

REVIEWS

The Review Section of E&A consists of three parts. The first is made up of brief reviews of books and articles (and perhaps films, etc.) that are concerned in some way with the rights and wrongs of human treatment of non-human animals. The second part of this Section is entitled 'Replies' and contains comments on or responses to reviews published in earlier issues of E&A. By letter the Editor invites the authors of works reviewed to respond, and by this proclamation in each issue invites all other interested readers to submit comments. The third part of the Reviews Section is a list of works of which reviews are invited. Any member who wishes to review any work in this continuing 'Reviews Needed' list should contact the Editor.

Stephen Walker, *Animal Thought*
(London: Routledge & Kegan Paul), 1983

Walker summarizes the argument of his book in the following words:

Human thought is intimately connected with the activities of the human brain; other vertebrate animals apart from ourselves have very complicated brains, and in some cases brains which appear to be physically very much like our own; this suggests that what goes on in animals brains has a good deal in common with what goes on in human brains; and laboratory experiments on animal behaviour provide some measure of support for this suggestion (p. xiii).

His conclusion is that

it makes sense to suppose that awareness and mental organization occur in animals, without the involvement of language (xiii).

The book is divided into three parts. The first three chapters provide a history of philosophical and psychological theories concerning animal thought. Chapter 1 is devoted to the philosophers. It focuses on Descartes, naturally, but also contains summaries of the Aristotelean-Aquinian position against which Descartes was

working and of the Lockean, Humean, and Schopenhauerean positions developed in opposition to Descartes. Chapter 2 deals with Darwin and some of the nineteenth century thinkers he influenced, Romanes, Huxley, Marx, Engels, and Lloyd Morgan. Chapter 3 deals with twentieth century theories of animal thought, ranging from Thorndike and Pavlov through Watson, Tolman, and Skinner to Piaget, Griffin, and MacKintosh.

All Walker's summaries in these three chapters are lucid, well-focused, and engaging. Chapters 2 and 3 will be of particular interest to those, like myself, who are basically ignorant of the history of psychology. For example, I was surprised to learn that psychological experiments on animals were begun in reaction against Darwinian theorists and the field studies they employed. E. L. Thorndike, "who introduced the laboratory experiment into animal psychology, . . . pointed out that previous authors had paid much more attention to animal intelligence than to animal stupidity. Thorndike's tone throughout is that of a man who is going to remedy this omission" (61). Also surprising, at least to me, was the split between psychologists, such as Walker, who

are sympathetic to the idea of animal intelligence on the basis of physiological evolution and ethologists, such as Griffin (*The Question of Animal Awareness*), who are sympathetic to this idea on the basis of animal behavior. Walker tends to discount ethological studies of intelligent animal behavior, such as Griffin's study of the language of the honey bee, when the claimed intelligence of the behavior does not correspond to an appropriate level of brain development. It would seem that philosophical precommitments remain alive and well in animal psychology.

The second section of the book is devoted to physiological evidence concerning animal intelligence. Chapter 4 deals with the sequence and relations in vertebrate brain evolution. Chapter 5 deals with the functions of the various parts of the vertebrate brain and the conservation or change of functions as the structure of the brain evolves. Chapter 6 discusses these functions and their evolution in the life and survival of animals.

Walker summarizes the conclusion of these physiological chapters as follows:

I have supported the idea that the functions of the different divisions of the brain are more or less the same in all vertebrates, and that therefore we should expect the functions of intelligence, thought, and cognition to be present roughly in proportion to how well the forebrain seems to be developed. A fish, frog, or lizard does not have very much by way of cerebral hemispheres, and should therefore have very little cognition. But this little is a much more generous allowance than that given by other theories, which say that such forebrain as is present in non-mammals is not used for

cognition, or attention, or learning, at all, but is only there to respond to smells, or to program primitive instincts. These other theories are probably wrong (192-193).

Thus, Walker sees physiology supporting something like the "difference of degree" approach to animal vs. human thought favored by Locke and Hume, rather than the "difference in kind" (if it makes and sense to talk of animal thought at all) approach favored by Descartes and many contemporary, neo-Cartesian opponents of animal rights (e.g., R. G. Frey, *Interests and Rights*).

The third section of the book is devoted to psychological studies of animal thought. Chapter 7 concerns the cognitive dimensions of animal perception. Chapter 8 deals with animal memory, and Chapter 9 discusses symbolic awareness, communication, and attempts to teach apes human languages.

Not surprisingly, Walker finds that the psychological evidence confirms the "difference of degree" position supported by the physiological evidence. In the case of perception, if a bird sees a tree as something which can be flown around and possibly landed on and nested in, the argument is that this requires a perceptual schema of some complexity, which may be closer to an expressible verbal concept than to a succession of instinctive responses to exactly preprogrammed sensations (284).

Turning to memory,

If the perceptual apparatus of an animal is used to construct descriptions of what is perceived, in order to detect objects and things rather than isolated sensations, then one would certainly expect continuity and discontinuity with time

to be a necessary part of the descriptions. However, more complicated brains would be needed to construct such descriptions, and to store them over time, than would be needed to react to a simple stimulus, such as a bright light, and to modify reactions according to whether previous reactions to bright lights had been strengthened by the ingestion of food, or such like. There is reason to believe that the cerebral hemispheres of vertebrate brains are particularly important for, among other things, the utilisation of memories as opposed to such simple habits (337-338).

Concerning language, Walker is inclined to deny that Washoe and the other signing apes have learned a human language, because of the minimal grammar in their communications. As might be expected, he favors an evolutionary view of non-human near-languages:

Whatever the sources and stages in the evolution of human language, there remain sufficient similarities between human and animal brain function to allow for comparison. The similarities depend on the assumption that animal brains are devices for selecting and organising perceived information, and that the neural systems which accomplish perception and memory exhibit evolutionary continuity. Behavioural data support the contention that mental organisation exists in animals, in particular in non-human primates, as a necessary part of the percep-

tion of objects and their localisation and interrelationships in space and time. It does not seem unreasonable to suppose, therefore, that the development of the distinctively human capacity for language took place via the deployment of the same forms of mental organisation for new purposes (380-391).

In conclusion, Walker's book provides a good crash course in the history, physiology, and psychology of animal thought. Since animal rights philosophers and advocates are often dismissed by scientists as being woefully ignorant of the facts about animal mental capacities, reading this book can be recommended as a convenient way of catching such detractors by surprise and making them eat their words. However, at the beginning of *Animal Thought*, Walker says that he has "deliberately avoided the question of how theories of animal psychology might impinge on opinions about our moral responsibilities towards animals" (xiii); so, this book contains no ethical theory or conclusions. This book does contain summaries and analyses of many experiments involving the deprivation, mutilation, and killing of animals which are exemplary of the idle curiosities which animal physiologists and psychologists call "science". Many readers will, consequently, find parts of this book thoroughly distasteful. One can only hope that the argument developed in *Animal Thought* will come to impinge on our moral responsibilities to animals, so that the pointless suffering of animals reported in its pages may thereby finally come to some good purpose.

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