Vignettes: Research Choices

People tend to stay away from the hypothalamus. Most brain scientists . . . prefer the sunny expanses of the cerebral cortex to the dark, claustrophobic regions at the base of the brain. They think of the hypothalamus—though they would never admit this to you—as haunted by animal spirits and the ghosts of primal urges. They suspect that it houses, not the usual shiny hardware of cognition, but some witches' brew of slimy, pulsating neurons adrift in a broth of mind-altering chemicals.

—*Simon LeVay*, in *The Sexual Brain* (MIT Press)

Biologists are always on the lookout for animals easy to rear in the laboratory, and what could be easier than cockroaches, which are usually there to start with anyway.

—*Howard Ensign Evans*, in *Life on a Little-Known Planet* (updated edition; Lyons and Burford)

that could contribute to the disorder.

Innocenti *et al.* and Hugdahl develop more fully the view that subtle brain alterations during fetal ontogeny can result in neurological and cognitive dysfunction. In particular, Hugdahl demonstrates how deviations in brain asymmetry and patterns of handedness may interact with immune disorders to produce the cognitive and behavioral deficits associated with dyslexia. Tallal and Fitch elaborate on hormone-mediated, gender-specific effects and their implications for the familial transmission of language and learning impairments. Njiokiktjien notes that developmental dysphasia and dyslexia have many common features and presents neurological arguments for a joint developmental dysphasia-dyslexia syndrome. It is in fact possible that dyslexia and perhaps other developmental language disorders as well are transmitted genetically. DeFries *et al.* provide a concise overview of behavioral and molecular genetic studies and note that although there is no consensus regarding a particular mode of inheritance, there is some evidence for linkage of a major gene for reading disability to chromosomes 6 and 15.

Neuroimaging procedures can enhance our understanding of the relationship between brain morphology and learning disorders, and Caviness *et al.* provide a concise review of the potential contributions of magnetic resonance imaging (MRI). Surprisingly, although the chapter provides valuable information about the morphometric applications of MRI—a field in which the authors have done pioneering work—it does not consider the recent imaging studies of the brains of dyslexics, which have been shown to exhibit functional and structural differences from those of nondyslexics.

This well-conceptualized and well-executed volume paves the way for further investigations of the neurobiological basis of a multifaceted disorder. It should be required reading for students and scholars in neuroscience, neuropsychology, genetics, and education.

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Books Received

Analog Electronics with Op Amps. A Source Book of Practical Circuits. A. J. Peyton and V. Walsh. Cambridge University Press, New York, 1993. xii, 281 pp., illus. $89.95; paper, $34.95.

Ancient Puzzles. Classic Brainteasers and Other Timeless Mathematical Games of the Last 10 Centuries. Dominic Olivastro. Bantam, New York, 1993. viii, 280 pp., illus. Paper, $12.95.

Australian Tropical Rain Forest Trees. An Interactive Identification System. B. P. M. Hyland and T. Whiffin. CSIRO, East Melbourne, Australia, 1993. 2 vols. Vol. 1, viii, 303 pp., illus. Vol. 2, x, 564 pp., illus. Boxed with diskettes and *Leaf Atlas of Australian Tropical Rain Forest Trees*. $195.

Chemistry and Biology of Pteridines and Folates. June E. Ayling, M. Gopal Nair, and Charles M. Baugh, Eds. Plenum, New York, 1993. xxvi, 825 pp., illus. $159.50. Advances in Experimental Medicine and Biology, vol. 338. From a symposium, Orange Beach, AL, March 1993.

Choosing Big Technologies. John Krige, Ed. Harwood, Langhorne, PA, 1993. xiv, 244 pp., illus. $69 or £36. From a symposium, Florence, Nov. 1991. Reprinted from *History and Technology*, vol. 9, nos. 1–4.

The Computer in the United States. From Laboratory to Market, 1930–1960. James W. Cortada. Sharpe, Armonk, NY, 1993. xx, 183 pp., illus., + plates. $45; paper, $16.50.

Contextual Reality. A New Approach to Study Mathematics and Physics Paradoxes. Tower Chen. Jern Charng, Barrigada, Guam, 1993. x, 90 pp., illus. $9.95.

The Environmentalists. A Biographical Dictionary from the 17th Century to the Present. Alan Axelrod and Charles Phillips. Facts on File, New York, 1993. xiv, 258 pp., illus. $45.

