Blending into the Crowd: Electrophysiological Evidence of Gestalt Perception of a Human Dyad - a replication study

In a recent study we suggested that a plurality of human bodies merely in close spatial proximity are automatically integrated into a coherent perceptual unit. In the present study we re-examine this hypothesis using the same paradigm and better controlled stimuli. We used an EEG frequency tagging technique allowing the dissociation of the brain activity related to the component parts of an image from the activity related to the global image configuration. We presented to participants images of two silhouettes facing the observer, flickering at different frequencies (5.88 vs. 7.14 Hz). As in the initial study, clear response at these stimulation frequencies reflected response to each part of the dyad. An emerging intermodulation component (7.14 - 5.88 = 1.26 Hz), a nonlinear response regarded as an objective signature of holistic representation, was significantly enhanced in the (typical) upright relative to an (altered) inverted position. Moreover, the inversion effect was significant for the intermodulation component but not for the stimulation frequencies, suggesting a trade-off between the processing of the global dyad configration and that of the structural properties of the dyad elements. These findings confirm our previous results showing that when presented with two humans merely in close proximity the perceptual visual system will bind them. Hence the perception of the human form might be of a fundamentally different nature when it is part of a plurality.