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Culturally Contingent Situated Cognition:  
Influencing Others Fosters Analytic Perception in the U.S. but Not in Japan

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Abstract

Interpersonal influence and adjustment play a crucial role in structuring social interactions across cultures. However, not much is known about whether their consequences are culturally contingent. We hypothesized that in order to effectively influence others, one needs to employ a perceptual style that serves one's cultural imperative. Specifically, we predicted that whereas in the U.S., interpersonal influence fosters an analytic, context-independent perceptual style, which helps one to focus on the target of one's goal, this pattern may be either absent or reversed in Japan where the cultural imperative is to attend to others and fit into social contexts. In two studies, we tested this hypothesis by measuring (Study 1) or manipulating (Study 2) interpersonal interactions. Overall, the findings support a culturally contingent situated cognition approach, which highlights not only interpersonal underpinnings of perceptual styles, but also the role which culture plays in prescribing meaning to interpersonal interactions. (147 words)

Culturally Contingent Situated Cognition:

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Interpersonal influence plays a crucial role in shaping and structuring social interactions (Cartwright, 1959). People often either influence others or adjust to others in their everyday lives. Exerting influence and adjusting to others have been shown to have various consequences (S. T. Fiske, 1993; Keltner, Gruenfeld, & Anderson, 2003). For example, when they have control over others, people tend to perceive others as a means to an end (Gruenfeld, Inesi, Magee, & Galinsky, 2008). Despite the importance of interpersonal influence and adjustment across cultures (A. P. Fiske, 1992), not much is known about whether the consequences of these behaviors are culturally contingent.

Different socio-cultural environments prescribe different imperatives for individuals (Markus & Kitayama, 1991; Triandis, 1995). In interdependent social environments (e.g., East Asia), the primary imperative is to fulfill socially prescribed roles and fit into social contexts. On the other hand, in independent social worlds (e.g., North America), the imperative is to pursue self-defined goals independently from social contexts. Studies have shown that people in interdependent social environments report adjusting to their surroundings more frequently, whereas people in independent social worlds report influencing their surroundings more frequently (Morling, Kitayama & Miyamoto, 2002; Weisz, Rothbaum, & Blackburn, 1984). At the same time, people in both cultures report engaging in both types of behavior. However, the consequences of these behaviors may depend on cultural contexts.

The present study examined the possibility that interpersonal influence requires a perceptual style that serves one's cultural imperative. Previous studies have distinguished between two divergent styles of perceptual processing (Nisbett & Miyamoto, 2005; Nisbett,

Peng, Choi, & Norenzayan, 2001): a holistic perceptual style is characterized by attention to relationships and to the context, whereas an analytic perceptual style is characterized by attention to salient objects and one's goal with respect to them. These divergent perceptual styles have different social functions. Compared to analytic perceptual processing, holistic perceptual processing has been shown to be associated with social concerns (Kim & Markman, 2006) and to facilitate behavioral alignment with others (van Baaren, Horgan, Chartrand, & Dijkmans, 2004). These findings imply that holistic perceptual processing helps one to attend to others' needs and to fit into social contexts, whereas analytic perceptual processing helps one to pursue one's goals without being overly influenced by social contexts.

We thus reasoned that effectively exerting interpersonal influence in independent social environments may facilitate analytic perceptual patterns, allowing one to focus on one's goal, whereas effectively influencing others in interdependent environments may foster holistic perceptual patterns, allowing one to attend to others and fit into social contexts. In contrast, effectively *adjusting* to others may require attention to others and fitting into social contexts in both cultures, thus fostering holistic perceptual patterns, though the strength of the effect may potentially differ across cultures. This suggests that, in American cultural contexts, interpersonal influence should cause more analytic patterns of perception than interpersonal adjustment does. In Japanese cultural contexts, on the other hand, there are two possibilities: if interpersonal influence and adjustment are equally likely to lead to holistic perceptual patterns in Japan, the difference between influence and adjustment will be absent, or if interpersonal influence is more likely than interpersonal adjustment to foster holistic perceptual patterns in Japan, the difference between influence and adjustment should be reversed.

