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10 **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

11 **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)

12 **Classes of Agnosia**
(Lissauer's stage model)

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Apperceptive Agnosia

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

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Associative Agnosia

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

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15 **Anatomy implied in Stage Model**

16 **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

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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

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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**

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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

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40 **Meryl Streep**

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42 **Saddam Hussein**

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44 **John Kerry**

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46 **Sebastian Weisdorf**

47 **Richard Nixon**

48 **John F. Kennedy**

49 **Cross-Domain Semantic Priming**

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51 **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

52 **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

53 **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

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Prosopagnosics can:

- Discriminate age
- Discriminate gender
- Recognize emotions
- Recognize faces as such
- Match faces
- Show 'indirect' knowledge about faces

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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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