbol that is commonly found in Chinatown and the Asian supermarket. Before focusing on the vin-yang symbol, we sent a research assistant to survey the Chinese symbols and icons in Chinatown and the Asian supermarket. Although she located many symbols and icons, both Chinatown and the supermarket contained a particularly high density of representations of the yin-yang symbol (see Table 1 for a sample of those representations). The yin-yang symbol, which implies change and balance, expresses many of the essential differences in cognition between East Asians and European Americans (e.g., Nisbett et al., 2001).3 Examining the effects of exposure to the yin-yang symbol might also shed light on the findings we obtained in our location studies. We expected participants to anticipate change and balance because they recognized the yinvang symbol in the environment that conveyed those concepts.

Furthermore, the yin-yang has also become generally more prominent in European American culture. The yin-yang features prominently in restaurants, in jewelry, in art, and in many other locations and on many other products. The yin-yang symbol is also an ideal starting point because Nisbett and his colleagues (2001) postulated that many of the cognitive differences between the West and East originate in the different ancient philosophies espoused by the Greeks and Chinese. For example, East Asians predict more change (Ji et al., 2001) and focus more holistically on the environment (Nisbett et al., 2001; Peng & Nisbett, 1999) than do Westerners. These differences, which supposedly originate in ancient Chinese philosophies, are exemplified in the vin-yang, which can be traced back to Fu Xi, who reportedly ruled China around the year 2800 B.C.E. Although Nisbett and his colleagues argued that the enduring prevalence of cultural symbols might explain why distinctions between Ancient Chinese and Western thought persist today, no empirical research has investigated whether the yin-yang symbol indeed primes expectations of change.

Since Pilot Studies A and B, and Study 1 were quasiexperimental, assigning participants to conditions according to preexisting populations, we adopted a strict experimental approach in the remaining studies. Specifically, we randomly assigned European American participants to one of the conditions in each

<sup>&</sup>lt;sup>3</sup> Although different East Asian countries may be differentially familiar with the yin–yang and its meaning, we group these countries under the umbrella term *East Asian*. Although this term necessarily glosses over those differences as they apply to the yin–yang symbol specifically, much research suggests that East Asians across many countries express different cognitive styles from European Americans (for a similar approach, see, e.g., Markus & Kitayama, 1991; Nisbett et al., 2001; for more on the differences that exist between East Asian countries, see, e.g., Kitayama et al., 2006; Oyserman et al., 2002; Rhee et al., 1996).

Table 1
Nonexhaustive List of Stimuli in Chinatown (Pilot Study B) and the Asian Supermarket (Study 1) That Contained
Representations of the Chinese Yin–Yang Symbol

Chinatown	Asian supermarket
Exercise iron ball with	
yin-yang symbol	Yin-yang doormat
Yin-yang charm	An assortment of yin-yang desserts
Yin-yang t-shirt	Yin-yang serving tray
Yin-yang necklace	Yin-yang on wrapping of instant noodle
Yin-yang wall clock	Yin-yang teapot
Yin-yang on store logo	Yin-yang on the cover of a cookbook
Yin-yang cushion	Yin-yang mug
Yin-yang on teddy bear	Yin-yang on Chinese herbal product
Yin-yang and I Ching	
keepsakes	Yin-yang shopping bag
Yin-yang accent lamp	Yin-yang chai (tea)

study. This approach enabled us to eliminate the possibility that preexisting differences between participants in the various conditions caused the observed effects.

# Studies 2–7: Effects of Culturally-Laden Symbols on Cognition

In Studies 2–7, we sought to show that an imported foreign culturally-laden symbol influenced cognition among European Americans. We began in Study 2 by adopting an empirical approach to validating the yin–yang as an appropriate symbol. For a symbol to be considered both foreign and imported, we reasoned that participants should perceive the symbol as originating in a foreign culture yet nonetheless report being familiar with the symbol and its meaning. We expected the yin–yang symbol to satisfy these criteria. In subsequent studies, we examined the effects of exposing participants to the yin–yang symbol on predictions of change. Since the yin–yang symbol conveys an approach to thinking about change, we also expected its priming effect to be stronger when participants were more familiar with the symbol's meaning (see Study 4).

# Study 2: European Americans' Familiarity With the Yin–Yang Symbol

We expected the yin-yang symbol to be an ideal symbol both because it is inextricably linked with East Asian culture and because it has been increasingly appropriated in Western culture. For example, a search for "yin-yang" on Froogle, Google's online shopping search engine, revealed 15,000 merchandise hits, ranging from jewelry to clothing and posters. An identical search on Amazon.com generated over 15,000 hits. Most of the manufacturers are U.S. companies, and both sites are based in the United States, suggesting that the symbol has gained currency in American commerce. We sought to confirm that the yin-yang's meaning is familiar to European Americans in Study 2.4 Four samples of European American participants completed one of four tasks. The first sample indicated whether the yin-yang and four other cultural symbols originated in the United States or in a foreign culture, as well as their familiarity with each symbol; the second sample attempted to identify the yin-yang among four filler symbols; the third sample associated various change- and balance-related words with the yin-yang and four filler symbols; and the fourth sample generated an open-ended definition of the yin-yang symbol's meaning. Although we did not record each participant's gender, the experimenters were asked to collect an approximately equal number of responses from male and female participants.

#### Method

Identifying the origin and recognizing the meaning of the yinyang (Task 1). Forty European American Princeton University undergraduates were approached at the Princeton University campus center. Participants indicated the extent to which five cultural symbols (see Figure 4A) originated in local or foreign cultures (from 1 [strongly foreign origins] to 10 [strongly local origins]) and their familiarity with each symbol (from 1 [totally unfamiliar] to 10 [very familiar]). We included one obviously American symbol (the McDonald's restaurant golden arches: arches), two obviously foreign symbols (the Chinese yin-yang: yin-yang, and Irish shamrock: shamrock) and two religious symbols (the Christian crucifix: crucifix, and Jewish Star of David: star). We expected the difference between participants' familiarity with the symbol and their rating of its origin to be greatest for the yin-yang, suggesting that it was an appropriately foreign, yet familiar, symbol to this sample of European Americans.