Cross-cultural evidence on leadership styles provides supporting evidence: Effective American leaders tend to focus on personal goals and on the task at hand, whereas effective Asian leaders generally attend to relationships and the demands of other people surrounding them (Jung & Avolio, 1999; Misumi & Peterson, 1985). Furthermore, there is evidence that in Western cultural contexts, interpersonal influence is linked to analytic ways of thinking. Americans who have a higher sense of personal control tend to provide more analytic explanations that focus on dispositions of individuals (rather than on contextual factors) in social events (Kraus, Piff, & Keltner, 2009). In addition, Guinote (2007) showed that in England, people who recalled an event in which they exerted power over other people could better ignore contextual information than people who recalled an event in which someone else exerted power over them. These findings suggest that personal control or influence fosters not only how people reason, but also how people attend to the environment.

In summary, we conducted two studies in both the U.S. and Japan to test the hypothesis that, in American cultural contexts, interpersonal influence will foster more analytic patterns of perception than will interpersonal adjustment, whereas in Japanese cultural contexts, interpersonal influence should foster as holistic patterns of perception as (or more holistic patterns of perception than) interpersonal adjustment does. In Study 1, we measured self-reported influence and adjustment and examined their relationship with perceptual styles. In Study 2, we experimentally manipulated influence and adjustment to test the causal direction of the relationship.

### Study 1

#### *Participants*

Seventy-five European American undergraduates (45 females) at the University of Wisconsin-Madison and 76 undergraduates (36 females) at Waseda University in Japan participated in the study. Each session was conducted in a small group with a maximum of five participants.

### *Measures*

*Interpersonal influence and adjustment.* Interpersonal influence and adjustment was assessed by using the Circumplex Scale of Interpersonal Values (Locke, 2000). The scale has been used in previous studies to measure interpersonal orientation (Locke, 2003; Tsai, Miao, Seppala, Fung, & Yeung, 2007). Following Tsai et al. (2007), interpersonal influence was measured by four items (e.g., “I have an impact on others”;  $\alpha$ s = .66 and .55 for Americans and Japanese, respectively), while interpersonal adjustment was measured by five items (e.g., “I do what others want me to do”;  $\alpha$ s = .59 and .63).

*Perception task.* In order to assess analytic and holistic perceptual styles and to minimize error in a group context, we used the simplified questionnaire version (Kitayama, Park, Sevincer, Karasawa, & Uskul, 2009) of the framed-line task (FLT; Kitayama, Duffy, Kawamura & Larsen, 2003) with feedback. Participants were first shown a square frame with a vertical line in it and then presented with another square frame of either the same or a different size. In the second square, they were asked to draw a line that was identical to the first line in either absolute (the absolute task) or relative (the relative task) length. Therefore, the absolute task required participants to focus on the focal line while ignoring the contextual frame, whereas the relative task required participants to attend to the relationship between the focal line and the contextual frame. A larger error on the absolute task indicates more holistic patterns of attention, whereas a larger error on the relative task indicates relatively more analytic patterns of attention. To

minimize the error, if participants drew a line that did not match the instructed task during the practice trial, the experimenter offered feedback. Amount of error on actual trials was measured.

### *Results*

Table 1 shows correlations among variables. We conducted multiple regression analyses using both interpersonal influence and adjustment, dummy-coded culture (Americans = 1, Japanese = 2), and both influence x culture and adjustment x culture interactions to predict the amount of error in the relative and absolute tasks, separately. Consistent with the hypothesis, both interpersonal influence x culture and interpersonal adjustment x culture interactions were significant for the absolute task,  $B = 3.16$ ,  $SE = 0.99$ ,  $p < .005$ ,  $f^2 = 0.07$  and  $B = -2.13$ ,  $SE = 1.03$ ,  $p < .05$ ,  $f^2 = 0.03$ , respectively. As shown in Figure 1, for Americans, the error on the absolute task was negatively associated with interpersonal influence and positively associated with interpersonal adjustment, whereas the patterns were absent or even reversed for Japanese. Patterns of interactions for the relative task were also in the predicted direction, though the interactions were not significant,  $B = -1.76$ ,  $SE = 1.12$ ,  $p = .12$ , and  $B = 1.52$ ,  $SE = 1.17$ ,  $p = .20$ .<sup>1</sup>

### Study 2

To test our hypothesis that interpersonal influence *fosters* perceptual styles, Study 2 assigned participants to different roles through structured interactions.

### *Participants*

Forty-six European American undergraduates (22 females) at the University of Wisconsin-Madison and 54 undergraduates (22 females) at Kyoto University in Japan participated in the study.

