Synopsis of Original Research Paper

The effect of "being–liked prediction" on valuation to others' faces

Ayahito Ito

Department of Psychology, University of Southampton. Japan Society for the Promotion of Science. Department of Health Sciences, Hokkaido University

In the present study, we investigated whether neural processes associated with valuation of faces were preceded by "being-liked" prediction which is associated with predicting other's preference of the self (i.e., meta-perception). During the fMRI, participants were asked to simply press a button when presented with photographs of opposite gender faces. After the scanning, they were unexpectedly asked to perform three impression ratings for each face: 1) attractiveness, 2) preference, and 3) willingness-to-talk (WTT) ratings. They were also asked to predict 4) the extent to which each person thinks the subject is attractive, and 5) the extent to which each person likes the subject (i.e., being-liked prediction). A factor analysis revealed that the former three types of ratings (i.e., impressions to others) and the latter two types of ratings (i.e., meta-perception) were classified into distinct factors. A mediation analysis showed a marginally significant mediation effect for the association between attractiveness rating and preference rating. Parametric modulation analysis based on principal component score calculated from the data of the former three ratings showed significant positive correlation in the ventromedial prefrontal cortex (vmPFC) ($p < 0.001$ uncorrected at peak, $p < 0.05$ FWE corrected at cluster level). Parametric modulation analysis based on principal component score calculated from the latter two ratings also revealed significant positive correlations in the vmPFC. Although preliminary, these results suggest that the vmPFC automatically codes belief about "being-liked" and subjective preference.