Domain Assignment in Face Perception

Domain Specificity in Face Perception

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Nature America 2000

Can a Nonspecific Bias Toward Top-Heavy Patterns Explain Newborns' Face Preference?

Cassia Viola Macchi et. al

Psychological Science 2004

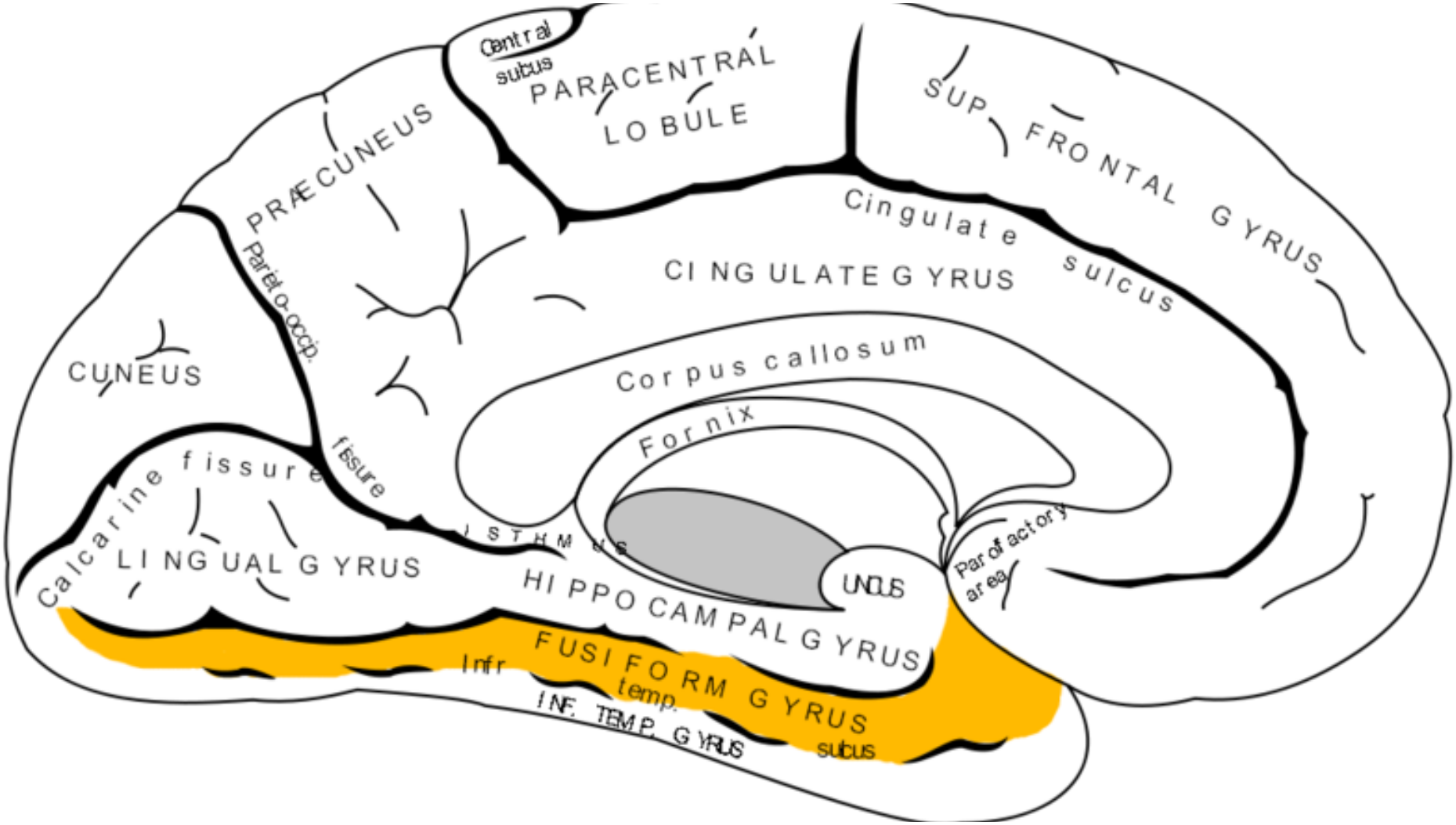
Conclusions

- Specific mechanisms (face perception)

- Double dissociation (face & objects)

Evidence for Face Specific Mechanisms

- Holistic and Inversion sensitive
- Prosopagnosic's
- Patient CK
  - DD for face and object recognition
- fMRI studies
  - activation of Fusiform Gyrus
  - compared to non-face stimuli
- EEG & MEG recordings
  - selective response to faces


Central sulcus
PARACENTRAL LOBULE
SUP. FRONTAL GYRUS
PRAECUNEUS
Parieto-occip. fissure
Cingulate sulcus
CINGULATE GYRUS
CUNEUS
Corpus callosum
Fornix
Calcarine fissure
ISTHMUS
LINGUAL GYRUS
UNCUS
Parahippocampal area
HIPPOCAMPAL GYRUS
FUSIFORM GYRUS
Infr. temp. sulcus
INF. TEMP. GYRUS

- Note, however, that the question of the domain specificity of face-processing mechanisms is independent from the question of the innateness of such mechanisms, which is not the focus of the present discussion.

