Fear of Isolation, Cultural Differences, and Recognition Memory

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Abstract

Previous research suggests that members of East Asian cultures show a greater sensitivity to context (vs. target) information than do members of Western Cultures. We suggest this difference is rooted in a greater chronic fear of isolation (FOI) in East Asians than in Westerners. To support this hypothesis, we first compare chronic levels of FOI between East Asian and Western participants. Then we manipulate FOI in a group of Western college students and assess their recognition memory for object as a function whether the background is the same or different from when the picture was first seen. Consistent with our proposal, the manipulation affected people's sensitivity to background context in picture recognition in a manner consistent with previous studies of cultural differences.

Introduction

Previous research has uncovered cultural differences in reasoning and decision making performance between East Asian and Western populations (Nisbett, Peng, Choi, & Norenzayan, 2001). Clearly the study of cultural differences has practical implications for international commerce and theoretical implications for claims about the universality of cognitive processing.

This work is based on the observation that cognitive and perceptual orientations can differ in the degree to which they are analytic versus holistic. For instance, Masuda and Nisbett (2001) showed Japanese and American subjects pictures of animals and fish with a surrounding background. Later, subjects were shown pictures of animals or fish they had seen as well as new animals and fish appearing either with the same background or in a new background. Japanese (but not American) subjects were more likely to correctly recognize an old animal when it appeared with the original background than when it appeared in a new context.

Findings like this suggest there are significant differences in reasoning between cultures, but only a few studies in cross-cultural research have manipulated potential causal variables in studies. For example, Briley and Wyer (2002) manipulated the degree of group membership and cultural identity in Asian and Western college students. They found that experimentally induced feelings of being part of a group produced a greater preference for equality and compromise in individual choice tasks in both populations. Similarly, Gardner, Gabriel, and Lee (1999) examined the causal role of self-construal by investigating whether priming independent or interdependent self-construals within a culture could result in differences in psychological worldview that mirror those traditionally found between cultures. For instance, in one experiment of the study, they found that European-American participants primed with interdependence displayed shifts toward more collectivist social values and judgments that were mediated by corresponding shifts in self-construal. These studies provide insight into our understanding causes of observed cultural differences (Chiu, Morris, Hong, & Menon, 2000; Hong et al., 2003).

In previous work, we proposed that these cultural differences may be caused by a higher chronic fear of isolation (FOI) in East Asian populations than in Western populations (Kim & Markman, 2003). FOI is the degree to which people are anxious or afraid about being cut off from peers and relatives (Gilbert, Fiske, & Lindzey, 1998; Noelle-Neumann, 1984). Communication theories define FOI as a force that leads people to conceal their views when they believe they are in a minority (Noelle-Neumann, 1984). This pressure is assumed to be related to their fears of being negatively evaluated by others. The theory maintains that mass media works simultaneously with majority public opinion to silence minority beliefs on cultural issues. On this view, FOI prompts those with minority views to examine the beliefs of others and to conform to what they perceive to be a majority view. In this paper we discuss a difference in chronic FOI between cultures and then present a study that addresses the relationship between FOI and attention/memory respectively.

Different sensitivities to FOI between East Asian and Western culture

Before discussing how a difference in degree of FOI can influence judgment and decision making, we must first show that members of different cultures are likely to differ in their chronic level of FOI.

As a measure of FOI, we used the Fear of Negative Evaluation scale (Watson & Friend, 1969).[1] This 30-item instrument measures social anxiety about receiving negative evaluations from others. Scores on this scale reflect a fear of the loss of social approval. Items on the measure include signs of anxiety and ineffective social behaviors that would lead to disapproval by others. We gave this scale to 41 Asian students enrolled in University of Texas Austin and their spouses participated for the measurement of FOI in East Asian population. The participants were all born in East Asia (31 Korean 6 Japanese, 4 Chinese) and had a native language other than English. The length of stay in the US was less than 5 years before their participation ($\underline{M}$ = 3.1 years). Western participants were 49 undergraduate students at the University of Texas (all born in the US). Both groups filled out Fear of Negative Evaluation scale along with questions for demographic information. The East Asian Group showed significantly higher scores on the FNE ($\underline{M}$ = 17.54) than did the Western group ($\underline{M}$ = 11.54), $\underline{t}$ (88) = 11.56, $p < .01$. This finding supports the proposal that members of East Asian culture have a higher chronic FOI than do members of Western culture.

