

Purpose distilled

The Purposive Brain

by Ragnar Granit, *The M.I.T. Press, London*, 1978. £8.75 (232 pages) 0 262 07069 3

It is good to see that some scientists at least are not afraid to think about Purposes. For many there is a whiff of philosophy, even of theology, in any discussion of aims. How many scientists can honestly say that they have never spoken disparagingly of 'teleology'? Physiologists and biochemists have mostly been as backward as the rest in discussing the aims and direction of living things. Yet this has not been so of the greatest of them. The concept of homeostasis in the hands of Claude Bernard and Walter Cannon provides the magic key to the understanding of physiology, and biochemistry too. Charles Sherrington, the founder of modern neurophysiology emphasized that "the purpose of a reflex seems as legitimate and urgent an object for natural enquiry as the purpose of colouring of an insect or blossom".

Now Ragnar Granit, who won the Nobel Prize for his research in neurophysiology, takes up the discussion of the difficult ideas that are involved in such topics as 'explanation', 'understanding' and even 'consciousness'. He does it of course from the point of view of a scientist, not a philosopher. That is to say, he emphasizes that, for him, 'explanation' can *only* be 'understood' by representative examples. So the reader gets the advantage not only of wise discussion but also of beautiful descriptions of the nervous activities that Granit understands so well. You can find

here a single and cogent account of how the brain works. He emphasizes how different the system is from a man-made computer in its huge numbers of redundant pathways and the map-like displays of the cells. Much of his own research has been on vision and he gives an excellent account of seeing as a process of scanning the environment. Reflex physiology is another of his fields and he uses this to outline the principles of feedback and the control of movement, though he is somewhat sceptical as to how far detailed cybernetic explanations can go.

One important area that seems to be neglected in the book is the hypothalamus and systems that set the aims of regulation, and the rewards for meeting them. The work of Olds is only mentioned in passing. Knowledge of these pathways, obtained by self-stimulation and excision experiments, and of their pharmacology, seem to me to be fundamental to the understanding of aims and purposes. But one cannot expect everything in 232 pages. I was going to write 'packed pages' but that would give quite a wrong impression of the excellent writing. What is here is distilled not condensed.

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