  - Kanwisher

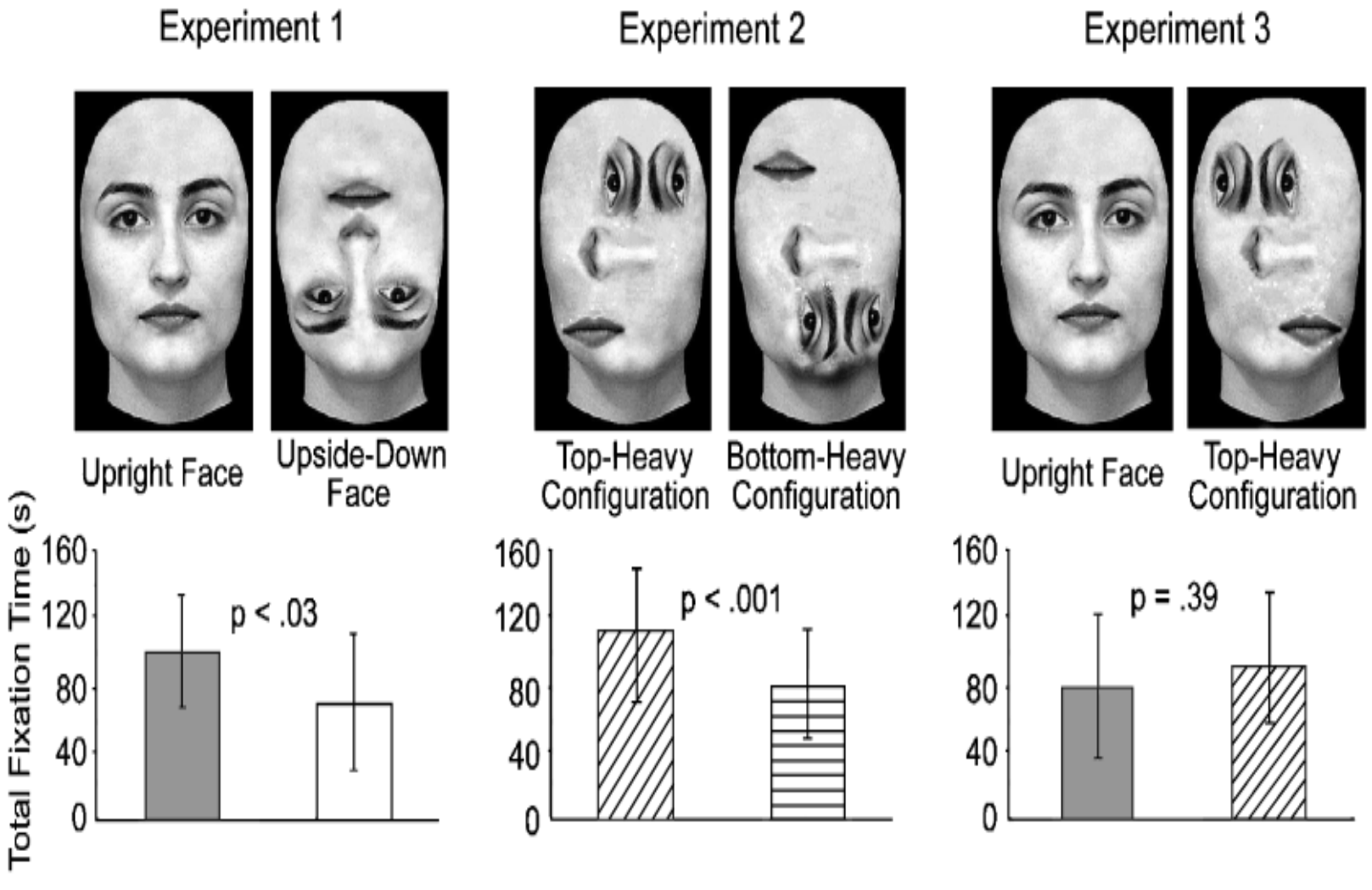
Conclusions

- Experiment 1
  - Prefers face
- Experiment 2/3:
  - Horizontal asymmetrical bias
- Top-heavy
- Domain General mechanism

Details of Experiment

- Experiment 1
  - 20 healthy, full-term infants 25 to 73 hr old.
  - high-quality black-and-white photograph of a 22-year-old woman's face
  - Eye tracking
  - 2 T-tests: one for number of discrete looks and the other for total fixation time
- Experiment 2
  - 20 healthy, full-term infants 24 to 79 hr old.
  - two scrambled faces differing exclusively in the up-down positioning of the inner features
- Experiment 3
  - 20 infants 24 to 82 hr old participated in the study.
  - the natural upright face presented in Experiment 1 and the nonfacelike top-heavy configuration shown in Experiment 2

Evidence for Domain Generality



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Significance

- True DD?
- Domain Specific or General?
- Are all DD's clear cut?