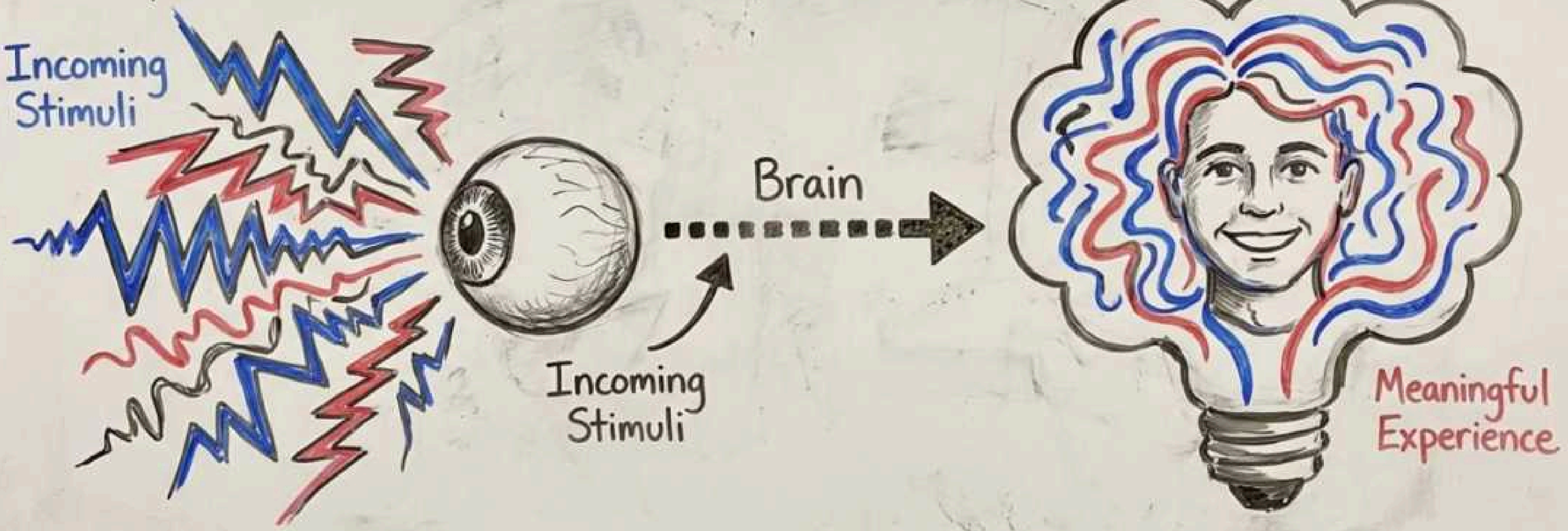
Sensation vs. Perception

[3.1]

- Sensation: Detecting Energy
- Perception: Interpreting Meaning

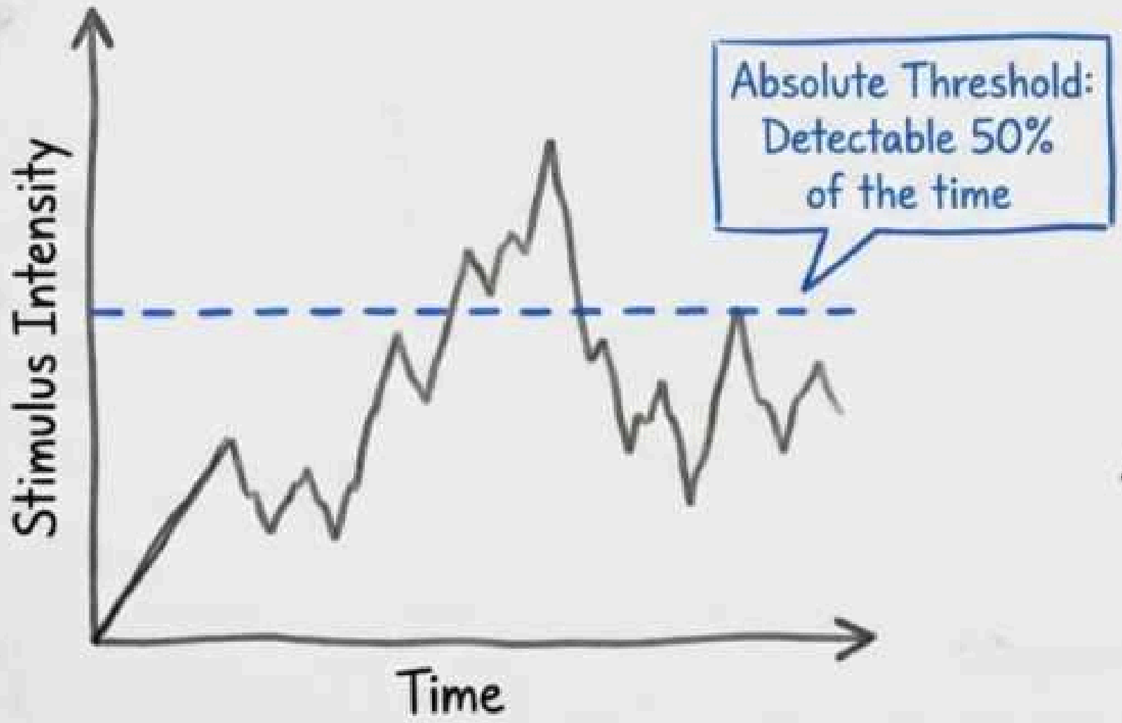


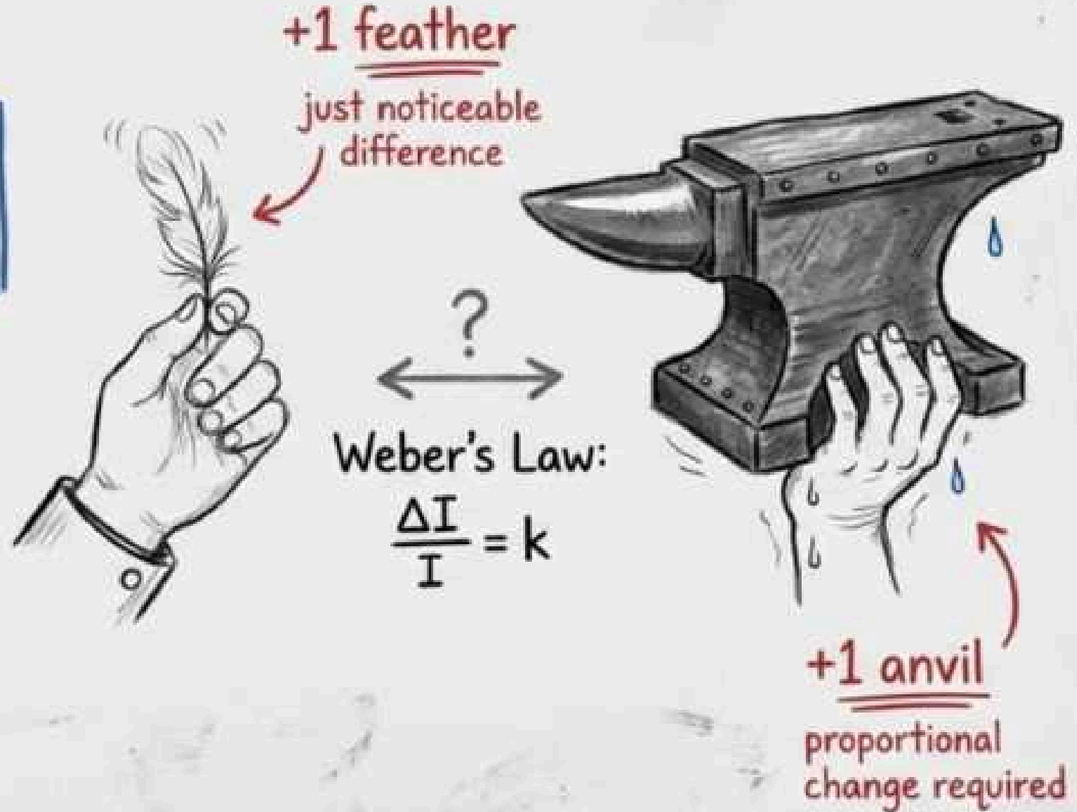
Gemini Notebook

Transduction & Thresholds

3.2

- Transduction: Energy -> Nerve Signals
- Absolute Threshold (50% Detection)
- Weber's Law (Proportional Change)



