

# Neurobiology in Antiquity: Exploring Sense Perception in Greek and Roman Thought

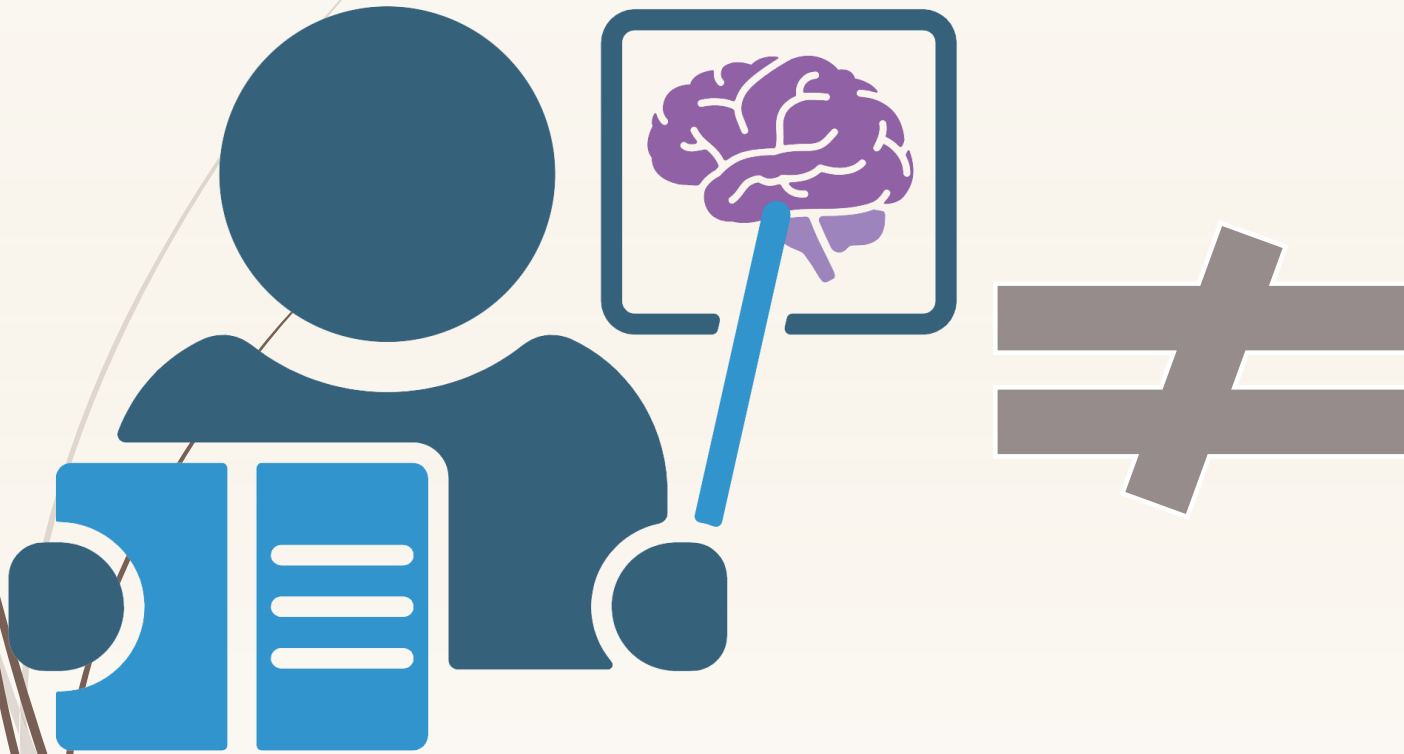


THE COLLEGE OF  
**WOOSTER**

Rae Harris  
Classical Studies,  
Neurobiology  
Spring 2025



# Classical Philosophy in STEM Courses



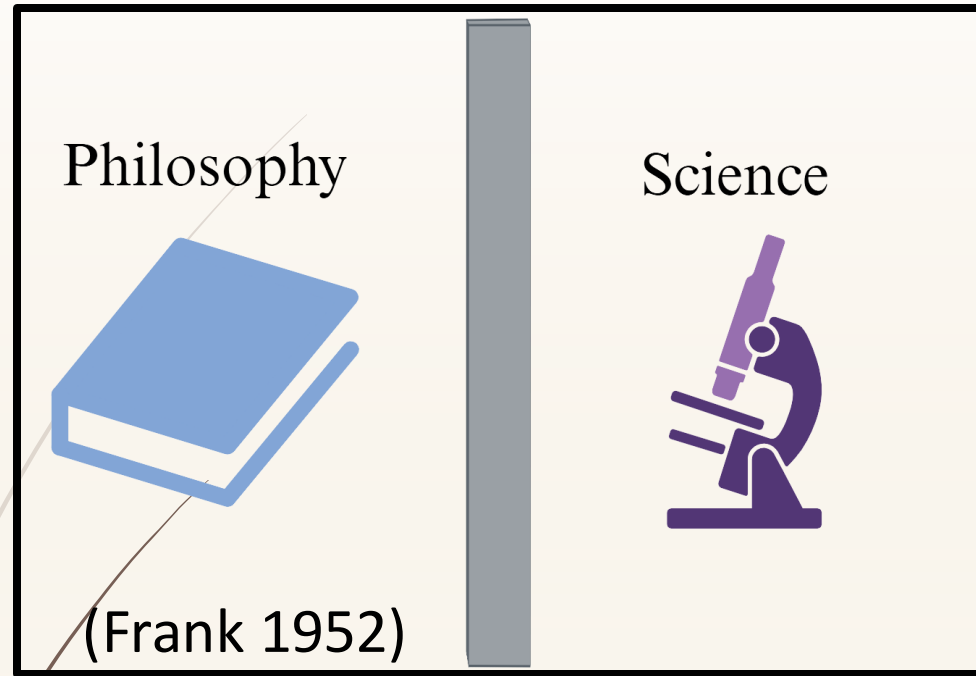
Plato and Aristotle  
(*The School of Athens* by Raphael)



# Research Goals

1. Demonstrate how philosophy is relevant within a STEM education
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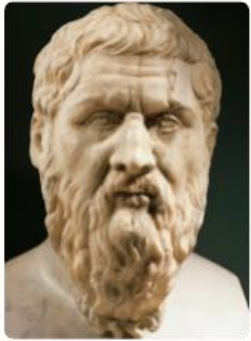
# Philosophy is the Foundation of Science