The social anxiety literature provides some insight about why different cultures have different levels of FOI. Cross-cultural differences in social anxiety have been studied in various ways, and the consensus among researchers is that members of relatively society-oriented cultures have more social anxiety than do those in individual-oriented cultures. For example, Okazaki and colleagues (Okazaki, 1997; Okazaki, Liu, Longworth, & Minn, 2002) found that Asian-American report higher distress on various measures of social anxiety. A practical merit of such studies is that they enable a comparison of two cultures controlling out other confounding variables such as language or culture-specific patterns in reporting /interviewing. For this reason these results provide insight into chronic differences in social anxiety between cultures. Other cross-cultural comparisons assessed the difference in social anxiety between Asian and Western populations. For example, Sato and McCann (1998) studied Japanese and American students and found a positive relation between social anxiety and interdependent self-construals (which are typical of collectivistic cultures). Similarly, Dinnel, Kleinknecht, and Tanaka-Matsumi (2002) shows that TKS (Taijin Kyofusho, a Japanese variant of social anxiety) - like symptoms (e.g., fear of offending others) were more likely to be reported Japanese university students than by their American counterparts. It is unlikely that social anxiety discussed in the current study is more related to other subcomponents then FOI.

Given that members of East Asian and Western culture differ in chronic FOI, it is important to discuss why this difference might lead to differences in reasoning. Social anxiety, especially FOI, motivates people to focus on social activity, to interact with other members in the social network and to consider others' responses seriously (Gilbert, 2001; Scheufele, Shanahan, & Lee, 2001). Thus, members of collectivistic cultures are expected to be generally more interested in relations among items in the environment than do members of individualistic cultures (Morris & Peng, 1994; Nisbett et al., 2001). It is also possible to observe such differences within a single culture by manipulating a potential cause. For example, as discussed earlier in the previous section, Gardner (1999) showed that manipulation of self-construals by priming interdependence induced a more collectivistic thinking in Western participants. Note that such patterns of behavior and thinking caused by primed interdependence are consistent with observed patterns rooted in a greater level of FOI (Gilbert et al., 1998; Noelle-Neumann, 1984).

In sum, social anxiety is higher in Eastern than Western populations. Increased social anxiety leads to increased attention to relations among items and to context. We connected these two and suggested that levels of FOI are positively related to the degree of dialectical thinking which has been treated as characteristic reasoning mode of collectivism culture (Kim & Markman, 2003).

We developed this idea further in the current study by examining the influence of a manipulation of FOI on recognition memory. As discussed above Masuda and Nisbett (2001) found that members of collectivist culture were more holistic in their analysis of scenes than were members of an individual culture. If a high level of FOI indeed makes people to attend to interpersonal relationships (and more broadly to relations between objects and their environments), then inducing a high level of FOI should make Americans less likely to attend to target information, which in turn should increase their memory for context vs. target information.

Manipulation and measurement of FOI

In our studies, FOI was manipulated as an independent variable following the method used by Kim and Markman (2003). Participants in the High

[1] There are other scales that have been used to measure FOI, but these scales also ask questions about physical rather than social isolation.

FOI group described experiences in which they were socially isolated from others (e.g., "you might have been anxious once when your friends were not talking to you at all, or when you went to a new place where you didn't know anyone and had difficulty meeting new people"). The Low FOI group described experiences in which they caused someone else to be socially isolated from other (e.g., "you might have been at a party and you didn't talk to one of your friends who did not know many people at the party and you felt bad about it later"). Many clinical techniques such as prolonged exposure treatment that is used to treat post-traumatic stress disorder are based on the premise that asking a patient to recall and describe a previous experience and associated emotion will activate and retrieve relevant feelings and memories, and put the person into that state again (Foa, Cashman, Jaycox, & Perry, 1997). Then we measured a person's FOI with the Fear of Negative Evaluation (FNE) scale as a manipulation check.

Experiment

Method

Participants

Eighty nine American undergraduate students (all born in the US) of the University of Texas participated in the study. Half of participants were randomly assigned to the High FOI condition and the other half were to the Low FOI condition.

Materials

In the first phase of the study, 24 animal pictures were presented. Each picture has an animal and a particular background (see Figure 1).

