

Book Review

A VISION OF THE BRAIN. By Semir Zeki. Published by Blackwell Scientific Publications: London, 1993. 357pp. \$36.95.

What do you know of current research on and new ideas of how the brain sees? Vision science of the brain has made important strides in the past decade or so. What do you know about it? Find out by taking this quiz! Compare your answers with those printed at the end of the review in inverted format. There is only one correct answer for each question.

1. The brain processes visual images by:
 - a. equipotentiality
 - b. primarily the striate cortex
 - c. specialized centers including V1 through V6 in the visual cortex
 - d. the cranial nerves
 - e. area 19 of Brodmann
2. Hierarchical concepts of visual processing (emphasized by Hubel & Wiesel a quarter of a century ago) are valid only in the:
 - a. cortex
 - b. visual pathways up to the cortex
 - c. V5
 - d. frontal eye fields
3. Central colorblindness (cerebral achromatopsia) is:
 - a. a colorful myth
 - b. an unestablished possibility
 - c. firmly established in humans by functional brain imaging
 - d. caused by lesions in area 17
4. Motion blindness (akinetopsia) is the specific result of bilateral lesions in:
 - a. V1
 - b. V2
 - c. V3
 - d. V4
 - e. V5
 - f. V6
5. The original discovery of separate cortical areas with different functions in the visual cortex (such as V4 and V5) was made by Zeki using:
 - a. PET (Positron Emission Tomography)
 - b. histological studies in monkeys
 - c. CT or CAT (Computerized Axial Tomography) scans
 - d. visual computational neurobiology
6. The perception of color is determined by:
 - a. light wavelength
 - b. color memory
 - c. retinal cones
 - d. complex cortical function
7. The Kaniza triangle elicits an illusion:
 - a. of a ménage à trois
 - b. of trichromatic function
 - c. seated in the angle of the calcarine spur
 - d. related to illusory contours processed in V2
8. The primary processing of V1 (striate cortex) is:
 - a. categorization
 - b. color vision
 - c. motion vision
 - d. stereo vision
9. Agnosia (recognition blindness) demonstrates that:
 - a. neuroses affect vision
 - b. seeing and understanding are the same process
 - c. the mind can be quixotic
 - d. refractive errors should be corrected
10. Dreams and visual hallucinations are visually normal because they:
 - a. occur at odd times
 - b. can be frightening or pleasurable
 - c. seem real, often colorful and are not surrealistic
 - d. are a product of the mind
11. Seeing, understanding and consciousness are brought about by the:
 - a. striate cortex
 - b. frontal cortex
 - c. feedback system of the cortex and much simultaneous activity
 - d. temporal cortex
12. Blindsight is:
 - a. low vision
 - b. insight
 - c. a canard
 - d. the opposite of nindsight
 - e. unconscious vision through a scotoma

Physically, the book is professionally produced with a soft cover and at a reasonable price. Chapters are short, conversational and easy to

read and to follow the reasoning. Illustrations are clear, simple and uniform in style. The bibliographies at the end of each chapter are complete.

Concepts are chronologically developed so that one learns how they came about and why they took the time that they did to develop.

Although Zeki is a leading vision scientist, his sight transcends seeing. He is using firmly based vision function in the brain to reach

toward more remote and subtle brain function, such as consciousness and what is sometimes called the mind. All who are in neurobiology and its clinical applications such as optometry can extend their vision of the brain with this splendid book.

REVIEWER'S ADDRESS:

*Elwin Marg
School of Optometry
University of California
Berkeley, CA 94720*

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| 12. e | 8. a | 4. e |
| 11. c | 7. d | 3. c |
| 10. c | 6. d | 2. b |
| 9. b | 5. b | 1. c |

Answer Key: