

# OBJECT RECOGNITION

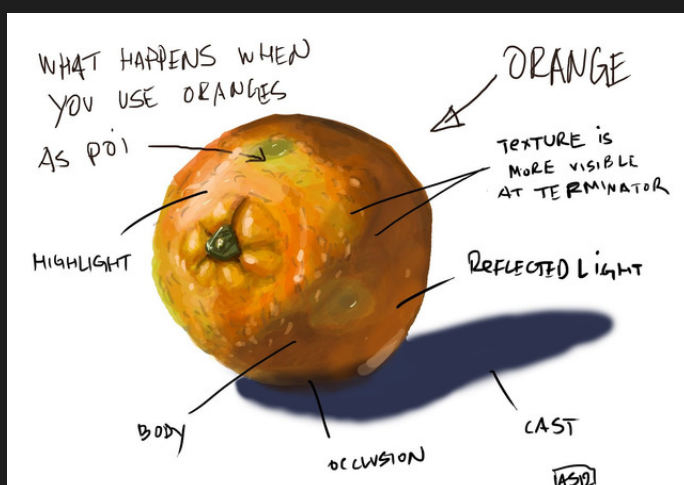
*An in-depth look into recognizing the world.*

Information sourced from Dr. Marlene Behrmann's publications  
<https://www.cmu.edu/dietrich/behrmannlab/Publications/index.html>

Object recognition is the ability to see an object's physical attributes & give that object a label or name.

## Steps of Object Recognition:

- Processing basic object components
- Object components are grouped by similarity
- Visual representation is matched with structural memory descriptions



## APPROACHES

### VIEWPOINT INVARIANT

Recognition time is not affected by the object's orientation.

The viewpoint of the object does speed up or slow down recognition speed

More popular approach for object recognition.

### VIEWPOINT DEPENDENT

Recognition time is dependent on a variety of factors, including the object's orientation

The opposite of the viewpoint invariant approach, believing that viewpoint does matter.

## DR. BEHRMANN'S RESEARCH

### Subcortical facilitation of behavioral responses to threat

Humans are more likely to respond quicker to threatening images than neutral

The prefrontal, anterior cingulate, & orbitofrontal cortices have been seen to respond to threatening images in imaging studies

### Temporal lobe contribution to perceptual function

Investigated if there are unique impairments in individuals that have damage to the hippocampus, perirhinal cortex, or medial temporal lobe in comparison to those with congenital prosopagnosia

There are slight differences in defects for each group of lesions. Deficits in both congenital prosopagnosia & medial temporal lobes go beyond facial processing.



Dr. Behrmann is mainly focusing on perception & how that is affected by various lesions in the brain. She is also interested in agnosia, the inability to process sensory information, caused by lesions