

# Culturally Contingent Situated Cognition: Influencing Other People Fosters Analytic Perception in the United States but Not in Japan

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## Abstract

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

## Keywords

culture, perceptual style, interpersonal influence and interpersonal adjustment, Culture × Situation × Person interaction

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

Different sociocultural 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. By contrast, in independent social worlds (e.g., North America), the imperative is to pursue self-defined goals independently of 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). Although there are cultural differences in relative frequency, it is important to note that 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 people's cultural imperatives. 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 their context, whereas an analytic perceptual style is characterized by attention to salient objects and to people's goals with respect to those objects. These divergent perceptual styles have different social functions. Compared with analytic perceptual processing, holistic perceptual

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processing has been shown to be more associated with social concerns (Kim & Markman, 2006) and more likely to facilitate behavioral alignment with other people (van Baaren, Horgan, Chartrand, & Dijkmans, 2004). These findings imply that holistic perceptual processing helps people attend to others' needs and to fit into social contexts, whereas analytic perceptual processing helps people pursue their own 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 people to focus on their own goals. Alternatively, effectively influencing other people in interdependent social environments may foster holistic perceptual patterns, allowing people to attend to others and fit into social contexts. In contrast to influencing people, effectively adjusting to people may require attending to others and fitting into social contexts in both environments. This behavior would foster holistic perceptual patterns, though the strength of the effect may differ in different 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 contrary, there are two possibilities: On the one hand, if interpersonal influence and interpersonal adjustment are equally likely to lead to holistic perceptual patterns, there will be no difference in the effects of influence and adjustment on perceptual patterns. On the other hand, if interpersonal influence is more likely than interpersonal adjustment to foster holistic perceptual patterns, the effects of influence and adjustment on perceptual patterns should be the opposite of their effects in the United States.

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.

We conducted two studies in both the United States 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 much holistic perceptual processing as interpersonal

adjustment does (or possibly more holistic processing 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 manipulated influence and adjustment experimentally to test the causal direction of the relationship.

## Study 1

### Participants

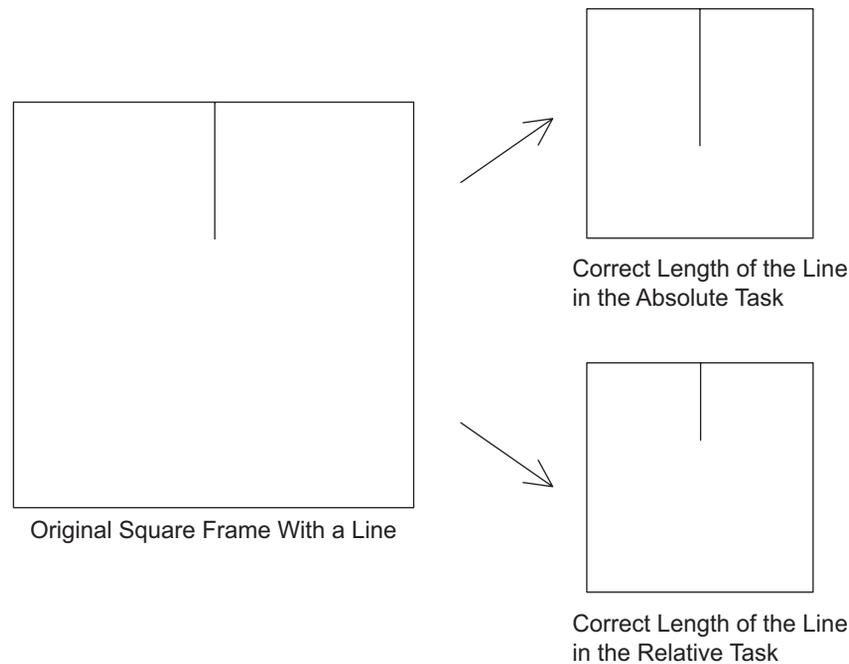
Seventy-five European American undergraduates (45 females and 30 males) at the University of Wisconsin–Madison and 76 Japanese undergraduates (36 females and 40 males) at Waseda University participated in the study. Each session was conducted in a small group with a maximum of 5 participants.

