

PSYC 1340 / VLST 2110 Perception

Recitation 9 - Midterm Review

slides.organica.dev

Table of Contents

1. [Logistics](#)
2. [Exam Coverage](#)
3. [Main Topics](#)
4. [Questions?](#)
5. [Anatomy and Physiology Review](#)
6. [Receptive Field Practice](#)
7. [Marr's Levels of Analysis Review](#)
8. [Fundamental Hue Review](#)

Logistics

1. Exam on Monday, in class, at the usual time.
2. 90 minutes to complete everything.
3. 75% of the points will be MCQ and 25% will be FRQ
 1. Exam length will be a bit shorter to reduce time pressure.
4. Bring a #2 Pencil for MCQ

Exam Coverage

1. Lectures Sept 25 - Nov 4
2. Material covered in HWs 4-7 inclusive
3. Textbook Reading List (Posted to Canvas)
 1. Goldstein and Cacciamani Chapter 2, 3.4, 4, 5, 9
4. Other Readings:
 1. Marr's levels of analysis
 2. Gregory's chapter on development (SB)
 3. Handout: Probability basics
 4. Handout: Receptive field computations
 5. Handout: Fundamental Hues

Main Topics

- Basic Anatomy and Physiology: Important cell types and what they do.
 - What happens when there are deficits to a particular region/connection/cell type?
- How does the V1 work? What's a retinotopic map? What are its features, why is it useful?
- What happens after V1? Ventral and Dorsal Streams.
- How does color vision work? What cells are involved? How does color blindness work? How do color-based illusions work?
- How does language interact with color perception?
- Development of perception: do we need to learn to perceive?
- Gestalt laws of grouping
- How do we explain complex systems? Marr Levels

Questions?

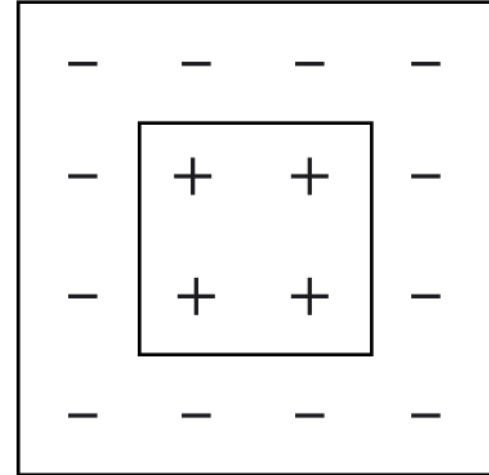
Anatomy and Physiology Review

1. Retina: Five major cell types
2. Visual Flow of information from eyes to brain
 1. Include nuclei and direction
3. Visual Cortex
 1. Include hypercolumns, retinotopic map, and dorsal and ventral streams

Receptive Field Practice

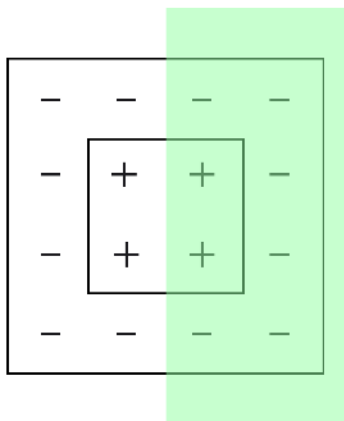
Compute the anticipated spikes from a stimulus over the following receptive field.

White regions have an intensity of 5 and green regions have an intensity of 1.

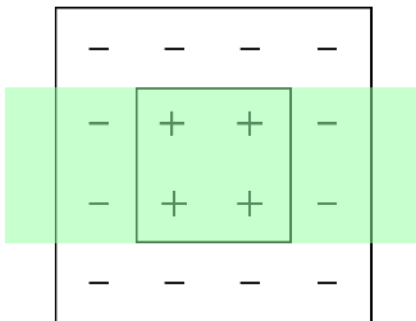


Receptive Field Practice

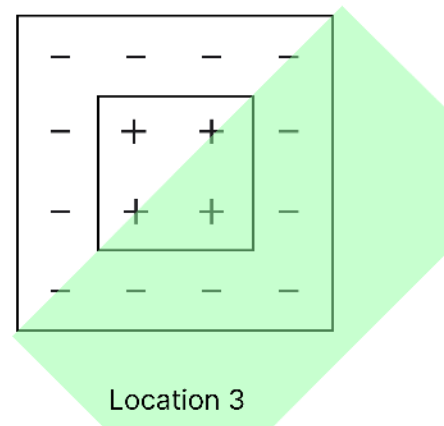
White regions have an intensity of 5 and green regions have an intensity of 1.