# Ancient Philosophers

428 - 348 BCE

**Plato**

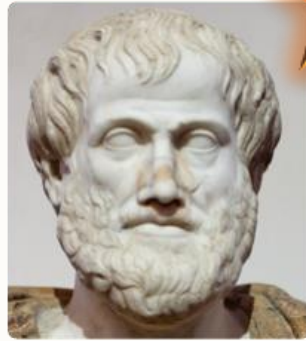


*The Timaeus*

*The Phaedo*

384 - 322 BCE

**Aristotle**



*On the Soul*

*Short Works On Nature*

◀ Over 200 Years ▶

99 - 55 BCE

**Lucretius**



*On the Nature of the Universe*

129 - 216 CE

**Galen**

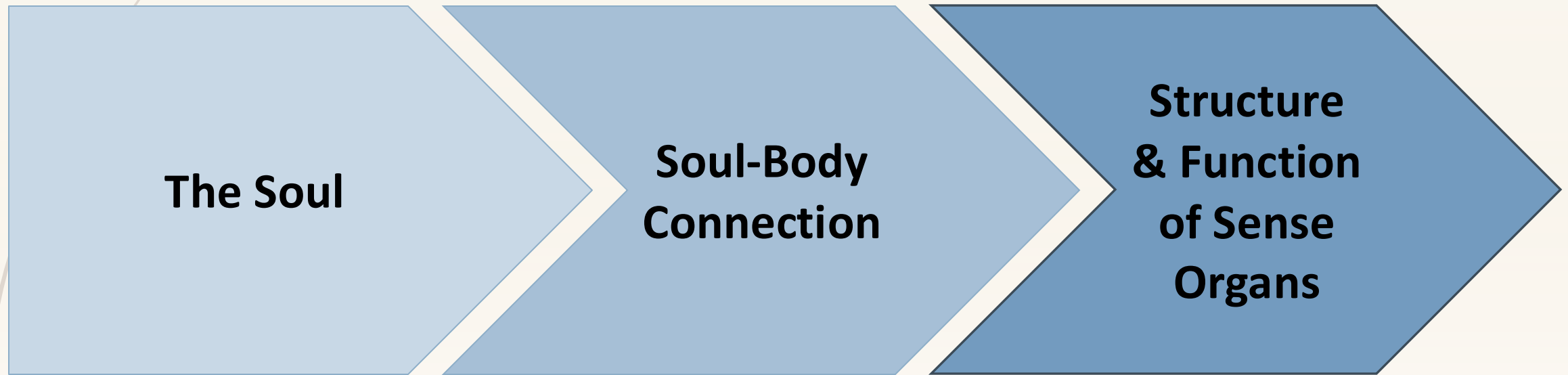


*On the Usefulness of the Parts of the Body*

*On the Doctrines of Hippocrates and Plato*

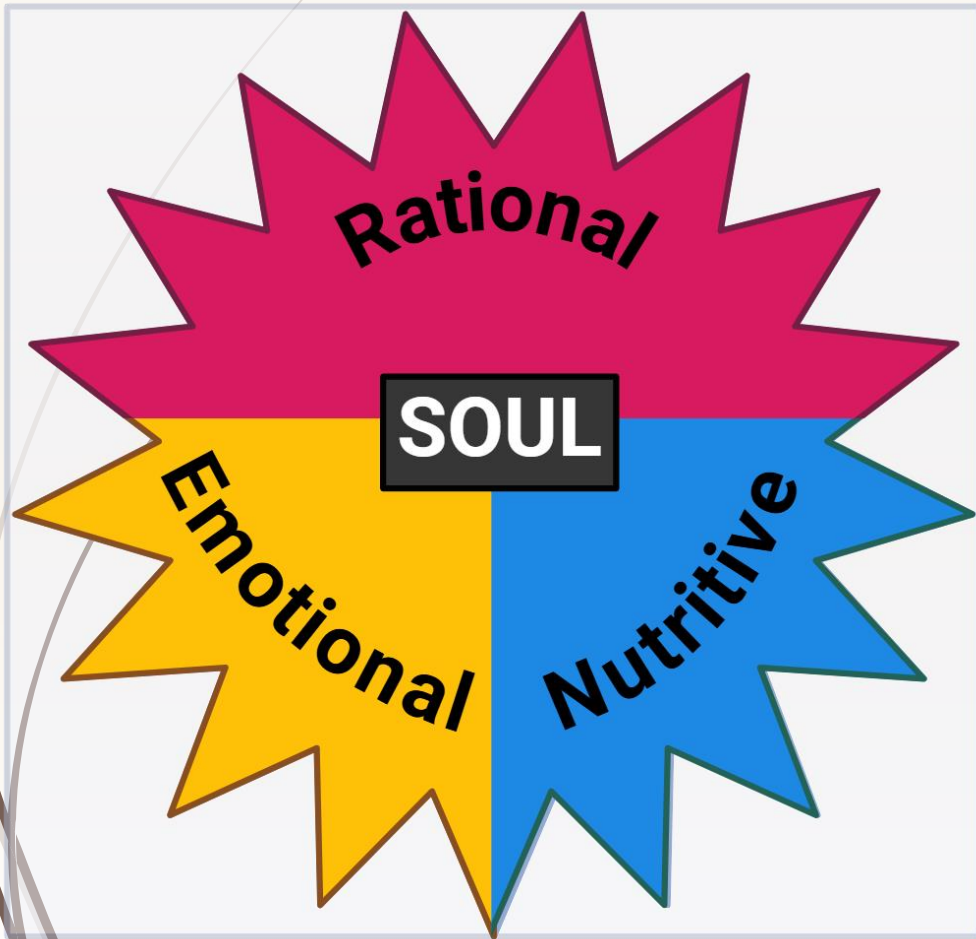
*The Soul Depends on the Temperament of the Body*