### Measures

#### **Interpersonal influence and interpersonal adjustment.**

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

**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 containing a vertical line. In a second square of either the same or a different size, they were asked to draw a second line that was identical to the first line in either absolute length (the absolute task) or relative length (the relative task). Therefore, the absolute task required participants to focus on the first line while ignoring the contextual frame, whereas the relative task required participants to attend to the relationship between the first line and the contextual frame (see Fig. 1). The task is designed so that participants who engage in more analytic perceptual processing ignore the contextual frame and thus make fewer errors on the absolute task and more errors on the relative task than participants who engage in more holistic perceptual processing, who attend to the relationships between the line and the contextual frame. To minimize error, the experimenter gave feedback if participants drew a line that did not follow the instructions during the practice trial. The amount of error on trials was measured.



**Fig. 1.** Illustration of the framed-line task (FLT; Kitayama, Duffy, Kawamura, & Larsen, 2003). Participants were presented with a square frame containing a vertical line (left) and asked to draw a line in a second square of either the same size or a different size (shown here). In the absolute task, participants drew a line that was identical to the first line in absolute length (top right), whereas in the relative task, participants drew a line that was identical to the first line in relative length (bottom right).

## Results

Table 1 shows correlations among the variables. We conducted multiple regression analyses using interpersonal influence and interpersonal adjustment, dummy-coded culture (Americans = 1, Japanese = 2), and Interpersonal Influence  $\times$  Culture and Interpersonal Adjustment  $\times$  Culture interactions to separately predict the amount of error in the relative and absolute tasks. Consistent with the hypothesis, results for the absolute task were significant for both the Interpersonal Influence  $\times$  Culture interaction,  $b = 3.16$ ,  $SE = 0.99$ ,  $p < .005$ ,  $f^2 = .07$ , and the Interpersonal Adjustment  $\times$  Culture interaction,  $b = -2.13$ ,  $SE = 1.03$ ,  $p < .05$ ,  $f^2 = .03$ . As shown in Figure 2a, for Americans, error on the absolute task was negatively associated with interpersonal influence and positively associated with interpersonal adjustment; these patterns were absent or even reversed for Japanese. Patterns of interactions for the relative task (see

Fig. 2b) were also in the predicted direction, though the interactions were not significant—Interpersonal Influence  $\times$  Culture interaction:  $b = -1.76$ ,  $SE = 1.12$ ,  $p = .12$ ; Interpersonal Adjustment  $\times$  Culture interaction:  $b = 1.52$ ,  $SE = 1.17$ ,  $p = .20$ .<sup>1</sup>

