

particularly relevant to his/her own situation, and hopefully this will lead to further improvements and refinements in the working practices of cat rescue organizations. My only quibbles are with some of the photographs, where a profusion of pots and flowers makes it difficult to see the cat rescue facility behind the floral display; and on p 17, one veterinary surgeon seems to be operating on two cats simultaneously!

It would be extremely gratifying if this publication could serve as a catalyst for introducing legislation on compulsory standards of care for animal rescue organizations, as well as encouraging debate and dialogue on how best to tackle the ever-increasing problem of unwanted animals in our communities.

Irene Rochlitz
University of Cambridge
Cambridge, UK

Anthropomorphism, Anecdotes, and Animals

Edited by R W Mitchell, N S Thompson and H L Miles (1997). State University of New York Press: Albany. 518pp. Paperback. Obtainable from the publishers, State University Plaza, Albany, New York, NY 12246, USA (ISBN 0791431266). Price US\$21.95.

Anthropomorphism: is it bad, is it inevitable, is it useful? Moreover what actually is it? On these questions, scientists in the field of animal behaviour and welfare hold very different views. The term has something to do with our human perspective on the world, and on animals in particular, but how trustworthy that perspective is remains a cause for heated debate. For some it is trivial that we have a human perspective, for others it is a threat to science, while for yet others it is a legitimate way to approach and know the world. Thus, where you stand on anthropomorphism appears to be related to your views on measurement and scientific objectivity, and these are not easy issues to resolve.

Many fields of scientific research appear not to be overly bothered that a human perspective may underlie measurement, even though perhaps they should. When students in an organic chemistry class were instructed to use 'molecular anthropomorphism' to describe the behaviour of molecules, their scientific understanding of molecular mechanisms actually *improved* (Miller 1992). Nevertheless, we take for granted that molecules do not actually get angry or frustrated, so in this case the distinction between reality and creative fun is easy to make. In case of animals, however, the reality of their feelings matters greatly, and is precisely the point of debate. Radical behaviourists perhaps thought they had the debate dead and buried; however, with the publication of *The Question of Animal Awareness* (Griffin 1976), it re-emerged into mainstream science. The crucial question is: can we come to know an animal's perspective as it really is, or will our human bias always be in the way? This question is pertinent for many different fields – but especially that of animal welfare.

Reading *Anthropomorphism, Anecdotes and Animals* is an excellent way of digging into this question. This book presents a vast range of different perspectives on the problem of anthropomorphism and its many facets. The aim of the editors was to provide a forum for open-minded and thoughtful discussion, rather than to mould the different views into a structured theoretical framework. Thus in 29 chapters, animal behaviour experts, philosophers, psychologists, historians and anthropologists argue their individual views. The result is a highly interesting, stimulating and provocative overview of socio-cultural and historical perspectives, philosophical principles, and various kinds of behavioural evidence. The reader cannot be left unmoved to contemplate his or her own approach.

I found it striking, however, that throughout the diversity of views a one-sidedness seems to pervade the book. The majority of contributing authors take it for granted that anthropomorphism – ‘the extrapolation of human characteristics to nonhumans’ as Mitchell defines it – inevitably colours interpretations of an animal’s perspective. Most of the authors do not see anthropomorphism as a specific problem to be solved, but as a global, inescapable bias of human perception and language development. For example, Knoll, Guthrie, Russell, Caporael and Heyes, and Beer approach anthropomorphism from a cognitive perspective in their chapters and argue that human perception is mediated by internal mental belief structures, and therefore inevitably coloured by social and cultural bias.

One form of such bias is the belief that humans are uniquely different from non-human animals. In the book’s first chapter, Knoll tells an illuminating and amusing anecdote about Darwin. To avoid upsetting the English upper middle class with his evolutionary continuity thesis, Darwin ignored the lowly, beastly qualities of humankind but discussed the ‘foreshadowing’ of noble human traits - love, duty, cleverness - in apes and dogs. Of course, neither Knoll nor the other authors of the book would endorse such an extreme anthropocentric view, but still many of today’s authors appear to peer down from the top of the evolutionary ladder. Those authors in the book who adopt a cognitive approach mostly assume that the capacity for language profoundly distinguishes human intelligence *over* that of animals. Yet paradoxically, that intelligence seems to block our understanding of the intelligence of other species. As these authors assert, our language merely provides metaphor, an intentional stance, or a folk psychology for portraying animals ‘like us’, while in fact they may not be like us at all. Thus, our unique capacity for language appears to isolate us into a position where we must distrust our perceptions of animals on principle.

