



Assessing Visual Perception Towards a Systematic Approach

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Assessing Visual Perception: Towards a Systematic Approach

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Background

Visual perceptual deficits are common in neurological disorders:

- seen in around 30% of patients with acquired brain injury.
- also common in neurodegenerative disorders.

Can have significant negative effects on:

- activities of daily living, mental health and quality of life.
- general rehabilitation.
- performance on all neuropsychological tests using visual stimuli.

Visual perception should be assessed following brain injury.

The literature does not provide a simple overview of tests available.

Aim

Create a framework that facilitates structured and systematic assessment of visual perceptual functions.

Method

- Visual perceptual tests and test batteries are identified in the literature.
- Tests and batteries are categorised according to their visual sub-processes.
- A simple visual framework is developed.

Conclusion

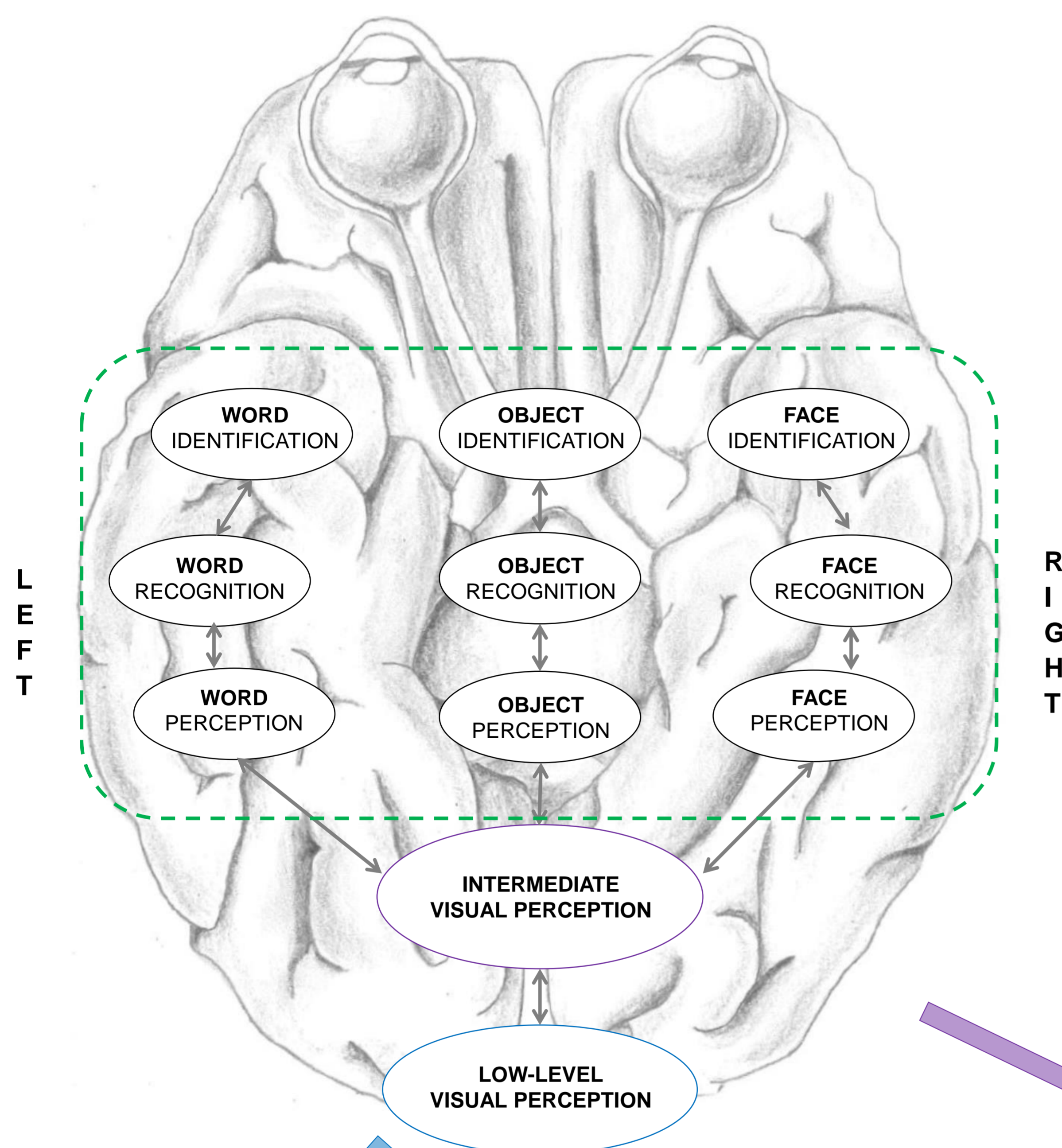
Assessment should also be carried out in the absence of visual perceptual complaints (insight often limited).