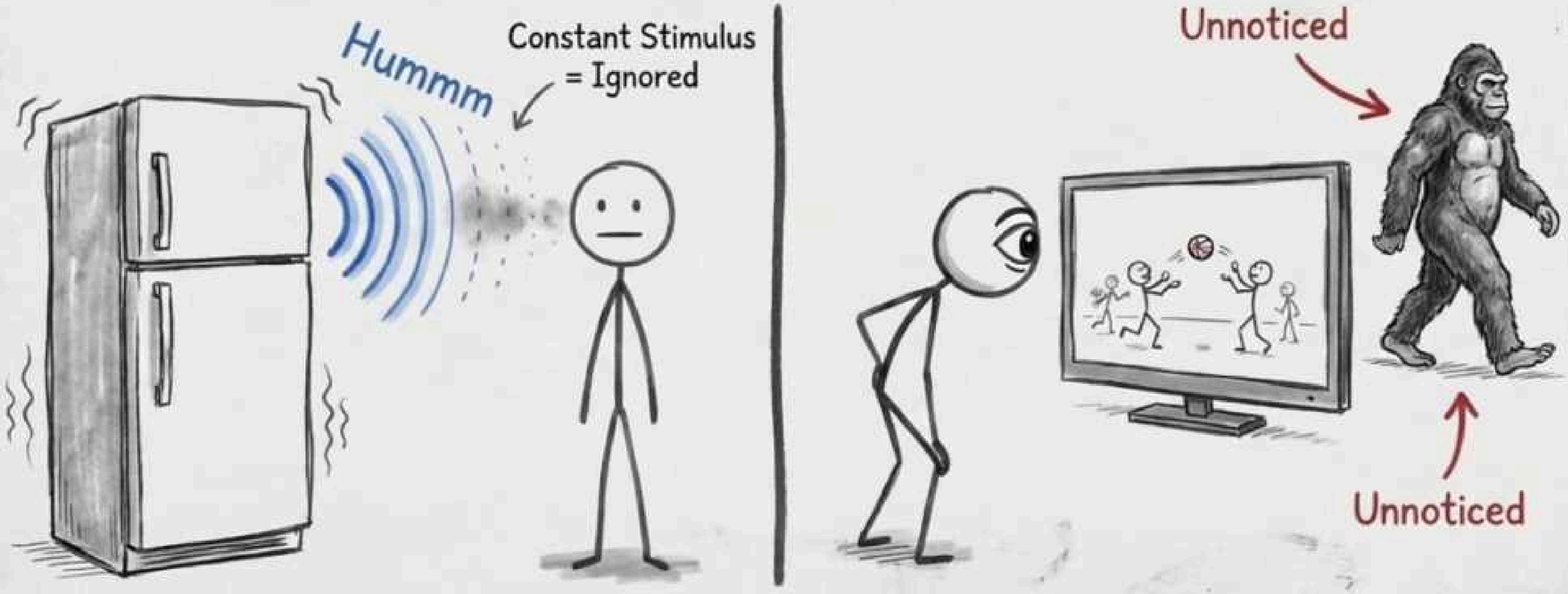


Gemini Notebook

Adaptation & Attention

3.3

- Sensory Adaptation (Constant Stimulus)
- Inattentional Blindness (Limited Attention)

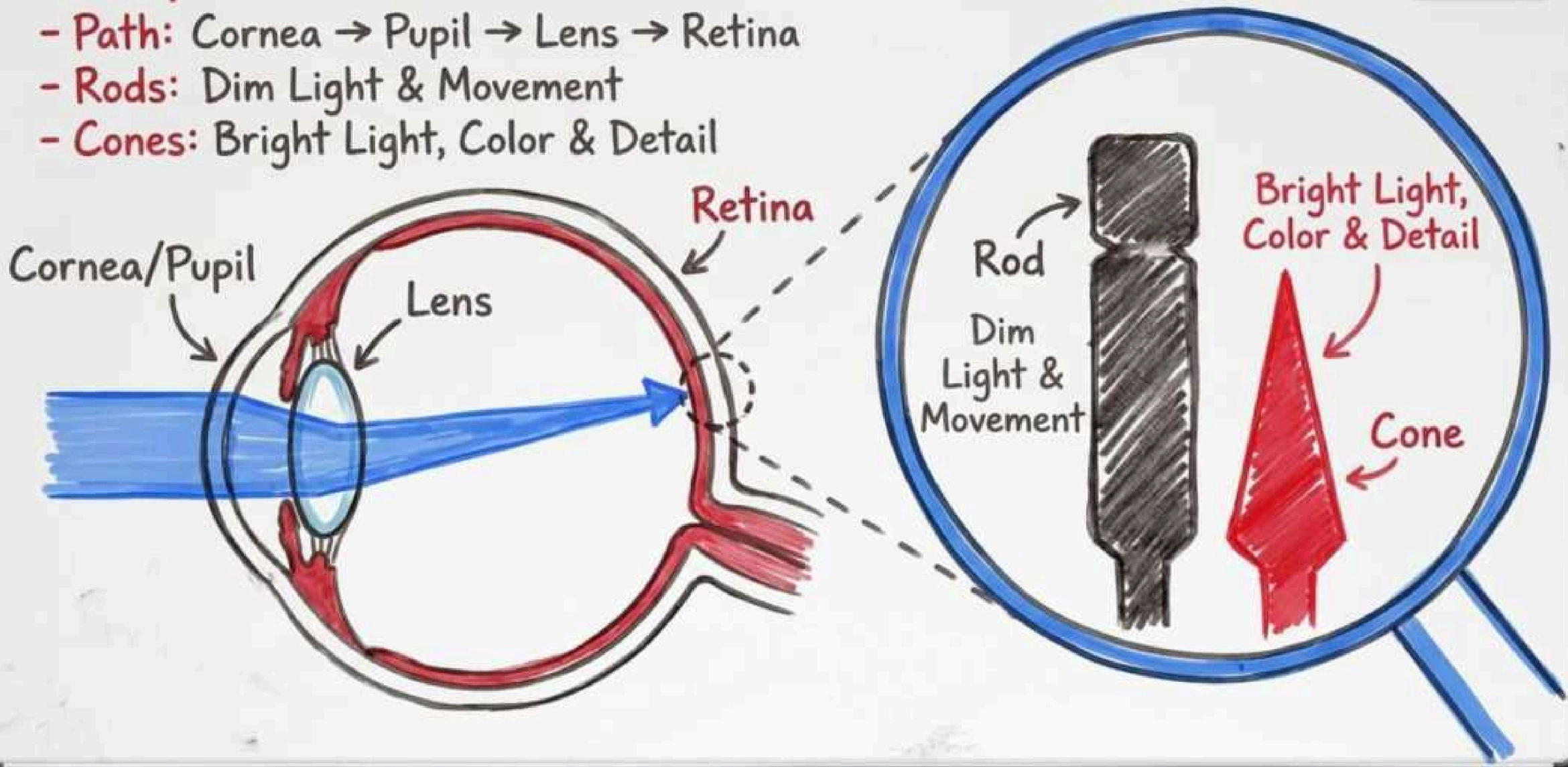


Gemini Notebook

The Eye & The Retina

[3.4]

- **Path:** Cornea → Pupil → Lens → Retina
- **Rods:** Dim Light & Movement
- **Cones:** Bright Light, Color & Detail

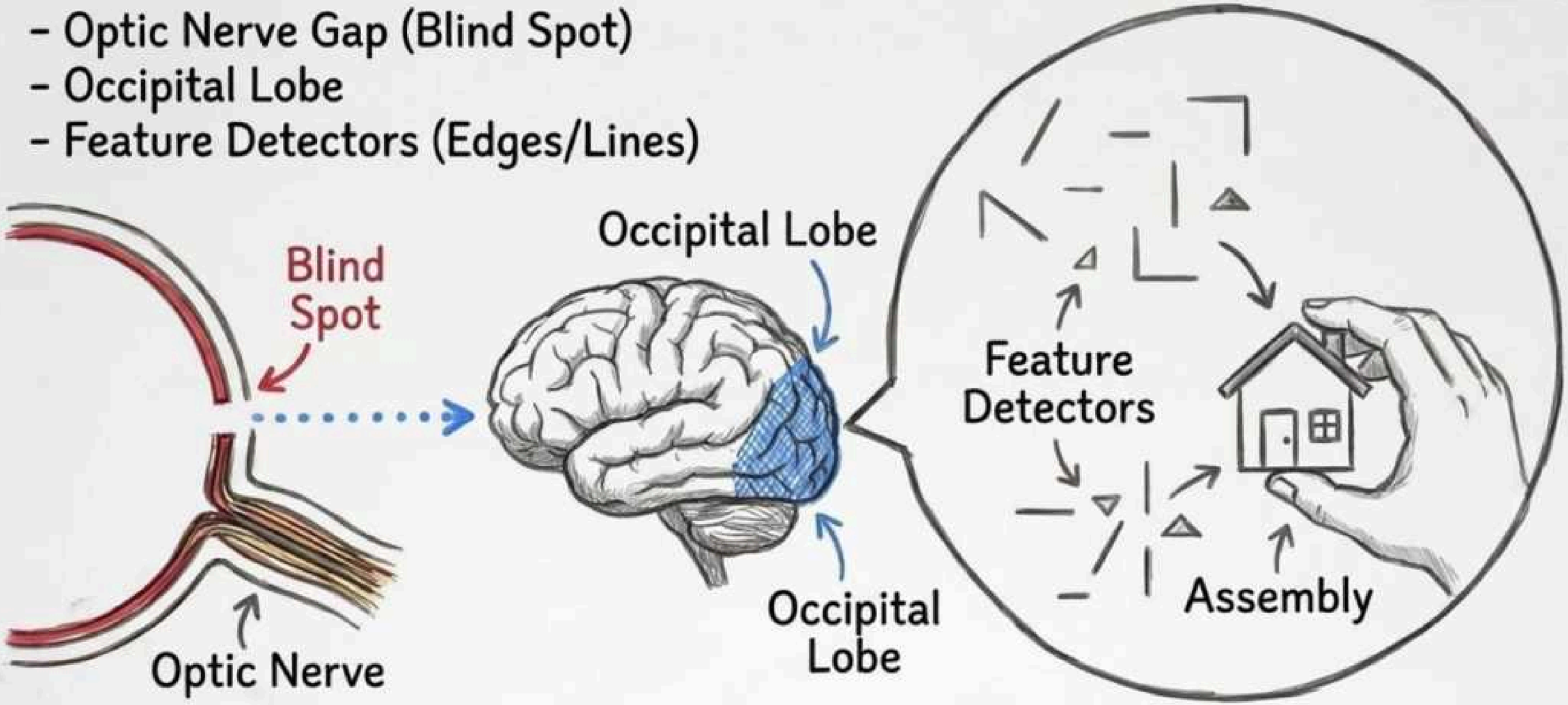


Gemini Notebook

Blind Spots & Brain Assembly

[3.5]

- Optic Nerve Gap (Blind Spot)
- Occipital Lobe
- Feature Detectors (Edges/Lines)