Epilepsy. Models, Mechanisms, and Concepts. Philip A. Schwartzkroin, Ed. Cambridge University Press, New York, 1993. xiv, 544 pp., illus. $120.

Excitations in a Bose-Condensed Liquid. Allan Griffin. Cambridge University Press, New York, 1993. xii, 308 pp., illus. $54.95. Cambridge Studies in Low Temperature Physics, 4.

The Fourth Discontinuity. The Co-Evolution of Humans and Machines. Bruce Mazlish. Yale University Press, New Haven, CT, 1993. x, 272 pp., illus. $30 or £22.50.

History of Rocketry and Astronautics. Lloyd H. Cornett, Jr., Ed. Published for the American Astronautical Society by Univelt, San Diego, CA, 1993. xiv, 437 pp., illus. $60; paper, $40. AAS History Series, vol. 15. IAA History Symposia, vol. 9. From symposia, Innsbruck, Austria and Brighton, U.K., 1986 and 1987.

How Clean is Clean? How Safe is Safe? A Review of Environmental Priorities. Merril Eisenbud. Cogito (Medical Physics), Madison, WI, 1993. xii, 63 pp., illus. Paper, $7. Focus on Health Series.

Interferogram Analysis. Digital Fringe Pattern Measurement Techniques. David W. Robinson and Graeme T. Reid, Eds. Institute of Physics, Philadelphia, 1993. xviii, 302 pp., illus. $118 or £59.

Invariant Distances and Metrics in Complex Analysis. Marek Jarnicki and Peter Pflug. De Gruyter, Hawthorne, NY, 1993. xii, 408 pp., illus. DM 178. De Gruyter Expositions in Mathematics, vol. 9.

Medicine Before the Plague. Practitioners and Their Patients in the Crown of Aragon, 1285–1345. Michael R. McVaugh. Cambridge University Press, New York, 1993. xvi, 280 pp., illus. $59.95. Cambridge History of Medicine.

Modern Nonlinear Optics. Part 2. Myron Evans and Stanisław Kielich, Eds. Wiley, New York, 1993. xii, 835 pp., illus. $195. Advances in Chemical Physics, vol. 85.

Molecular Genetic Medicine. Vol. 3. Theodore Friedmann, Ed. Academic, San Diego, CA, 1993. xiv, 184 pp., illus. $49.95.

Nonlinear Modeling and Forecasting. Martin Casdagli and Stephen Eubank, Eds. Addison-Wesley, Reading, MA, 1992. xxiv, 533 pp., illus. $49.50; paper, $34.50. Santa Fe Institute Studies in the Sciences of Complexity, proceedings vol. 12. From a workshop, Santa Fe, NM, Sept. 1990.

Physics of the Pulsar Magnetosphere. V. S. Beskin, A. V. Gurevich, and Ya. N. Istomin. Cambridge University Press, New York, 1993. xxiv, 408 pp., illus. $125. Translated from the Russian by M. V. Tsaplina.

Plasma Astrophysics. Kinetic Processes in Solar and Stellar Coronae. Arnold Benz. Kluwer, Norwell, MA, 1993. xviii, 299 pp., illus. $99 or £71 or Dfl. 185. Astrophysics and Space Science Library, vol. 184.

Practical Polymer Analysis. T. R. Crompton. Plenum, New York, 1993. xx, 822 pp., illus. $175.

Professional Environmental Auditors' Guidebook. Paul N. Cheremisinoff and Nicholas P. Cheremisinoff. Noyes, Park Ridge, NJ, 1993. x, 257 pp. $48.

Solutions in Statistics and Probability. Edward J. Dudewicz. 2nd ed. American Sciences Press, Columbus, OH, 1993. iv, 318 pp., illus. Paper, $98.75. American Sciences Press Series in Mathematical and Management Sciences, vol. 3.

System Designs into Silicon. Jan Johansson and John Forskitt. Institute of Physics, Philadelphia, 1993. Variously paged, illus. Spiral bound, $70 or £35.

Time Series Prediction. Forecasting the Future and Understanding the Past. Andreas S. Weigend and Neil A. Gershenfeld, Eds. Addison-Wesley, Reading, MA, 1993. xx, 643 pp., illus. $49.50; paper, $32.25. Santa Fe Institute Studies in the Sciences of Complexity, proceedings vol. 15. From a workshop, Santa Fe, NM, May 1992.

The World of Physical Chemistry. Keith J. Laidler. Oxford University Press, New York, 1993. xii, 476 pp., illus. $85.