# Components of Philosophy on Sense Perception



# Aristotle's Model of Sense Perception

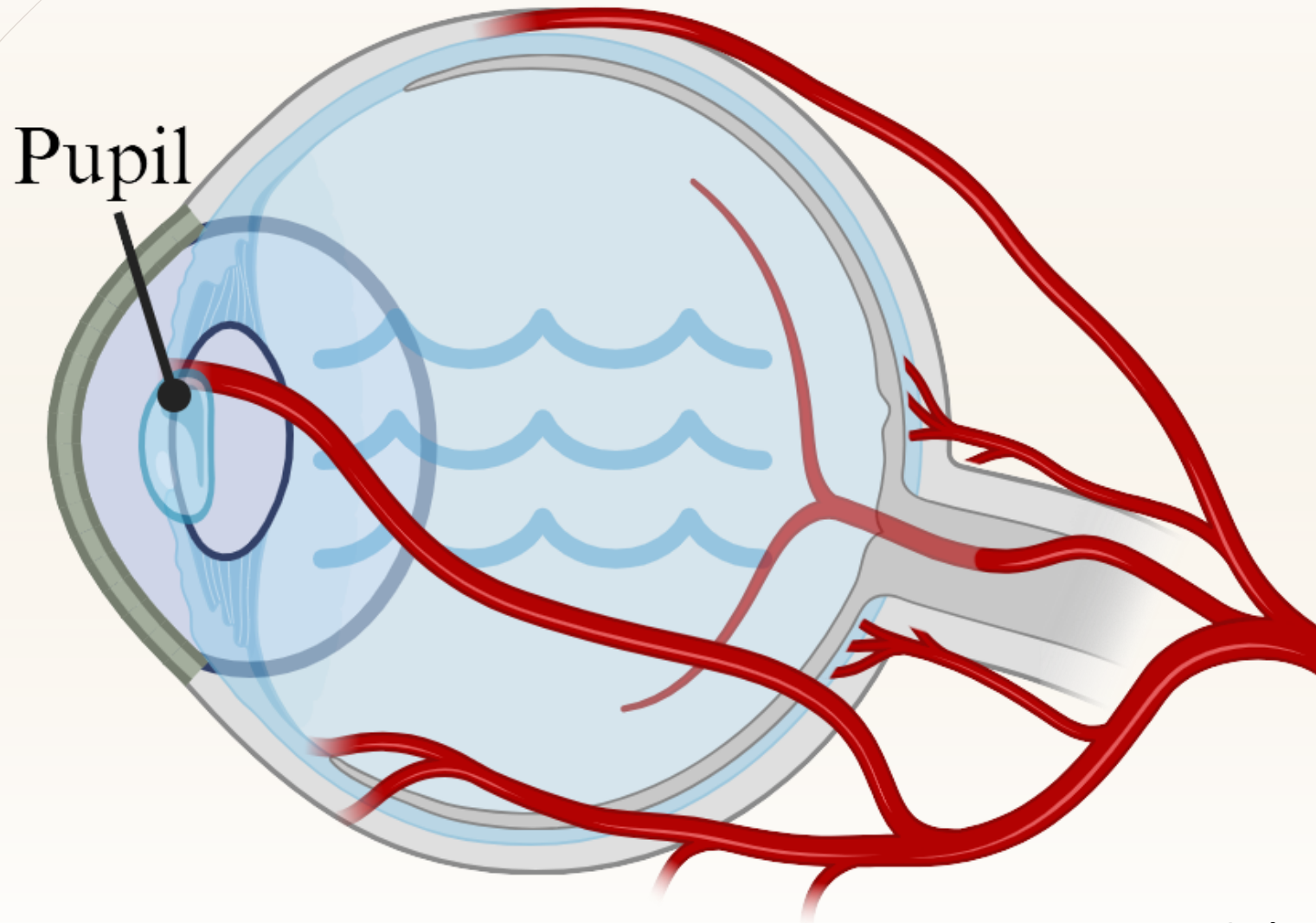
The Soul





# Aristotle's Model of Sense Perception

## The Structure & Function of Sense Organs: The Eye



Arist. *Parv. nat.* 438a-b.



