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Face and Race: Evidence for expertise-dependent influences on recognition memory for own- and other-race faces

Many people we know would wholeheartedly agree to the statement that “Chinese all look the same to me”. A phenomenon that has gained increasing attention over the last 30 years is the “other race” effect, which was first described by Malpass & Kravitz (Malpass & Kravitz, 1969). It offers an explanation for the effect that people are generally much more efficient in processing, encoding and remembering faces from their own ethnic group in comparison to faces from ethnic groups other than their own (this is also described as “own race” bias). Recent studies (Slone, Brigham & Meissner, 2000; Wright, Boyd & Tredoux, 2003; Tanaka, Kiefer & Bukach, 2004) suggest that the amount of contact with people from other ethnic groups can be a decisive factor in lowering the “own race” bias. Apart from manifestations in recognition memory performance the “other race” effect also influences specific aspects in the neurophysiological processing of faces. In the present study I investigated the influence of other-race experience on the “own-race” bias in regard to Caucasian (own-race) and Asian (other-race) faces. Participants were recruited in two different groups depending on their experience and quantity of contact with Asian people. A control ($N=20$) was made up of Germans without considerable experience, whereas the second and so-called “expert” group ($N=20$) comprised Germans with intensive experience regarding Asian faces. Over the course of my experiment participants had to complete a recognition memory test for Caucasian and Asian faces. At the same time electrophysiological brain activity was recorded using a high-resolution EEG. The results of this experiment showed that participants from the “expert” group not only showed higher recognition memory for Asian faces than control group participants, but also for faces from their own ethnic group. This might reflect more extensive perceptual expertise for faces in general in the “expert” group. Furthermore, analyses of the electrophysiological brain activity showed an increase in the amplitude of the N170 ERP component for other-race faces in both groups as well as group-dependent differences in the amplitudes of the P2 ERP component for Asian faces. An “old/new-effect” was also found in a later time window (after 400 ms) for both groups, although with a bigger spatial distribution in the control group. The bigger spatial distribution of these waveforms across the scalp within the control group could be interpreted as increased processing effort, which, however, does not result in performance similar to the “expert” group. In summary, the findings of this study support the theory that intensive experiences with people of other ethnicities produce expertise in the sense of more accurately perceiving and recognizing other-race faces.