CNS 2016

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Title: **Physical Size and Spatiotopic Cues Modulate Inverted Face Representation**

Topic Area: PERCEPTION & ACTION: Vision (Poster session)

Session Date and Time: ***Monday, April 4, 1:30 pm - 3:30 pm***

Location: New York Hilton Midtown Hotel

Abstract: Recent neuroimaging findings indicate that the real-world size of objects is spatially represented along the ventral temporal lobe of the brain. Additionally, behavioral studies involving mental rotation and spatial navigation tasks performed on screens of varying size suggest that task performance is improved when viewers perform the task on a large visual display compared to a small visual display even when visual angle is held constant. Given these findings, the present study investigated the interaction between real-world size and perceived size on holistic processing using fMRI. Subjects were shown images of upright faces and inverted faces, as well contours whose forms were comprised of local and globally aligned elements or global only aligned elements. These stimuli were chosen because of their known differences in holistic representation. In order to manipulate perceived size, subjects were shown small and large images that were either near or far to the scanner and during perceived size conditions retinal image size was held constant. It was hypothesized that cortical activations elicited in response to the face and contour stimuli would change as a function of their perceived sizes. Further, changes would represent alterations in the representations of the face and contour stimuli in way related to their holism. GLM analysis from 17 young, healthy participants indicated significant effects in the left and right anterior calcarine sulcus and left fusiform gyrus. Interestingly, these effects were significantly less present for smaller real-world size images of inverted faces, which suggests an effect of perceived size.