# Galen's Model of Sense Perception

## The Soul

**Rational**

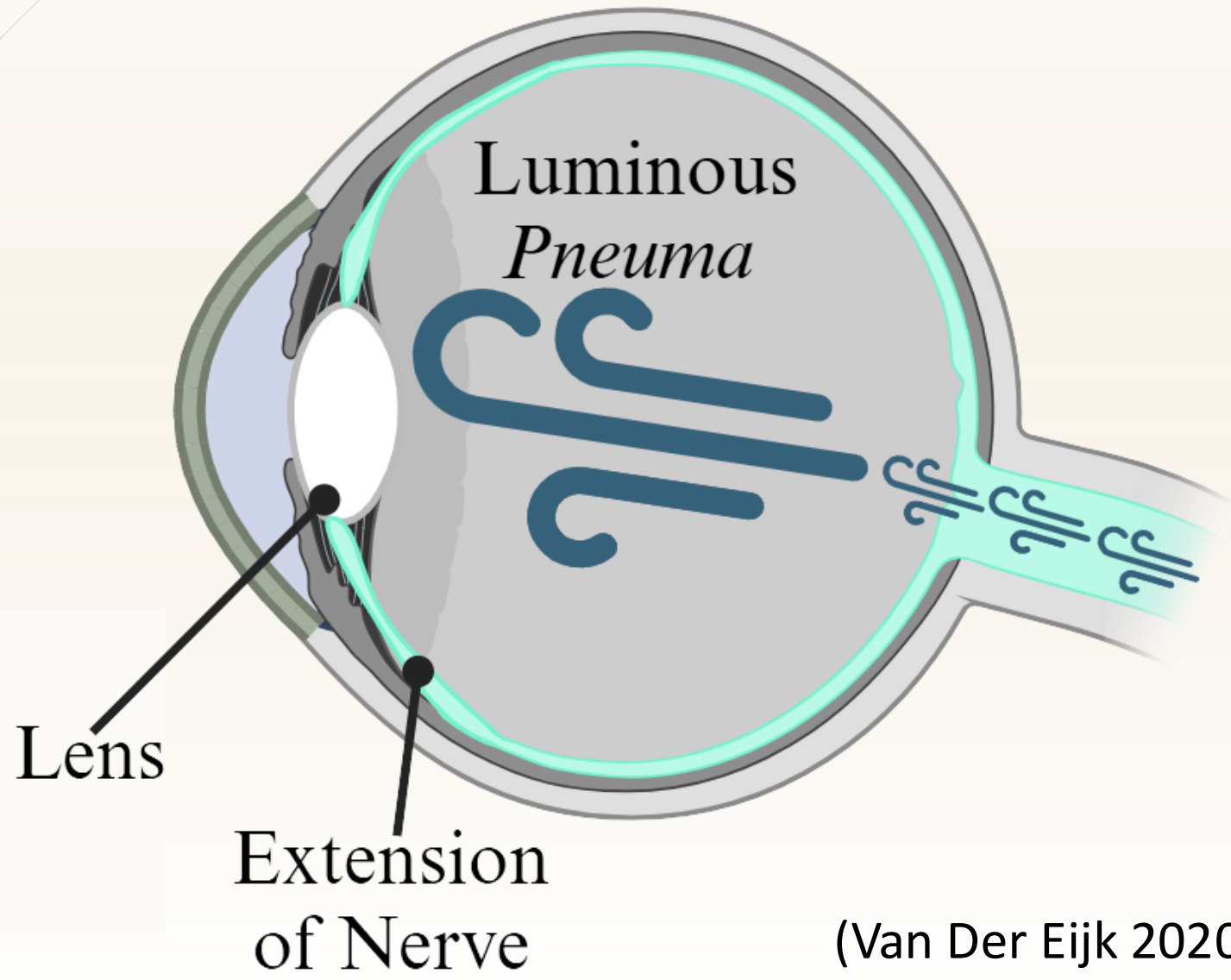
**Emotional**

**Nutritive**



# Galen's Model of Sense Perception

## The Structure & Function of Sense Organs: The Eye



(Van Der Eijk 2020; Gal. UP, 10.2.71-72. )

