Each of these explanations may be supported by a survey of the literature on this problem." Though I do not think such pessimism is warranted in the study of leks, I hope researchers will follow the thoughtful suggestions for future research given in the final chapter of this book and provide new insights for the next edition.

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Visual Perception

Foundations of Vision. BRIAN A. WANDELL. Sinauer, Sunderland, MA, 1995. xvi, 476 pp., illus. $45.95 or £29.95.

We see wonderfully well and without obvious effort, yet vision is arguably the most difficult task the brain faces. In *Foundations of Vision* Brian Wandell has done a fine job of explaining both the complexities of the problem and the state of our current knowledge. Viewed from afar, the cover of Wandell's book displays a picture of an eye, an appropriate subject. But as you approach, the eye is increasingly camouflaged by the hundreds of separate tiny images from which it is constructed. The small component pictures (illustrations from the book) are monochrome images of different colors and contrasts. At the near distance required to resolve their individual characteristics, the great eye itself virtually disappears. This clever design is a useful metaphor for the visual system. When we examine the visual mechanism closely, although we understand much about its component parts, we fail to fathom the way in which they fit together to produce the whole of our complex visual perception.

Wandell divides his consideration of the visual system into three parts. The first describes the optics of the eye, the retinal photoreceptors and their responses, and the color matching that is so well explained by reference to this level. The second section treats what Wandell refers to as representation, including information about analysis in the neural retina and the visual cortex, basic facts about behavioral pattern sensitivity, and a discussion of multiresolution image representations. Here he introduces computational models related to human vision, presenting both the underlying ideas and some of the algorithms that are used. The third section of Wandell's book considers the most difficult problem of all, namely, how we interpret the information that is present in the visual representation. Color, motion, and depth are discussed in some detail, and there are interesting short descriptions of the strange perceptual phenomena associated with certain neurological abnormalities and of ever popular visual illusions. The book concludes with a series of useful appendixes describing shift-invariant linear systems, display calibration, classification, signal estimation, motion-flow-field calculation, and sampling and aliasing.

Foundations of Vision is unusual in combining competent treatments of the basic physiology and psychophysics of vision with a lucid presentation of ideas from computational vision, all with the ultimate goal of understanding high-level visual perception. It will be of particular value to students because it presents a broad range of fundamental data and ideas and because it demonstrates how to compute solutions to many standard problems. But Wandell's new book is not just for students; it is a well-written, carefully crafted discussion of the problems of vision and the current state of our understanding. It has much to offer everyone who wonders how this most remarkable of all senses works.

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Also Noteworthy

Atoms, Bombs, and Eskimo Kisses. A Memoir of Father and Son. CLAUDIO G. SEGRÈ. Viking Penguin, New York, 1995. xiv, 287 pp. + plates.

The Nobel Prize–winning physicist Emilio Segrè gave an account of his own life in the posthumously published *A Mind Always in Motion* (University of California Press, 1993; reviewed in *Science* **263**, 996 [1993]). In the present book Segrè's only son (now himself deceased) gives an account of his growing up with such a father. The experience as he describes it was not an easy one. Transported in infancy from Italy to the United States, Claudio was required to negotiate his way between his family's persistent conviction of European cultural superiority and the danger of being perceived as "not one of us" by his new compatriots. Admiring his father, he was conscious of himself as "Son of Superman," alternately feeling eclipsed by and relishing the position. Academically he was beset by a "joyless desire to achieve" and only seldom gained the praise or sympathy he longed for from his exacting and often sarcastic father. But he discovered the delights of hot dogs, comic books, and baseball and forged ahead on his own by choosing the reputedly "Red" Reed College over his family's preferred Berkeley. After graduation, in search of work to which he could "be as devoted . . . as my father was to physics," he spent some years as a journalist before ultimately making a creditable academic career as a historian, along the way establishing an apparently satisfactory family life of his own. The book ends with an account of his relations with his father as an adult, including a disappointing attempt at a therapeutic confrontation.

Katherine Livingston

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Books Received

Critical Success Factors in Biomedical Research and Pharmaceutical Innovation. S. W. F. Omta. Kluwer, Norwell, MA, 1995. xii, 294 pp., illus. $124.50 or £79 or Dfl. 175.

The Cure of Childhood Leukemia. Into the Age of Miracles. John Laszlo. Rutgers University Press, New Brunswick, NJ, 1995. xiv, 289 pp. $29.95.

The Most Beautiful Molecule. The Discovery of the Buckyball. Hugh Aldersey-Williams. Wiley, New York, 1995. x, 340 pp., illus. $24.95.

The Most Complex Machine. A Survey of Computers and Computing. David J. Eck. Peters, Wellesley, MA, 1995. xii, 445 pp., illus. $49.95.

Polyamines. Regulation and Molecular Interaction. Robert A. Casero, Ed. Springer-Verlag, New York, and Landes, Austin, TX, 1995 (distributor, CRC Press, Boca Raton, FL). x, 236 pp., illus. $89. Molecular Biology Intelligence Unit.

Population Dynamics. New Approaches and Synthesis. Naomi Cappuccino and Peter W. Price, Eds. Academic Press, San Diego, 1995. xxii, 429 pp., illus. $74.95.

Population Production and Regulation in the Sea. A Fisheries Perspective. David Cushing. Cambridge University Press, New York, 1995. xii, 354 pp., illus. $69.95.

Reinventing Biology. Respect for Life and the Creation of Knowledge. Lynda Birke and Ruth Hubbard, Eds. Indiana University Press, Bloomington, 1995. xviii, 291 pp. $35; paper, $15.95. Race, Gender, and Science.

Semiconductor Optics. C. F. Klingshirn. Springer-Verlag, New York, 1995. xviii, 490 pp., illus. $54.50.

Set Theory. On the Structure of the Real Line. Tomek Bartoszyński and Haim Judah. Peters, Wellesley, MA., 1995. xii, 546 pp., illus. $69.95.

Shafarevich Maps and Automorphic Forms. János Kollár. Princeton University Press, Princeton, NJ, 1995. x, 201 pp. $37.50 or £29.50. M. B. Porter Lectures.

Shapes and Shells in Nuclear Structure. Sven Gösta Nilsson and Ingemar Ragnarsson. Cambridge University Press, New York, 1995. xiv, 408 pp., illus. $89.95.

She Does Math! Real-Life Problems from Women on the Job. Marla Parker, Ed. Mathematical Association of America, Washington, DC, 1995. xvi, 253 pp., illus. Paper, $24. Classroom Resource Materials.

Signal Transduction Mechanisms in Cancer. Hans H. Grunicke. Springer, New York, and Landes, Austin, TX, 1995 (distributor, CRC Press, Boca Raton, FL). xiv, 148 pp., illus. $79. Molecular Biology Intelligence Unit.

The Sixth Extinction. Patterns of Life and the Future of Humankind. Richard Leakey and Roger Lewin. Doubleday, New York, 1995. xii, 271 pp., illus., + plates. $24.95 or $C34.95.

Solid-State Imaging with Charge-Coupled Devices. Albert J. P. Theuwissen. Kluwer, Norwell, MA, 1995. xxviii, 388 pp., illus. $192 or £124 or Dfl. 295. Solid-State Science and Technology Library, vol. 1.

The Story of Astronomy. Lloyd Motz and Jefferson Hane Weaver. Plenum, New York, 1995. x, 387 pp., illus. $28.95.

Structure in Protein Chemistry. Jack Kyte. Garland, New York, 1995. x, 606 pp., illus. $62.