If anthropomorphism is fundamental to all human perception, then it is not clear how we could ever know whether and when a judgement is correct. Most authors in the book propose that systematic, multidisciplinary and philosophically enlightened scientific investigation may eventually sort right from wrong ‘anthropomorphisms’. In his chapter, Burghardt puts the study of animal awareness in historical context and argues that Tinbergen’s four aims of ethological research need to be complemented with a fifth – the study of private experience. Other authors suggest specific experimental methodologies for the investigation of animal awareness and discuss data bearing on the mental capacity of various species (eg Byrne, Mitchell, Quiatt, Miles, Parker, Gallup and co-authors, Povinelli, Swartz and Evans, and Moynihan. (The latter, unusually, focuses on cephalopods). Each of these accounts are constructive within the specific field they discuss. They are fascinating to read and will surely lead to an increased insight into animal intelligence.

However, Davis, the only radical behaviourist contributing to the book, counters the general optimism. Dismissing anthropomorphism as ‘an epidemic illness’, he may be unsubtle – but he has a point to make: from a strictly scientific perspective, anthropomorphism is not established and is suspect *even for humans*. The notion of cognition, Davis contends, is embedded in mechanistic and information technology explanatory schemes and does not in itself justify the use of psychological language in science. Like Kennedy (1992) in *The New Anthropomorphism*, Davis basically sees no place for psychological language in science. Outdated as such a radical stance may seem, in my view the contention that cognition ultimately is a mechanistic notion needs serious consideration. Its implication is that in the long run cognitive science may not be able to provide formal justification for anthropomorphic accounts of animal behaviour. Such accounts may never achieve full operational power, especially ‘down the lower end’ of the phylogenetic scale. I fear that the anthropomorphic stance may work for great apes, dolphins

and dogs, but that the behaviour of mice, honey bees and fish will remain suspended in metaphor.

The book also hosts a few authors who, aware of these problems, move away from an anthropomorphic stance and propose a different route. Cenami Spada argues that no question per se is in principle anthropomorphic; Asquith points out that it is the literal power of terms which lends them their metaphorical power in the first place. It is suggested that psychological interpretations of animal behaviour may be taken as direct, literal descriptions rather than as projected human beliefs. Lehman supports this view with a fundamental critique of cognitive models of human perception, arguing that the apprehension of animal pain or contentment is no less direct and based on empirical criteria than that of colour or form. Both kinds of perception, he argues, are based on ostensive definition, ie definition by pointing. Thus, as we can learn to reliably state 'that colour is red', with sufficient experience we can also learn to reliably state 'that animal is in pain'. Russell's objection that apprehension of psychological states is multifaceted and therefore abstract does not, Lehman counters, take away from the empirical nature of these states.

Shapiro moves away most radically from traditional anthropomorphic conceptions. Experience is not a matter of encased 'internal' cognitive mental states, he argues, but is lived and known transparently (both for ourselves and for others) through active bodily movement in the world. Language is part of this dynamic process, not separate from it. Kiriazis and Slobodchikoff argue that not only humans but many species may have evolved linguistic abilities with a syntax and grammar specific to their ecological needs. Thus, the authors adopting this alternative stance do not see language as a 'higher' form of intelligence, and accordingly do not view humans as inescapably barred from seeing other species and their perspectives as they really are. They concede that mistakes in judging animal experience will be made but also believe that, with sufficient experience, we can get it right.

In conclusion, this book offers fascinating windows on two different approaches to the scientific study of animal awareness. Both approaches manifest a renewed enthusiasm for the science of animal awareness, and will positively affect society's treatment of animals. Yet each approach may have different implications as to the kind and number of animal species we are willing to protect. With the current predominance of the anthropomorphic stance, the great apes are increasingly guarded from exploitation. However, for the sake of the millions of 'lower' vertebrates and invertebrates that we use every year, we should perhaps accept that an approach venturing beyond anthropomorphism is possible – and encourage that approach to grow.

Francoise Wemelsfelder
Scottish Agricultural College
Edinburgh, UK

References:

- Miller L L** 1992. Molecular anthropomorphism. A creative writing exercise. *Journal of Chemical Education* 69: 141-142
- Griffin D R** 1976. *The Question of Animal Awareness: Evolutionary Continuity of Mental Experience*. The Rockefeller University Press: New York, USA
- Kennedy D S** 1992. *The New Anthropomorphism*. Cambridge University Press: Cambridge, UK