Identifying the yin-yang by name (Task 2). Twenty-five European American adults were approached while sitting in an outdoor dining area in Princeton, NJ. Participants were asked to identify the yin-yang symbol from among five religious symbols. The other symbols were a Star of David (associated with Judaism), a swastika symbol (associated with Buddhism and the Nazi party), a fish icon (associated with Christianity), and a crescent symbol (associated with Islam).

Identifying the yin-yang's meaning (Task 3). Seventy-two European American undergraduates at Princeton University completed a one-page questionnaire. Participants were asked to associate six words with five symbols (see Figure 4B) by ranking the symbols according to how well they reflected the meaning of each word (from 1 [least representative] to 5 [most representative]). One of the five symbols was a yin-yang symbol (far left), and the remaining four icons were control symbols that shared structural elements with the yin-yang. Three of the words were associated with change and balance (diverse, balance, opposite), and the remaining three (control) words were associated with risk (insecure, risk, uncertainty). We chose to include risk-related control words to show that the yin-yang symbol did not merely prime risk-related cognitions, a potential alternative explanation for our finding that European Americans in Chinese cultural environments preferred ambiguous to previously appreciating stocks. We averaged participants' rankings across the change- and risk-related words so they ranged between 1 and 5,

<sup>&</sup>lt;sup>4</sup> It is of course possible that a symbol takes on an entirely new meaning when imported to a new culture. For example, the swastika, a Sanskrit symbol now tarnished by its association with Nazism, originally signified luck and wellbeing (N. Gardner, 2006). Study 2 was designed in part to show that the yin–yang's imported meaning remains similar to its original connotation of change and balance.

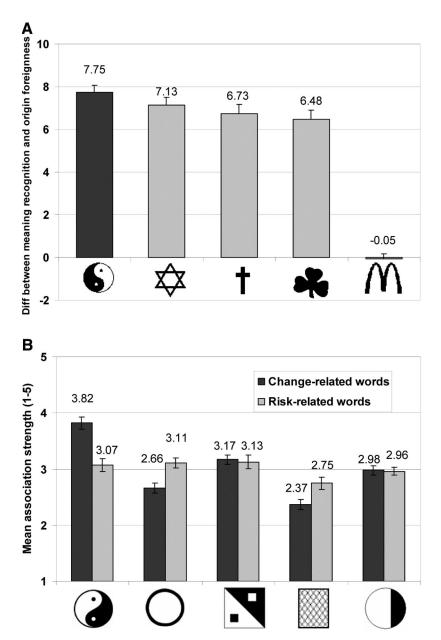


Figure 4. A: Discrepancy (and standard error) between participants' knowledge of the meaning of five cultural symbols and the foreignness of the symbol's origin from Task 1 in Study 2. B: Mean rankings (and standard error) of symbols against change- and risk-related words from Task 3 in Study 2. Diff = difference.

with higher scores indicating that participants considered the symbol to be highly representative of the target word relative to the other symbols. We expected participants to associate the change-related words, but not the risk-related words, with the yin-yang symbol more strongly than with the other symbols.

Providing open-ended definitions of the yin-yang (Task 4). Forty-two European American professionals at a commercial complex food hall in Lawrenceville, NJ, generated free-response definitions of the yin-yang symbol's meaning. Participants were asked to generate as complete a definition as they could, including the symbol's name and its meaning.

#### Results and Discussion

Identifying the origin and recognizing the meaning of the yinyang (Task 1). To calculate the discrepancy between each symbol's familiarity and the foreignness of its origins, we calculated the difference between each symbol's familiarity rating and ratings of the foreignness of its origin. The higher this measure, the better the symbol satisfied our criteria that it has foreign origins but has now gained currency among European Americans. As we expected, the yin-yang had the highest score on this cultural importation measure (see Figure 4A), all pairwise comparisons significant, t(38)s ranging from 2.43 to 26.97, ps ranging from <.001 to .020, except for the comparison with the Star of David, which was marginally significant, t(38) = 1.92, p = .062. This first task therefore suggested that the yin–yang satisfied the criteria of cultural importation more strongly than the four remaining symbols.

*Identifying the yin–yang by name (Task 2).* All 25 participants correctly identified the yin–yang from among the five symbols, suggesting that this sample of participants was familiar with the yin–yang symbol by name.

Identifying the yin-yang's meaning (Task 3). We submitted participants' rankings to a 2 (word-type: change/balance, risk) × 5 (symbol: vin-yang, circle, square, crosshatch, semifilled circle) within-subjects ANOVA (see Figure 4B). As expected, we found a significant Word-Type  $\times$  Symbol interaction, F(4, 68) = 7.34,  $p < 10^{-5}$ ,  $\eta_p^2 = .30$ . A follow-up contrast comparing the yinyang's change-related rankings with the remaining nine rankings was significant, F(1, 71) = 53.54,  $p < 10^{-27}$ ,  $\eta_p^2 = .44$ , as were the nine simple contrasts comparing the yin-yang's change-related rankings with each of the nine rankings in turn (all Fs > 15.00, all ps < .0001, all  $\eta_p^2 s > .18$ ). In addition, the yin-yang's changerelated rankings were the only rankings that significantly exceeded the expected mean had participants merely assigned rankings randomly, t(71) = 7.42, p < .001,  $\eta_p^2 = .44$  (all other ts nonsignificant at p < .05, corrected for multiple comparisons). In sum, participants associated the yin-yang symbol with change- and balance-related words but not with risk-related words. This result is also informative because it suggests that European American participants in the Asian supermarket (Study 1) were unlikely to have preferred the ambiguously performing stocks merely because they were more risk-seeking than their counterparts who had not entered the Asian supermarket.