### *Procedure and Measures*

Each session involved a same-gendered pair of participants, none of whom knew each other. Participants were seated at opposite ends of a table with a small divider in the middle, which allowed them to see each other's faces but prevented them from seeing the other side of the table. The first task was a structured communication task (Krauss & Weinheimer, 1966; Schober & Clark, 1989; Tsai et al., 2007). Participants were given the same set of 16 cards with complex Tangram figures and were told to sort 12 of them in the same order as their partner. They were then randomly assigned to be either a leader (influence condition) or a matcher (adjustment condition). The leader was instructed to choose 12 cards and decide how to order them, and then to verbally describe each card to the matcher so that the matcher could put them in the same order. Subsequently, they were asked to work on an ostensibly unrelated visual task, the FLT. For Study 2, instead of employing the questionnaire version of the FLT which had been used to assess perceptual styles in a group setting, the interactive version of the FLT (Kitayama et al., 2003) was used to allow for generalization to a related perceptual measure. In the interactive version, the experimenter presented the framed lines manually.

At the end, participants completed measures of perceived influence and adjustment as a manipulation check. We modified the inclusion of other in the self scale (Aron, Aron, & Smollan, 1992), which involves a set of seven Venn-like diagrams, varying in the degree of overlap between two transparent circles, each representing the self and the other. We made one circle opaque so that it overlapped the other circle to varying degrees. Perceived influence (adjustment) was measured with a scale where the circle on the top represented the self (partner) and the circle on the bottom represented the partner (self). Participants were told that the diagrams represented how much influence they may have had over their partner, or vice versa,

and were asked to select the picture that best described their interaction during the communication task.

### *Results*

*Manipulation check.* A condition (leader vs. matcher) x scale type (influence vs. adjustment) interaction was significant,  $F(1, 96) = 36.26, p < .001$ . Whereas leaders perceived themselves to have exerted a larger influence on their partner ( $M = 4.86$ ) than their partner had exerted on them ( $M = 3.78$ ),  $t(96) = 3.83, p < .001$ , matchers perceived that their partner had exerted a larger influence on them ( $M = 4.64$ ) than they had exerted on their partner ( $M = 3.34$ ),  $t(96) = 4.96, p < .001$ . The interaction was further qualified by culture,  $F(1, 96) = 4.47, p < .05$ . The condition x scale type interaction was more pronounced for Japanese participants,  $F(1, 52) = 28.33, p < .001$ , than for American participants,  $F(1, 44) = 10.38, p < .005$ , though the 2-way interaction was significant for both groups. This suggests that the manipulation was effective in both cultures, but that it had an even larger impact on Japanese than on American participants.

*FLT performance:* First, we obtained a significant main effect of FLT task type,  $F(1, 96) = 136.97, p < .001, \eta^2_p = .59$ , and a significant culture x FLT task type interaction,  $F(1, 96) = 4.70, p < .05, \eta^2_p = .05$ . Participants made more errors on the absolute task ( $M = 9.97$ ) than on the relative task ( $M = 5.11$ ) and the difference between the two tasks was larger for Japanese than for Americans, replicating previous findings on cultural differences in perceptual style. More importantly, a culture x condition x FLT task type interaction was significant,  $F(1, 96) = 5.10, p < .05, \eta^2_p = .05$ . As shown in Figure 2, among American participants, the difference between the absolute and relative tasks was smaller for leaders than for matchers, suggesting that leaders showed a more analytic perceptual style compared to matchers,  $F(1, 44) = 5.26, p < .05, \eta^2_p = .11$ . On the other hand, among Japanese participants, the difference between the two tasks did

not differ between leaders and matchers,  $F(1, 52) = 1.17$ , n.s. If anything, the pattern was slightly reversed. This result is not likely due to the failure of manipulation for Japanese, given that the manipulation check indicated a stronger impact of the manipulation on Japanese participants' perception of influence than on American participants'.

### Discussion and Conclusion

Across two studies, interpersonal influence was linked to an analytic perceptual style in the U.S., whereas the pattern was absent or reversed in Japan, suggesting that influencing others requires different perceptual styles across cultures. In American cultural contexts, influencing others requires an analytic perceptual style, which possibly helps one to focus on the target of one's goals without being distracted by others. On the other hand, in Japanese cultural contexts, influencing others requires a perceptual style as holistic as adjusting to others does, which may help one to attend to the demands of others.

The present findings not only demonstrate that perceptual styles are situated within social contexts (situation x person interaction)—but also provide evidence for a culturally contingent situated cognition approach (culture x situation x person interaction; Cohen, 2007; Hong & Mallorie, 2004). In American cultural contexts, where the cultural imperative is to pursue self-set goals independently from social contexts, interpersonal influence and an analytic perceptual style mesh meaningfully. However, the two do not cohere in Japanese cultural contexts, where the cultural imperative is to fulfill socially prescribed roles. These findings highlight the importance of situating perceptual styles in culturally defined social interactions. Perceptual styles are shaped by the nature of interpersonal contexts, but how they are shaped depends on the larger cultural contexts in which they are located.

