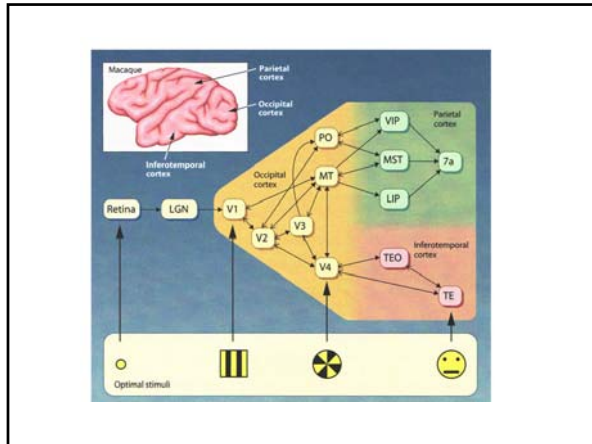
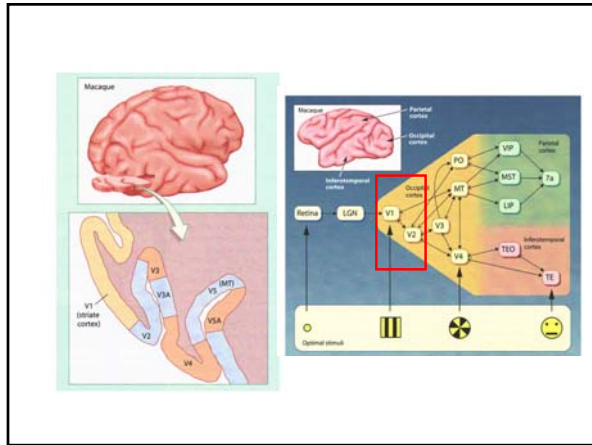
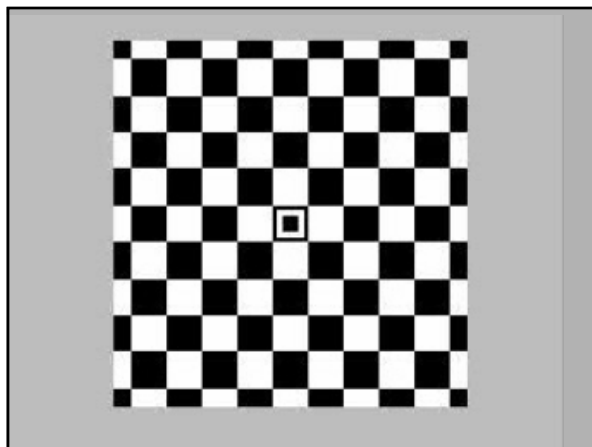
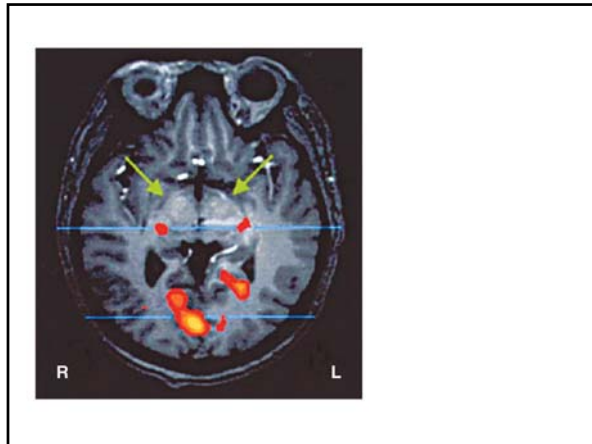


Visual Perception









Blindsight

- Explicitly claim they are blind, but implicitly respond accurately
- Ability to unconsciously respond to stimuli in their scotoma

A cartoon illustration showing a doctor in a white coat and glasses talking to a patient sitting in a chair. The patient has a speech bubble that says "I can't see a thing". The doctor has a speech bubble that says "I can't see a thing". A small figure of a person is standing next to the patient, possibly representing a stimulus or a scotoma.

Patient D.B

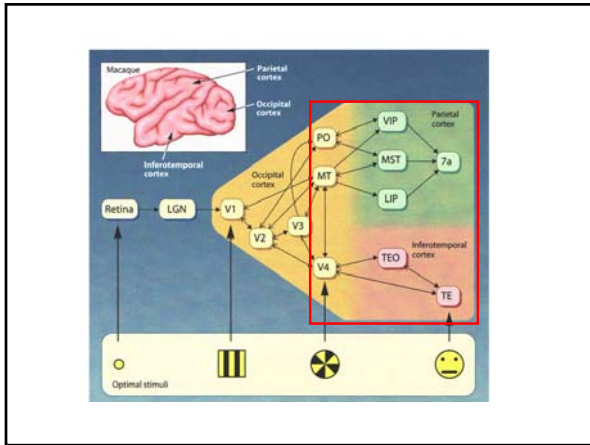
- A forced-choice (discrimination) task
- Shows performance higher than 75% success rate (chance is 50%)
- Claims to see nothing (cannot tell the difference)