# Modern Model of Sense Perception

## The Soul



↑ Belief in Neuroscience

↓ Belief in Soul

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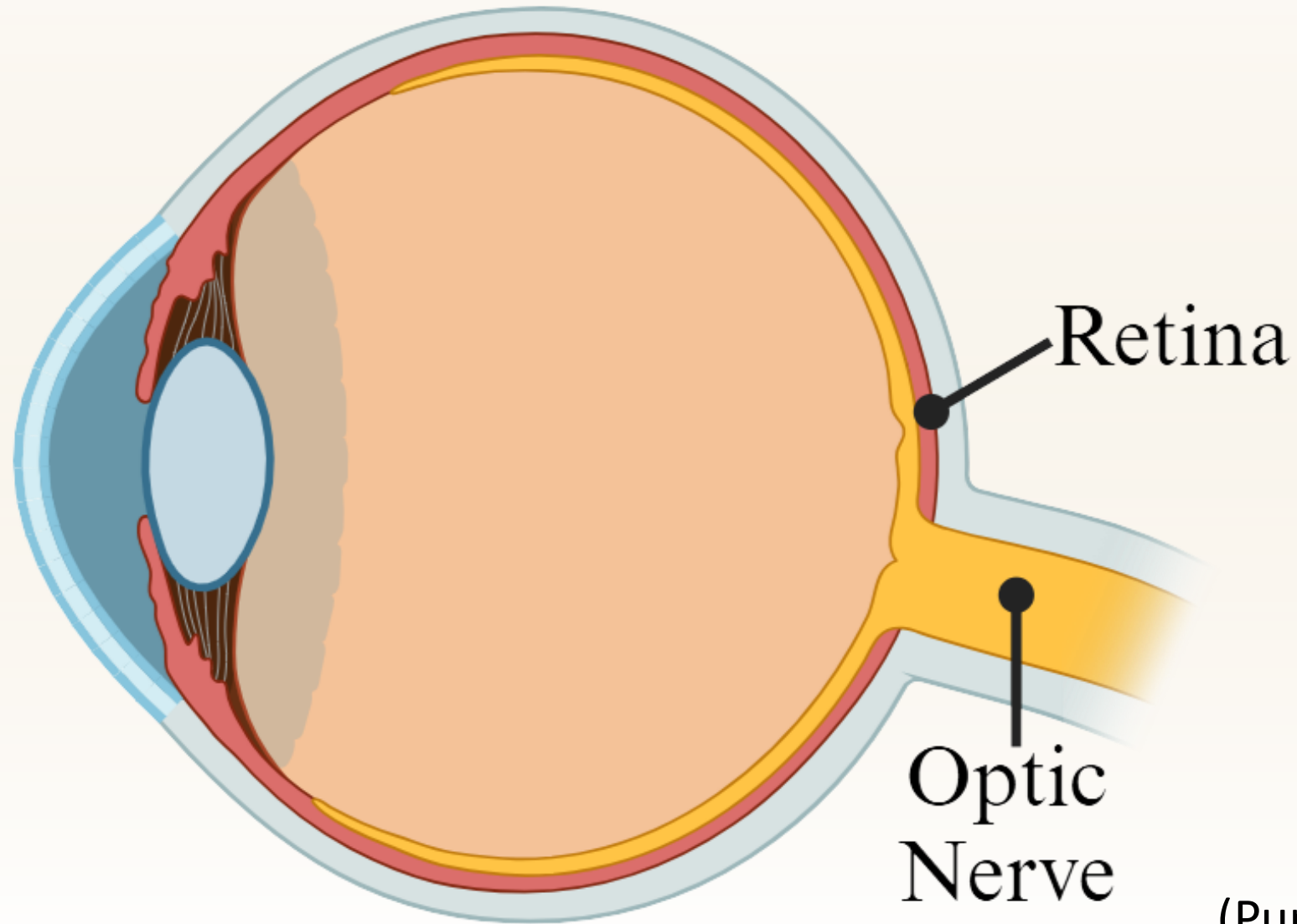
↓ Belief in Neuroscience

