

FIFTEEN chapters by different authors who write with different degrees of clarity comprise the present volume. The ultimate goal of the book as described in the final chapter, by Meyer and Bresnahan, is to familiarize physiological psychologists with neuroanatomical methods in order to achieve an interdisciplinary approach to brain-behavior problems.

The book is divided into three major sections: general information about neural tissue, methods for studying normal tissue, and tracing methods to study neural connections. The first chapter deals with the basic tool of the neuroanatomist: the microscope. In order to utilize anatomical techniques, a certain degree of familiarization with the microscope is an absolute necessity. Möllring's chapter is written in very general terms; more examples of neural tissue would have been helpful. Unfortunately, the lack of references in this chapter represents a glaring error; some of the many books and articles on the subject of microscopy should have been included for the reader who desires additional information. Clark's chapter on the preparation and staining of neural tissue gives the novice a good background for beginning neuroanatomical endeavors. The final chapter in this first part, by Woolsey and Dierker, is a discussion of the use of computers in neuroanatomy. They mention several types of analyses that computers can do for us.

The second part of this book contains four chapters: The Scheibels describe Golgi-impregnation techniques, Moore and Loy review fluorescence histochemistry for the visualization of monoamines, Tweedle discusses techniques for staining of single cells, and the Bernsteins present electron microscopic (EM) material. The last chapter is the weakest because many of the procedures are only vaguely explained. I think this chapter would tend to discourage any physiological psychologist from even thinking of embarking on an EM project.

The final section consists of seven chapters dealing with the experimental approaches to the study of neural connections. Giolli and Karamanlidis review

methods of silver stains for degenerating fibers. Hendrickson and Edwards review the autoradiographic (AR) technique. These are the two most popular methods for studying anterograde connections. Both chapters are written with clarity and with sufficient detail to allow readers to initiate these techniques in their own laboratory. Spencer, Lynch, and Jones discuss horseradish peroxidase (HRP) as an anterograde tracer. Kobayashi reviews the neurochemical effects of lesions; his chapter is more a compendium of results rather than a discussion of methodology. Ravizza discusses the retrograde changes that occur in a cell body after its axon has

been severed. LaVail discusses HRP as a technique for tracing retrograde connections; since publication of this book new protocols have been developed, and recent journal articles should be consulted by readers who wish to use HRP. A chapter by Schlag on the use of electrophysiology for mapping is also included.

OVERALL, the book is very worthwhile. Any neurobiologist who wishes to be familiar with the current neuroanatomical techniques or who wishes to use them would do well to start by reading this book.

## A Thinker's Introduction to Experimental Design

A. Bennett, S. Hausfeld, R. A. Reeve, and J. Smith  
*Workshops in Cognitive Processes*. Kensington, Australia: New South Wales University Press, 1978. Pp. 120. \$6.75 paper.

Reviewed by WAYNE A. WICKELGREN

All four authors are at Macquarie University (North Ryde, Australia). A. Bennett is Senior Lecturer in Psychology. A University of Sydney PhD, she has research interests in visual memory, reading, and imagery. S. Hausfeld, R. A. Reeve, and J. Smith have each done postgraduate study at Macquarie. Hausfeld is a Tutor (previously at Sydney University) with research interests in adult cognition and perception, especially adult reading and listening processes. Reeve and Smith are Senior Tutors, previously Lecturers at New South Wales Institute of Technology. Reeve has research interests in adult and developmental cognitive processing. Smith's research interests include developmental aspects of memory, especially memory for musically rhythmic patterns.

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THIS is a superb book! I used it in an introduction to experimental psychology college honors class and in an upper-division advanced experimental psychology class. I loved the book, my teaching assistant loved it, and finally, the students loved it. I recommend it very highly for any course that tries to teach students some concepts and principles of any phase of experimentation in human cognitive psychology, from the generation of initial research questions to experimental design, preparation and running of experiments, analysis, and write-up.

