Baars and Gage: Cognition, Brain, and Consciousness

Study Guides

Chapter 6: Vision

1. In what ways does the visual system work differently from the pictures captured by a camera?
2. Describe some visual features that neurons in vision cortex may be tuned to.
3. Describe Gestalt grouping principles that underlie object recognition.
4. Name two types of photoreceptors in the retina and describe their roles in vision.
5. What is the fovea and what is its role in visual perception?
6. What is the importance of lateral inhibition and center-surround cells in visual perception?
7. The visual pathways from the retina to visual cortex are highly segregated. How does the left visual field communicate with the cortex? The right visual field? What does this segregation accomplish for the visual system?
8. Why is visual processing in the cortex described as a hierarchy?
9. What are the dorsal and ventral pathways in visual cortex? How do they differ and what are their roles in visual perception?
10. Which brain areas are involved in visual object perception?
11. Where are human faces processed in the brain? Why do you think there might be a specialized region for this?
12. What are two current theories about visual consciousness? What are their key differences?
13. How does damage to the earliest visual regions, V1, differ from damage to higher visual areas?
14. What is the difference when damage is located in the ventral stream in cortex vs. dorsal parietal areas? How does this evidence relate to theories of the what and where pathways for vision?
15. What is multistable perception and what can it tell us about human vision?
16. What is the role of perceptual filling-in in vision and where in the visual system may it occur?
17. New techniques are allowing us to investigate topics like unconscious perception. Provide an example of unconscious perception.

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