Providing open-ended definitions of the yin-yang (Task 4). We coded participants' free-response definitions of the yin-yang according to whether they (a) knew the yin-yang's name and (b) whether they mentioned at least one of the terms balance or change or any duality or dichotomy such as light-dark or daynight. All 43 participants knew the yin-yang by name, and 37 out of 42 (88%) used at least one of the target terms to describe the yin-yang's meaning.

The findings of these four tasks suggest that European American participants from our sample considered the yin-yang to have originated in a foreign culture yet recognized that it implies change and balance.

# Study 3: The Yin–Yang and Chinese Dragon as Cultural Primes

Having shown in Study 2 that the yin-yang is associated with change and balance, we sought to show that the yin-yang also evokes Chinese or East Asian culture. Hong et al. (2000) showed that bicultural American Chinese people reason more like monocultural Chinese people than monocultural Americans after exposure to Chinese symbols (e.g., a Chinese dragon, the Great Wall of China). We propose that cultural symbols (e.g., the yin-yang and Chinese dragon) that are centrally associated with Chinese culture should prime general representations of Chinese culture. Many European Americans have some knowledge about East Asian or Chinese culture, and a sample of pilot participants unan-

imously recognized that Chinese meals are strongly associated with green tea and rice. Accordingly, stimuli that are generally associated with China should in turn prime these specific representations of Chinese culture. Study 3 was designed to test this hypothesis.

Participants in Study 3 were asked to complete a "marketing survey." The experimenter who approached the participants was carrying a clipboard on the back of which we had pasted one of three symbols: a control crosshatch symbol, a yin-yang symbol, or a Chinese dragon symbol. The survey asked participants to estimate the change in popularity of several food and drink items over the previous 5 years. Among those items were a typically East Asian cuisine (rice) and drink (green tea). Since we expected both the yin-yang and dragon symbols to activate concepts generally associated with Chinese or East Asian culture, we expected participants who were primed with those symbols to rate the Chinese food and drink items as experiencing a greater increase in popularity than would the participants primed with the crosshatch symbol. In contrast, we did not expect participants across the three conditions to differ in their popularity judgments of the non-Chinese items.

#### Method

*Participants*. Fifty-one European American adults (17 females) volunteered to participate in this study while shopping in a large mall in Lawrenceville, central New Jersey.

Materials, design, and procedure. Participants completed a marketing survey at the request of an experimenter who carried a clipboard displaying either a (control) crosshatch symbol (the fourth symbol in Figure 4B), a Chinese dragon symbol (Chinese prime), or a vin-yang symbol. The survey explained that the marketing group was interested in determining the extent to which people believed several food and drink items had changed in popularity over the past 5 years. The survey was divided into a food section (rice, couscous, and polenta) and a drink section (instant coffee, boxed juice, and green tea), and participants were asked to estimate the change in popularity of each item on a scale from -5 (strongly declined in popularity) to 5 (strongly increased in popularity), with a midpoint of 0 (no change in popularity). We calculated mean popularity change scores for the Chinese products by averaging participants' estimates of the change in popularity of rice and green tea and calculated a similar index for the non-Chinese products by averaging participants' estimates of the change in popularity of couscous, polenta, boxed juice, and coffee.

After completing the survey, participants reported their ethnicity, and the experimenter explained the true purpose of the study. To reiterate, we expected participants who were primed with the yin-yang and dragon symbols to rate the rice and green tea as experiencing stronger increases in popularity relative to participants in the crosshatch condition, whereas we did not expect participants' ratings to differ when they considered the change in popularity of the non-Chinese food and drink items.

# Results and Discussion

We began by conducting an omnibus 3 (prime: crosshatch, yin-yang, dragon) × 2 (product type: Chinese, non-Chinese) mixed-design ANOVA, where the first measure was manipulated

between participants and the second measure was manipulated within participants. As expected, we found a significant interaction between prime and product type, F(2, 48) = 4.40, p < .02,  $\eta_p^2 = .16$  (see Figure 5).

We conducted three follow-up  $2 \times 2$  interactions to examine the interaction between product type and each pair of symbol primes. The interactions between product type and the yin-yang and crosshatch primes, on the one hand, and product type and the dragon and crosshatch primes, on the other hand, were both significant, F(1, 29) = 5.61, p < .05,  $\eta_p^2 = .16$ , and F(1, 32) = 8.39, p < .01,  $\eta_p^2 = .21$ , respectively. Also as expected, the interaction between product type and the yin-yang and dragon primes was not significant (F < 1, p > .96,  $\eta_p^2 < .001$ ). These results suggested that participants estimated a greater increase in popularity of the Chinese relative to non-Chinese products when they were primed with either the yin-yang or dragon primes, relative to the crosshatch prime.

To further examine these effects, we conducted separate simpleeffects analyses of participants' popularity change estimates of the Chinese and non-Chinese products. As expected, the priming condition did not significantly affect participants' estimates of the popularity of the non-Chinese products ( $F < 1, p > .90, \eta_p^2 < .01$ ; see dark grey bars in Figure 5). In contrast, participants' estimates of the change in popularity of the Chinese products differed significantly as a function of priming condition, F(2, 48) = 6.72, p < .01,  $\eta_p^2 = .22$  (see light grey bars in Figure 5). Pairwise follow-up analyses showed that participants estimated greater increases in the popularity of the Chinese products when exposed to the vin-yang or dragon primes relative to the crosshatch prime,  $F(1, 29) = 8.30, p < .01, \eta_p^2 = .22, \text{ and } F(1, 32) = 10.91, p < .01, \eta_p^2 = .25, \text{ respectively. Consistent with the proposition that the}$ yin-yang and dragon symbol similarly prime Chinese culturallyladen cognition, participants' popularity change estimates of the Chinese products did not differ between the yin-yang and dragon conditions ( $F < 1, p > .61, \eta_p^2 < .01$ ).