The book is composed of 31 workshops covering a wide variety of topic areas in cognitive psychology: memory, imagery, attention, perception, language,

speech, reading, and thinking. The specific topics for each workshop are as follows: (1) mental set and comprehension, (2) eyewitness reports, (3) memory for serial lists, (4) recall versus recognition, (5) levels of processing, (6) encoding specificity, (7) verbal labeling and memory, (8) method of loci, (9) bizarre imagery mnemonics, (10) visual versus verbal coding, (11) imagery and perception, (12) structure of imagery, (13) mental rotation, (14) selective listening, (15) selective attention in reading, (16) divided attention, (17) visual search, (18) visual pattern recognition, (19) musical pattern recognition, (20) grammaticality and sentence perception, (21) transformation rules, (22) extralinguistic context, (23) lexical search, (24) sentence ambiguity, (25) reading units, (26) three term series problems, (27) deductive reasoning, (28) concept attainment, (29) Tower of Hanoi problem, (30) Missionaries and Cannibals problem, and (31) creativity.

Each workshop is meant to be an experiment conducted by a student or a group of two or three students—typically using other members of the class as subjects. The book introduces each workshop area by succinctly summarizing some background information and posing some interesting questions to which the workshop lab exercise is addressed. Each workshop is typically based on some experiment in the recent journal literature, and the student should be provided with a copy of this journal article to obtain information on details of experimental method, analysis, and interpretation not provided in this text.

The text does not duplicate the journal article. It provides an introduction and overview to the experiment(s) described in the relevant journal article in language that is both easy and interesting to read. The text is short and very concisely written. There are no wasted words, but it is very clearly written. The authors write in straightforward, no-nonsense prose. They show exquisite judgment for what needs to be said to students to get them to understand what some important theoretical issues are in each workshop area and what some important methodological (design) prob-

lems are that must be solved to answer the theoretical questions.

Most important, the authors ask hundreds of fascinating questions that get students thinking about the theoretical issues and the experimental design problems for themselves. The book is fun to read and it focuses on theoretically interesting questions throughout. Students learn design and analysis principles and procedures in the context of designing, planning, preparing, running, analyzing, and writing up an interesting experiment—not by reading an atheoretical discussion of experimental design principles in general. I think some abstract discussion of independent, dependent, and controlled variables; manipulated versus measured variables; subject-controlled versus independent group designs; practice and order effects; and so forth, is helpful to students. However, the nuts and bolts of learning how to do experiments in psychology require just the

sort of “hands on” experience that the workshops in the book provide.

WHAT makes this book so extraordinary as a vehicle for taking students through a set of laboratory experiments is that the book asks so many fascinating questions. It gets students to think for themselves. The focus is on answering important questions concerning how the mind works, and it stimulates students to generate their own research questions in each area. Students are not just told to replicate a particular experiment. They are given many alternatives, encouraged to generate their own alternatives, and then asked to make choices both as to what question(s) they will try to answer and what methods they will employ. I've never cared much for canned lab exercises—too much mindless action. This book puts the emphasis in laboratory psychology where it belongs—on the mind, not the hand.

## A Mixed Bag

George Serban (Ed.)

*Cognitive Defects in the Development of Mental Illness.* New York: Brunner/Mazel, 1978. Pp. xxviii + 404. \$25.00.

Reviewed by BERTRAM D. COHEN

George Serban is Clinical Associate Professor and Principal Investigator (both in the Department of Psychiatry) and Director of the Community Research Study, all at New York University. An MD of the Faculty of Medicine (Bucharest, Rumania), he is also Medical Director of the International Anti-Drug Abuse Foundation, an ABPN Diplomate, and a past President of the International Society for Existential Psychiatry. Serban is author of *Adjustment of Schizophrenics in the Community* and editor of *Psychopathology of Human Adaptation*, among other books.

Bertram D. Cohen is Professor in the Department of Psychiatry at Rutgers

Medical School. A University of Iowa PhD, he was previously Chairman of the Graduate Faculty in Psychology at Rutgers University (where he is currently Adjunct Professor in the Graduate School of Applied and Professional Psychology) and Lecturer at Princeton, and has been a Fulbright-Hayes Visiting Fellow at the Psychological Institute in Copenhagen. Cohen wrote chapters in S. Schwartz's *Language and Cognition in Schizophrenia* and in L. C. Wynne's *The Nature of Schizophrenia*.

THIS is a conference book, containing a collection of papers presented at a symposium, the theme of which is expressed in the title of the book. The