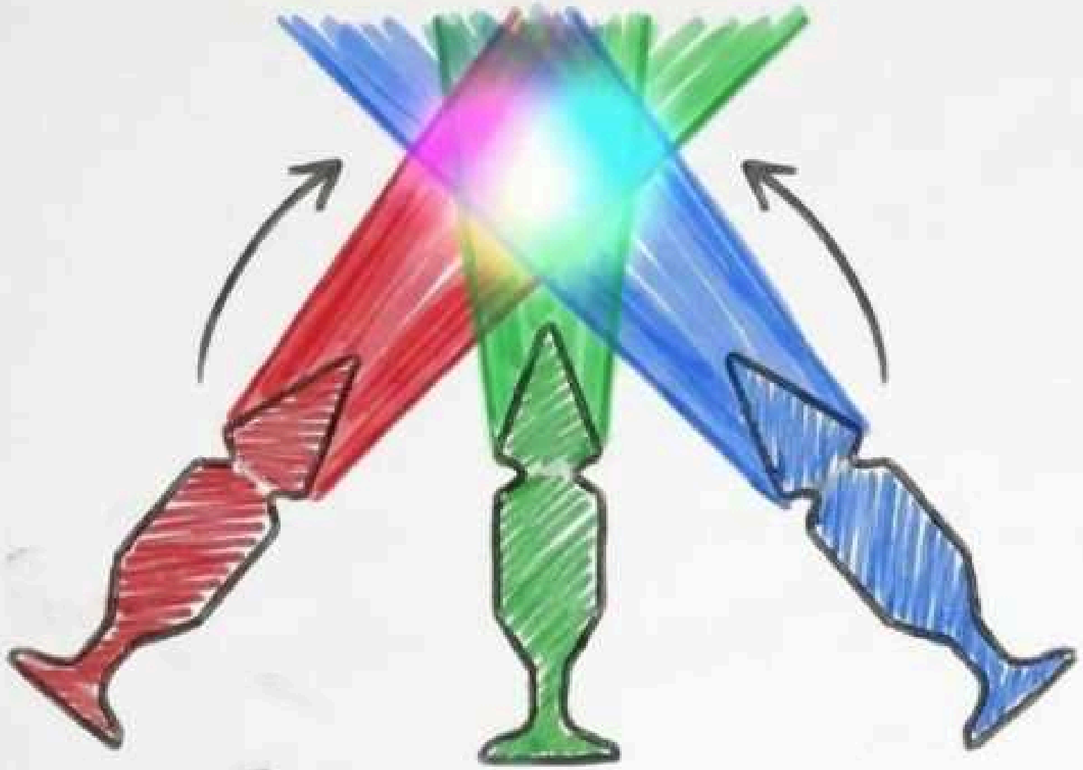
Gemini Notebook

Color Vision Theories

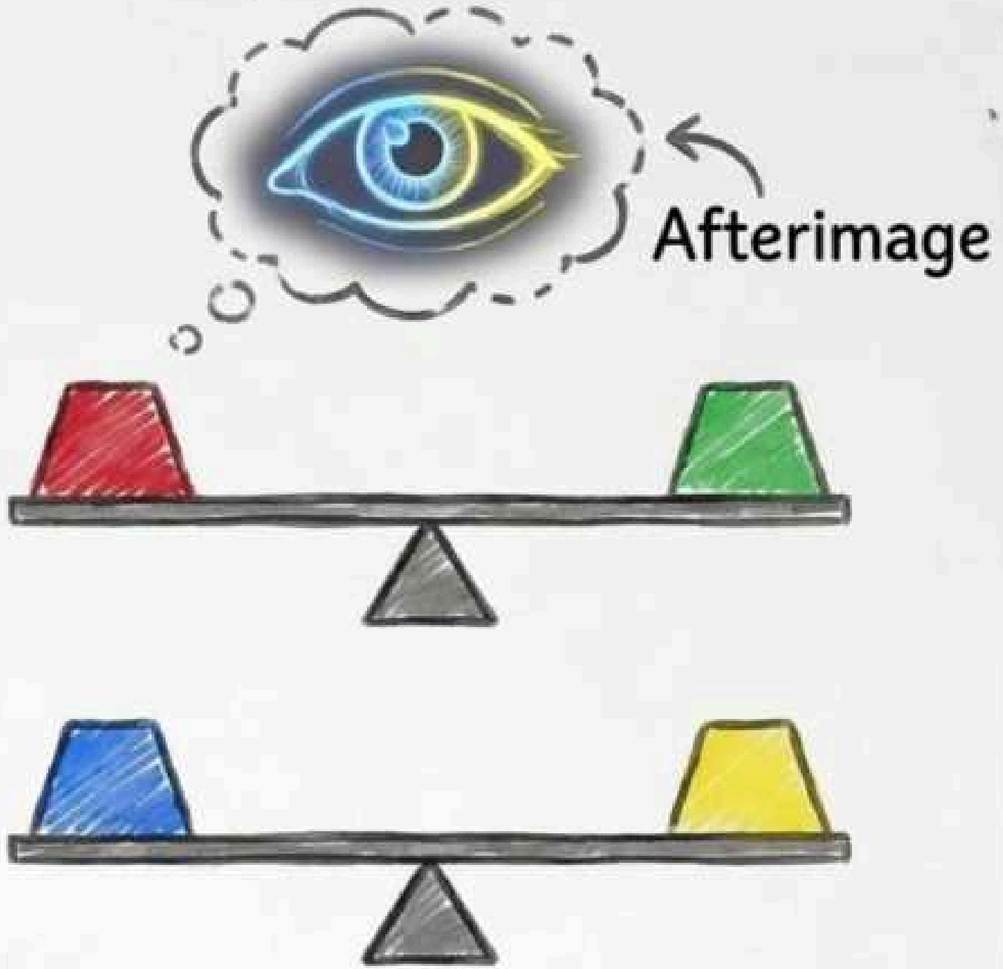
[3.6]

- Trichromatic (Red, Green, Blue Cones)
- Opponent-Process (Paired Opposites)

Trichromatic



Opponent-Process

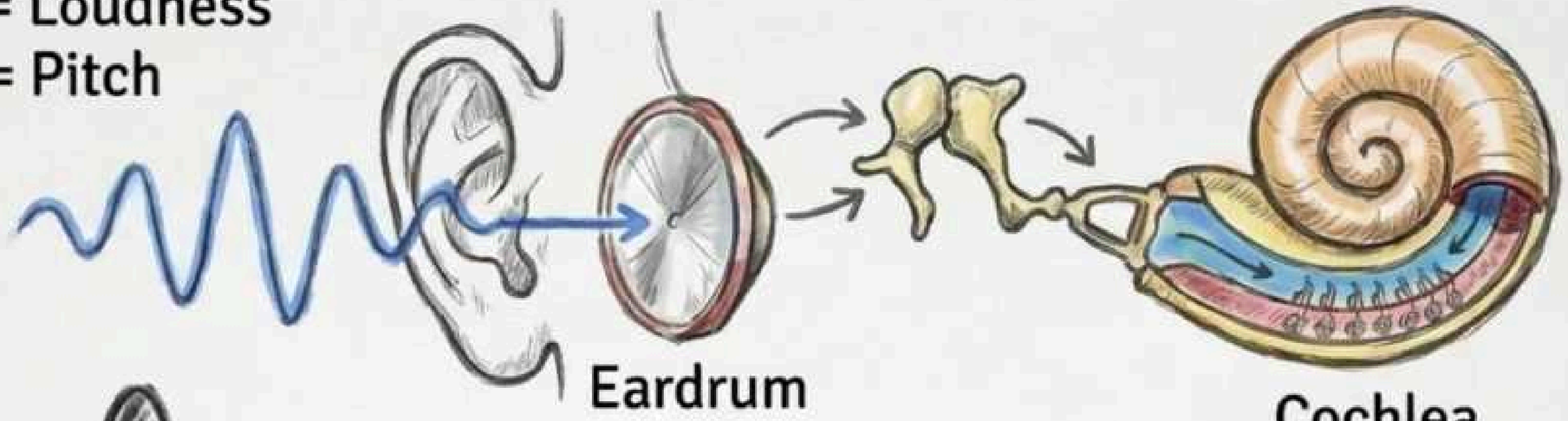


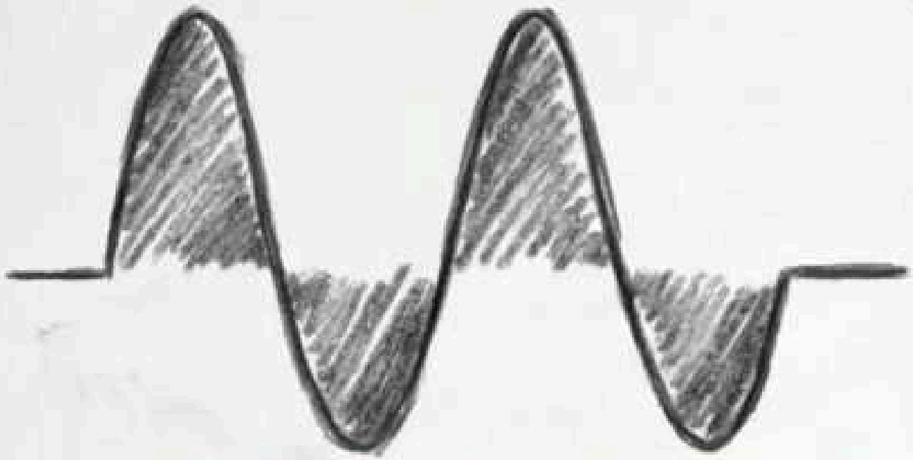
Gemini Notebook

Hearing & Sound Waves

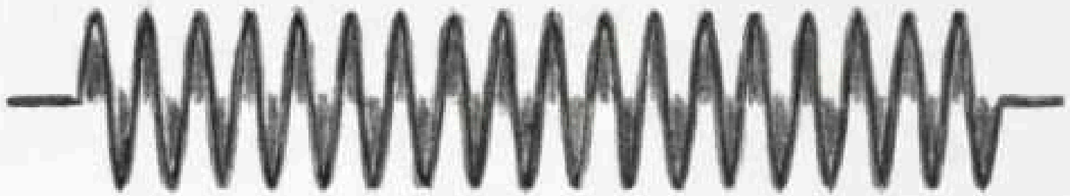
[3.7]

