Say hello to BoB
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Face and words recognition has traditionally been thought to rely on highly specialised and relatively independent cognitive processes. Strong evidence for this has come from single case studies of patients with:

- pure prosopagnosia: a selective face recognition deficit
- pure alexia: a selective word recognition deficit

Recent theories, such as the many-to-many hypothesis (Behrmann & Plaut, 2013), suggest instead that the cognitive and cerebral processes underlying visual recognition are more distributed and interactive. While single case studies are well suited to investigate dissociations between deficits, larger groups of patients are needed to investigate associations predicted by a distributed model.

### Methods

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<th>70-100 patients</th>
<th>50 healthy controls</th>
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<td>(stroke in posterior cerebral artery)</td>
<td>(matched as group for age and education)</td>
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### Imaging

- Structural T1 scan
- Functional localiser: faces and scrambled faces, words and checkerboards
- Diffusion tensor imaging (DTI) scan

### Behavioural tests

All patients are assessed (>9 months post-stroke) a large battery of sensitive behavioural tests (see figure 1 for overview of functions assessed). Assessment of each patient carried out over 3 days (within maximum 3 weeks).

- Premorbid face recognition: Faces and emotions questionnaire
- Premorbid reading: Adult reading history questionnaire
- Basic motor response time: Simple visual RT test (up vs down)
- Cognition: Oxford Cognitive Screen; Digit span (WASI): forwards and backwards
- Depression:  Geriatric depression scale: GDS-15
- Handedness: Edinburgh short-form (5 items)
- Contrast sensitivity: the functional acuity contrast test
- Colour perception: D-15 test
- Visual acuity: FrACT (Landolt C)
- Visual field test: Copenhagen perimetry
- Intermediate and low-level visual perception: L-post
- Visual field test: Copenhagen perimeter
- Visual acuity: FrACT (Landolt C)
- Colour perception: D-15 test
- Contrast sensitivity: the functional acuity contrast test
- Handwriting: Edinburgh short-form (5 items)
- Digit span (WASI): forwards and backwards
- Basic motor response time: Simple visual RT test (up vs down)
- Premorbid reading: Adult reading history questionnaire
- Handwriting: Edinburgh short-form (5 items)
- Premorbid face recognition: Faces and emotions questionnaire

### What’s novel?

- Participants selected according to lesion localization, not according to symptoms ➔ Expecting novel patterns of lesions and symptoms.
- All participants assessed with the same wide range of functions with sensitive tests ➔ Enabling direct comparison across subjects, which is often not possible across single case studies.
- Tests of face, word and object processing: Same level of processing tested across stimulus type.
- Large group of PCA patients included.

### Status

- 25 patients tested (right lesions n = 6; left lesions n = 16; bilateral lesions n = 3)
- 3 control participants tested

### International collaboration

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