

## Attending Holistically Versus Analytically: Comparing the Context Sensitivity of Japanese and Americans

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Much research indicates that East Asians, more than Americans, explain events with reference to the context. The authors examined whether East Asians also attend to the context more than Americans do. In Study 1, Japanese and Americans watched animated vignettes of underwater scenes and reported the contents. In a subsequent recognition test, they were shown previously seen objects as well as new objects, either in their original setting or in novel settings, and then were asked to judge whether they had seen the objects. Study 2 replicated the recognition task using photographs of wildlife. The results showed that the Japanese (a) made more statements about contextual information and relationships than Americans did and (b) recognized previously seen objects more accurately when they saw them in their original settings rather than in the novel settings, whereas this manipulation had relatively little effect on Americans.

A well-established finding in the field of social cognition concerns the so-called *correspondence bias* or *fundamental attribution error*—the tendency to see behavior as a product of the actor's dispositions and to ignore important situational determinants. Cross-cultural studies show that Asians are more inclined to explain events situationally than are Americans. The reasons for this cultural difference, however, are unclear. In this article, we examine the differences in attentional patterns between Japanese and Americans and provide an explanation of differences in attribution based on differences in cognitive and perceptual orientations that Nisbett and his colleagues (Nisbett, Peng, Choi, & Norenzayan, 2001; Norenzayan & Nisbett, 2000; Peng & Nisbett, 1999) have labeled *holistic* and *analytic*.

### Attribution and Culture

In an early study, Jones and Harris (1967) asked participants to read an essay allegedly written by another student that was either for or against an important social issue of the day. They were

informed that the essayist had been required to take a pro or con stand by a political science instructor, a debate coach, or an experimenter. When asked to estimate the essayist's actual opinion, participants tended to ignore the situational constraints and inferred that the essayist's actual opinion corresponded to the content of the essay. A great deal of research carried out under the rubric of the attitude attribution paradigm indicates that this bias is robust (Gilbert & Jones, 1986; Gilbert & Malone, 1995; Jones, 1979; Ross, 1977).

These findings are consistent with the generalization that people tend to pay attention to others' behavior at the expense of environmental factors. In Heider's (1958) view, "behavior engulfs the field" (p. 54). Jones (1979) interpreted this to mean that the observed action and the actor are so salient that people tend to attribute outcomes to the actor's internal states and dispositions rather than to less salient situational factors. This claim has long been a common theme of social psychology. Gilbert and Malone (1995), for example, maintain that it is the lack of awareness of situational factors that is the cause of the correspondence bias.

The correspondence bias appears to be weaker in some non-Western cultures. Many studies indicate that Asians are inclined to explain the outcome of another person's behavior in terms of situational factors, whereas Americans are more likely to explain behavior in terms of presumed internal factors such as personality traits and other corresponding dispositional terms (Lee, Hallahan, & Herzog, 1996; Miller, 1984; Morris & Peng, 1994; Norenzayan, Choi, & Nisbett, 1999). Even when situational factors are made extremely salient—for example, in the Jones and Harris (1967) paradigm—Americans may still attribute behavior to dispositional factors, whereas East Asians' attributions are influenced by the same salience manipulations (Choi & Nisbett, 1998; Masuda & Kitayama, 2001; Toyama, 1990). In other studies, in which people

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were asked to read assigned descriptions of personal traits in front of observers, East Asians were less likely than Westerners to believe that the observers would infer that the participants' actual personal traits corresponded to the assigned descriptions (Kamada & Van Boven, 2000; Van Boven, Kamada, & Gilovich, 1999). Finally, East Asians are less likely than Westerners to believe that behavior normally corresponds to actual attitudes (Kashima, Siegal, Tanaka, & Kashima, 1992).

These findings suggest that East Asians' views about the causes of behavior and the importance of situational factors differ from those of Westerners. If so, we might expect that they would attend to different aspects of the environment. If people believe that causality is located in the environment, they might pay attention to the field as a whole and to the object's relationship with the field rather than focusing narrowly on the object.

### Holistic Thought Versus Analytic Thought

Nisbett and his colleagues (2001) provided a theoretical model within which to consider such questions. They argued that there are significant psychological differences between East Asians and Westerners that are rooted in long-standing differences between East Asian and Western civilizations. Intellectual traditions in ancient Greece emphasized analytic thought, which can be defined as involving

detachment of the object from its context, a tendency to focus on attributes of the object in order to assign it to categories, and a preference for using rules about the categories to explain and predict the object's behavior. Inferences rest in part on the practice of decontextualizing structure from content, the use of formal logic, and avoidance of contradiction. (Nisbett et al., 2001, p. 293)

Nisbett et al. maintained that contemporary Westerner's mentalities and systems of thought are highly influenced by such an analytic tradition.