## Study 2

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

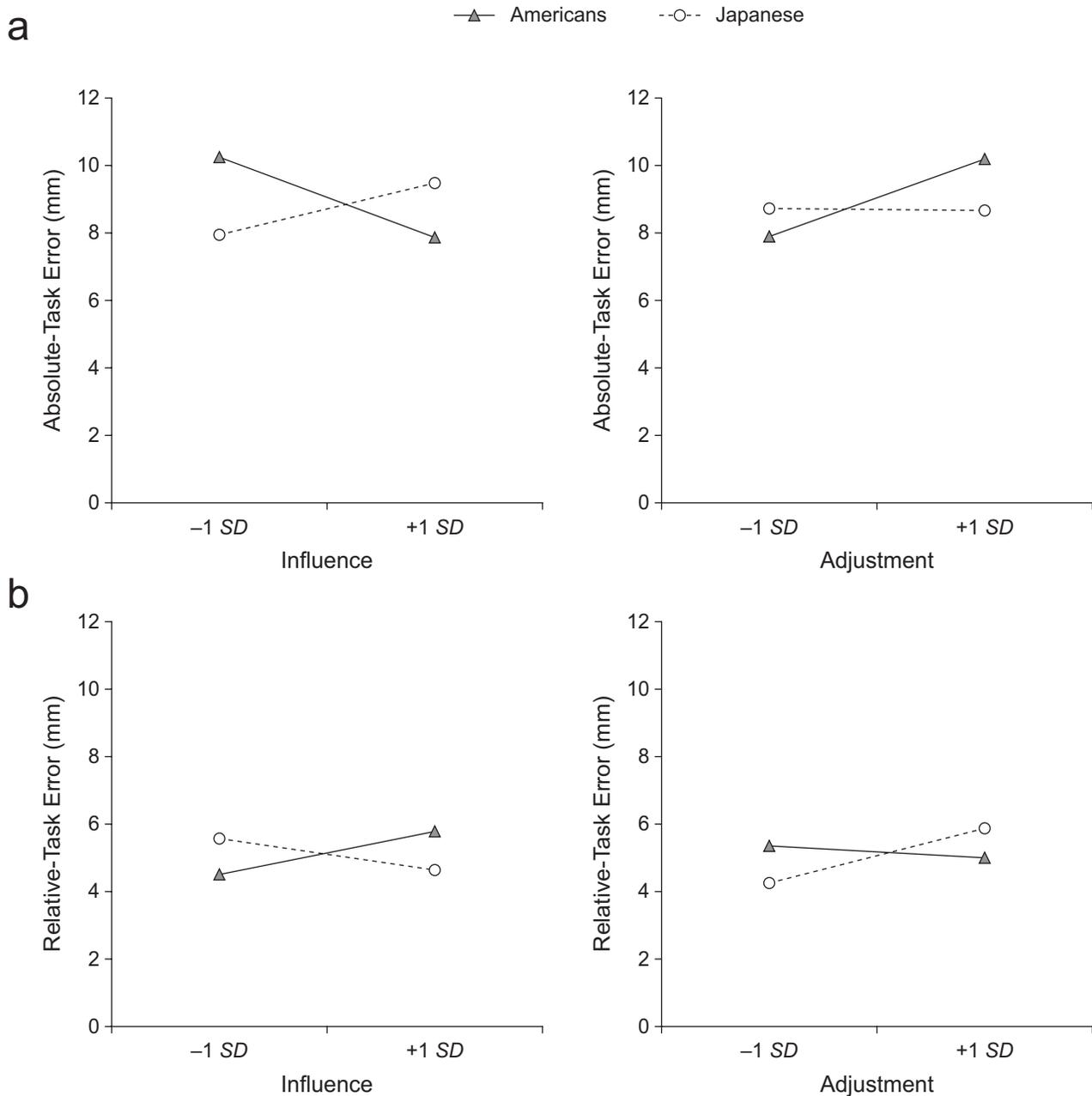
## Participants

Forty-six European American undergraduates (22 females and 24 males) at the University of Wisconsin–Madison and 54 Japanese undergraduates (22 females and 32 males) at Kyoto University participated in the study.

**Table 1.** Zero-Order Correlations Among Variables in Study 1, for European Americans (Above Diagonal) and Japanese (Below Diagonal)

Variable	Interpersonal influence	Interpersonal adjustment	Absolute-task error	Relative-task error
Interpersonal influence	—	.25*	-.21 <sup>†</sup>	.14
Interpersonal adjustment	.27*	—	.21 <sup>†</sup>	-.01
Absolute-task error	.23*	.06	—	.12
Relative-task error	-.07	.16	.13	—

<sup>†</sup> $p < .10$ . \* $p < .05$ .



**Fig. 2.** Regression results from Study 1: American and Japanese participants' predicted mean error on the framed-line task. Participants performed (a) an absolute version of the task and (b) a relative version of the task. For each version, results are shown as a function of interpersonal influence and interpersonal adjustment (1 SD above the mean and 1 SD below the mean).

**Procedure and measures**

Each session involved a same-gender pair of participants who did not know each other. Participants were seated at opposite ends of a table with a small divider in the middle that 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 did. 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, participants were asked to work on an ostensibly unrelated visual task, the FLT. Instead of employing the questionnaire version of the FLT, which had been used in Study 1 to assess perceptual styles in a group setting, we used

the interactive version of the FLT (Kitayama et al., 2003) to allow for generalization to a related perceptual measure. In the interactive version, the experimenter manually presented a square with a vertical line in it and then asked participants to draw a corresponding line in a second, empty square.

