Ecological Approach to Human Visual Perception

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What you should get out of this session

- What is the fundamental principle behind the ecological approach to human visual perception?
- How can you use its fundamental principle to think about different questions that you may encounter?

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  - Walking on the streets
  - Climbing up a flight of stairs
  - Sitting onto a chair
  - Reaching out and grab a glass of water

Ask the appropriate questions

- How do we use visual perception to perform these tasks?
  - When walking on the streets, how do we know if we won't run into people?
    - https://youtu.be/_OQYKip2nY4?t=47

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  - When grabbing a glass of water, how do we know the size of the glass?

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- How would the performance of these tasks differ for different people?
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- What are the commonalities in terms of performing these tasks among different people?

The Ecological Approach to Human Visual Perception

- The perspectival nature of perception
  - You always perceive at a certain height
    - Have you tried on shoes that give you a couple more inches?
  - Moving in a certain way
    - Have you injured your back?
  - At a certain changing location
    - Can you recall the last time when you are staying absolutely still?
  - With certain boundaries on the momentary field of view
    - Do you wear glasses?

The Ecological Approach to Human Visual Perception

- The importance of your surrounding
  - We are always situated in a certain environment/surrounding
  - Perception does not happen in the void
    - Sensory deprivation tank
  - We are surrounded by different surfaces that have different textures and reflectance
    - They all reflect light differently

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- Studying visual perception is about describing the ever-evolving relationship between the observer and his/her surroundings.

The Ecological Approach to Human Visual Perception

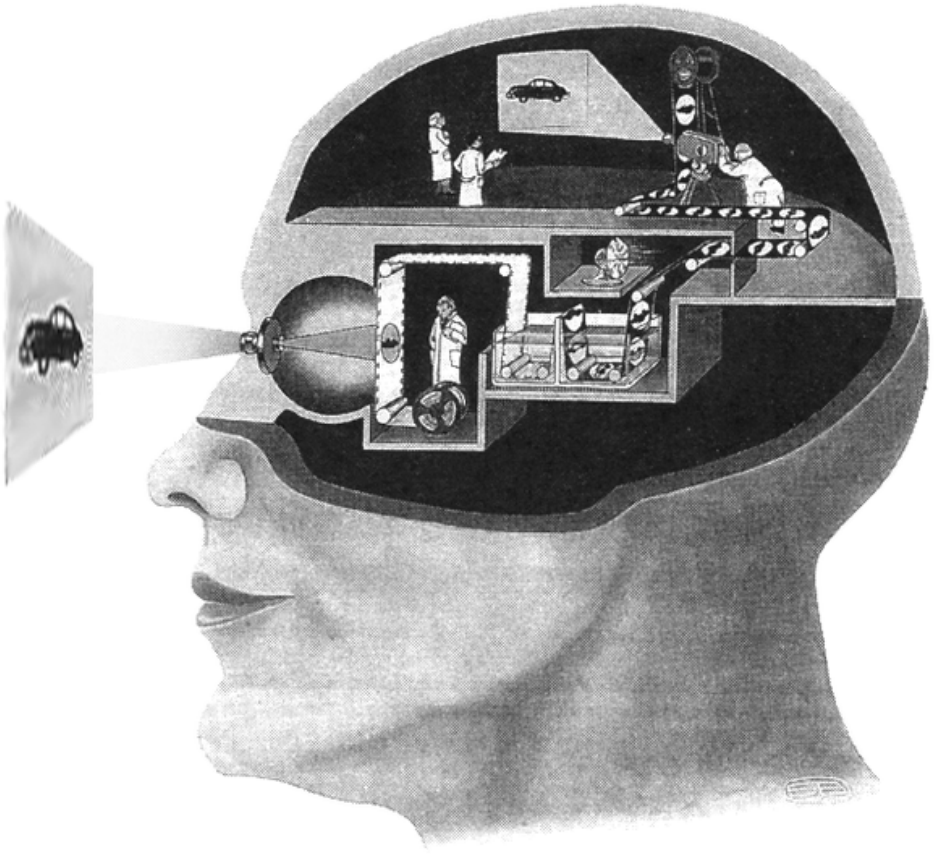
- A holistic approach
  - Instead of separating the observer from the environment, we combine them into a single unit of analysis.
- A method of abstraction
  - Identify an information variable that different people all use to perform a certain task.
  - This can reduce the complexity of explanation.
- **Invariant over transformation**
  - What is not changing despite of the fact that we are always in flux

Why do you care?

- Consider this topic as a method
- Use the knowledge that you will learn to develop a new way to think about things.

A Final Note

- This is *not* the “predominant” view in studying human visual perception.
- A more popular view focuses on using internal representations to account for human visual perception and action.
  - The human mind is like a computer.
- Bottom line: If we can explain a phenomenon without calling for the use of representations, we don’t use them.
  - This can simplify the questions and models.
  - Try to avoid the homunculus fallacy.



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  - Try to avoid the homunculus fallacy.
  - Bring the environment back to perception.

What you should get out of this session

- What is the fundamental principle behind the ecological approach to human visual perception?
  - Organism-environment relationship and interaction
  - Invariant over transformation
- How can you use its fundamental principle to think about different questions that you may encounter?
  - This is an open question. Think about it!

See you next time!