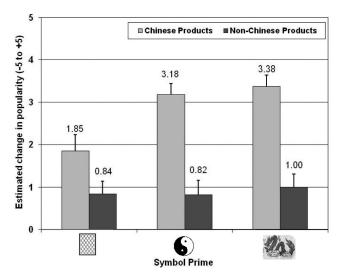


Figure 5. Estimated change in popularity (and standard error [error bars]) of Chinese and non-Chinese food and drink products as a function of symbol prime in Study 3.

In sum, these results show that the yin-yang, like the Chinese dragon symbol, primed participants to estimate greater increases in the popularity of Chinese, but not non-Chinese, products over the previous 5 years. Accordingly, the yin-yang symbol generally primes representations associated with Chinese culture. In Study 4, we sought to show that the yin-yang primes the specific concepts of change and balance identified in Study 2, whereas the dragon symbol should not prime similar cognitions despite its general association with Chinese culture. In other words, Study 4 was designed to show that, although the yin-yang and dragon primes converge to prime concepts associated with Chinese culture, only the yin-yang should prime the specific change- and balance-related concepts associated with Chinese culture.

# Study 4: The Yin-Yang and Stock Predictions

In Study 4, we attempted to replicate our earlier location-priming effects by exposing participants to the yin-yang symbol, rather than approaching them while they were in an East Asian environment. We sought evidence that European Americans primed with a yin-yang symbol would avoid previously appreciating stocks under the assumption that they would experience an imminent downturn, relatively preferring ambiguously performing stocks instead. Thus, we expected to replicate our findings in Studies 1 and 3, in which Chinese participants and European Americans exposed to an East Asian culturally-laden environment preferred ambiguously performing stocks to previously appreciating stocks.

If the yin-yang symbol activates a way of thinking associated with change, as we have argued, people who are familiar with the yin-yang's meaning should anticipate change more strongly than those who are unfamiliar with its meaning. We therefore asked participants who were primed with the yin-yang symbol to indicate how familiar they were with the symbol. Consistent with our hypothesis that familiar cultural symbols prime extracultural cognition, we expected the yin-yang symbol to have a stronger influence on participants' judgments the more familiar they were with its meaning. This prediction is consistent with past research showing that foreign primes tend to influence cognition only to the extent that perceivers recognize their meaning (e.g., Briley & Wyer, 2002).

We also sought to eliminate the possibility that participants were merely responding to the yin-yang's foreignness by anticipating change and balance in the previously appreciating stocks. Rather, we expected that the yin-yang would influence participants' judgments because they associated it with the concepts of change and balance. Thus, in one control condition, participants completed a questionnaire that depicted the Chinese dragon symbol used in Study 3. Since the dragon symbol is associated with Chinese culture generally, but with neither change nor balance specifically, we did not expect participants in the dragon condition to respond differently from participants in the other control conditions.

#### Method

*Participants*. A sample of 157 European American adults (54 females) volunteered to participate in this study while eating at a commercial complex in Lawrenceville, NJ. Sixty percent of participants were professionals, and they reported practicing 70 different occupations.

Materials, design, and procedure. Participants completed one of four variations of the stock-prediction questionnaire described in Pilot Study A. Thirty-nine participants completed the same questionnaire described in Pilot Study A (no-symbol control condition), 40 participants completed a version of the questionnaire with a small (½-in. square) crosshatch symbol following the questionnaire instructions (crosshatch control condition), 40 participants completed a questionnaire with a small Chinese dragon (foreignness control condition), and 38 participants completed a version with a similarly sized yin–yang symbol following the instructions (yin–yang condition). We included the crosshatch and foreignness control conditions to ensure that the mere presence of a symbol or foreign stimulus did not alter participants' response tendencies.

Participants who were in the yin–yang condition also completed two additional items on a second page of the questionnaire after the stock-prediction task. First, they were asked to write down the yin–yang symbol's meaning as comprehensively as they could. Second, they indicated how familiar they were with the yin–yang symbol (from 0 [never seen before] to 9 [very familiar]). We compared participants' knowledge about and familiarity with the yin–yang with their investment patterns to determine whether knowledge about the yin–yang's meaning moderated the effect of the symbol on participants' aversion to previously appreciating stocks.

# Results and Discussion

As in Pilot Study A, we calculated how much of the \$1,000 sum participants invested in the three previously appreciating stocks and submitted those data to a four-way between-subjects ANOVA. An omnibus F test showed that the primes had significant effect on participants' investment patterns, F(3, 153) = 3.10, p < .03,  $\eta_p^2 = .06$  (see Figure 6). Specifically, participants who were primed with the yin–yang symbol invested less heavily in the previously appreciating stocks than did participants primed with no symbol, F(1, 75) = 5.78, p < .02,  $\eta_p^2 = .07$ ; a crosshatch symbol, F(1, 75) = 5.78, p < .02,  $\eta_p^2 = .07$ ; or a Chinese dragon, F(1, 76) = 6.67, p = .01,  $\eta_p^2 = .08$  (all p values controlled for multiple comparisons). Participants did not invest differently across the three control

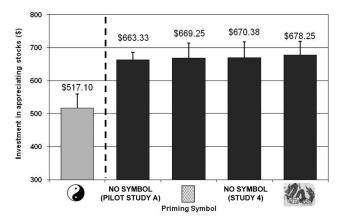


Figure 6. Mean (and standard error [error bars]) investment in previously appreciating stocks in Study 4.

conditions (all pairwise Fs < 1). Participants in the no-symbol control condition invested almost an identical amount in previously appreciating stocks as did European American adults in Pilot Study A (M=670.38, SD=265.09, vs. M=663.33, SD=273.37; F<1). These very similar results suggest that the stock investment measure is quite reliable across time, as the samples were demographically similar and participants completed the same questionnaire separated in time by a few months.

Furthermore, participants who were primed with the yin–yang symbol appeared to avoid previously appreciating stocks to the extent that they were familiar with the yin–yang's meaning. Specifically, the more familiar participants were with the yin–yang symbol, the less heavily they invested in the previously appreciating stocks, r(33) = -.49, p = .003. Moreover, the 27 participants in the yin–yang condition who were able to define the yin–yang symbol's meaning were more strongly influenced by its presence. They invested significantly less in the previously appreciating stocks (M = 475.74, SD = 157.79) than did participants in the yin–yang condition who were not able to report its meaning (M = 633.67, SD = 111.38), F(1, 36) = 7.88, p = .008,  $\eta_p^2 = .17$ .