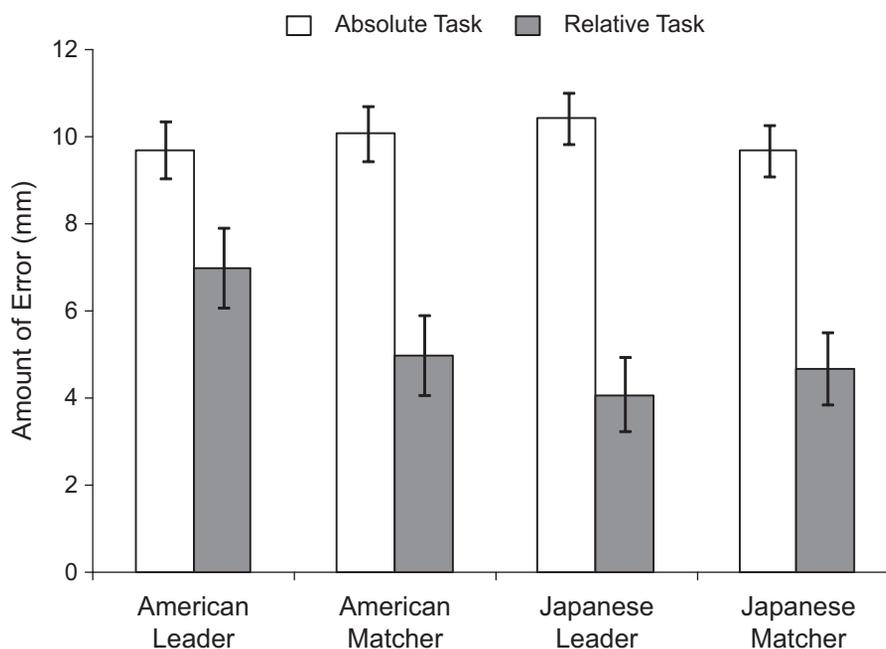
At the end of the study, participants completed measures of perceived influence and adjustment as a manipulation check. We modified the Inclusion of Other in Self scale (Aron, Aron, & Smollan, 1992), which involves a set of seven Venn-like diagrams that vary in the degree of overlap between two transparent circles, one of which represents the self and one of which represents the other. We made one circle opaque so that it covered the second circle to varying degrees. Perceived influence was measured with a scale on which the opaque circle represented the self and the second circle represented the partner. In contrast, perceived adjustment was measured with a scale on which the opaque circle represented the partner and the second circle represented the self. Both the leader and the matcher were presented with the measures of interpersonal influence and interpersonal adjustment. They were told that one diagram represented how much influence they may have had over their partner, and the other represented how much influence their partner may have had over them. For each measure, they were asked to select the picture that best described their interaction during the communication task.

## Results

**Manipulation check.** A Condition (leader or matcher)  $\times$  Scale Type (influence or 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,  $F(1, 96) = 4.47, p < .05$ . It 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 two-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 Americans.

**FLT performance.** We obtained a significant main effect of FLT task type,  $F(1, 96) = 136.97, p < .001, \eta_p^2 = .59$ , and a significant Culture  $\times$  FLT Task Type interaction,  $F(1, 96) = 4.70, p < .05, \eta_p^2 = .05$ . Participants made larger errors on the absolute task ( $M = 9.97$  mm) than on the relative task ( $M = 5.11$  mm), but the difference in error between the two tasks was larger for Japanese than for Americans, replicating previous findings on cultural differences in perceptual style. More important, a Culture  $\times$  Condition  $\times$  FLT Task Type interaction was significant,  $F(1, 96) = 5.10, p < .05, \eta_p^2 = .05$ . As shown in Figure 3, among American participants, the difference between the absolute and relative tasks was smaller for leaders than for matchers,  $F(1, 44) = 5.26, p < .05, \eta_p^2 = .11$ ; this suggests that leaders showed a more analytic perceptual style than matchers did. Among Japanese participants, however, the difference between the two tasks did not differ significantly



**Fig. 3.** Mean amount of error on two versions of the framed-line task in Study 2. American and Japanese participants were randomly assigned to be either leaders (the interpersonal-influence condition) or matchers (the interpersonal-adjustment condition). Error bars represent standard errors.

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

## Discussion and Conclusion

Across two studies, interpersonal influence was linked to an analytic perceptual style in the United States, whereas this pattern was absent or reversed in Japan. This finding suggests that influencing other people requires different perceptual styles in different cultures. In American cultural contexts, influencing other people requires an analytic perceptual style, which may help individuals focus on their goals without being distracted by other people. In Japanese cultural contexts, however, both influencing and adjusting to other people require a holistic perceptual style, and this may help people attend to the demands of others.

The present findings not only demonstrate that perceptual styles are situated within social contexts (Situation  $\times$  Person interaction), but also provide evidence for a culturally contingent situated-cognition approach (Culture  $\times$  Situation  $\times$  Person interaction; Cohen, 2007; Hong & Mallorie, 2004). In American cultural contexts, in which the cultural imperative is to pursue self-set goals independently of social contexts, interpersonal influence and an analytic perceptual style mesh meaningfully. However, these two factors do not cohere in Japanese cultural contexts, in which 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 embedded.

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## Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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## Note

1. The overall amount of error was smaller in Study 1 ( $M = 7.03$  mm) than in the study by Kitayama et al. (2009;  $M = 8.95$  mm), which used

the same simplified questionnaire that we did. This discrepancy is probably because feedback was provided in our study but not in the previous study. Contrary to the findings of Kitayama et al., our results showed no Culture  $\times$  Task Type interaction,  $F(1, 149) < 1$ . Possibly, feedback influenced participants to concentrate more on the task, and this 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 performance.

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