↑ Belief in Soul

(Preston, Ritter, and Hepler 2013)

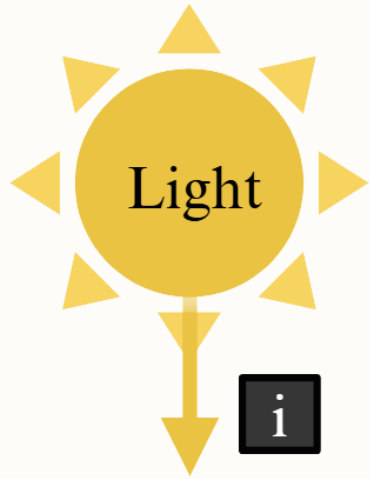
# Modern Model of Sense Perception

## The Structure & Function of Sense Organs: The Eye

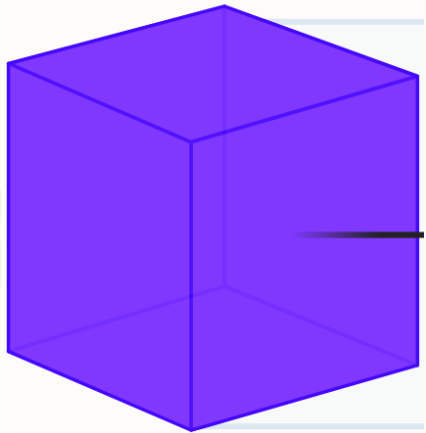


(Purves et al. 2018)

# Modern Visual Pathway



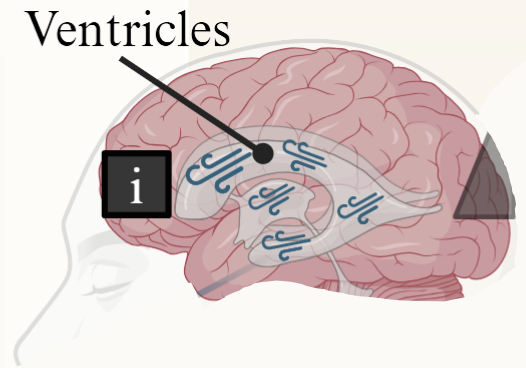
# Aristotle's Visual Pathway



Sensible Object

(Aristotle, *On the Soul. Parva Naturalia. On Breath.*)