This study offers encouraging preliminary evidence that European Americans who are exposed to the yin-yang symbol anticipate change similarly to East Asians (Pilot Study A) and European Americans who are temporarily exposed to an East Asian environment (Study 1). Furthermore, since participants did not invest less heavily in the previously appreciating stocks when exposed to the Chinese dragon, we were able to eliminate the possibility that participants who were exposed to the yin-yang symbol merely altered their investment preferences in the presence of its foreignness. In Study 5, we sought to show that the yin-yang symbol similarly induces predictions of change among European American participants, using the weather-prediction task described in Pilot Study B.

# Study 5: The Yin-Yang and Weather Patterns

We had two purposes in Study 5. First, we sought to show that European Americans who were primed with a yin-yang symbol perceived more changes in the weather than their counterparts who were primed with a control prime. This study was therefore designed to replicate Pilot Study B, except that participants were exposed to an East Asian symbol (the yin-yang) rather than an East Asian environment (Chinatown). Second, we sought to replicate the findings in Study 4 in a second change-prediction task, showing again that a yin-yang symbol primes participants to anticipate change consistent with the symbol's meaning.

#### Method

Participants. Thirty-three European American graduate students and undergraduates at Princeton University (17 females) volunteered to participate in this study while eating at the student campus center.

Materials, design, and procedure. Participants completed a similar weather-prediction questionnaire to that described in Pilot Study B, with two significant differences. First, instead of four target and two filler stimuli, we expanded the questionnaire to include six targets and four fillers. Second, both versions of the questionnaire were printed on fabricated letterhead titled AV Sta-

tionery, for Princeton University. In the yin-yang prime version of the study, the letterhead also contained a small (1½-in. square) yin-yang symbol, whereas the control condition letterhead contained a similarly sized map of the United States. Since the yin-yang implies change (Study 2), we expected participants in the yin-yang prime condition to anticipate more changes in the weather than would participants who were primed with the U.S. map.

#### Results and Discussion

As in Pilot Study B, we began by collapsing participants' judgments across the sunny and rainy trends. We submitted participants' predictions to a 2 (prime: yin–yang, U.S. map)  $\times$  2 (weather trend: sunny–sunny, rainy–rainy) mixed-design ANOVA.

Again, participants generally expected trends to continue, anticipating a sunnier day following a sunny trend rather than after a rainy trend, F(1, 31) = 139.89,  $p < 10^{-13}$ ,  $\eta_p^2 = .82$  (see Figure 7). However, this main effect was again qualified by a significant Weather Trend  $\times$  Sample interaction, F(1, 31) = 4.14, p = .05,  $\eta_p^2 = .12$  (see Figure 7). Compared with controls, participants who were primed with the yin-yang anticipated significantly more rain following a sunny trend, F(1, 31) = 5.89, p = .02,  $\eta_p^2 = .16$ , but not significantly more sun following a rainy trend, F(1, 31) < 1, p = .38,  $\eta_p^2 = .03$ . Simply, participants in the yin-yang condition expected sunny days to become rainy but not rainy days to become sunny. Although we had not predicted this asymmetry in the results, their suggestion of pessimism rather than optimism is encouraging because it diminishes the possibility that participants primed with the yin-yang in the stock-prediction task were more risk-seeking merely because they were more optimistic about the ambiguous stocks' future performance. Study 5 therefore replicated Study 4, again showing that the yin-yang symbol primed European Americans to anticipate change in a simply judgment task. In Study 6, we sought to further extend and replicate this effect, showing that it also applies to a professional sample, using a different priming technique.

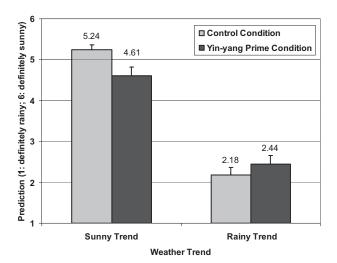


Figure 7. Mean (and standard error [error bars]) weather predictions following sunny and rainy trends in Study 5.

# Study 6: T-Shirt Primes and Wall Street

The point is, ladies and gentlemen, that greed, for lack of a better word, is good. Greed is right; greed works. Greed clarifies, cuts through, and captures the essence of the evolutionary spirit.

—Gordon Gekko, Wall Street trader, in Wall Street (Pressman & Stone, 1987)

Wall Street traders are popularly cast as calculating and motivated by hardheaded financial motives (e.g., Ellis, 2001). In Study 6, we sought to show that even Wall Street professionals are susceptible to the effects of culturally-laden primes. Experimenters in this study wore either a plain white t-shirt or a white t-shirt decorated with a small yin–yang symbol. This approach to priming was more subtle than the approach of presenting questionnaires depicting various symbols in Studies 4 and 5, and t-shirt designs are more typical of the symbol primes that people might incidentally encounter in the environment.

# Method

Participants. Thirty-nine European American professionals (11 females) working on Wall Street in New York City agreed to participate in this study during their lunch breaks. Before completing the study, participants indicated that they worked on or near Wall Street.

Materials, design, and procedure. All participants completed the abridged stock investment questionnaire described in Study 1, and the experimenter explained that he was administering the questionnaire for a laboratory at Princeton University.

Participants completed the questionnaire under one of two conditions. In the control condition, participants were approached by an experimenter who was wearing a plain white t-shirt. In the yin–yang prime condition, the experimenter was wearing a white t-shirt with a small yin–yang symbol (approximately 2 in.  $\times$  2 in.) printed on the shirt's left breast-pocket area.