- Vibrations → Eardrum → Bones → Cochlea
- Amplitude = Loudness
- Frequency = Pitch





High Amplitude = Loud



High Frequency = High Pitch

Gemini Notebook

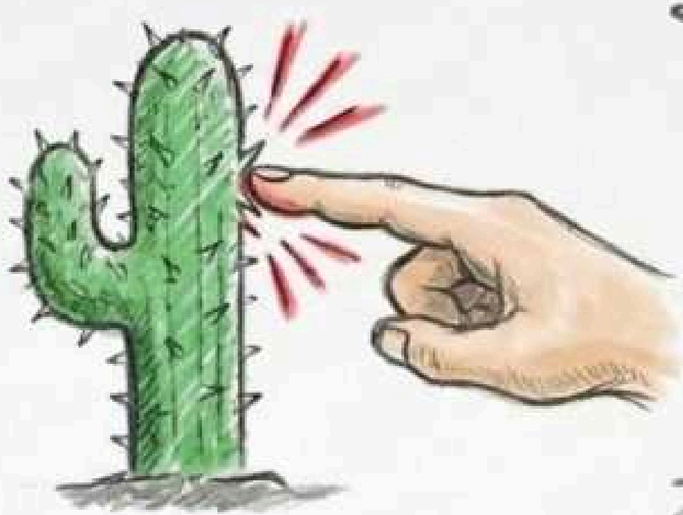
Chemical, Tactile & Body Senses

[3.8]

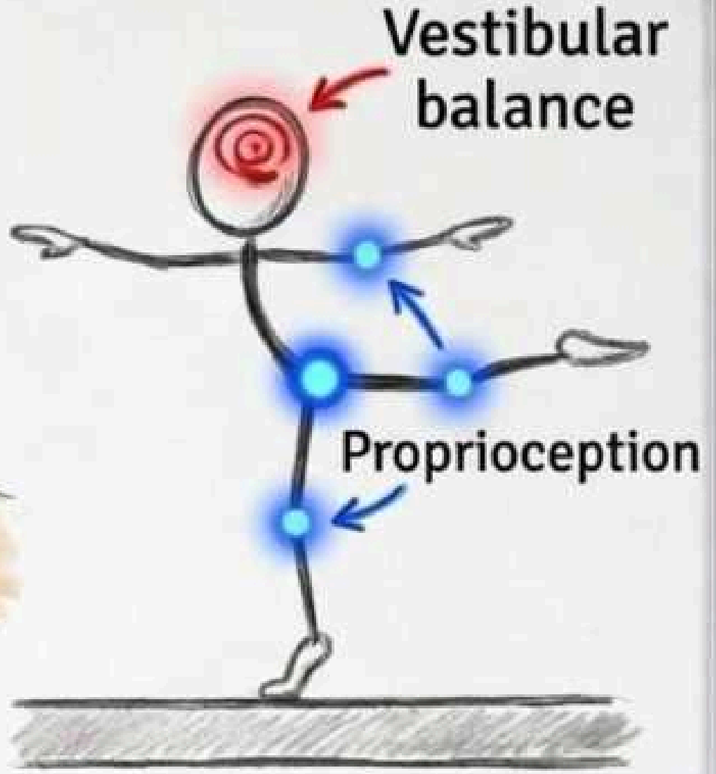
- Taste + Smell = Flavor
- Touch (Pressure, Temp, Pain)
- Vestibular (Balance) & Proprioception (Limbs)



Chemical



Tactile



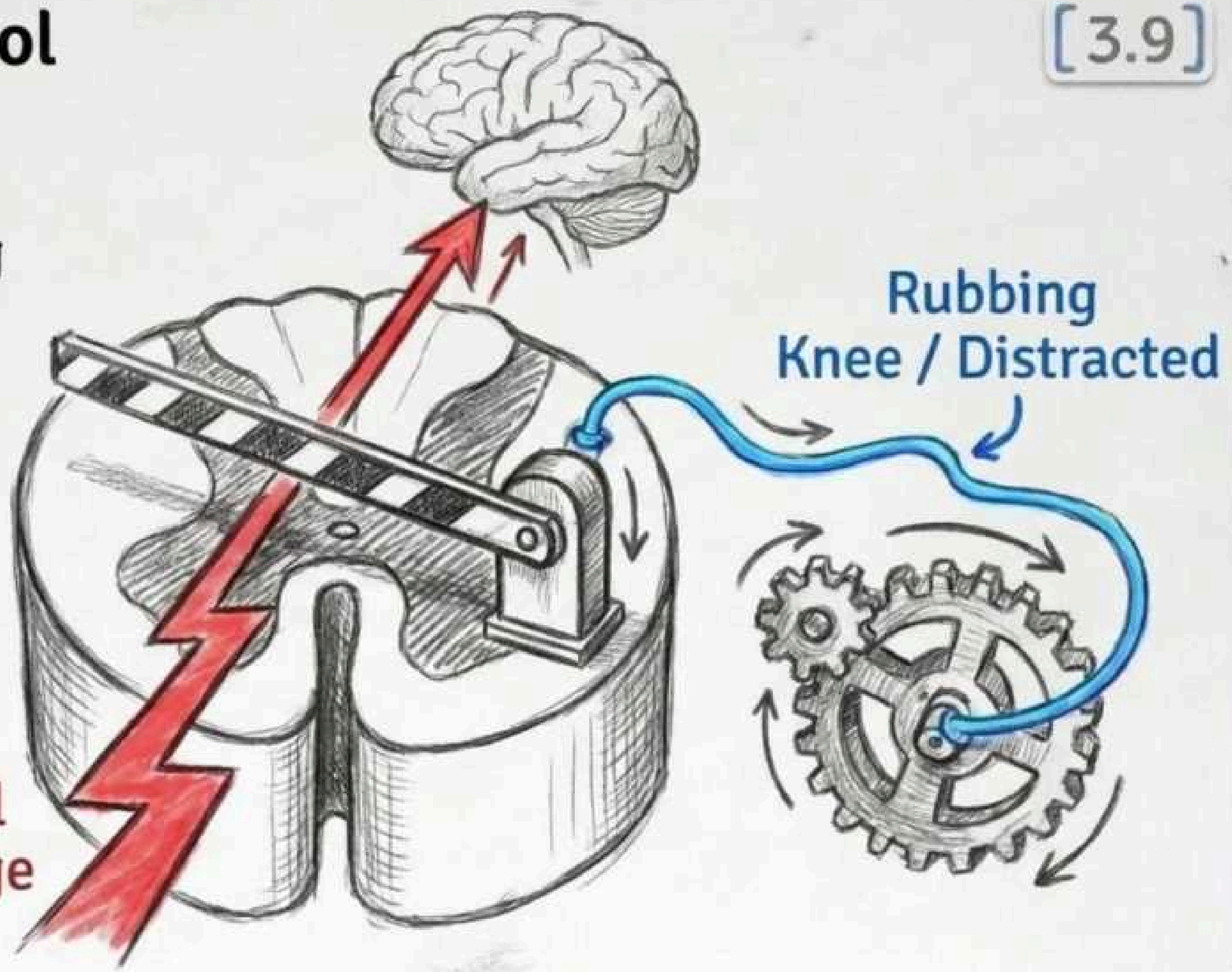
Body

Gemini Notebook

Pain & Gate-Control

[3.9]

