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Abstract

The other-race effect refers to the difficulty of discriminating between faces from ethnic and racial groups other than one's own. We challenged the hypotheses that same-race faces are holistically encoded while the other-race faces are analytically encoded. We proposed that the analytic-holistic hypotheses could be discriminated based on their information processing properties: (1) processing order of facial features, (2) stopping rule and (3) process dependency. We compared Eastern and Western participants using the psychophysically adjusted configural facial features in a face categorization task. The two cultures showed markedly different processing strategies: the Easterners demonstrated a higher level of holistic processing, than the Westerners. The computational modeling results show a weak other-race effect for Westerners, and a reversed effect for the Easterners. Overall, all subjects demonstrated parallel processing of facial features. In addition, some showed a presence of the across-feature process dependency, which supports a strong form of facial holistic hypothesis.