Reviews

Experimental psychology and information processing by D W Massaro; Rand McNally, Chicago, Ill. (UK: Eurospan, London), 1975, 651 pages, $14.95 (UK: £11.50)

This book grew out of two courses of lectures (whose names form the title), taught by the author. Its aim is to present an up to date treatment of basic material suitable for courses in Experimental Psychology, Perception, Memory and Attention, Information Processing, and Cognitive Psychology. The book is divided into an Introduction and five main sections, which more or less trace the inward flow of information from the sense organs.

After a brief flirtation with the mind/body problem, and various theoretical approaches to psychology, there follow chapters on the use of reaction time to measure the duration of mental processes, and inferences about the number and nature of the stages involved in a particular task. The latter form a detailed and lucid account of some of the techniques and theories which characterize the information processing approach.

The next two sections are entitled “Sensation” and “Visual Perception”. The first three chapters of the former section give a readable account of classical psychophysical methods and Fechner’s Law, the problems surrounding the concept of a sensory threshold, and signal detection theory. The fourth chapter on “The Detection of Light” looks like a condensed version of Cornsweet’s much praised treatment of Hecht, Schlaer and Pirenne’s famous experiment. Inevitably, the section on visual perception is limited in scope. Some of the effects of eye movements, accommodation, and perspective cues on perception are demonstrated. A chapter is devoted to some well-known illusions, and is followed by a discussion of shape and size constancy.

There are some attractive touches in these sections. For example, many of the pictures which enable readers to observe effects for themselves are photographs of abstract paintings, rather than the usual run of home-drawn stimuli. What this part of the book attempts is usually competently done, though in places careful amplification would be needed: for example, in a paragraph on the role of fine eye tremor in vision, or the treatment of the horopter.

The rest of the book falls more easily under the usual information-processing classification. The section on “Attention” begins with “The Span of Apprehension” and includes a comprehensive survey of selective-listening studies and the various theories based on them. There are also chapters about the effects of attention on different stages of information processing. “Reading and Listening” tries to analyse the processes of visual and auditory recognition. Massaro also discusses echoic and iconic storage, the time taken to process perceptual information, and the nature of the perceptual units in speech and reading. The final section on “Memory and Learning” opens with chapters on information read-out from perceptual stores, whether of speech or nonspeech sounds, or of visual patterns. There are discussions of forgetting, types of coding and search procedures, and of what it is that subjects learn, remember, and use during normal performance.

As the author’s stated aim—and this description of the contents—suggest, the book embraces a broad range of topics. Thus it has to be selective, at least in parts, or provide very thin coverage. Massaro’s strategy has been to select. This gives the section on visual perception a somewhat distorted appearance, and many people would want additional reading to fill gaps, let alone to give other points of view. For example, there is nothing on aftereffects—or (in a chapter entitled “The Art of Binocular Perception”) on stereoscopic vision, though references to the latter are given in the suggestions for further reading at the end of the book.

In general, the book is clearly written and well produced. Students interested in topics covered in the later chapters would probably find them and parts of the Introduction rewarding reading. Those taking courses in perception would need a supplementary diet.

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Aspects of tone sensation by R Plomp; Academic Press, London, 1977, 167 pages, £6.50 (US: $14.25)

Reinier Plomp has produced a book which covers most of the phenomenology of tone perception: frequency analysis, nonlinearity, loudness of complex sounds, timbre, pitch, roughness. He makes no attempt to correlate this knowledge with the anatomy or physiology of the ear: such an attempt would, of course, require a much larger book and would date faster.

The result is a good reference book, although the subject index could usefully be expanded. It is not a good textbook for students, nor, I suspect of use to most musicians and musicologists as it is too difficult to read. This is less because the author is writing in a foreign language than because of the way the book is put together. The summaries at the end of each chapter are useful, but no substitute for clear presentation and organisation.

Tone perception is something of a Cinderella; it is usually allowed a chapter in books devoted to other aspects of auditory perception, and most such chapters concentrate on the limits of the system rather than its normal operation. This is probably an inevitable result of the way science looks for data. However, music, the most important use of tones, is concerned with sensation rather than thresholds, so this emphasis may be misplaced; not just in sound perception but in other fields too. The subject area of this book is a welcome exception.