# Results and Discussion

We began by summing participants' investment in the two previously appreciating stocks. As in the previous studies, participants exposed to a yin–yang symbol invested less heavily in the previously appreciating stocks than did control participants who were exposed to a plain white t-shirt, F(1, 37) = 5.63, p < .05,  $\eta_p^2 = .13$  (see Figure 8).

Study 6 therefore suggests that professionals, like college students and laypeople, are susceptible to the effects of cultural primes and that stimuli in the environment at large (e.g., on a t-shirt) have effects similar to stimuli located on a questionnaire (as in the previous studies).

# Study 7: Travel as a Moderator of the Priming Effect

In Study 7, we sought to further replicate the standard priming effect and to identify a factor that moderates the effect of cultural primes on extracultural cognition. Specifically, we examined whether participants who had traveled internationally would be more likely to predict change in the presence of a culturally-laden symbol relative to participants who had not traveled internationally. We reasoned that, since the yin–yang is a culturally-laden

prime, participants who had traveled overseas were more likely to have been exposed to foreign cultures and were therefore more amenable to the influence of foreign cultures at large. Recent work (for a review, see Oyserman & Lee, 2007) has suggested that people must be receptive to the influence of a cultural prime before it will influence their judgment and decision making. A second factor that may enhance international travelers' susceptibility to foreign cultural primes is that people who seek out travel opportunities are likely to be more open to the influence of foreign cultures. Accordingly, we expected participants who had spent time overseas in the past 2 years to invest less heavily in the previously appreciating stocks when primed with the yin–yang symbol but not when they were primed with a control crosshatch symbol.

#### Method

Participants. Forty European American Princeton University undergraduates (26 females) volunteered to participate in this study while seated in the student campus center. Twenty participants had not traveled outside the United States in the past 2 years, whereas the remaining 20 participants had spent time overseas during the same period (minimum = 7 days, maximum = 90 days, M = 20.86 days, SD = 24.37).

Materials, design, and procedure. Participants completed the abridged stock investment task described in Study 6. For half the participants, the questionnaire contained a small yin–yang symbol on its letterhead, whereas for the other half, the letterhead contained a crosshatch (control) symbol. After completing the questionnaire, all participants were asked to indicate whether they had traveled overseas in the previous 2 years and how many days they had spent overseas.

# Results and Discussion

As in the previous studies, participants who were primed with the yin–yang symbol invested less heavily in the previously appreciating stocks than did participants in the crosshatch control condition, F(1, 38) = 4.24, p = .046,  $\eta_p^2 = .10$  (see Figure 9).<sup>5</sup>

We also conducted a 2 (international travel over previous 2 years: yes, no)  $\times$  2 (condition: yin–yang prime, crosshatch prime) between-participants ANOVA. As expected, the two variables interacted significantly, F(1, 36) = 4.45, p = .042,  $\eta_p^2 = .11$  (see

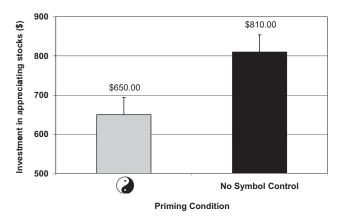


Figure 8. Mean (and standard error [error bars]) investment in previously appreciating stocks in Study 6.

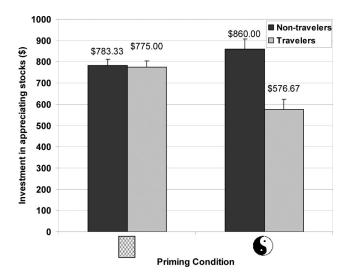


Figure 9. Mean (and standard error in) investment in previously appreciating stocks in Study 7 as a function of priming condition and international travel.

Figure 9). Follow-up simple-effects analyses showed that participants in the yin-yang prime condition who had traveled invested significantly less in the previously appreciating stocks than did participants in the yin-yang prime condition who had not traveled, F(1, 19) = 6.22, p = .023,  $\eta_p^2 = .26$ . This effect was absent among participants who had not traveled in the previous 2 years, as they invested similarly regardless of whether they were exposed to the yin-yang or crosshatch primes (F < 1). Importantly, prior travel did not affect participants' investment decision in the crosshatch prime condition (F < 1, p > .90), suggesting that travelers did not invest differently from nontravelers except when primed with the foreign, culturally-laden yin-yang symbol.

We conducted similar analyses using the number of days participants spent overseas in the previous 2 years as a proxy for exposure to foreign cultures. Specifically, we conducted a moderated regression analysis (Muller, Judd, & Yzerbyt, 2005) to determine whether participants who spent more time abroad invested less heavily in the previously appreciating stocks when primed with the yin–yang symbol but not when primed with the crosshatch symbol. A significant moderated regression analysis requires that the interaction term significantly predict the dependent measure in a model that includes both main-effect variables. Accordingly, we included the binary prime condition variable (coded yin–yang = 1 and crosshatch = -1), the mean-centered number of days traveled, and the interaction of these two variables as predictors and dollars invested in the previously appreciating stocks as the de-

<sup>&</sup>lt;sup>5</sup> We note that the investment patterns across the stock investment studies differed somewhat depending on whether participants completed the longer (nine-stock) or shorter (four-stock) version of the investment questionnaire. Specifically, participants generally tended to invest more heavily in the previously appreciating stocks when they completed the shorter version of the questionnaire (Studies 1, 6, and 7; Figures 3, 8, and 9) than when they completed the longer version of the questionnaire (Pilot Study A and Study 4; Figures 1 and 5). This difference is not relevant to our hypotheses and merely reflects a difference in the nature of the stimuli across the studies.

pendent measure in a simultaneous multiple regression model. Indeed, interaction term significantly predicted participants' investment patterns,  $\beta = -.45$ , t(32) = 2.11, p < .05.