Location 1



Location 2



Location 3

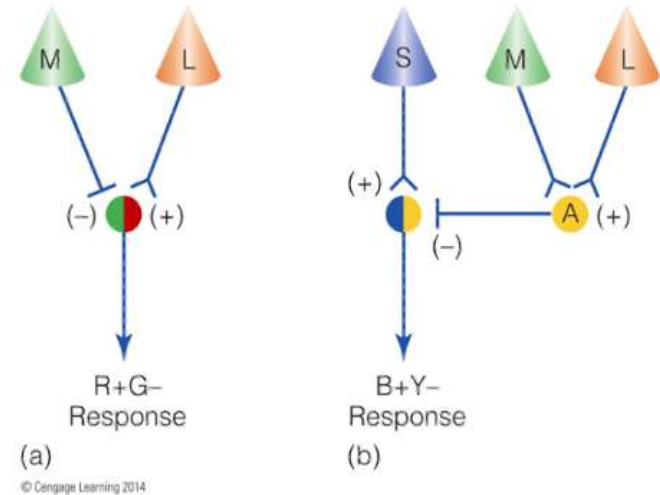
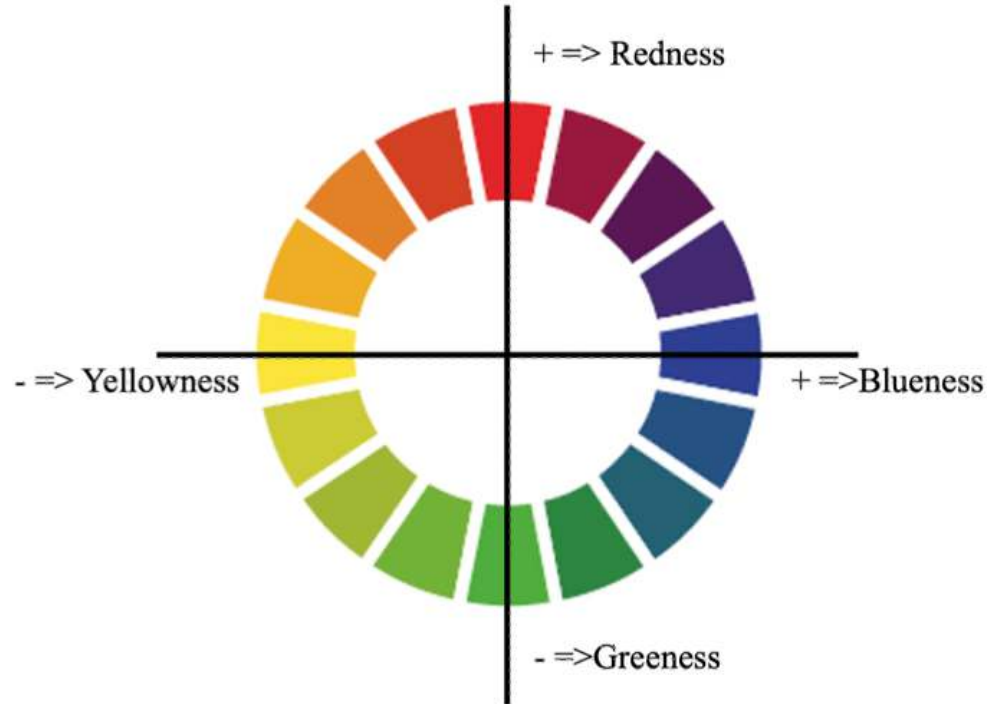
Marr's Levels of Analysis Review

What are the three levels?

Provide an example for each level.

Fundamental Hue Review

1. How do we get each of the fundamental hues? What would the cone/neuron responses need to be?



See you next week!