- Protective Signal
- Spinal Cord Gate
- Distraction / Rubbing

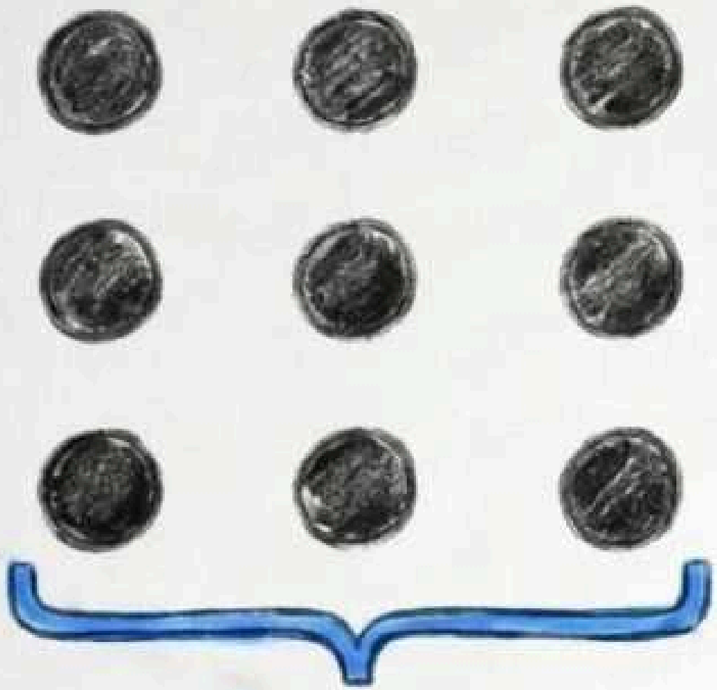


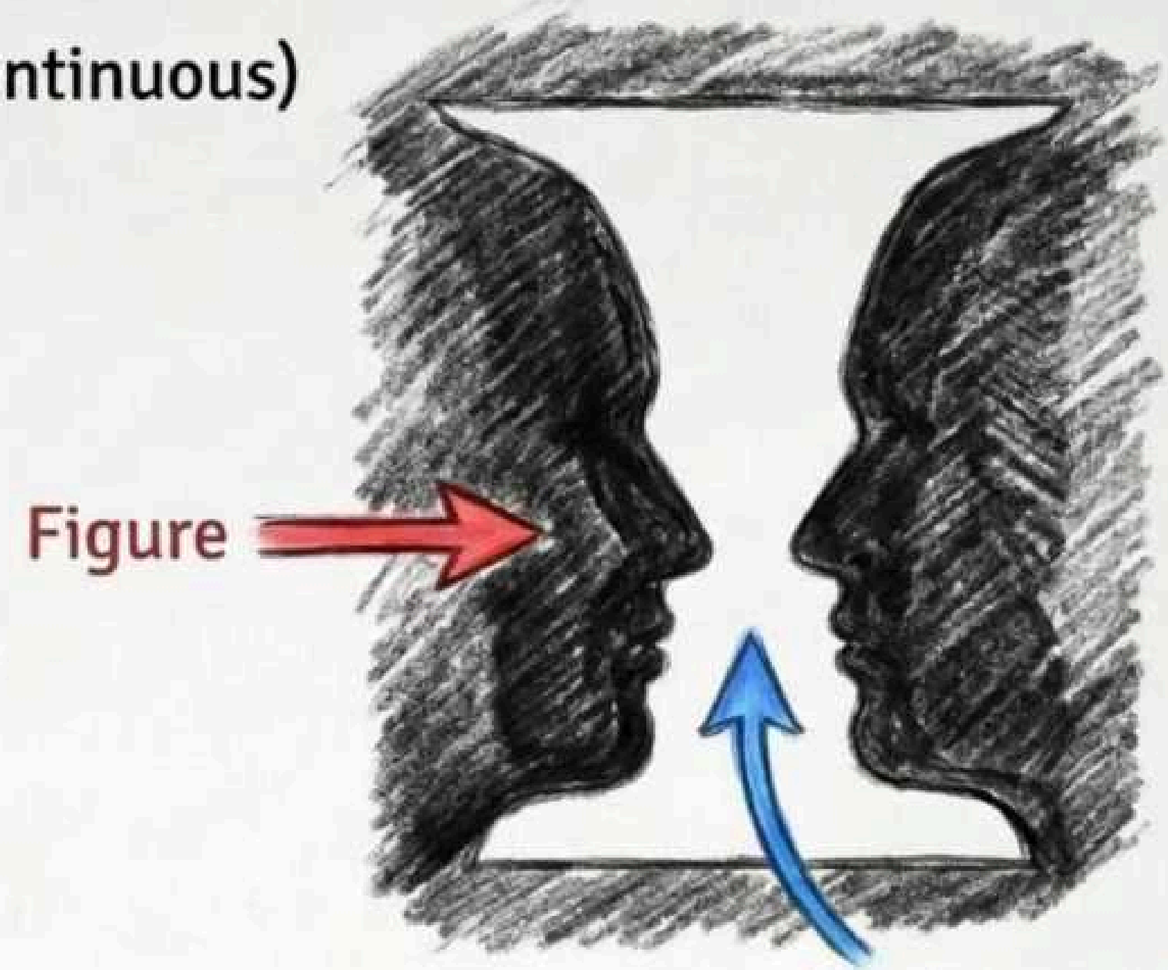
Gemini Notebook

Active Perception & Gestalt

[3.10]

- Whole > Sum of Parts
- Grouping (Close, Similar, Continuous)
- Figure vs. Background



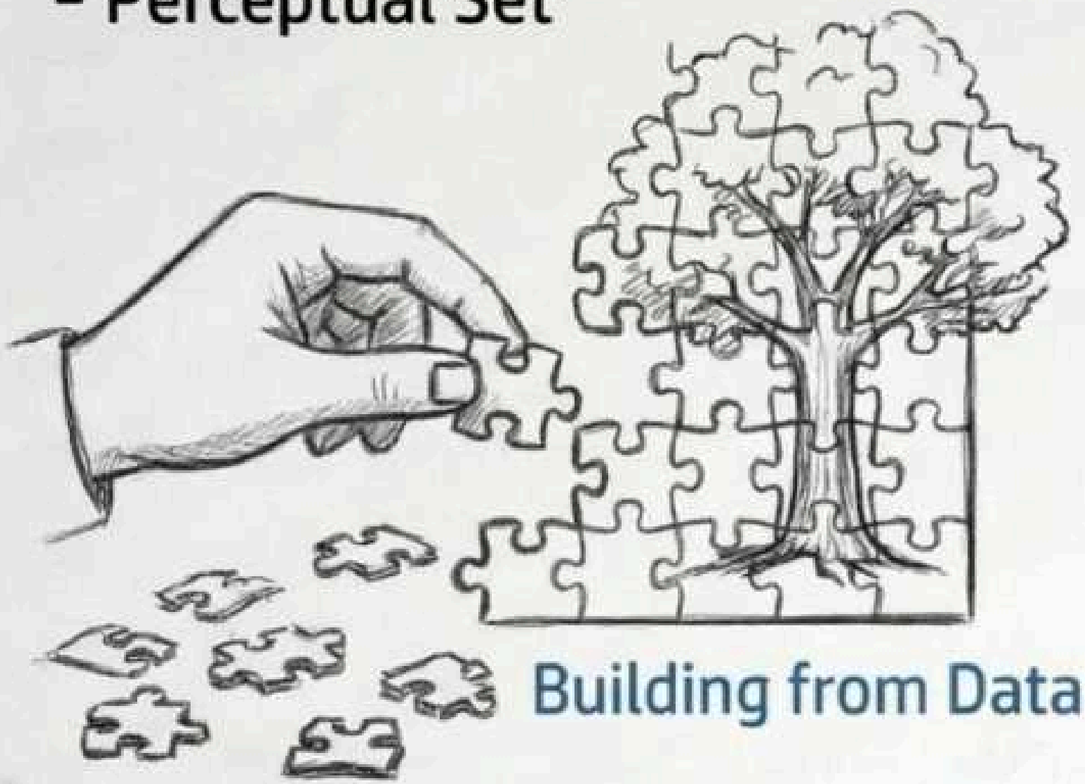


Gemini Notebook

Top-Down vs. Bottom-Up

[3.11]

- Bottom-Up: Raw Sensory Data
- Top-Down: Knowledge & Expectation
- Perceptual Set



Building from Data

Bottom-Up Processing

Perceptual Set



Projecting Expectation

Top-Down Processing

Gemini Notebook

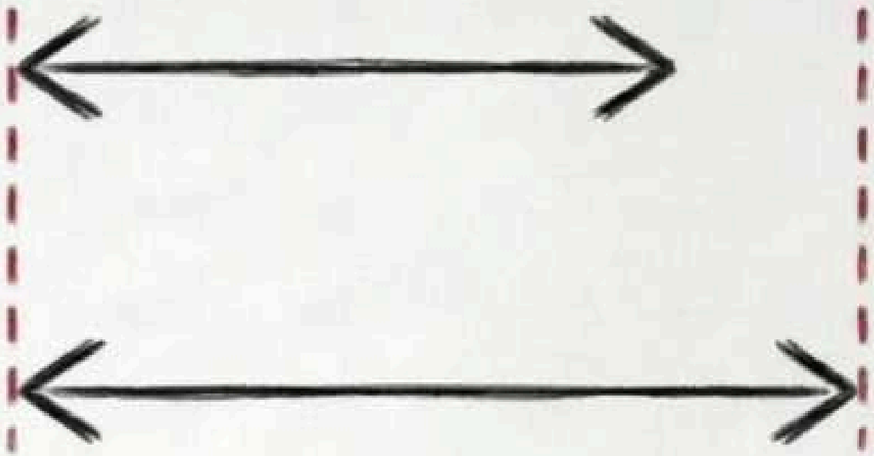
Depth & Illusions

[3.12]

- Binocular & Monocular Cues
- Overlap & Relative Size
- Perceptual Shortcuts



Monocular Cues



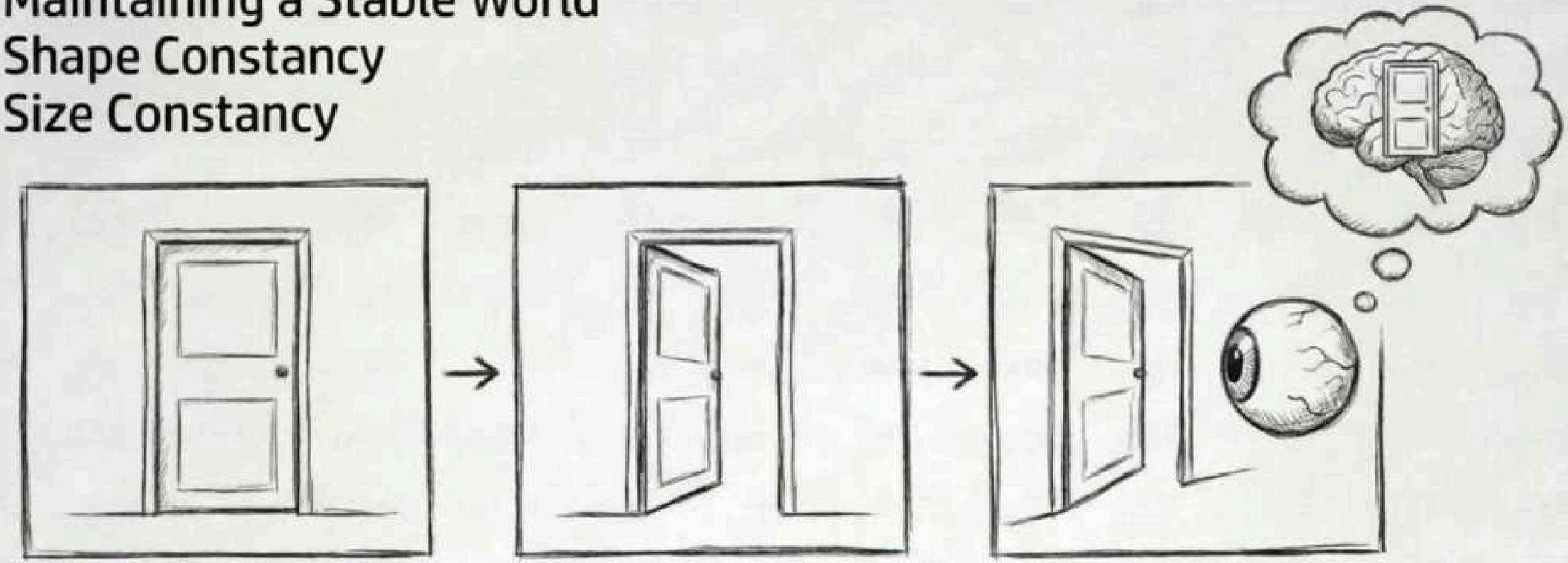
Shortcuts / Illusions

Gemini Notebook

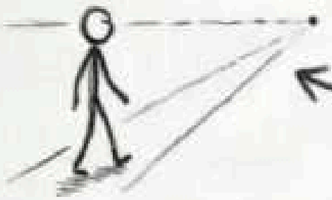
Perceptual Constancy

[3.13]