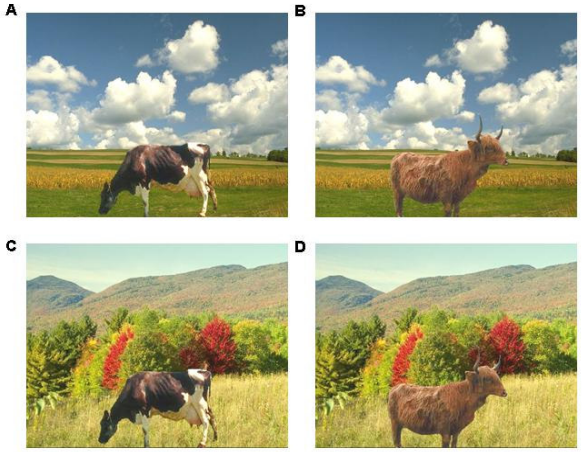

Figure 1. Sample pictures used in this study. (A) A study picture. (B) A new animal in the old background. (C) An old animal in a new background. (D) A new animal with a new background.

In the second phase, participants saw 96 pictures. 24 of them were same with the pictures seen in the first phase (old animal and old background). To create the rest of the 72 pictures, an additional 24 animals (new animal) and 24 backgrounds (new background) were used and the combination between the animal and the background information was manipulated. Because each animal could have one of two different backgrounds – the original background or a novel background, there were four different conditions: (a) old background and old animal, (b) old background and new animal, (c) new background and old animal, and (d) new background and new animal (see Figure 1). All of these pictures were used in Masuda and Nisbett's (2001) study.

Procedure

Participants were asked to describe their previous experiences relating to an anxiety producing situation. In the High FOI condition, participants wrote about being socially isolated from others. In the Low FOI condition, participants wrote about socially isolating someone else from them or other people. After completing this self-descriptive priming task, participants in both conditions responded to the Fear of Negative Evaluation scale as a manipulation check.

Then participants viewed 24 photos of animals in naturalistic environments. After a 2-minute delay, participants viewed 96 photos in a recognition memory test that varied whether the animals were old or new and whether the background was old or new. Subjects responded whether they had seen the animal in the photo regardless of the background of the test photo.

Results

First, we checked the effectiveness of our FOI manipulation. Average values on the Fear of Negative Evaluation scale were significantly higher in the High FOI condition ($\underline{M}$ = 15.61) than in the Low FOI condition ($\underline{M}$ = 10.60), $\underline{t}$ (87) = 3.92, $p < .01$. Note that the mean score of High FOI group approaches that seen in the East Asian group ($\underline{M}$ = 17.54) we measured.

For "old" and "new" responses, we subtracted people's accuracy for the pictures with the new background from their accuracy with the original background. Positive scores indicate sensitivity to the context.

The pattern of data in this study shows the same pattern observed by Masuda and Nisbett (2001) (see Figure 2). There was a significantly higher index ($\underline{M}$ = 2.39) for the High FOI condition than for the Low FOI condition ($\underline{M}$ = 1.22), $\underline{F}$ (1, 87) = 6.01, $\underline{p}<.05$. This effect is mediated by level of FOI. In an ANCOVA including FNE score, there is a significant correlation between FNE and the response index ($\underline{r}$ = .33, $\underline{p}$ <.01) and the main effect of FOI is reduced in significance, $\underline{F}$ (1, 87) = 1.91, $\underline{p}$ = .171.

For "new" responses there is also a marginally significant difference between the High (M = -1.43) and Low FOI conditions (M = -2.01), F (1, 87) = 1.18, p<.28. (Masuda and Nisbett (2001) found no significant difference between their Japanese and American subjects for "new" responses.) This finding is consistent with the hypothesis that participants in the High FOI condition attend more on background information than do those in the Low FOI group even when misleading cues of original background interfered with recognition.

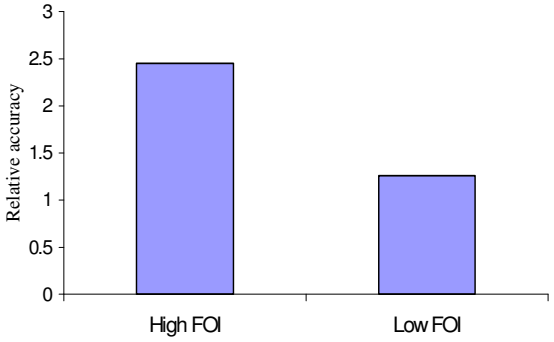

Figure 2. Participants' relative accuracy for "old" response.

