Supplementary Material

Methods

Face stimuli. FaceGen software was used to generate facial morphs. Morphing is done using a statistical 3D model based on anthropometric parameters derived from laser scans of human faces. The model does not make assumptions about what differs between White and Asian faces; rather, by averaging across many faces, parameters that emerge as reliably different between the ethnicities are incorporated into the morphing algorithm (Blanz & Vetter, 1999).

Scene stimuli. In a pretest including American (N=8) and Chinese (N=8) participants, we obtained ratings of the scene contexts (without any face stimulus) on a scale from 1 (very American−typed) to 7 (very Chinese-typed), with a rating of 4 indicating cultural neutrality. A mixed-model ANOVA indicated a significant effect of scene, $F(2, 28)=131.27$, $p<.0001$. American scenes were rated significantly more American-typed (M=1.98) than neutral scenes (M=3.84), $t(15)=8.77$, $p<.0001$, and Chinese scenes were rated significantly more Chinese-typed (M=6.16) than neutral scenes (M=3.84), $t(15)=10.51$, $p<.0001$. The main effect of participant culture [$F(1,14)=0.19$, $p=.67$] and the scene × culture interaction [$F(2, 28)=0.58$, $p=.57$] were not significant. This confirms that the American scenes were indeed perceived to be American-typed, and Chinese scenes perceived to be Chinese-typed, and identically across the two cultures.

Procedure. To ensure trajectories were on-line with the categorization process, we encouraged participants to begin initiating movement early. As in previous research (Freeman et al., 2010), if participants initiated movement later than 400ms following face presentation, a message appeared after the trial encouraging them to start moving earlier on future trials.

Analytic techniques. In all generalized estimating equations regression analyses, unstandardized regression coefficients are reported. Trajectories were normalized (linearly interpolated) into 101 time steps, which controlled for differences in overall movement duration across trials and participants. Prior to analyses, mouse trajectories were rescaled into a standard *x, y* coordinate space: top−left [1,1.5] and bottom−right [1,0], leaving the start position of the mouse at [0, 0]. For comparison, all trajectories were remapped rightward, such that the selected response was at the top-right and the unselected response at the top-left. Time-course analyses were done by fitting participants' mean horizontal-deviation profiles (*x*-coordinate difference scores from time-step 0 to time-step 101) to single Gaussian functions of time using an iterative nonlinear optimization algorithm (Nelder–Mead).

Results

Trajectory temporal sensitivity across study sites. To confirm that the two study sites had identical temporal sensitivities, however, we compared the cursor sampling rates of the data obtained in the U.S. with those obtained in China. The mean sampling rates (*M*s) of the data from the U.S. (M=64.01 Hz) and the data from China (M=64.00 Hz) were not significantly different, $t(42)=0.34, p=.73$. Moreover, the moment-to-moment variability in the sampling rate (*SD*s) of the data from the U.S. (M=1.99 Hz) and the data from China (M=2.03 Hz) were also not statistically different, $t(42)=1.00, p=.32$. These results alleviate the concern that any effects of participant culture on trajectory data could have been spuriously produced by differences in temporal sensitivity between the two sites.

Face-context compatibility. Effects not involving participant culture were reported in the main text. As for categorization responses, participant culture did not have an overall influence, $B=0.11, Z=1.05, p=.30$, nor did it significantly interact with context, $B=-0.08, Z=1.05, p=.29$. Interestingly, however, there was a significant culture × morph-value interaction, $B=0.08, Z=2.22, p<.05$. As a face's morph value rose from White (−4) to Asian (4), American participants exhibited a higher tendency to categorize the face as Asian relative to Chinese participants. Finally, the 3-way interaction was not significant, B=-0.03,Z=0.78,p=.43.

As for AUC, there was an overall effect of participant culture, with the trajectories of Chinese participants exhibiting less AUC (M=1.09) than those of American participants (M=1.20), B=0.12,Z=2.73, p<.01. Whereas there was no significant culture × context interaction [B=0.05,Z=0.92,p=.36], there was a significant culture × morph-value interaction [-0.05,Z=3.97, p<.0001], whereby AUC decreased as a face became more Asian in American but not Chinese participants. The 3-way interaction was not significant, B<-0.01,Z=0.45,p=.65.

Time-course analysis. To estimate the onsets of the congruency and incongruency effects, we determined the time-step at which the cultural difference in x-coordinates exceeded a value of 0.01 and maintained the difference for 5 time-steps. Other similar values were chosen, and these had negligible influences on the results. These onsets were submitted to a congruency × culture mixed-model ANOVA. The effect of congruency was not significant, $F(1,42)$=1.04,p=.31. The effect of culture, however, was significant, $F(1,42)$=5.73,p<.05, with the onsets occurring earlier in Chinese relative to Americans (Supplementary Figure 1). The interaction was not significant, $F(1,42)$=0.09,p=.77. Thus, both the effects of a congruent and incongruent context (relative to neutral) began earlier in Chinese participants.

One possibility is that these cultural differences in the time-course of the congruency and incongruency effects were spuriously produced by overall differences in the onset and duration of movement (perhaps arising from differences in the two study sites' set-ups or some other between-group difference). However, analyses were conducted in normalized rather than raw time precisely to minimize such differences, and given time-normalization, it is unlikely that such differences could have caused the effects. Nevertheless, to ensure this, we included initiation and response times as covariates in the above analyses and those in the main text, and as expected all effects remained significant (all *p*s$<.05$). This alleviates the concern that the earlier sensitivity to context in Chinese participants was some byproduct of overall movement patterns. Instead, this suggests that the temporal differences reflect Chinese participants' earlier integration of the context into the face-categorization process.

Supplementary References

Blanz, V., & Vetter, T. (1999). *A morphable model for the synthesis of 3D faces*. Paper presented at the SIGGRAPH'99, Los Angeles.

Freeman, J. B., Pauker, K., Apfelbaum, E. P., & Ambady, N. (2010). Continuous dynamics in the real-time perception of race. *Journal of Experimental Social Psychology, 46*, 179-185. doi: 10.1016/j.jesp.2009.10.002

Supplementary Figure 1. Bar plot depicting estimated onset time-step for the face-context congruency and incongruency effects in the two cultures.