

BOOK REVIEWS

useful situations that might be encountered by human beings while exploring their environment.

I should add that while the book defends these four research strategies, it also covers alternative arguments (both philosophical and scientific) in great detail, so this book is not just a list of the author's own ideas, it also serves as an introduction to consciousness studies as a whole. I personally feel that the coverage of consciousness studies as a whole is a bit too much; the book would have been about half the length, and the main argument easier to understand, if the author had stuck to his own ideas. Then again, since one of the author's stated aims is to lay out a roadmap for the field as a whole, he is within his rights to point out the pitfalls along the way, while leading us via the one true path. The novice reader will quite possibly benefit from these digressions.

Like every other book on a topic as controversial as consciousness, this book also has some flaws. For one, the book does not address the hard problem of consciousness. Why is there anything like phenomenal experience at all? No known physical or biological processes can plausibly be the basis for a state for which there is a 'what is it like to be in that state'. VR simulations are no exception – the reason why we experience something in a VR environment is because *we* inhabit those environments and not because VR computers secrete conscious experience. Why should the brain be any different? Secondly, even if we set aside such metaphysical puzzles, even a biological realist can quibble about brain centrism. Here is an alternative – the brain itself is given to us as an object via our experiential contact with the world, just like flowers and trees and umbrellas. Indeed, one could *define* objects, including the brain, as (geometric and material) invariants of our experience. Objects are shapes that remain constant while we move around in this world. If we accept this 'invariant' reasoning, then from symmetry considerations we should not make a distinction between the brain and other objects, so why privilege the brain?

Keeping the shortcomings of the book aside for the moment, a field as wide open as consciousness studies needs several research programmes, some biological, others physical and yet others metaphysi-

cal. Our knowledge of consciousness is bound to increase when these programmes compete in the public domain. For these reasons, I commend Revonsuo for sticking his neck out and stating his views about the geography of consciousness.

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Handbook of Virology. Jawaid A. Khan and Jeanne Dijkstra (eds). The Haworth Press Inc., 10 Alice Street, Binghamton, NY 13904-1580, USA. 452 pp. Price: \$69.95.

This book is very handy and provides up-to-date information on different aspects of plant virology in a very concise form. The book includes selected topics in both basic and applied aspects in plant virus research that are written by experts in their own field of research. The book therefore can serve as a useful guide to students, teachers and researchers in plant virology.

Descriptions on symptomatology would have been clearer with more illustrations. The chapter on architecture of plant viruses is rather brief and the assembly pathways for TMV and bromoviruses could have been described in some more detail with illustrations. The replication and gene expression of both RNA and DNA viruses are described in detail. This is followed by a brief description of viroids. Transmission of plant viruses, which is a very important aspect of plant virus research in the management of the disease, is covered in three chapters. The chapters on serology, detection and identification of plant viruses provide up-to-date information on various methods of disease diagnosis and are very useful to researchers in the field. The book also deals with the more contemporary topics such as recombination in plant viruses, virus variability and evolution. The chapter on recombinant DNA technology could have been presented soon after the chapter on isolation and purification of viruses. This chapter seems to be out of place although it describes the various techniques. Resistance to viral infection and control strategies are described rather briefly.

The most useful information for researchers in the field is provided in the appendix, which describes each family of viruses. The book would be of use to both graduate and undergraduate students of plant pathology.

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Annual Review of Neuroscience. Steven E. Hyman *et al* (eds). Annual Reviews, 4139, El Camino Way, P.O. Box 10139, Palo Alto, California 94303-0139, USA. 2006. Vol. 29. 914 pp. Price not stated.

Although intuitively it would seem that reviewing a set of reviews, a meta-review of sorts, would appear not too demanding (which is probably the reason why I accepted the offer so quickly), perusing through the twenty reviews that comprised the 2006 edition of the *Annual Review of Neuroscience* made me quickly realize the challenge at hand. Because the editorial committee of the Annual Reviews mainly chooses the topics based on their current relevance, the annual reviews series are not thematically organized. Added to this, the reviewer's job is particularly exacerbated by the scope of modern neuroscience that encompasses varied technical and conceptual approaches, all well motivated and necessary, but nonetheless difficult to be digested by a single brain (at least mine). This confession notwithstanding, in putting this review together I have taken the liberty to re-organize the presentation of chapters, emphasizing functional links where possible. I hope this approach might be of greater value to a reader of this meta-review interested in getting a gist of the breadth of issues being examined in the 2006 edition, rather than just evaluate the reviews in their order of presentation in the book, or segregate the reviews into areas such as molecular, cellular, systems, behavioral/cognitive and computational neuroscience as is typically done in many neuroscience journals these days.