To parse this result further, we examined the simple correlation between time spent abroad and investment patterns first among participants who were primed with the yin-yang symbol, then separately among participants who were primed with the cross-hatch symbol. As expected, we found that time spent overseas was negatively correlated with participants' investment in the previously appreciating stocks in the yin-yang prime condition,  $\beta = -.55$ , t(16) = -2.66, p < .02. Conversely, participants' time spent overseas was not significantly related to their investment preferences in the crosshatch prime condition,  $\beta = -.07$ , t(16) = -.29, p = .77. We also asked participants to indicate where they had traveled. Since only 3 participants had traveled to East Asia, we inferred that the effect was largely driven by the general experience of international travel rather than the specific experience of traveling to East Asia.

This mechanistic result is important because it shows that the yin-yang exerted a stronger effect on people who had spent more time overseas but that those participants did not generally invest differently from their lesser traveled counterparts when not exposed to a cultural prime. In short, participants who had spent time overseas appeared to be more willing to adopt the meaning implied by foreign cultural primes into their approach to decision making.

# General Discussion

Across two pilot studies and seven studies, we found that European Americans recognized the change-based meanings associated with East Asian culture and that they could be induced to adopt typically East Asian cognitive patterns when primed with an East Asian culturally-laden location or symbol.

We began by showing that Chinese adults and students anticipated change and balance more readily than their European American counterparts (Pilot Study A). This finding reflects the divergent cultural tenets that have long populated Eastern and Western thought; whereas Easterners believe that change and corrective balance are inevitable, Westerners tend to emphasize continuity and consistency in the environment (Ji et al., 2001; Nisbett et al., 2001; Ritsema & Karcher, 1994).

However, the boundaries that separate Eastern and Western interpretations of change and balance are not impermeable. Eliciting European Americans' predictions about change when they were exposed to Chinese culture in Chinatown (Pilot Study B) or an Asian supermarket (Study 1) yielded more typically Eastern change predictions. These findings raised the question of how exactly culturally-laden environments prime culturally-consistent cognitive patterns. Participants noted that Chinatown's most salient feature is its constellation of symbols and icons, which convey the tenets associated with Chinese culture.

Since European Americans are not familiar with the meaning of every foreign culturally-laden symbol, we chose the yin-yang, a symbol that has been widely imported into Western culture. European American adults and students in our samples were almost unanimously familiar with the yin-yang symbol and its meaning (Study 2), though some participants reported being more familiar with the symbol than did others (Study 4). Consequently, when we exposed European Americans to the yin-yang symbol,

they estimated greater increases in the popularity of typically Chinese food and drink over the past 5 years (Study 3) and anticipated more change in stock-prediction (Studies 4 and 6) and weather-prediction (Study 5) tasks. Supporting our suggestion that participants must be familiar with the foreign symbol and that the effect is intimately tied to culture, the yin–yang symbol appeared to exert greater effects on participants' cognitions when they were more familiar with its meaning (Study 4) and after they had traveled overseas (Study 7). In sum, although European American culture appears distinct from Eastern culture, elements of Eastern culture have gained currency among European Americans and remain dormant until coaxed to influence judgment with appropriate cultural primes.

# Theoretical and Practical Implications

These findings have several theoretical implications. McLuhan's (1962) global village metaphor was originally intended to convey the impression that people across the globe were living in a claustrophobically confined cognitive universe. Although the phrase now connotes the positive consequences of exposure to the world's many cultures, our research suggests that McLuhan's analogy is remarkably apt. For better or worse, one hallmark of village life is that each person knows everyone else's business. People also begin to recognize alternative cultural approaches, which have the latent potential to influence cognition and judgment.

The blurred line that separates cultural groups is quite well documented in cultural research. People within a culture vary in the extent to which they recognize and embody the culture's tenets and beliefs (e.g., Atran, Medin, & Ross, 2005; Sperber, 2001), and contextual changes such as immigration and travel gradually facilitate cultural changes (Kitayama et al., 2006). However, much of the existing literature has focused on the power of American influences on the rest of the world. For example, the world is becoming increasingly individualistic under the influence of the United States (e.g., Miyanaga, 1991). In one disturbing example, the American fast food culture continues to influence a growing range of foreign countries. The Soviet Union opened its first McDonald's restaurant in 1990, and a recent American Association for the Advancement of Sciences report concluded that poorer nations as far afield as the Cook Islands are becoming obese in the wake of growing access to high-calorie Western foods (e.g., see Ulijaszek & Lofink, 2006). Our studies examined the converse relationship because they suggested that people in the United States are also influenced by other cultures. Indeed, this effect may become more prominent as the U.S. cultural landscape becomes increasingly populated with foreign cultural influences.

However, not all European Americans are equally likely to adopt the tenets associated with foreign cultures. Since people in large cities are more frequently exposed to foreign cultural symbols and influences, they are more likely to be familiar with the meanings of foreign stimuli than are people in smaller towns and rural areas. Cultural differences within the United States might

<sup>&</sup>lt;sup>6</sup> These analyses included data from 36 participants, as the remaining 4 participants reported having traveled internationally but failed to report the number of days they had spent outside the United States.

also predict people's willingness to adopt foreign cognitive styles (e.g., Vandello & Cohen, 1999). Whereas people in large cities may be more familiar with foreign influences, they may also be more dogmatically individualistic or unwilling to accommodate alternative viewpoints.

A second factor that appears to engender susceptibility to cultural primes is the experience of traveling overseas. Participants who had traveled overseas, regardless of whether they had traveled to East Asia, were more susceptible to the effects of the yin-yang symbol than were participants who had not ventured outside the United States in the previous 2 years. This result suggests that participants who had traveled were more willing to transiently incorporate the change-based meaning of the yin-yang, a foreign cultural symbol, into their decisions. There are two possible explanations for this effect: Either the experience of travel made participants more open to and familiar with foreign cultural stimuli, or they were dispositionally more motivated both to travel and to respond to foreign cultural stimuli. Regardless which explanation accounts for our findings, other recent research supports the notion that people differ in the extent to which they are susceptible to the effects of environmental primes. For example, Cesario, Plaks, and Higgins (2006) found that participants who held positive implicit associations with the elderly walked more slowly in the presence of elderly-related primes, whereas participants who held negative implicit associations walked more quickly (see also Fu, Chiu, Morris, & Young, 2007). Thus, the extent to which people assimilate primes might reflect preexisting motivational attitudes to the primed concepts. Of course, we cannot infer causation from this correlational analysis; the experience of traveling may have prepared participants to respond to foreign cultural primes, but they may have also been attracted to traveling because they were more open to foreign cultures in the first place. Regardless, participants who were well traveled were more open to adopting the meaning embodied in the yin-yang symbol.