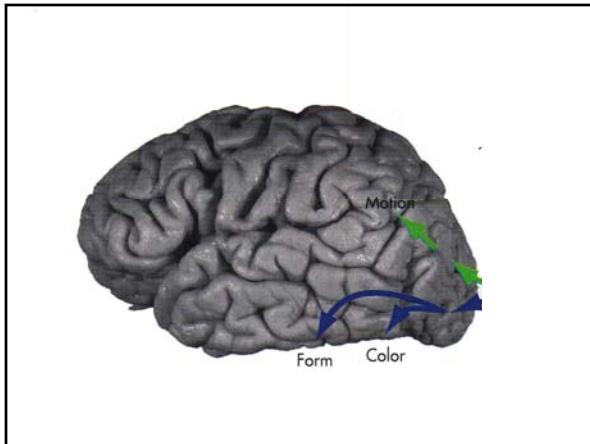
A bar chart showing the percentage correct for three different discrimination tasks. The y-axis is labeled "Percentage correct" and ranges from 0 to 75. The x-axis is labeled "Discrimination task" and has three categories: "X versus O", "□ versus ◇", and "□ versus □". The bars show performance levels of approximately 85%, 85%, and 60% respectively. A dashed horizontal line is drawn at the 75% mark.

Discrimination task	Percentage correct
X versus O	85
□ versus ◇	85
□ versus □	60

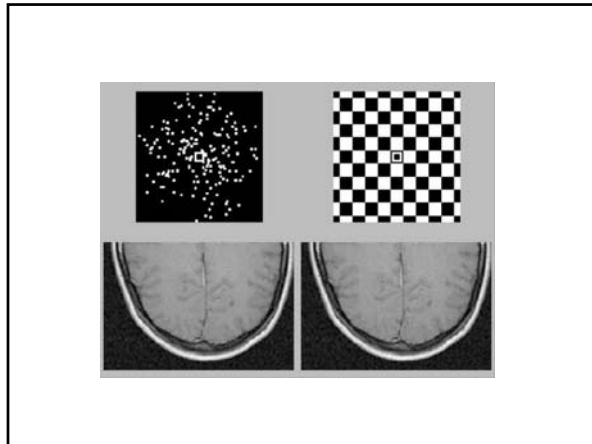
Explanation for Blindsight

- Some pathways may still remain from V1->V2
- Subcortical structures provide input to V2
- V1 particularly linked to phenomenal experience






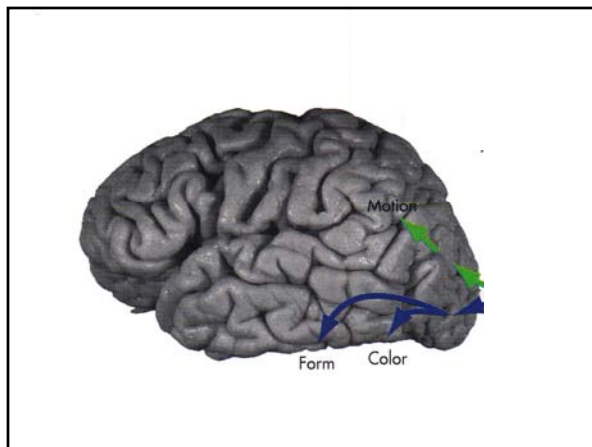
Visual Perception



Motion blindness (The case of M.P.)



- Sees objects, but not:
 - whether they're moving
 - their direction or speed
- Sees the worlds in "snapshots"
- M.P.: "When I'm looking at a car first, it seems far away. But then when I want cross the road, suddenly the car is very near."
- Bilateral lesion in temporoparietal cortex



Prosopagnosia

- Patient P.T.
- Left-hemisphere stroke
- No longer recognized (visually) people around him, including his wife
- Easily recognized people after hearing their voice
- Demonstrated a curious dissociation

Prosopagnosia



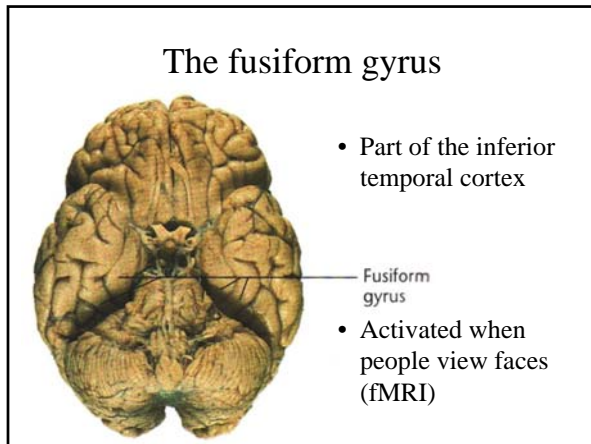
Detail from "Luncheon on the Grass"
Monet, 1886