- Maintaining a Stable World
- Shape Constancy
- Size Constancy



Frame 1 → Frame 2 → Frame 3



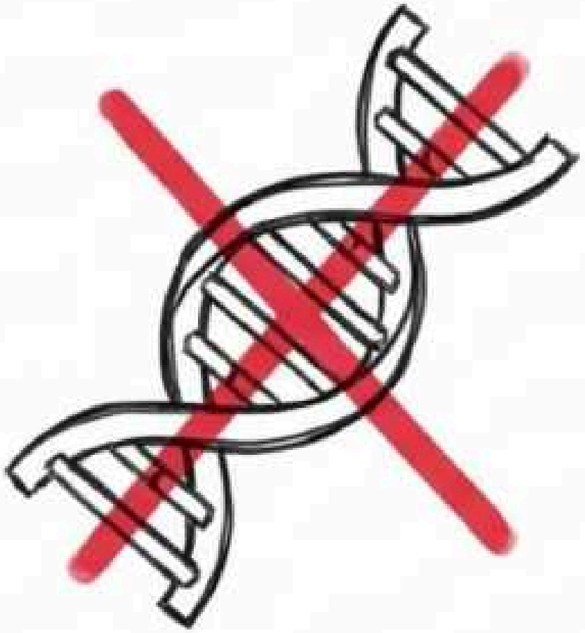
← Retina image shrinks → Brain knows size is constant.

Gemini Notebook

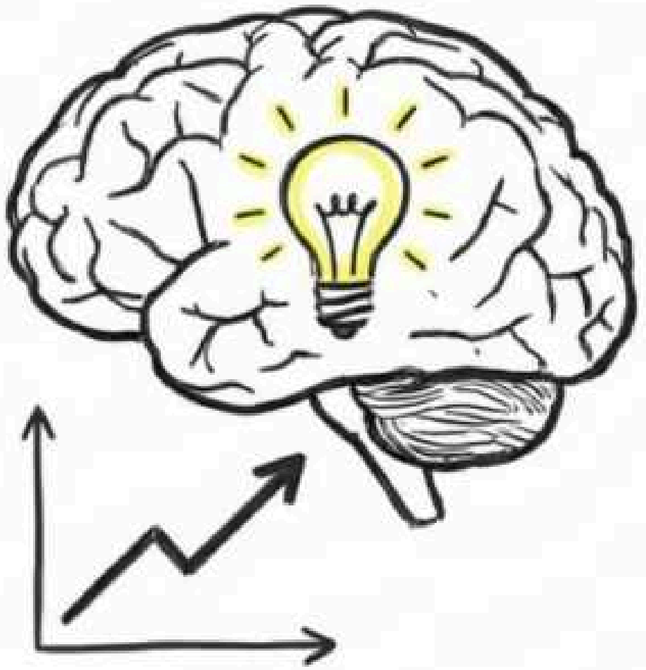
Defining Learning

3.14

Experience • Lasting Change • vs. Inborn



Experience



Not just inborn instincts.

Lasting change in behaviour or knowledge.

Gemini Notebook

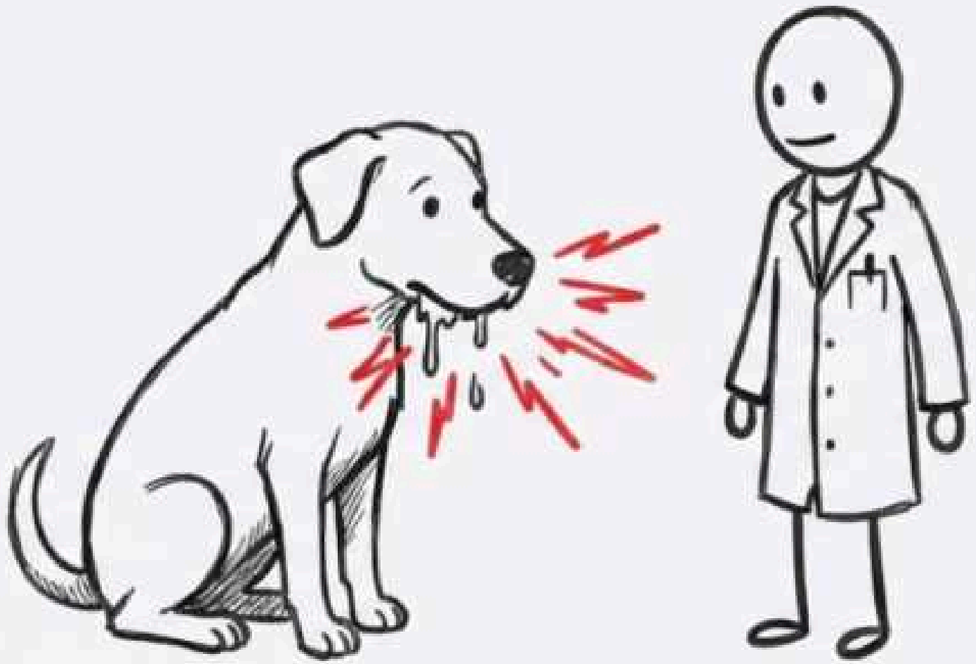
Pavlov's Discovery

3.15

Digestion • Unintended Trigger • Anticipation



Natural Digestion



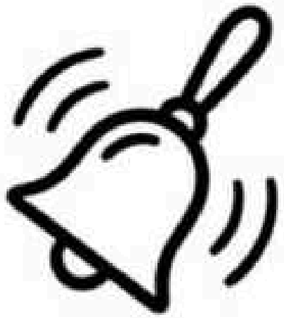
The Unintended Trigger

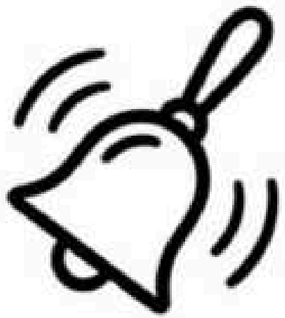
Classical Conditioning Mechanics

3.16

US & UR • NS • CS & CR


(US) → 
(UR)

(NS)  + 
(US) → 
(UR)

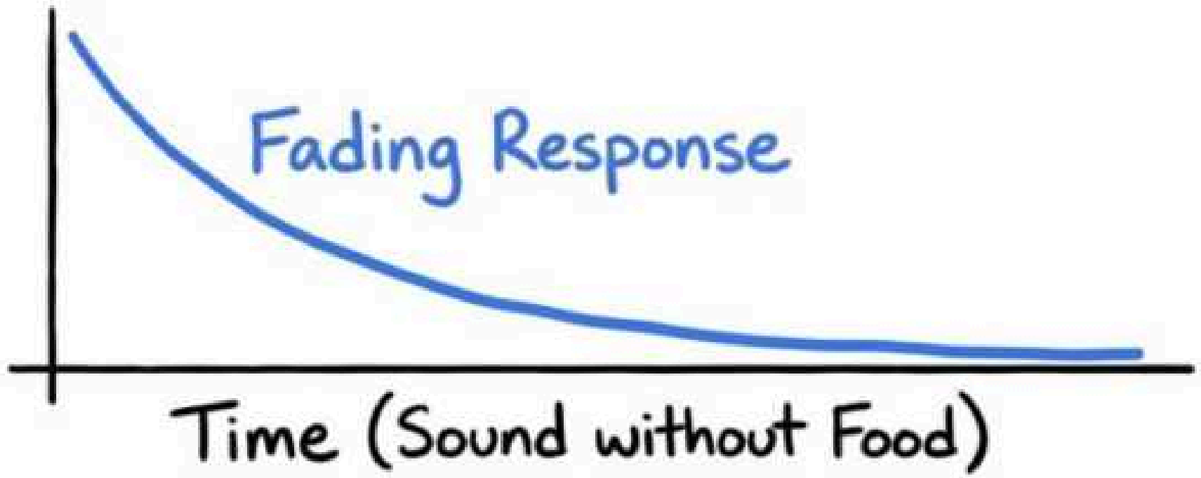

(CS) → 
(CR)

