Lecture 3 notes and knowledge

jdrews17

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1   Pre-lecture

Preparation: Read chapter 4

- **What are some principles of Figure-Ground organization?**
  Depth, Surroundedness, Symmetry, Convexity, Meaningfulness, Simplicity

- **What grouping principles are used to identify the doors, windows and wheels of a bus passing by, as part of the same object?**
  Perceptual grouping(Proximity, etc), perceptual interpolation(Ink spots, edge detection)
  Gestalt: Proximity, common fate, similarity

- **What are some challenges the human brain need to face in identifying objects visually?**
  Gestalt principles, edge detection, using these properly to stitch together the figure

- **What is meant by bottom-up and top-down information? Can you give examples of when either is used?**
  Top-down: *Knowledge and expectations, which affects perception (Expect jon to walk through a door, makes you recognize him faster, and what is more likely to be in a specific scene.)*
  Bottom-up: *Information contained in the neural signals from the receptors.*
  An example can be a wound, seeing it happen (Top-down) differs from feeling it (Bottom-up).

2   Lecture

3   Knowledge

- Give examples of principles for figure-ground organization

- Give examples of different grouping principles used by the visual system

- Explain the role of bottom-up and top-down information flow in object recognition

4   Important notes