

reviews

White beard through the looking glass Richard Dawkins

Behind the Mirror: A Search for a Natural History of Human Knowledge. By Konrad Lorenz. Pp. 261 (Methuen: London, 1977.) £4.90.

A PURELY PERSONAL PREJUDICE leads me to appreciate a book more if I am told, at the outset, what it is the author hopes to teach me. In place of the introductory chapter which might have served this purpose, *Behind the Mirror* begins with 'Epistemological Prolegomena'—long on Kant but, apart from a cryptic last sentence, short on statements of intention. In the final chapter we learn of the author's aim to "attempt to give a survey of man's cognitive mechanisms", something that "no-one else has hitherto ventured to do". "Cognitive mechanisms" are interpreted liberally to include not only higher conscious faculties but also more rudimentary mechanisms of adaptive behaviour which might represent the evolutionary forerunners of consciousness.

The readership at which the book is aimed is also hard to pin down. It is certainly too cerebral for the mass audiences of *King Solomon's Ring* and *On Aggression*, although there are flashes of the humour and the eloquence that characterise those works. On the other hand, although there is a bibliography to match the undoubted erudition of the author, the text lacks the detailed citations which would encourage the professional scholar to follow up points of special interest.

Librarians should file it half way between Philosophy and Ethology, which is another way of saying that I am only half competent to review it. I lack the knowledge (to say nothing of the confidence) to make statements like "The only philosopher ever to voice similar opinions is the Austrian F. Decker". And I cannot professionally evaluate Lorenz's central philosophical point, which seems to me rather important, that "in the interests of objectivity a scientist must understand the physiological and psychological mechanisms by which experiences are conveyed to men . . . for the same reasons that a biologist must know his microscope . . .".

The early chapters include some of the arguments given in *Evolution and Modification of Behaviour* (1966). Certainly these points can bear repetition, having been much misunderstood by Lorenz's critics from the school of Hysterical Environmentalism. Animal behaviour is adapted to its environment. This means there is a sense in which facts about the

world are represented in the animal's nervous system or other parts of its physical structure. Just as a key embodies information about the lock which it is manufactured to fit, so even the simplest protozoan contains knowledge about its environment in the sense that it is equipped in advance to survive in that environment.

Those who have ranted against Lorenz's usage of "innate" have sometimes failed to appreciate that he applies the word not to behaviour itself but to the "adaptive information" of behaviour. This is vividly expressed in his treatment of learning: "Unless one believes in supernatural factors . . . one has to postulate the existence of innate teaching mechanisms in order to explain why the majority of learning processes serve to enhance the organism's fitness for survival. These mechanisms also meet the Kantian definition of the *a priori*: they were there before all learning, and must be there in order for learning to be possible".

In later chapters of *Behind the Mirror* Lorenz comes on to human culture. As always what he has to say is stimulating, but his comparison of biological and cultural evolution is marred by his unfortunate misconception about how evolution works, and therefore about the nature of adaptation. A junior ethologist is bound to be mindful of Lorenz's own emphasis, reiterated in *Behind the Mirror*, on the biological value of reverence for the ancestral wisdom of tribal elders. This is enough to arouse twinges of remorse over the tone of my own recent criticism of Lorenz's unconscious group selectionism. Perhaps it was unfair to pick on *On Aggression* which, after all, was first published in 1963, just before the reaction to Wynne-Edwards brought us back to our neo-Darwinian senses.

But it seems that nothing has changed. In *Behind the Mirror*, animals are still expected to behave for the good of the species, and

there is still no inkling that the issue is the slightest bit controversial. Lorenz sees a "balance between the factors that make for the invariance of the gene pool and those factors that make for its modification . . ." which "is adjusted to the degree of variability of the environment". Mutation rate is at its "highest in creatures that inhabit highly variable environments". This last statement fits Lorenz's world view like a glove, but it ruffles all my selfish-genetic hackles and I would have liked to have been told where I could look up the evidence.

The idea of a balance between mechanisms for and against change is developed in the analogy of cultural evolution, where it is thought to include genetically programmed tendencies on the part of the young to revere the wisdom of elders—the White Beard Effect—and at other times to rebel against it. Lorenz gives us some fascinating examples of the predominance of blind biology-like evolution rather than rational planning in the development of human culture, and he correctly identifies natural selection as the common factor. But his is a natural selection between large units—species in the biological case, civilisations in the case of culture—rather than, as it should be, natural selection *within* such large units. If you want a cultural analogue of the fundamental unit of biological natural selection, you should seek the analogue not of the gene pool but of something like the gene.

A reviewer is bound to mention the shortcomings he sees in a book, but in this case they are not new and therefore do not diminish his deep respect for the author's achievements, a respect which is far too solid and real to owe its origin to any White Beard Through the Looking Glass. □

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Language analogue project

Language Learning by a Chimpanzee: The LANA Project. Edited by D. M. Rumbaugh. Pp. 312. (Academic: New York and London, 1977.) \$17.50; £12.40.

LANA is a laboratory chimpanzee, born in October 1970, who has been learning a specially-designed 'language' and engaging in a number of related experiments at the Yerkes Primate Center of

Emory University, Atlanta, Georgia, since she was just over two years old. The 'language' that she is learning is called, appropriately enough, 'Yerkish'; and her own name is identical with the acronymic abbreviation of the formal title of the project; the LANA project is, in full, the Language Analogue project. With the publication of the present volume, which reports the results of the first three and a half years