Gemini Notebook

Extinction & Conditioned Emotion

3.17

Fading Response • Little Albert • Ethics







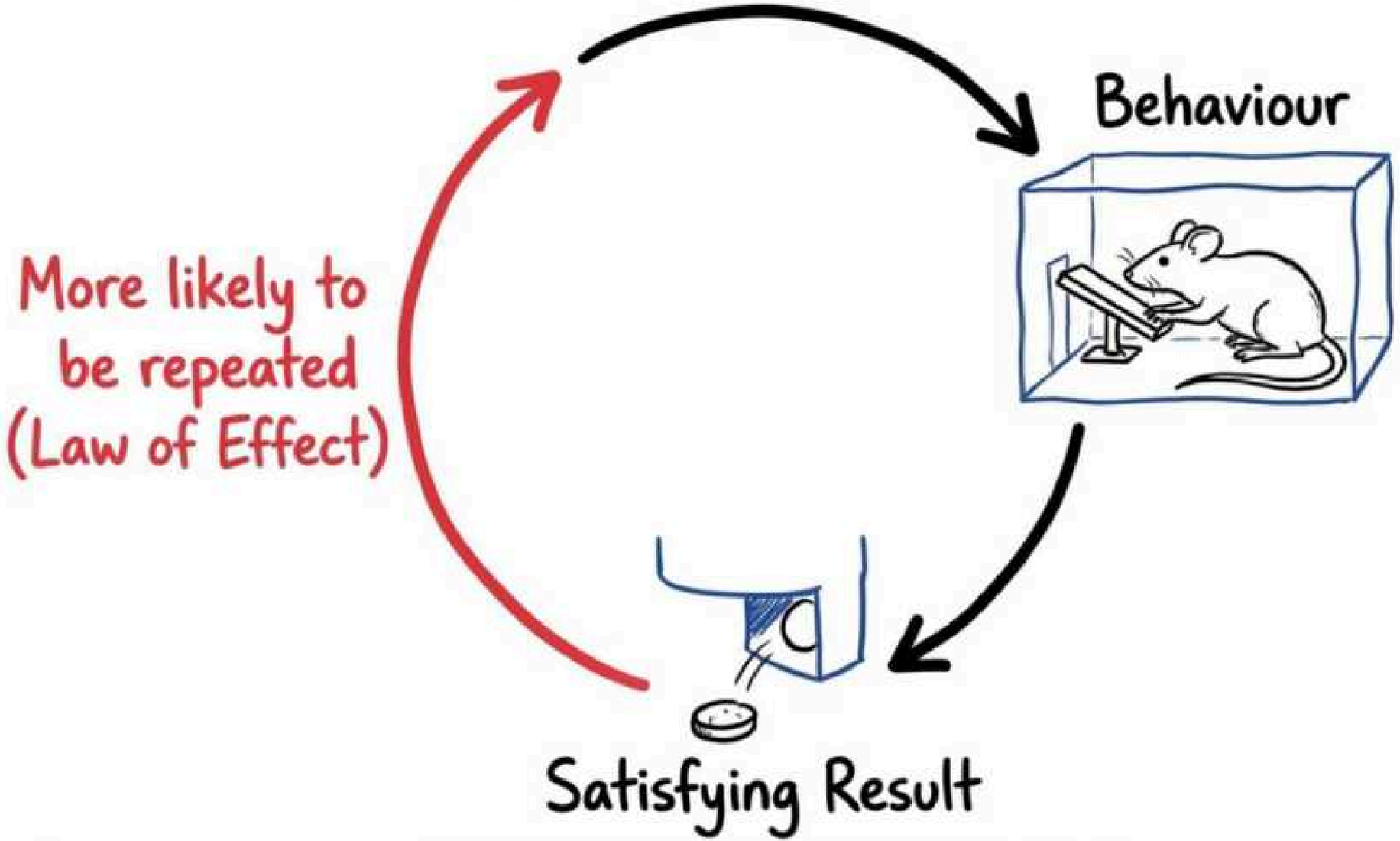
1920: Deeply Unethical Emotion Conditioning

Gemini Notebook

Operant Conditioning

Law of Effect • Consequences • Skinner Boxes

3.18

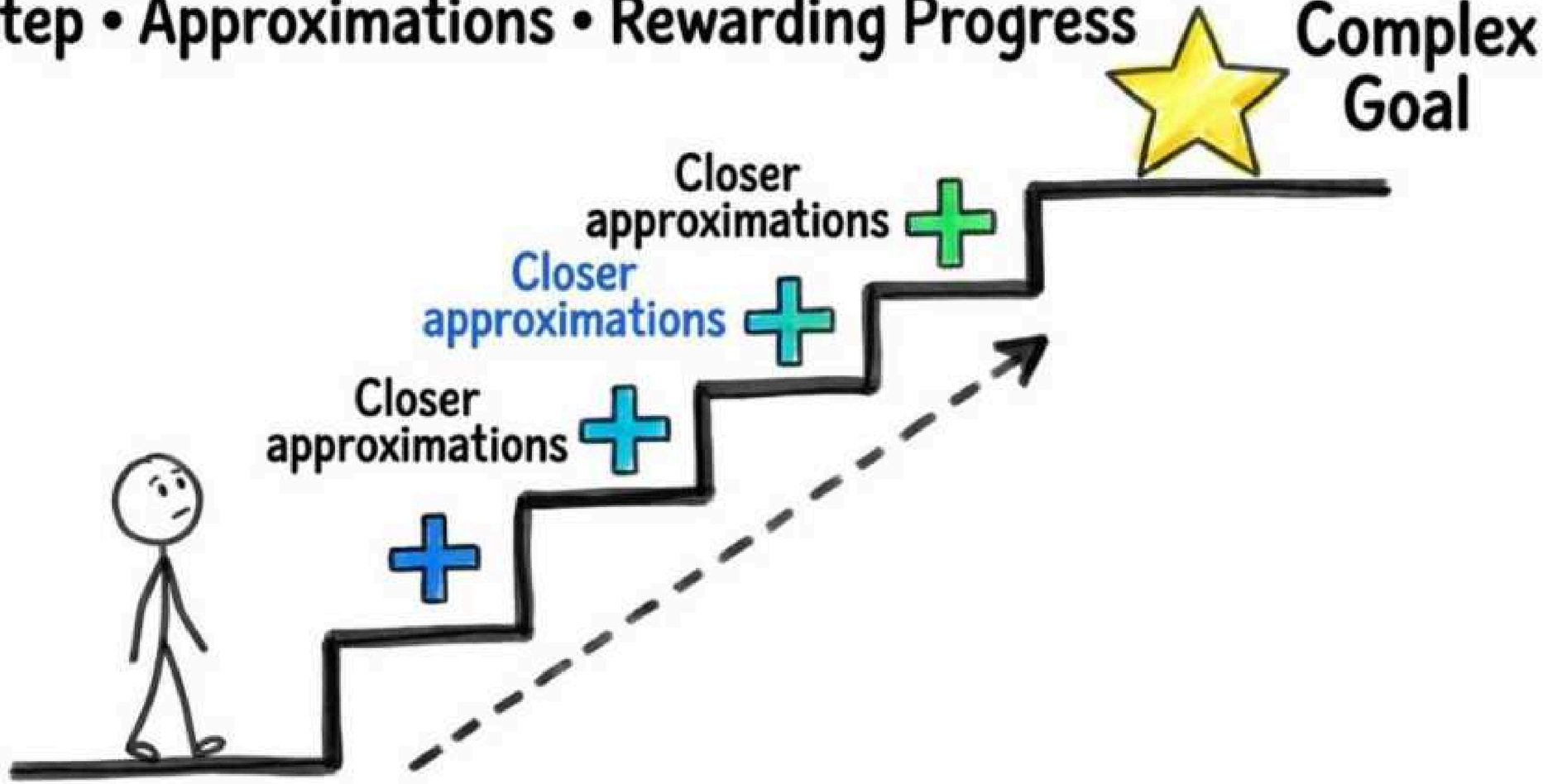


Gemini Notebook

3.19

Shaping Behavior

Step-by-Step • Approximations • Rewarding Progress



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Reinforcement vs. Punishment

3.20

Increase/Decrease • Add/Remove

	Add Something (+)	Remove Something (–)
Make Behaviour More Likely	Positive Reinforcement 	Negative Reinforcement 
Make Behaviour Less Likely	Positive Punishment 	Negative Punishment 

Gemini Notebook

The Timing of Rewards

3.21

Continuous vs. Partial • Variable Ratio • Persistence

Builds learning quickly.

Unpredictable / Partial.



Persistent behaviour.
Very hard to stop.

Gemini Notebook

Observational Learning

3.22

Modeling • Bobo Doll • Copying Rewards

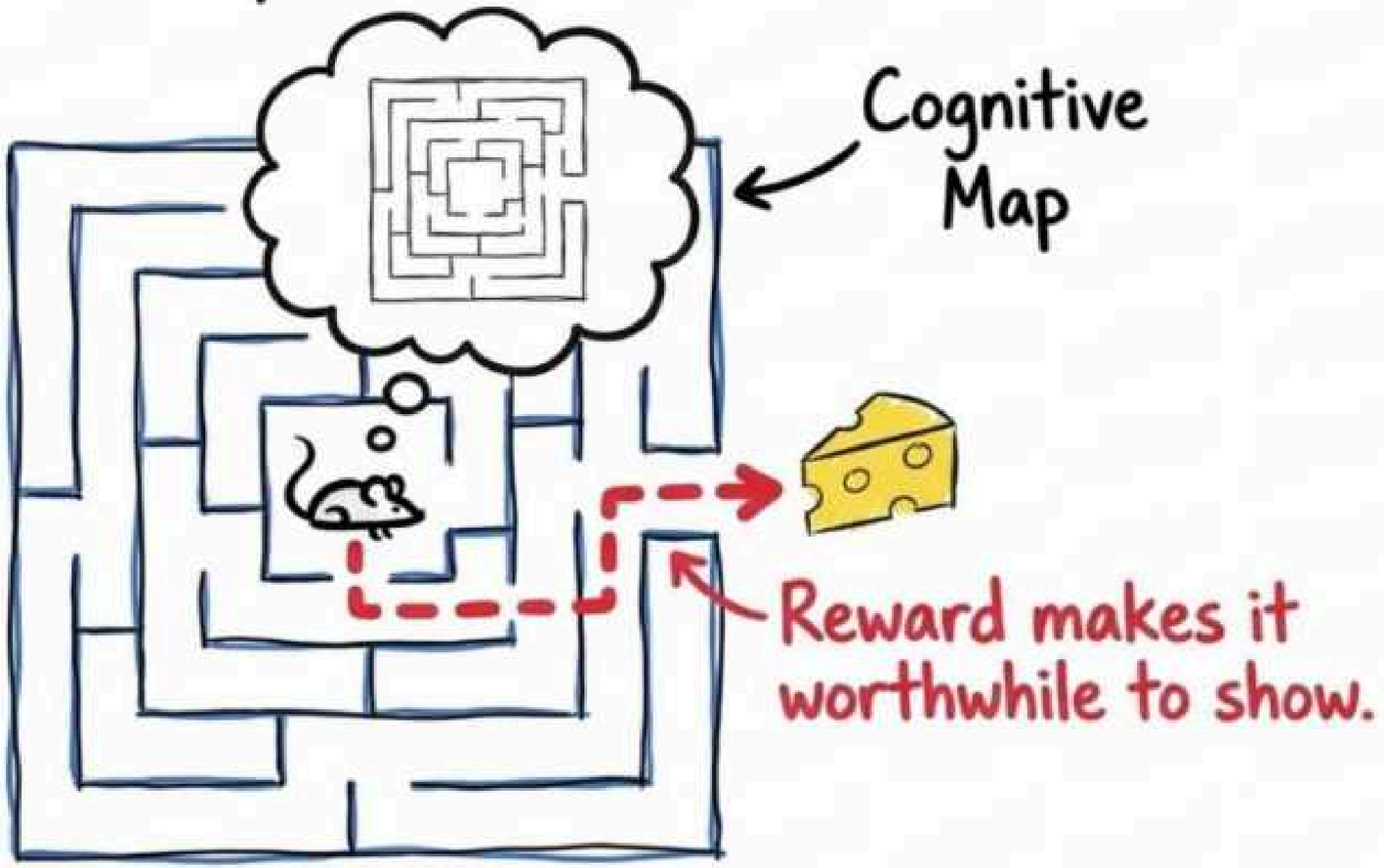


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Latent Learning

3.23

Cognitive Maps • Not Purely Mechanical • Hidden Until Rewarded



Thinking plays a part.

