

for the reader to follow progressive and regressive development patterns as the species adapt to environmental circumstances.

Reference is sometimes made to human maldevelopmental and pathological conditions, although many phylogenetically traceable entities are not dealt with.

Compared with the first edition of *Evolution of the Nervous System*, this new edition has been extensively revised and up-dated. New concepts derived from neurophysiology, histochemistry, electronmicroscopy and neurochemistry have been incorporated. Of particular interest are the discussions on bioluminescence, thermoregulation, the role of neuromelanin and the development of speech.

The book is well written and referenced and undoubtedly the best on this difficult subject. It makes exciting bedtime reading for any neuroscientist.

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ANIMAL MODELS OF HUMAN BEHAVIOR: CONCEPTUAL, EVOLUTIONARY, AND NEUROBIOLOGICAL PERSPECTIVES. Edited by Graham Davey. Published by John Wiley and Sons. 371 pages. \$68.95 Cdn.

Mark Twain was of the opinion that God created humans because he was disappointed in the monkey. In this series of papers, anthropologists, biologists, and psychologists examine the issues of whether, why, and how findings from studies of the latter, and their infra-human associates, contribute to the understanding of the structure and function of the former. A single chapter on cognitive theories of animal learning examines the heuristic value and legitimacy of extrapolations in the opposite direction.

The inspiration for this text grew out of a 1980 London symposium on "Extrapolation from animals to man in psychology". The current volume was expanded by the addition of contributions from researchers considering the problem of interspecific comparisons from the perspective of evolutionary biology, thereby complementing, or challenging, the traditional approach of comparative psychology.

In addition to its scholarly appeal, Professor Davey's book takes on added currency as the recurrent debate over the morality of animal experimentation again heats up.

The text is in three sections, each with an introduction by the editor. Section I, with the exception of a curious initial chapter on "linguistic phenomenology", comprises articles on the

historical development and conceptual status of behaviorism and its rivals as models of human and animal behavior. The contributions are well conceived and serve to illustrate how thoroughly behavioral models have informed basic research on human and infrahuman function even among those who may not espouse all of the philosophical trappings of radical behaviorism.

Section II presents a separate approach to the investigation of structure and function from that adopted by the comparative psychologist, specifically the perspective of evolutionary biology. It is a teleological perspective which addresses the issues of what function does such-and-such a behavior serve and how does behavior increase an organism's inclusive fitness, that is, its reproductive success. The rallying cry of the proponents of this approach is that no theory of behavior which is inconsistent with the findings of evolutionary biology can long endure. Although this is an eminently sensible premise, the comparative psychologist may feel ill at ease with the construction of elaborate theoretical edifices on narrow empirical bases, as suggested in Barkow's chapter on "Begged questions in behavior and evolution".

Section III has the clearest direct relevance to the interests of the neuroscientist in presenting a number of papers on interspecific brain-behavior analyses and the status of particular models of psychopathology. This section presents a well-balanced view of both the problems and the possibilities attendant upon such modeling. A fascinating chapter by Carroll and O'Callaghan on psychosurgery illustrates how the cavalier extrapolation of findings from studies of animal behavior to human behavior on the basis of superficial similarity of the two domains and through the uniquely human trait of seeing what one wants to see may have exacted a high cost in human function.

This is an interesting work and, within the limits imposed by a multi-author endeavor, a well written one. It has the further advantage of being largely free of hectoring and polemic. The chief problem it faces is in finding its audience, a problem not mitigated by the text's costs. Neither the basic scientist searching for a comprehensive review of a particular research domain nor the clinician seeking information of direct relevance to practice will find it in this text. Nevertheless, it does present an up-to-date conceptual analysis of both the possibilities and the pitfalls of extrapolation from animal to human behavior. Undoubtedly, Mark Twain would have approved.

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Books Received

A GUIDE TO NEUROLOGICAL AND NEUROSURGICAL NURSING, 1983. Edited by Mariah Snyder. Published by John Wiley & Sons, New York. 613 pages. \$34.00 Cdn. approx.

ANIMAL MODELS OF HUMAN BEHAVIOR. Edited by Graham Davey. Published by John Wiley & Sons, New York. 371 pages. \$62 Cdn. approx.

ATLAS OF HUMAN CROSS-SECTIONAL ANATOMY, 1984. By Donald R. Cahill and Matthew J. Orland. Published by Lea and Febiger. 139 pages. \$37 Cdn.

AUTONOMIC GANGLIA, 1983. Edited by Lars-Gosta Elfvin. Published by John Wiley & Sons, New York. 527 pages. \$65 Cdn. approx.

CLINICAL NEURO-OTOLOGY (Clinical Neurology and Neurosurgery monographs, Volume 4) By Peter Rudge. Published by Churchill-Livingstone, Academic Press. 341 pages. \$69.50 Cdn.

COGNITIVE PROCESSING IN THE RIGHT HEMISPHERE, 1983. Edited by Ellen Perelman. Published by Academic Press Inc. 257 pages. \$43.75 Cdn. approx.