assumes considerable specialist knowledge in the reader. However, the book provides evidence of a strong and active research effort in the field of obesity in many Italian laboratories, and the editors are entitled to be proud of their contributions to this field.

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The perception of odors. T. Engen. Pp. 202. Academic Press, New York, 1982. £18·50. $27·50.

No careful student of appetite would doubt that olfactory perception is important for ingestive behaviour. No gastronome could believe that the human sense of smell is dull—either insensitive or uninteresting! So it will be no surprise to readers of *Appetite* to see a book on smell reviewed in these pages. It turns out to be highly appropriate, for Engen considers that the sense of smell may well have more to do with motivation and emotion than with the mere informing of problem-solving about its environment.

Effects of odours on human eating recur among Engen's examples. The olfactory component of flavour is given proper prominence over taste in dietary discrimination. Engen seems to vary in optimism about attempts to use odours to reduce intake when that is desirable. In food and elsewhere, aroma is important for people but its effects are labile, probably largely learned and certainly late developing, from Engen's own evidence.

Such subtleties of human olfaction bear also on Engen's other two main examples of the practical significance of odour—air pollution and personal fragrances. He repeatedly attributes renewed interest in olfaction to speculation about human sex pheromones. The topic certainly enlivens a textbook like this but surely it cannot be compared to food research (and pollution research) for its contribution to the understanding of human olfaction (and I comment from some research involvement). Engen also treats the human pheromone issue as a matter more of behavioural biology than of the historical design and current marketing of personal fragrance products. Yet the latter orientation would cohere better with Engen's general approach. Trygg Engen was among the first to promote a psychological rather than merely psychophysical or even chemical approach to olfaction. This book exposes how ridiculous is rivalry between biological and social science—and illustrates the key role of behavioural science in holding the balance. Odour is important to us but not a part of our animal nature except in a way that makes it exquisitely human: olfactory learning is fast and very well retained; a previously experienced odour can dominate brain activity to produce a recall of amazing richness; odour seems primitive merely because the stimulus is spatio-temporally fragile and is almost impossible to name for itself rather than for its source.

There are other ways in which Engen could have productively pushed his approach still further. He questions whether odours make you feel sick or feel good, rather than sustaining or discouraging eating, breathing or socialising. He doubts that there are innate olfactory likings or dislikes. Even the character of olfactory sensations may depend on experience, he suggests. Such lines of thought could have radical implications for odorant receptor theory, but Engen does not pursue them.

Another "cognitive" psychologist long ago exposed the futility of S. S. Stevens' "new psychophysics" (although he was not allowed to call it the "new pseudophysics": E. C. Poulton, *Citation Classics*, 1981). Yet Engen reckons that "ratio scaling" and the Power Law have made major contributions to olfaction research. That is not only to ignore

the fact that there is no evidence that such procedures actually measure sensations as claimed. More broadly, it is to give sway to the phenomenological tradition in psychophysics to an extent that is peculiarly inappropriate to olfaction, on Engen's motivational view of it. Without discriminative acts and reactions, sensations and percepts could not be investigated or even talked about. Although Engen correctly denies that a smell is an odour experience because the olfactory nerve mediates it, the sensation is none the less a private aspect of the sort of contribution to discriminative and motivated performance that can be yielded by a sniff. Engen tells us that there is a contemporary American Weber at the FDA who detects decay in fish better than their chemical instruments can. I suspect that a cognitive experimental approach to olfactory performance has much to contribute to food evaluation.

A small textbook on olfaction is timely, and Engen's treatment of the area especially so. The book is readable and succinct without compromising critical scholarship. I could not argue that the few literature omissions I spotted are serious. Errors are few: cachexic anorexia should be distinguished from anorexia nervosa (p. 111) and the occasional loose phrasing tightened. The book should serve its author's intentions admirably—to introduce the established facts and current issues briefly and clearly to specialist students and to scholars in related fields.

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The psychobiology of human food selection. Lewis M. Barker (Ed.). Pp. 262. Avi Publishing Company, Inc., Westport, Ct. John Wiley/Ellis Harwood, Chichester, U.K., 1982. £18·00, $36·20.

This edited collection brings together the work of experts on feeding from many perspectives. Biologists, psychologists, nutritionists, anthropologists, physiologists, and even geographers are represented in this volume, which explores the various influences on human food selection. The book has 13 chapters divided into three sections.

Section One, the biological aspects of food selection, begins with a chapter on the biological basis of food selection, by Lloyd Beidler, which focuses mainly on taste factors. Next is an essay by Per-Olof Astrand on the influences of diet and exercise on each other, which has little to say about the selection of particular foods, but more about general energy requirements. Finally, an excellent overview by Edmund and Barbara Rolls of the literature on brain mechanisms involved in feeding behavior closes this section.

The second section explores psychological determinants of food choice. The five chapters explore the effects of nutritional, memory, variety, taste and social factors on the foods people eat. David Booth's analysis of nutritional wisdom's influence on eating may not be exactly on the general level, but covers most facets of this topic. Next, volume editor Lewis Barker's entertaining and well-written contribution discusses flavor memory. Although a bit more on humans and the significance of flavor memories might be desirable, this chapter is interesting and informative. Another excellent chapter by Barbara and Edmund Rolls addresses the influences of the availability of varieties of food on what and how much people eat. The following chapter by Smith, Foster, and Bartoshuk, on the other hand, does not successfully