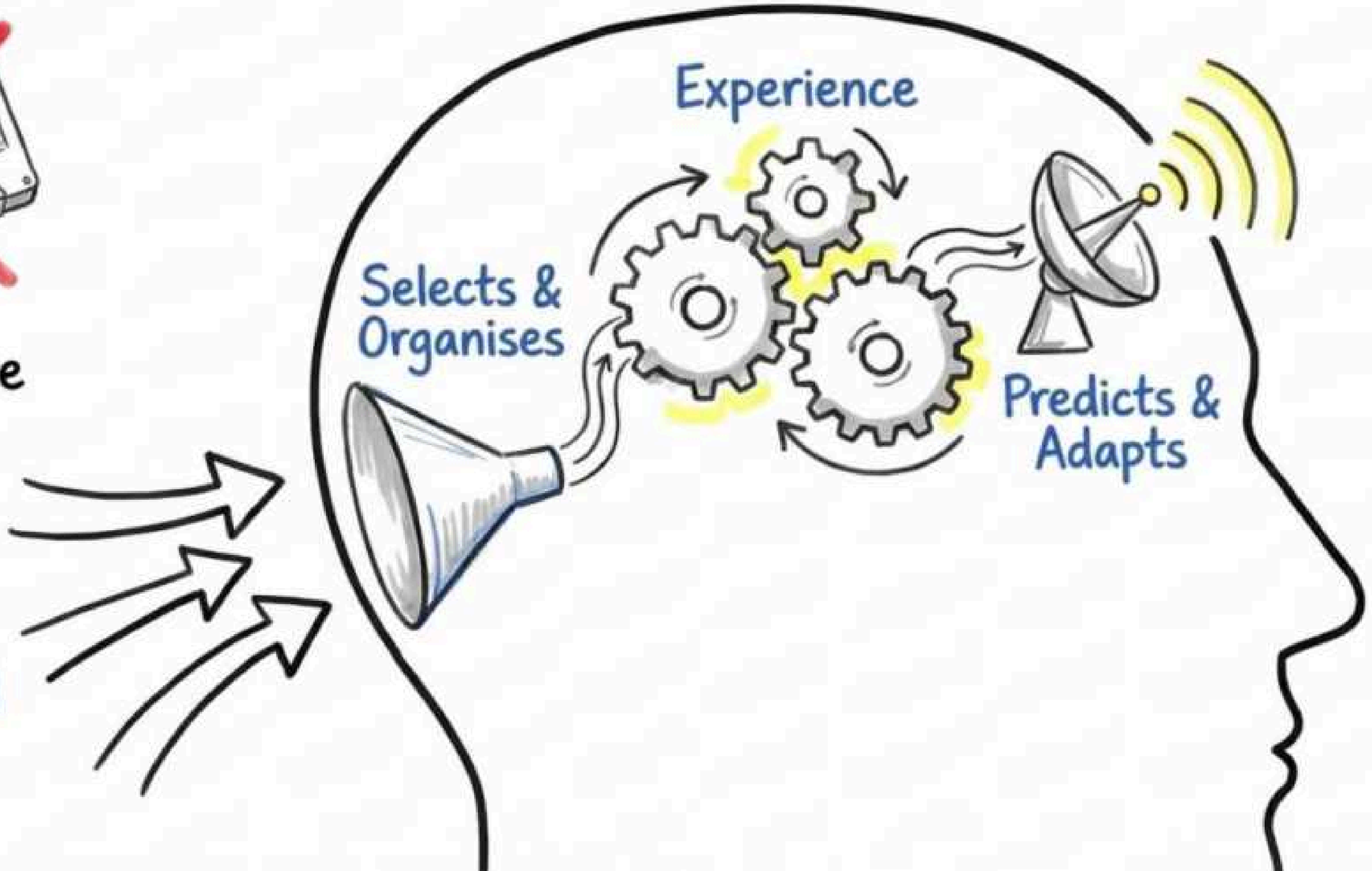
The Active Brain

3.24

Selects & Organizes • Predicts & Adapts • Guided by Experience



Not a passive recorder

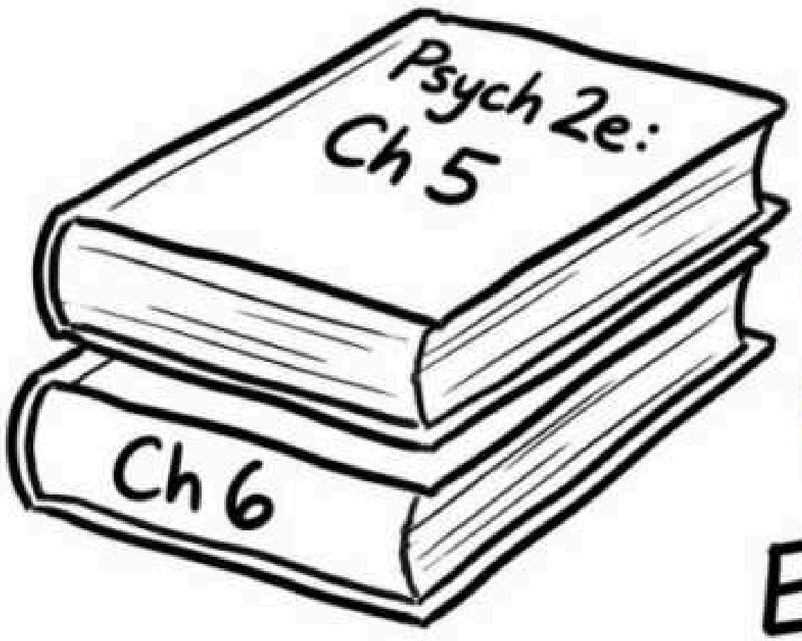


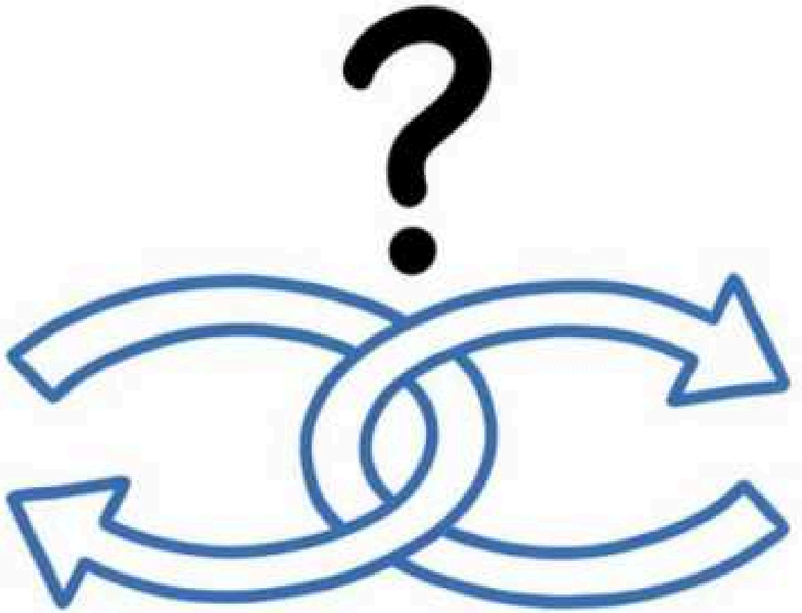
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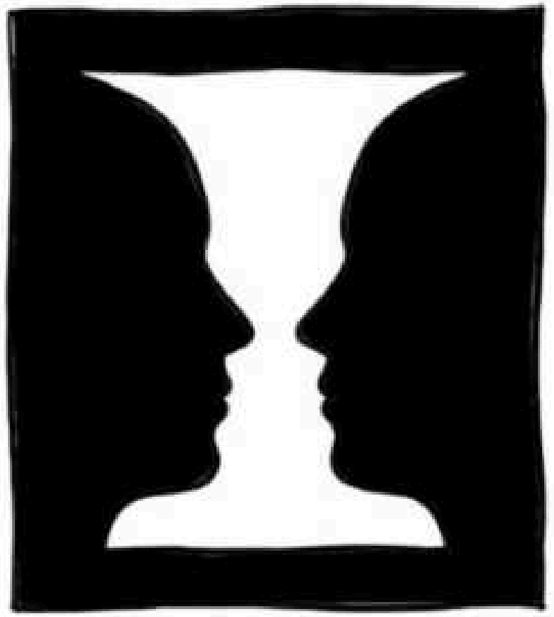
Going Further

3.25

Read Chapters 5 & 6 • Visual Illusions • Apply Principles







Explain each using the principles from this lecture.

Gemini Notebook