

recommendations and deficiencies in knowledge. It is an explicit, straight-talking, useful and practical guide to managing one of Australia's feral, mammal species. Whether or not the feral goat is a pest depends on who you are, where you are, where they are, how many of them there are, their economic value and their impact on environmental interests. Animal welfare concerns should not vary with situation, in practise they will probably do so. *Managing Vertebrate Pests: Feral Goats* gives clear guidelines for minimizing stress and suffering when managing the so-called 'arch despoiler of the earth'. We recommend this booklet as the best available summary of this field.

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***Kinds of Minds: Towards an Understanding of Consciousness***

Daniel C Dennett (1996). Weidenfeld & Nicolson: London. 184pp. Hardback. Obtainable from the publishers, Weidenfeld and Nicolson, The Orian Publishing Group, Orian House, 5 Upper Saint Martin's Lane, London WC2H 9EA, UK (ISBN 0 297 81546 6). Price £11.99.

When does mere sensitivity turn into sentience? This is the central question of *Kinds of Minds*. It is also the central question of animal welfare, for sensitivity (such as that shown by a thermostat) does not call upon our morals, whereas sentience does. This, the mind-body problem has occupied philosophers and lay-person alike for centuries. What does Dennett add?

For a start he adds a readable style and a familiarity with the reader lacking in most texts. No philosopher writes as accessibly as Dennett and this not because he is popularising but rather because his quirkiness, wordplay and familiarity with the reader lay bare the inherent popularity of the subject matter. Dennett's approach to philosophy is unique in so far as it resembles science rather than mathematics. Rather than pounding away at the philosophical rockface by strict deduction from initial axioms (to produce conclusions valid only with the sphere that those axioms permit) he starts with 'hypotheses' which are checked against reality, experiments (often of the thought variety) and commonsense. Thus whilst the path he follows has gaps, it makes good progress. He is also not too bothered about what other people have said unless it is definitely part of the flow; what is happening now is important and so the book is more like a documentary than a history of ideas.

Dennett starts his reasoning with his own creation, the 'intentional stance', the practice of describing an entity and predicting its behaviour as though it had beliefs and desires. Though our being able to adopt the intentional stance towards an animal is probably a necessary condition for it to be conscious, it is clearly not sufficient since many certainly non-conscious entities may appear intentional at times (shopping trolleys, for example). Indeed, Dennett proposes that networks of simple 'on/off' functions can produce complex behaviour that looks highly intentional, despite nothing going on inside that looks like specific thoughts. He contends that most animals exist at this level only. The road to sentience lies in labelling these networks so that the concepts that they embed become objects of representation - then the inner eye opens. This draws on ideas going back at least to

Nicholas Humphrey, that the great breakthrough to consciousness occurs, boot-strap style, with 'self-consciousness'. Dennett's contribution is to embody the idea neurally (which is of course the only way to embody the mind) by depicting the brain as sets of interconnected networks reporting to each other on their current status.

Not very satisfying? But what did you expect! A satisfying account would tell of some special sentient ingredient sprinkled over the sensitivity of the neurones, or some secret chamber in the brain where inner experience is played out. These are untenable. Clearly, however, Dennett's conclusion that minds are created by the representation of knowledge as knowledge begs the further question of how we are to identify such an activity. Rather than diving into neuroanatomy he offers us the exemplar of cognitive evidence for such a process - language. Language is a 'mind tool', something that helps us navigate our own mind but most importantly 'labels' the components of that cognition, making them explicit-like objects. Dennett puts it rather nicely when, whilst acknowledging that both dogs and humans can recognize cats, he goes on to say, 'Does a dog have a concept of a cat? Yes and no. Concepts are not things in the dogs' world in the way that cats are. Concepts are things in our world because we have language'.

Clearly then, humans have satisfied the conditions for having a mind. But I am not so sure that animals fail it. How is Dennett so sure that dogs don't privately explicate their knowledge of cats and manipulate that concept much like they represent the cat itself? The absence of language tells us nothing, for common wisdom holds that language is supervenient on cognition. That is, you can't speak unless you can think symbolically but thinking symbolically is not guaranteed to produce speech. Language is an externalized communicative device suited to the particular and peculiar niche into which humans have evolved. It clearly facilitates cognition by enabling knowledge to be externalized and manipulated free of cognitive processing constraints but it only remains an example of the kind of representation that Dennett claims underlies sentience.

From the point of view of comparative psychology the book is slightly disappointing. The title seems to promise a tour through the diversity of the animal psyche but this is misleading. Still, Dennett is a philosopher and it is his job to pose the questions and dispose of the fallacies, not to conduct a natural history of the mind. Dennett's overall contribution to the philosophy of mind of which this forms just a part has been to break down the apparent gulf between body and mind by illustrating how much less mysterious minds seem when it is shown how they might be put together. This shows real promise for breaking the impasse of dualism.

The most pressing practical relevance of the problem of other (animal) minds is of course animal welfare and again Dennett has relatively little to say here. Despite his account of the importance of language he never explicitly asserts that only humans have the right kind of sentience to suffer, for example. Indeed he is rather sceptical that one could ever 'discover' the point on the cognitive *scala natura* where such an ability enters in. Once again, however, this is not really Dennett's job. Failing a definite answer his job is to pose the right questions and stimulate others to apply them. If you find you have reached a personal impasse with the question of animal consciousness then buy the book and make a fresh start.

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