Agnosia

- Failure to recognize previously familiar stimuli
- Modality-specific
- Not due to dementia, aphasia, or unfamiliarity with stimulus
- May be limited to particular classes of stimuli

Agnosia Examples

- Prosopagnosia (impairment in recognizing familiar faces)
- Auditory Sound Agnosia (impairment in recognizing sounds of common objects)
- Phonagnosia (impairment in recognizing familiar people by their voices)
- Tactile agnosia (impairment in recognizing what’s placed in the hand)

Classes of Agnosia

(Lissauer’s stage model)

1. Apperceptive Agnosia
   - inability to recognize or name objects
   - subject cannot copy unrecognized objects
   - strong evidence for sensory-perceptual disturbance

2. Associative Agnosia
   - inability to recognize or name objects
   - subject can generally copy unrecognized objects
   - sensory-perceptual disturbance cannot explain recognition defect

Anatomy implied in Stage Model

Another way of Classifying Agnosia

- Stage/level (apperceptive, associative)
- Function (shape/form, integrative)
- Modality (visual, auditory, tactile)
- Domain (objects, faces, colors, sounds)
- Category (living things, moving things)
17 Explanations
   • Failure of perception to contact memory
   • Failure of perception to contact language (visual-verbal disconnection)
   • Impairment/degradation of a stored representation of an object in memory
   • Sensory-perceptual impairment

19 Cognitive Models of Object Recognition
   • Provide “box-models” of stages of information processing
   • Proposed stages derived from cognitive performance data in normals and brain-impaired patients
   • Help to decompose complex abilities into their constituent components

21 Steps in Assessment of Agnosia
   • Determine whether, in fact, the deficit is “agnosic”
     - Test for “boundary” conditions (aphasia, amnesia, dementia; modality specificity)
   • Qualify the nature of the deficit (determine conditions under which recognition succeeds and fails)
   • Determine the functional locus of the deficit

25 Defects in the “Initial Representation”
   • Visual Form Agnosia: failure in the appreciation of form or shape
   • Simultaneous Agnosia: inability to appreciate meaning of more than one stimulus
     - Dorsal: bilateral occipitoparietal disease
     - Ventral: left occipitoparietal junction
Clinical Features of Prosopagnosia

- Inability to identify previously familiar people by facial features alone
- Intact ability to identify people using nonfacial features (voice)
- May extend to nonfacial stimuli
- May co-exist with object agnosia
- May take apperceptive and associative forms

Frequent Co-existing Signs

- Object agnosia
- Visual recent memory loss, and other signs of visual-limbic disconnection
- Superior visual field defects
  - Altitudinal hemianopia
  - Superior quadrantanopia
- Achromatopsia
- Topographical agnosia

Lesion Profile in Prosopagnosia

- Bilateral occipitotemporal
  - Extent of damage determines presence of apperceptive defect
• Unilateral (right) occipitotemporal
  – Examples from recent cases

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56 Spared and Impaired Abilities in Prosopagnosia

1 Prosopagnosics can:
• Discriminate age
• Discriminate gender
• Recognize emotions
• Recognize faces as such
• Match faces
• Show ‘indirect’ knowledge about faces

2 Prosopagnosics can't:
• Identify individuals
• Describe the owner of the face (semantics)
• Feel familiarity when viewing faces
• (Variable) identify individuals in other categories

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