Existing test batteries suffer from limitations:

- lack of norms
- too time-consuming
- only selected aspects of visual perception assessed
- include tests of functions that are theoretically relevant but that have limited clinical value

By combining individual sub-tests from different batteries, in-depth assessment is possible, but:

There is a need for a test battery enabling structured assessment of clinically relevant aspects of visual perception.



	WORDS	OBJECTS	FACES
IDENTIFICATION	<ul style="list-style-type: none"> • Palpa 29: Reading words • Palpa 35: Reading regular vs irregular words • EC301-R: Reading digits • Reading text 	<ul style="list-style-type: none"> • Picture naming tasks (WAB 4.A., Boston Naming) 	<ul style="list-style-type: none"> • Naming familiar faces • Naming famous faces
RECOGNITION	<ul style="list-style-type: none"> • Warrington Recognition Memory Test for Words <p>ROAD - COURT</p>	<ul style="list-style-type: none"> • Object vs non-object: BORB 10 	<ul style="list-style-type: none"> • Cambridge Face Memory Test¹ • Warrington Recognition Memory Test for Faces
PERCEPTION	<ul style="list-style-type: none"> • Word matching tasks <p>ROAD ↙ ↘ TOAD ROAD</p>	<ul style="list-style-type: none"> • Benton Visual Form Discrimination Test • Copying: Rey's Complex Figure 	<ul style="list-style-type: none"> • Matching: Benton Face Recognition Task

¹<http://www.bbk.ac.uk/psychology/psychologyexperiments/experiments/facememorytest/startup.php>

VISUAL ACUITY

- CORVIST 1
- logMAR charts
- Computer-based Freiburg Visual Acuity & Contrast Test (FrACT)

CORVIST 1 logMAR chart

VISUAL FIELD

- Confrontation: Donders' test
- Computer-based perimetry (E.g.: Humphrey or Goldmann)
- Screening for visual field defects

Left Right Humphrey i750 (10 degrees) Laptop screening program

COLOUR PERCEPTION

- Colour discrimination: CORVIST 5
- Farnsworth-Munsell D-15 100 hue test: physical or online version
- Colour matching: Homemade cards
- Pointing (Token test 1, WAB auditory word recall)
- Naming (colours of objects in the room)

CORVIST 5 D-15

MOTION DETECTION

- Motion detection from L-POST

7. Global Motion Detection 9. Biological Motion

SIMPLE SHAPE PERCEPTION

- Line orientation: Benton Line Orientation Test
- Naming simple shapes
- Form discrimination: CORVIST 2

CORVIST 2

SIZE DISCRIMINATION

- CORVIST 3
- BORB 3

BORB 3

COPYING SIMPLE FIGURES

SHAPE INTEGRATION

Distinguish overlapping figures: Poppelreuter
Integrating fragmented stimuli:

- Fragmented digits/letters: VOSP 1, CORVIST 7
- Shape detection: VOSP 0, CORVIST 4

Poppelreuter CORVIST 7 CORVIST 4

RELATED FUNCTIONS

- Visual attention /Neglect
- Simultanagnosia
- Visual search
- Optic ataxia
- Oculomotor apraxia
- Topographical orientation

