Occipitotemporal Activation Evoked by the Perception of Human Bodies is Inhibited by the Presence of the Face

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Outline
- Part 1: Domain Specificity in the Occipitotemporal Cortex
- Part 2: The Social Brain in Action
- Part 3: Perceiving Others With and Without Visible Faces and Bodies

Part 1: Domain Specificity in the Occipitotemporal Cortex

Superior Temporal Sulcus

Face Processing

Extrastriate Body Area

Adapted from Downing et al. (2001); Science

Puce et al. (1996); Journal of Neuroscience

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Part 2: The Social Brain in Action

Was the response in FFG and EBA related to the number of visible body parts?

Part 3: Perceiving Others With and Without Visible Faces and Bodies
Methods

- Subjects
  - 12 healthy young adults

- Imaging
  - 4 Tesla – Inverse Spiral
  - 1.5 TR
  - Whole Brain Acquisition

- Analysis
  - False Discovery Rate thresholding employed to identify active voxels
  - Internal Localizer Approach
    - Half of all trials used to identify clusters of voxels (functional ROIs) showing differences between conditions.
    - Half of all trials used to test for significant differences in peak hemodynamic response for each ROI.

### Summary
- Similar activity in EBA and M-VOTC
- Strongest response when face is not visible
- Activity evoked by bodies is reduced when face is visible
Summary

- Face processing in VOTC and LOTC
  - In STS the presence of a face with or without a visible body evokes a larger response than bodies without visible faces
  - In L-VOTC the presence of a face with a visible body evokes the largest response

Interpretations

- The presence of the face modulated activity in the occipitotemporal cortex
- Processing the face reduces the resources available for processing the body
- Processing the face inhibits processing of other stimuli

- Why are there limited resources for domain specific processes?
  - We hypothesize that initial processing of domain specific stimuli proceeds in parallel.
  - Higher order processing of the scene requires selection among stimuli relevant to the subject’s dispositions and goals.

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