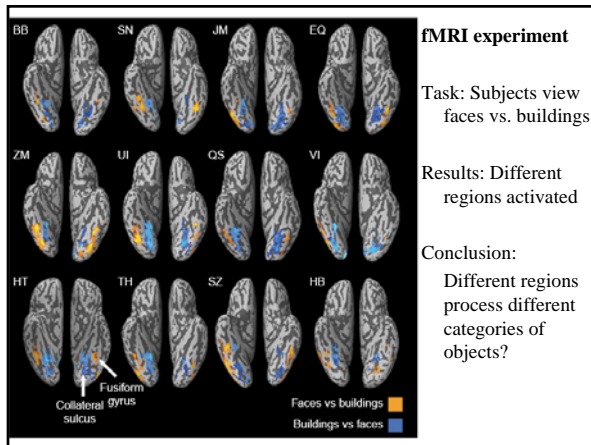
"Weeping Woman"
Picasso, 1937

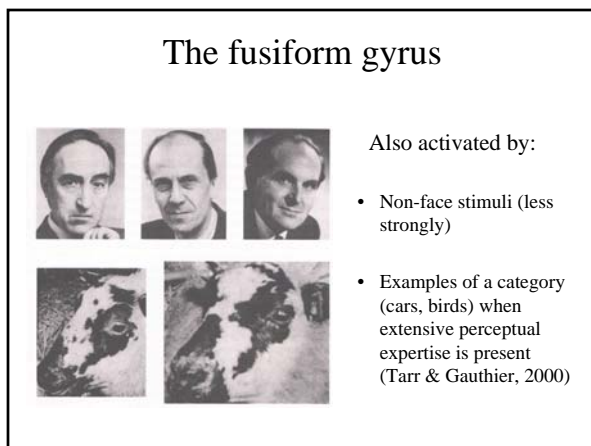
A different type of agnosia




- Closed head injury (Moscovitch et al., 1997, J. Cogn. Neurosci.)
- Patient
 - could recognize faces of all kinds, but not the individual objects that compose the face
 - was not even aware that the faces were composed of objects





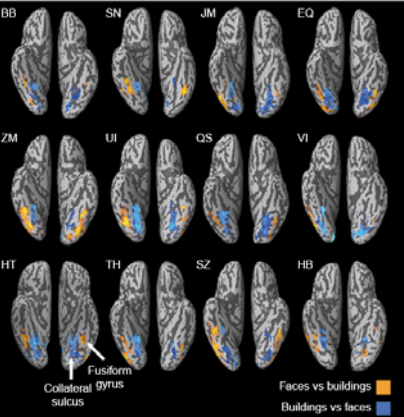


Greebles or faces



- Unfamiliar-looking objects
- At first, people have trouble recognizing them - fusiform responds weakly
- Later, people learn to recognize them - fusiform gyrus becomes more active (Gauthier et al., 2002)

fMRI experiment




Task: Subjects view faces vs. buildings

Results: Different regions activated

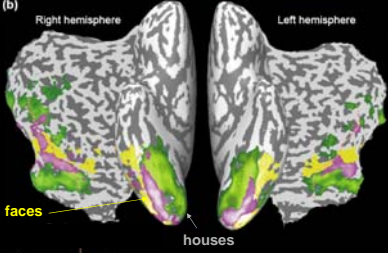
Conclusion: Different regions process different categories of objects?

Eccentricity organization

(a) Periphery Mid Center



(b) Right hemisphere Left hemisphere



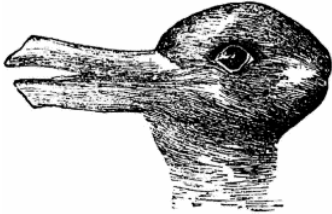
Task: Subjects view objects at different eccentricity

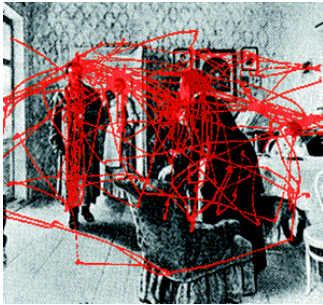
Results: Different regions activated

Conclusion: Topography of object areas follows eccentricity of visual field.

Malach et al., 2002, TICS

Visual field location and perceptual interpretation





Extracting meaning

Faces are:

- most often represented in foveal vision (in the center of visual field)
- much more important than other objects
- frequently encountered (expertise)
- seen in particular orientation
- processed holistically (in addition to part-by-part)

Visual Perception