Although researchers are increasingly concerned with symbolism (e.g., Butz et al., 2007; Hassin et al., 2007; Hong et al., 2000), our research is among the first to examine the role of imported cultural symbols on social cognition. Our findings suggest that culturally-laden symbols that are also familiar to people from foreign cultures have the potential to bridge cultural divisions, even transiently. Exposing people with one cultural viewpoint to the stimuli associated with a second cultural viewpoint might lead those people to adopt a cognitive approach typical of people from the second culture.

Similar research has recently shown that primes sometimes facilitate convergence between people with different dispositions. For example, Hassin et al. (2007) showed that Israelis who were high and low on a nationalism trait adopted convergent behaviors toward Palestinian targets when primed with an Israeli flag. Relevant to our claims, Hassin et al. argued that the Israeli flag expressed the ideal of national unity, thereby priming participants to adopt a more moderated stance toward Palestinians. Other, now-classic priming studies have shown that people tend to adopt the slow gait typical of an elderly person (Bargh et al., 1996), the cognitive styles of a professor or hooligan (Dijksterhuis & van Knippenberg, 1998), or the stereotypes associated with other outgroups (DeMarree, Wheeler, & Petty, 2005; see also the active-self account of Wheeler & Petty, 2001) when primed with concepts related to those groups. In all cases, these primes were well known

to participants, and participants responded by adopting the cognitive styles associated with those primes.

Although our results are similar to these earlier findings, we focused on the effects of imported cultural primes on cognition to show that certain aspects of one foreign culture sometimes infiltrate a second culture's cognitive style. This distinction is important because symbols like an Israeli or American flag might have very different meanings to people from foreign cultural backgrounds. For example, whereas Americans perceive their own flag as a symbol of unity and nationalism, recent polls suggest that Iragis are likely to respond to the American flag with anger and hostility (e.g., Wright, 2007). If we seek to facilitate communication between people from different cultures, it is important to identify the population of cultural symbols that embody similar meanings across cultural groups. In related work, we have begun to assemble a catalogue of such symbols, also focusing on the factors that predict when a cultural symbol will exert similar effects across different cultural groups (Alter & Kwan, 2008).

In addition to their theoretical implications, our findings have far-reaching practical consequences. Foreign culturally-laden locations and symbols are ubiquitous (e.g., Betsky, 1997; Cohen, 1979), so their effects on cognition apply to a broad range of domains and contexts. Researchers have already shown that people adopt distinct voting preferences depending on the location of the polling booth (Berger, Meredith, & Wheeler, 2007) and the presence of national flags (Hassin et al., 2007). For example, Berger et al. (2007) showed that Arizona voters were more likely to support a sales tax increase designed to fund education when they voted in schools, rather than other locations. As noted earlier, Hassin et al. (2007) similarly found that people who strongly and weakly supported Israeli nationalism behaved more similarly when exposed to an Israeli flag.

Our stock-prediction results are also particularly relevant to businesspeople, who are increasingly able to communicate decisions from any location. Their decisions while traveling overseas might differ from their decisions while at home. Since Japan's economy is the second largest in the world and China's is the world's fastest growing economy, European Americans are increasingly likely to be exposed to Eastern cultures. These effects are not confined to profound or weighty decisions that attend financial transactions. They also appear to extend to mundane everyday judgments like weather predictions, implying that the effects of cultural primes on judgment and decision making extend across a wide array of domains and contexts. Returning once more to McLuhan's analogy, European Americans seem to resonate to the tribal drums of Eastern philosophy without recognizing that those drums temporarily induce typically Eastern cognitions.

# Limitations and Future Directions

This article reports preliminary empirical evidence for McLuhan's global village. Just as McLuhan claimed (though with greater optimism), we showed that the disjunction between two seemingly foreign cultures is less profound than one might imagine. European Americans not only recognized the change-based meaning conveyed by the yin–yang but also inadvertently came to predict change more readily in its presence.

Though this evidence is encouraging, we focused on a limited set of cultural locations, one familiar but foreign cultural symbol, and several relatively homogeneous samples of European American participants from the northeast of the United States. Further evidence is needed before we are able to conclude that the global village applies to more than just European Americans who are exposed to East Asian stimuli. Indeed, our results suggest that poorer or insular cultures that have less access to travel or information about foreign cultures are unlikely to show these effects. We would argue, however, that as cultural knowledge is increasingly shared across the globe, extracultural cognition should only increase.

In a similar vein, future research might consider how strongly foreign cultural symbols influence cognition among difference samples of people in the population. The biculturalism literature suggests that immigrants rapidly become competent with their adopted culture, so, for example, businesspeople who live for many months in a foreign culture might be more susceptible to cultural primes than their counterparts who visit that culture for a short period of time. These effects may be explained by familiarity, in part, but they may also be a product of growing positivity toward that culture. Similarly, people who surf the Internet for more hours each day, watch more foreign television, or purchase more foreign products might also be more amenable to foreign cultural primes.

#### Conclusion

Marshall McLuhan was apparently correct to suggest that the world increasingly resonates to a single drum—at least when people are exposed to a unifying cultural symbol. People in the United States are exposed to a wide array of culturally-laden stimuli from a variety of cultures, and our research suggests that those stimuli have the potential to influence their transient judgments and behaviors. Although many differences between the world's cultures remain, this research tentatively suggests that people are increasingly aware of foreign cultural beliefs. The world may not quite be a single global village, but a reminder of foreign villages is enough to temporarily bridge the division that exists between the villages that populate the globe.

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