Interestingly, this combination of results does not indicate greater overall accuracy between groups. A calculation of d' shows no difference for the High FOI condition (M = 1.74) and the low FOI condition (M = 1.76), F (1, 87) = .01, p = .916.

General discussion

This experiment demonstrated the influence of fear of isolation on attention and memory. Inducing a higher level of FOI in American college students made their attention more similar to that of East Asian students observed in previous studies. Participants in the High FOI condition showed greater accuracy for the memory of background information than did those in the Low FOI condition. When Fear of Negative Evaluation scale values were incorporated into the analyses as a covariate, they were significantly related to the degree of sensitivity to context, and the strength of the effect of FOI manipulation was decreased.

However, an alternative interpretation of the current results is that the induction of low FOI primarily induced the feeling of guilt, and hence a more *negative mood* than in the condition designed to induce high FOI. Some previous studies showed that negative mood leads to more analytic thinking (Bolte, Goschke, & Kuhl, 2003). For example, according to the personality systems interaction theory (Bolte et al., 2003; Kuhl & Kazen, 1999), an increase in negative affect supports a analytic processing mode whereas positive affect induce a relatively more holistic thinking. We tested this possibility in another study, in which participants' relative preference for dialectical proverbs were measured, and found that there was no meaningful difference on emotion scales (e.g., hedonic tone and general arousal) between the two FOI groups and that only FNE scale values explained the variation in the relative preference for dialectical proverbs within/between group (Kim & Markman, in preparation). Thus it is unlikely that emotion systematically influenced the current results.

It is also important that, as discussed earlier, East Asian participants exhibited a significantly greater FOI than did Western participants. Note that East Asian without FOI manipulation showed a greater average values on the Fear of Negative Evaluation scale than did those in the High FOI group in the current experiment.

These findings are consistent with the hypothesis that chronic differences in FOI in members of East Asian and Western cultures lead to the differences in attention observed in the previous studies (Masuda & Nisbett, 2001). We are not claiming that FOI is the only cause of cultural differences in reasoning. Indeed, differences in culturally accessible concepts such as collectivism and individualism may influence cognition either by affecting level of FOI through some other route (Aaker & Lee, 2001; Hsee & Weber, 1999). This issue has been much discussed in communication theories, which have yielded no clear consensus on whether FOI is an antecedent or an intervening variable. For example, Shoemaker, Breen, and Stamper (2000) tested whether FOI is antecedent to opinion formation or an intervening variable between opinion formation and willingness to voice the opinion. Their path analysis suggested that FOI is an antecedent variable, but they could not exclude possibility that it is an intervening variable. However, it seems that FOI is a robust causal factor explaining previously observed difference between cultures. Kim and Markman (2003) found that a manipulation of FOI induced a difference in degree of dialectical reasoning.

Thus, chronic levels of Fear of Isolation may be a causal factor underlying observed cultural differences in reasoning. The mechanisms that relate FOI to these reasoning differences will be the subject of future research, but we speculate that high levels of FOI lead people to think more about their relationship to others, and hence are more open to compromise in reasoning and more attentive to contextual and situational factors that guide behavior.

The current study also has implications for Cognitive Science in general. Most behavioral research assumes that the average performance of participants

reflects the basic functioning of the cognitive architecture. However, work on cultural differences points out dimensions along which performance on cognitive tasks may reflect learned strategies rather than constraints of the cognitive architecture itself. In line with this viewpoint, the study we present in this paper indicates that “some” of the observed cultural differences may reflect straightforward differences in chronic social anxiety rather than fundamental differences in knowledge gathered over years of experience within a culture.

Finally, it is important to bear in mind that we induced significant differences in memory for objects based on a simple manipulation of a participant's level of fear of isolation. As these findings demonstrate, a straightforward change in motivational state can lead to a large difference in basic cognitive functioning. This work highlights the need to include more research on the influence of motivation on cognitive processing within the canon of research in Cognitive Science.

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