

system but they are generally presented clearly. The questions for thought and discussion following each chapter will probably be very useful when teaching a course based on this text. Most press the reader to explore the general applicability of conclusions drawn from case studies. In general, although the text is well illustrated, I felt that more photographs could have been used in place of some of the schematic illustrations.

What about the general principles to be drawn from the growing literature describing neural activity underlying behavior important to the animal? Here Camhi retreats to restrictive and conditional principles as opposed to

global ones, suggesting that it will be the neuroethologists' lot to 'uncover as many such principles as possible'. These include, among others that fast occurring behavioral acts will be mediated via large neurons with few synapses, or that rhythmic behaviors will use central oscillators and sensory feedback. It seems to me that this approach will relegate neuroethology to 'gee-whiz-ology', confirming that the consequences of natural selection can be seen at the level of the nervous system. To some extent, comparative physiology has suffered this same fate. Instead of these context limited principles, I would have liked to see discussion of more general

ideas, like the role of spatial maps in the brain for neural processing or the idea of 'equivalence sets' of neurons across species (Bullock, T. H. (1984) *Science* 225, 473-477). I enthusiastically support the view that a neuroethological approach has a great deal to offer in helping to understand how brains work, but this potential will be realized only when comparison among species is actively exploited to create a conceptual framework within which one can understand the details.

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### Not in our Genes; Biology, Ideology and Human Nature

by S. Rose, L. J. Kamin and R. C. Lewontin, Penguin Books 1984. £3.95 (xi + 322 pages) ISBN 0 14 022605 2

The word *Not* in the title on the front cover of this book should have been more clearly emphasized, otherwise the less discerning might be misled into thinking that this is yet another popular book on genetics, which it is not. The authors, a biologist, a psychologist and a geneticist respectively, are primarily concerned with 'an explanation of the origins and social functions of biological determinism in general - and with a systematic examination and exposure of the emptiness of its claims *vis-à-vis* the nature and limits of human society with respect to equality, class, race, sex, and "mental disorder"'. By biological determinism is meant that human lives and actions are the inevitable consequences of our genes. Human nature is fixed and therefore unalterable. This philosophy, it is argued, has been seized upon as a 'political legitimator' of a conservative ideology which the authors refer to as the New Right. The roots of biological determinism are traced back to the nineteenth century physiologists with their emphasis on the physicochemical basis of bodily processes, with the subsequent extension of this reductionist philosophy to molecules and genes.

The idea that our behaviour is inherently determined and therefore immutable, is prevalent among writers such as Zola and Dickens, and many scientists, including eminent geneticists such as Galton, and behaviourists

such as Lorenz and E. O. Wilson. The extension of this philosophy from the individual to society as a whole is examined, such as using the principles of Darwinism as an all-encompassing theory of society.

This reductionist philosophy is attacked on several fronts. Firstly, it is illogical. For example, if as J. B. S. Haldane and H. J. Muller believed, important aspects of human behaviour were significantly influenced by genes, how could they also believe that social relations could be revolutionized and the class system with its privileges be abolished? Secondly, and far more importantly, it has no real scientific basis. Data evinced as supportive at best have sometimes been naive, such as some of Galton's early studies, or at worst have actually been concocted, as in the case of Cyril Burt's data on IQ testing. More often data have been misunderstood and misinterpreted as exemplified in Jensen's and Eysenck's arguments concerning apparent racial

differences in intelligence. But the opposite extreme of biological determinism namely cultural determinism, as promulgated for example by the Skinnerian behaviourists, is equally untenable. The authors reject both extremes, though they are far more preoccupied in demolishing the former rather than the latter. They seriously question whether genetic factors are involved to any significant extent in determining IQ, schizophrenia and social behaviour. The naivete of socio-biology, portrayed for example in 'pop ethologies' such as *The Selfish Gene* also comes under detailed attack. In these days when molecular biology, genetic engineering, and gene cloning are rapidly becoming everyday topics of conversation with increasing emphasis on our genetic heritage, this is a refreshing attempt to redress the balance.

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### Muscular Dystrophy—Biomedical Effects

edited by Setsuro Ebashi and Eijiro Ozawa, Japan Scientific Societies Press and Springer-Verlag, 1983. DM 79 00/ US \$34.10 (ix + 302 pages) ISBN 3 540 12342 3

As stated in the Preface, the aim of the book entitled *Muscular Dystrophy, Biomedical Aspects*, is to provide greater exposure, particularly outside of Japan, for the research investigations of approximately ninety contributors interested in hereditary muscular dystrophy. Although the majority of these scientists have been active-

ly engaged in this area of research for many years, this specific group is one of several units recently organized under the auspices of the National Center for Nervous, Mental and Muscular Disorders of Japan. Their specific research interests focus primarily on developmental aspects concerned with the etiology of the disease and the role of intracellular proteinases on the progress of the disease.

The book accomplishes its aim. For this volume, each member of the research group was invited to submit an overview of his expertise with an emphasis on more recent findings. The presentations are grouped into six