### Experiment 1: Is the configural effect largely produced by cells with large RFs (low SFs)? Yes

**Face parts (a) and composite target faces (b) created from these parts for the current replication of the part-whole identification experiment of Tanaka and Farah (1993).**

- **Hypothesis**
  The representation of faces (but not objects) retains aspects of the initial multiscale, multiorientation tuning of early cortical visual stages and the configural effect is produced by the overlap of large receptive fields in which a change in the shape of one face part will affect the activation of many cells with large RFs not centered on that face part.

- **Results**
  - Faces and houses were included as stimuli.
  - Faces were used as a test stimulus and houses as a control stimulus.
  - The representation of faces (but not objects) retains aspects of the initial multiscale, multiorientation tuning of early cortical visual stages and the configural effect is produced by the overlap of large receptive fields in which a change in the shape of one face part will affect the activation of many cells with large RFs not centered on that face part.

- **Conclusions**
  The face configural and composite effects can be derived from models composed of overlapping receptive fields (RFs) characteristic of early cortical simple-cell tuning but also present in face-selective areas. Because of the overlap in RFs, variation in a single face part or half is propagated to the activation values of large RFs throughout the face.

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### Experiment 2: Is it large RFs or low SFs? Large RFs

**The configural effect (isolated part vs. composite) as a function of spatial frequency (all SF, high, and low pass). There is only a minimal effect of SF. Therefore the configural effect is produced by large RFs, not by low SFs.**

**Face Composite Effect**

- Identical top halves of two faces look different when their different bottom halves are aligned rather than offset.

**Experiment 3: Can the same theory account for the Face Composite Effect? Yes**

This effect—an influence of differences in the lower halves of the faces—can be produced by the fidaluc point model. Because of a reduction in the overlap of the RFs (perhaps also requiring the context of a face template) from the shift, the influence of the lower half is reduced when it is no longer aligned with the upper half. Above: Dissimilarity computed via Gabor-jet model version 2.

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### References