By contrast, intellectual traditions in ancient China such as Taoism, Chinese Buddhism, and Confucianism are more holistic in character. Nisbett et al. (2001) defined holistic thought as involving

an orientation to the context or field as a whole, including attention to relationships between a focal object and the field, and a preference for explaining and predicting events on the basis of such relationships. Holistic approaches rely on experience-based knowledge . . . and are dialectical, meaning . . . a search for the "Middle Way" between opposing propositions. (p. 15)

Nisbett et al. maintained that contemporary East Asians' mentalities and systems of thought are highly influenced by such a holistic tradition.

Nisbett and his colleagues (2001), following Witkin and Berry (1975), assumed that these cultural differences derive from the relative complexity of East Asian and Western societies. In complex societies such as ancient Chinese and other East Asian cultures, people were required to maintain close and well-structured relationships with other group members. Under these conditions, people need to be sensitive to relationships and to subtle changes in social situations. In contrast, in less socially complex and less role-constrained societies such as ancient Greece, people had more personal control over their environment. Under such circum-

stances, people are not required to examine all parts of the environment and can focus on a particular object and their own goals with respect to it. These characterizations of cultural models lead to several expectations about perception and attention among contemporary peoples, as East Asians still have generally interdependent societies and Westerners generally independent ones. For example, East Asians can be expected to see wholes where Westerners see parts. Moreover, East Asians might see relationships in a field more easily than Westerners can, but may find it more difficult to differentiate an object from the field.

### Cross-Cultural Findings Concerning Human Attention

There is some evidence that the above hypotheses about perception are correct. For example, Abel and Hsu (1949) conducted an early study that supports the claim that the holistic approach to information processing among Asians is predominant. They demonstrated that, in their responses to the Rorschach test, Chinese Americans tended to emphasize all aspects of the card, or its overall Gestalt. In contrast, the European Americans were more likely to emphasize parts or single aspects of the pictures.

Similarly, Chiu (1972) examined cultural differences in categorization patterns between American and Chinese children. In his study, children were asked to group any two of three items that "belonged together," for example, a man, a woman, and a baby. The results indicated that Chinese children were more "relational-contextual" in their groupings, for example, grouping together a mother and a baby "because the mother takes care of the baby." In contrast, American children were much more likely to group objects on a "categorical" basis, for example, grouping the man and the woman together "because they are both adults."

The notion that cognitive and perceptual orientations can differ in the degree to which they are analytic versus holistic is related to the concept of field dependence (Witkin & Berry, 1975; Witkin & Goodenough, 1977). According to Witkin and his colleagues, some people can perceptually separate an object from the field in which it is embedded more easily than can others. Witkin et al. also argued that such perceptual tendencies are strongly influenced by economic and social factors. For example, Witkin and Berry (1975) maintained that some societies require analyzing the visual field in such a way as to avoid being thrown off by external cues. Hunters and herders must analyze the features of novel information independent of context, whereas agriculturists can generally afford to merely scan the environment as a whole. Consistent with this logic, Witkin and Berry found that nonliterate hunters and herders have a more analytic or "field independent" style than do nonliterate farmers, performing better on the embedded figures test that requires ignoring the details of a complex stimulus figure and finding a smaller pattern "embedded" in it. Witkin and Berry also maintained that people who live in modern economies must be capable of substantial field independence. They found that modern Westerners are less field dependent than agriculturists and about as field dependent as hunters and herders.

Following Witkin's line of reasoning, Ji, Peng, and Nisbett (2000) examined the possibility that East Asians find more difficulty separating an object from the field in which it is embedded than do Americans. In their experiment, they used the Rod and Frame Test designed by Witkin and his colleagues (e.g., Witkin & Berry, 1975; Witkin & Goodenough, 1977), in which a frame

about 16-in. (approximately 41 cm) square is rotated independently of a rod that sits inside of the frame. The task is to report when the rod appears to be vertical. The degree to which judgments about the position of the rod are influenced by the position of the frame is an indication of degree of field dependence. East Asian participants, from China, Korea, and Japan, made more errors on the test than American participants. In another study, Ji et al. (2000) examined the ability of East Asians to detect covariation among stimuli. They assumed that East Asians would be more sensitive to the covariation of the stimuli because they would be more attentive to relationships in the field than Americans would. In one experiment, Chinese and American participants were asked to judge the degree of association between arbitrary figures on a computer screen. Ji et al. manipulated the contingencies of two figures. The probability of one particular object being associated with another object corresponded to a correlation of .00, .40, or .60. The results indicated that Chinese participants reported a greater degree of covariation than did American participants, they were more confident about their judgment, their confidence judgments were better calibrated with actual covariation, and, unlike Americans, the Chinese were not subject to the error of over-weighting pairings seen early in the presentation of stimuli.

