Table of Contents

- Multiple Neural Pathways for Encoding Visual Shape
  - Dorsal Visual Cortex Processes for Shape Perception
    - Shape of 3D concavities
    - 3D letter recognition
  - Role of the Basal Ganglia in Shape-based Object Recognition
  - Influence of Physical Size on Perception and Memory for Objects
    - Effect of real-world size on object shape perception
    - Effects of large-scale spatial separation on word item memory
- Identifying Object Shape Features
  - How does the visual system identify parts of common objects?
  - Which face features do we use to recognize different emotions?
  - Detecting clusters of objects
- Visual Numeracy
  - Cortical networks for understanding numbers
    - Mathematical Ways of Operating - Neural Correlates
    - Meta-analysis of numeracy neuroimaging
  - How does visual grouping affect enumeration?
  - How do generative AI image models estimate number?
- Visual Esthetics
- Hearing Disorders

Summary outline of research studies currently active.

In addition to holding brief descriptions of the projects, these wiki pages are used by the lab to document ongoing work (for example, software programming notes).

We like to write lots of notes on the fly. The waist-deep-in-a-project, nuts-and-bolts documentation pages are usually only available to lab members.

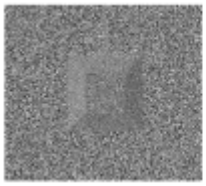
We are happy to share code and techniques upon request.

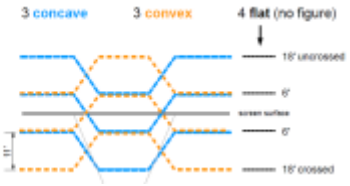
Multiple Neural Pathways for Encoding Visual Shape

Dorsal Visual Cortex Processes for Shape Perception

Shape of 3D concavities

fMRI of perceiving shape from 3D concavities





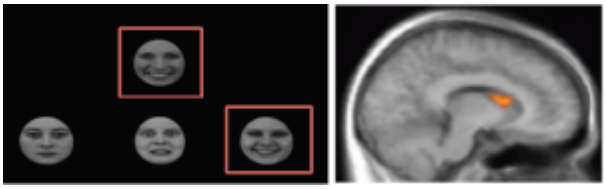
3D letter recognition

3D letter recognition and visual crowding



Role of the Basal Ganglia in Shape-based Object Recognition

Holistic perception in Parkinson's Disease

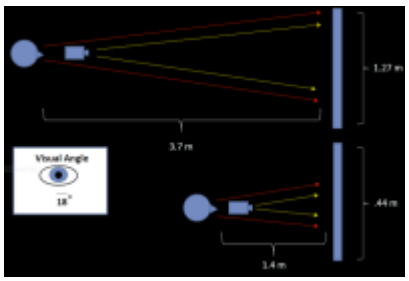


Influence of Physical Size on Perception and Memory for

Objects

Effect of real-world size on object shape perception

Physical Size and Holistic Perception



fMRI Study on Physical Size and Holistic Perception

Effects of large-scale spatial separation on word item memory

Learning in Large-Scale Interactive Displays

Identifying Object Shape Features

How does the visual system identify parts of common objects?

Crowding and parts-based recognition

Deferred decisions in object recognition

Which face features do we use to recognize different emotions?

Name That Emotion!

Detecting clusters of objects

What is a Cluster?

Visual Numeracy

Cortical networks for understanding numbers

Mathematical Ways of Operating - Neural Correlates

Mathematical Ways of Operating - Neural Correlates

Meta-analysis of numeracy neuroimaging

Meta-analysis of intraparietal sulcus (IPS) fMRI activation during numerical reasoning

How does visual grouping affect enumeration?

Visual Number Sense

Visual Number Sense fMRI

How do generative AI image models estimate number?

Counting on AI

Visual Esthetics

Color preference

Hearing Disorders

Misophonia

From:
https://wiki.anthonycate.org/ - **Visual Cognitive Neuroscience**

Permanent link:
https://wiki.anthonycate.org/doku.php?id=research:research

Last update: **2024/02/11 02:07**