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## Footnote

<sup>1</sup> Probably due to the feedback, the overall amount of error was smaller in Study 1 ( $M = 7.03$ ) in comparison to Kitayama et al. (2009), which used the same questionnaire without providing feedback ( $M = 8.95$ ). Contrary to their findings, there was no culture x task type interaction,  $F(149) < 1$ . Possibly, the presence of feedback influenced participants to concentrate more on the task, which compensated for cultural differences in attentional patterns. In fact, Hedden, Ketay, Aron, Markus, and Gabrieli (2008) have shown that such concentration, or attentional control, can reduce cross-cultural differences in FLT performances. Study 2 used the original procedure of the FLT (Kitayama et al., 2003) instead of the simplified questionnaire version to examine whether our findings generalize across different measurements and also to see whether cultural differences in the FLT could be replicated.

Table 1

Zero-Order Correlations for European Americans (Above Diagonal) and Japanese (Below Diagonal) among Interpersonal Influence and Adjustment and Amount of Error in the Framed Line Task in Study 1

	Influence	Adjustment	Absolute task error	Relative task error
Influence	--	.25*	-.21+	.14
Adjustment	.27*	--	.21+	-.01
Absolute task error	.23*	.06	--	.12
Relative task error	-.07	.16	.13	--

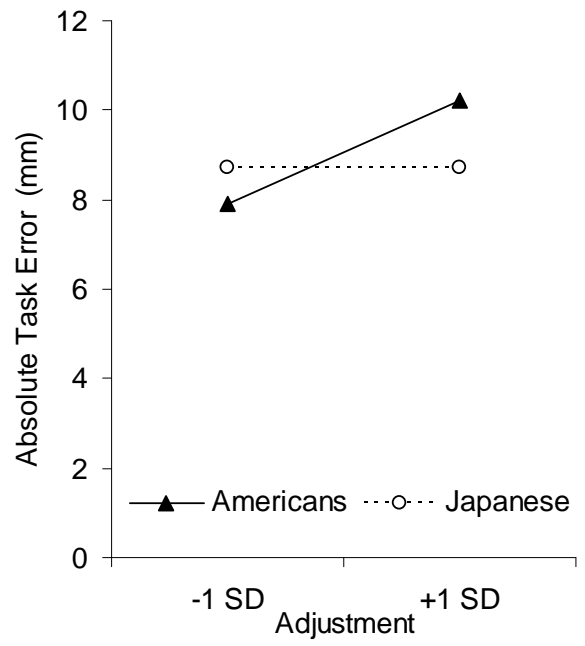
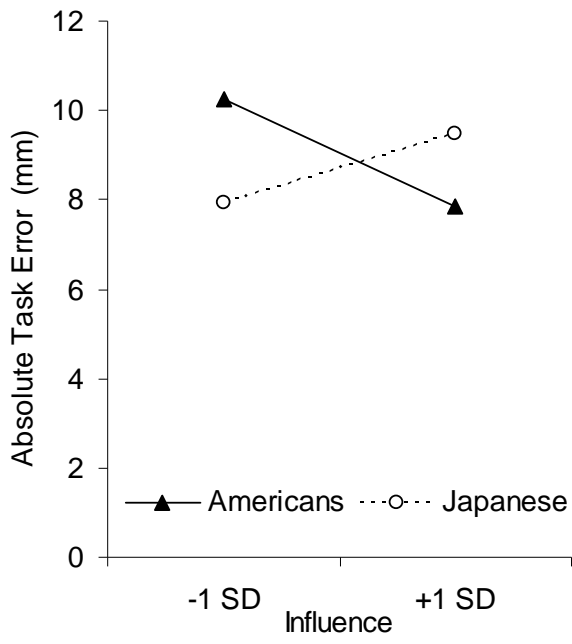
Note. \* <.05, + <.10.

Figure Captions

*Figure 1.* Amount of error on the Framed Line Task by Culture and Interpersonal Orientation in Study 1. (a) Absolute task and (b) relative task.

*Figure 2.* Amount of error on the Framed Line Task by Culture and Interpersonal Condition in Study 2. Error bars represent standard errors.

(a)



(b)