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Children's cognitive development by Ruth L Ault; Oxford University Press, New York, 1977, 193 pages, $3.00 (UK: £2.75)

Nowadays child psychologists almost universally look on children as defective adults. Children are charming, but they lack something that we have and as a result they think 'differently'. This view, which has clear antecedents in Baldwin's influential evolutionary view, Binet's tests and experiments, and Levy Bruhl's pronouncements about primitive minds, is the one major point of agreement between the two major approaches to cognitive development, that of Piaget and that of the information processors.

So it is not surprising that this book, which compares such attempts to reconcile these two approaches, enthusiastically accepts this assumption. Indeed to illustrate children's peculiar thought processes, it starts with the story of the girl who was asked what would have happened if she had been called Jack and answered, in my opinion quite logically, that she would have been a boy. Professor Ault uncharitably says that this demonstrates a typically childlike magical view of the importance of names. Not surprisingly she then goes on to accept with hardly a murmur the systematic attempts by Piaget to show how extraordinarily illogical children are.

I cannot recommend her account of Piaget. It is too sparse as well as too uncritical. Nor is her section on the information-processing view much help. Much better accounts of both approaches exist elsewhere. It is possible that this book might be some help in an introductory way to those who have had no experience of psychology, but its level is too low for a psychology undergraduate.

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Books received

Ault R L Children's Cognitive Development: Piaget's Theory and the Process Approach Oxford University Press, New York, 1977, 193 pages, $3.00 (UK: £2.75)
Borkowski J G, Anderson D C Experimental Psychology: Tactics of Behavioral Research Scott, Foresman, Glenview, Calif. (distributed in the UK by Eurospan, London), 1977, 258 pages, $8.95 (UK: £5.50)
**Reviews**

Bower T G R *A Primer of Infant Development*  W H Freeman, San Francisco, Calif., 1977, 187 pages, $12.95 cloth, $4.95 paper (UK: £10.40, £3.70)

Bromley D B *Personality Description in Ordinary Language*  John Wiley, Chichester, Sussex, 1977, 278 pages, £9.00 (US: $18.00)

Hart J, Corriere R, Binder J *Going Sane*  Jason Aronson, New York, 1975, 472 pages, $9.95

Kandel E R *Cellular Basis of Behavior: An Introduction to Behavioral Neurobiology*  W H Freeman, San Francisco, Calif., 1976, 727 pages, $45.00 cloth, $19.95 paper (UK: £36.00, £14.60)

Kuffler S W, Nicholls J G *From Neuron to Brain*  Sinauer Associates, Sunderland, Durham (distributed by W H Freeman, Reading, Berks and San Francisco, Calif.), 1977, 486 pages, £14.40 cloth, £10.20 paper (US: $24.00, $15.40)

Lacan J *Écrits: A Selection*  Tavistock, London, 1977, 338 pages, £12.00

Murch G M (Ed.) *Studies in Perception*  Bobbs-Merrill, Indianapolis, Ind. (distributed by Eurospan, London), 1977, 364 pages, $6.95 (UK: £5.50)

Rumelhart D *Introduction to Human Information Processing*  John Wiley, Chichester, Sussex, 1977, 306 pages, £6.95 (US: $12.00)

Rychlak J F *The Psychology of Rigorous Humanism*  John Wiley, Chichester, Sussex, 1977, 547 pages, £14.00 (US: $24.00)

Shaw R, Bransford J (Eds) *Perceiving, Acting, and Knowing*  Lawrence Erlbaum Associates, Hillsdale, NJ (distributed by John Wiley, New York and Chichester, Sussex), 1977, 492 pages, $25.00 (UK: £15.00)

Thompson R F (Introductions) *Progress in Psychobiology, Readings from Scientific American*  W H Freeman, San Francisco, Calif., 1976, 392 pages, $14.00 cloth, $7.00 paper (UK: £10.50, £4.90)

Welford A T *Skilled Performance: Perceptual and Motor Skills*  Scott, Foresman, Glenview, Calif. (distributed in the UK by Eurospan, London), 1976, 200 pages, £5.95 (UK: £4.50)

Wilden A *System and Structure: Essays in Communication and Exchange*  Tavistock Publications London (US: Harper and Row, New York), 1977, 540 pages, £5.25

All books for review should be sent to the publishers marked for the attention of the reviews editor. Inclusion in the list of books received does not preclude a full review.