### Hypotheses

In this article we report studies examining the extent to which attention can be presumed to be holistic versus analytic. We examined memory for objects versus memory for the environment in which they had been displayed. We anticipated that (a) East Asians would attend to field information more than Americans would, and thus would recall more such information and (b) East Asians' perception of objects would be more "bound" to the context in which they were initially encountered than would that of Americans in the sense that objects would be seen and thus remembered in relation to their context (Chalfonte & Johnson, 1996). We conducted two experiments comparing Americans and Japanese. In Study 1, we presented underwater scenes and asked participants to describe them. We expected that the Japanese would notice more field information than would Americans, and would see more relationships in the environment. In a subsequent part of Study 1, and in Study 2, we presented a set of objects and asked participants whether they had seen them. The backgrounds for previously seen objects were either the original ones or novel ones. We expected that the Japanese would be more vulnerable to the change of backgrounds than would Americans because, for Japanese, perception of the object is bound to the environment in which it appears.

### Study 1

In Study 1, participants were presented with vignettes of underwater scenes. Each scene was characterized by having "focal fish," which were large and had salient colors and shapes, moving in front of a complicated scene. After the scene was presented, participants were asked to report what they had seen. The recall patterns were then analyzed. We anticipated that (a) Japanese participants would report relatively more objects in the background environment than would American participants and (b)

Japanese participants would report relatively more events involving relations between the focal fish and the environment.

In a subsequent part of the study, participants were presented with objects that had been either shown or not shown during the earlier part of the study. Participants were asked to indicate whether they had seen the objects before. The previously seen objects were shown with either the original background, a different background, or no background at all. The recognition patterns were then analyzed. We anticipated that the accuracy of Japanese participants would be hurt more by seeing objects on a novel background than would that of American participants, and that it would be helped more by seeing them on the original background.

### Method

#### Participants

Thirty-six American participants at the University of Michigan and 41 Japanese participants at Kyoto University, Kyoto, Japan, participated in the experiments as a course requirement. The 36 American participants consisted of 33 Caucasians and 3 African Americans.

#### Materials

In the first phase of the study, 10 animated vignettes of underwater scenes were presented using Macro Media Director, Version 6 (Macromedia, San Francisco; see Figure 1). The same 17-in. (about 43 cm) monitors (Macintosh Color Monitor, Apple, Cupertino, CA) and computers (Macintosh G3, 233mhz) were used in the laboratories in the United States and in Japan. In each different vignette, along with the various salient focal fish, there were other actively moving but smaller objects such as water animals, bubbles, and relatively small fish, which had little detail and appeared to be in the background of the scene. In addition, scenes included inert objects such as vegetation and rocks and nonmoving animals such as shells and snails. Finally, each vignette had a particular background color—seemingly the color of the water. The participants sat on a chair and put their chin on a device to standardize the distance between the monitor and their face. The distance was 15 in. (38.1 cm).

In the second phase of the study, participants saw pictures of 45 objects that had actually appeared in the previous phase (previously seen objects). These objects included 23 focal fish, seven animals that were moving

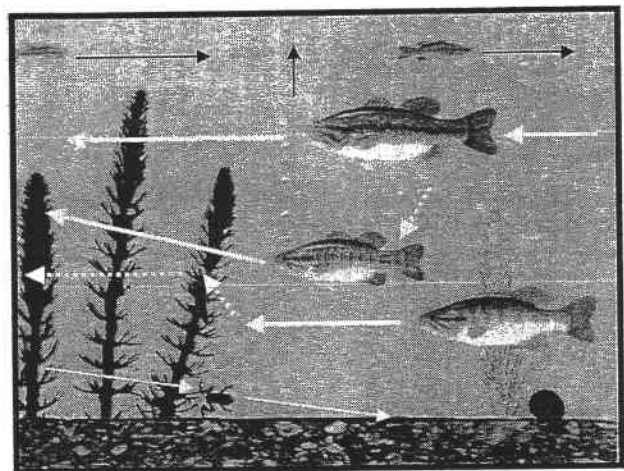


Figure 1. An example of animated vignettes in Study 1. The arrows refer to the directions of the figures' movements.