# Galen's Visual Pathway

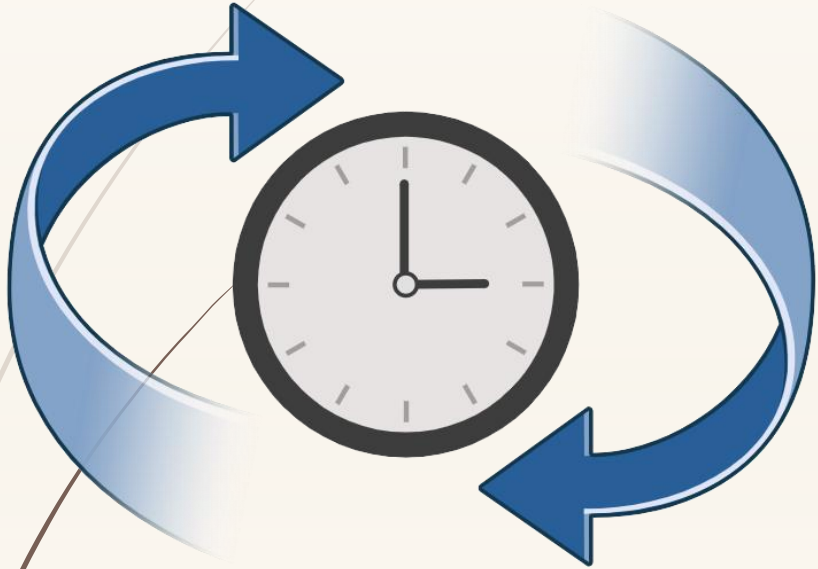


(Galen, *On the Doctrines of Hippocrates and Plato*;  
*On the Usefulness of the Parts of the Body*.)



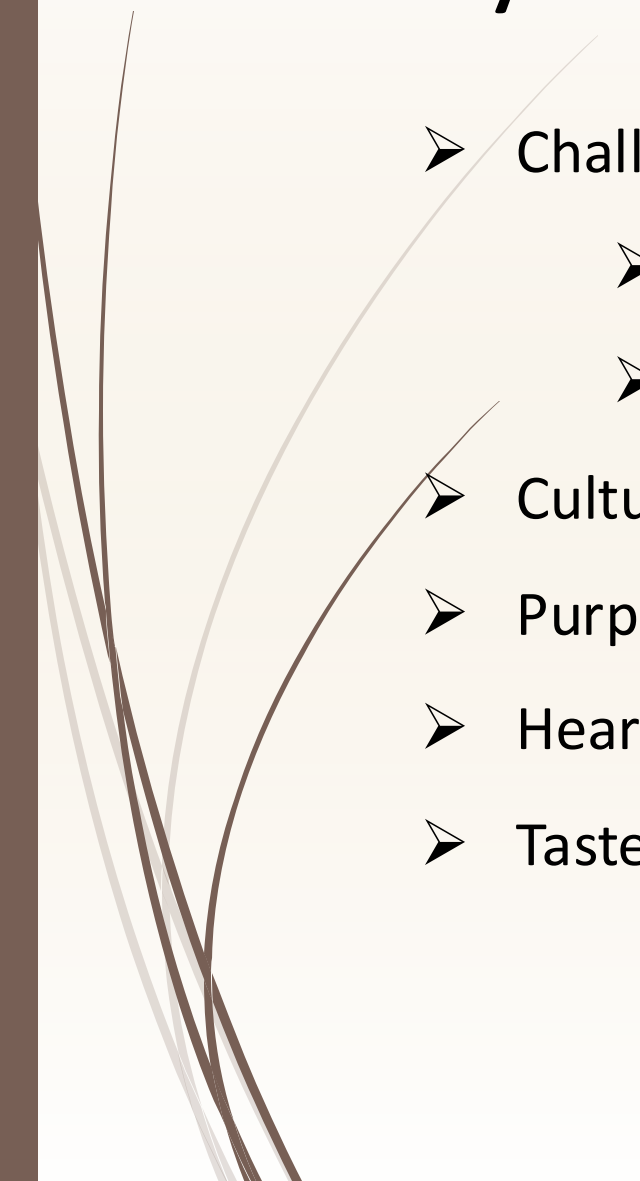
# Similarities

Philosophers ask the questions that  
scientists seek to answer





# Beyond Vision

- Challenge of Translation
    - Greek to Latin to English
    - *Aisthēsis* – “Sensation” versus “perception”
  - Cultural Context – Challenge of seeing as the ancient did
  - Purpose of the Senses – sense superiority between vision and hearing
  - Hearing and oral tradition
  - Taste and social status
- 



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# Works Cited

All images were made with Biorender.com

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