

survey may have provided further examples; however, implementing many of the author's recommendations and making measurable improvements to animal welfare on any scale through this route is likely to be more challenging than he appears to suggest. Humanitarian organisations will need to have a much greater understanding and more hard evidence of the links between animal welfare and human well-being before they will take seriously the prospect of embedding animal protection issues within, or alongside, their current work in emergency relief.

This book is written from the standpoint of an influential individual who has worked for a series of influential organisations. As such, it is full of hints and tips for similar delegates to conventions, treaty conferences and other events where multilateral diplomacy is played out among state representatives and other high-level officials. For those working in small organisations who do not have the opportunity to move in these circles, it will be useful to read it in conjunction with other sources of information more relevant to small-scale diplomatic efforts, such as experiences from the global south on how to identify and approach national representatives and local offices of the OIE and UN agencies, or how to create an effective network of small NGOs to gain leverage within larger consortia or partnerships.

Diplomacy, Funding and Animal Welfare is firmly rooted in the author's personal experience and style throughout, which may seem somewhat disjointed to anyone looking for a straightforward 'How to' guide to animal welfare diplomacy and funding or a text based on animal welfare science. However, on finishing the book, I was left with the impression of having had a number of personal conversations with a very interesting author covering his unique, wide-ranging experiences, and being able to take several ideas and practical tips to blend with other sources for furthering high-level international animal welfare policy.

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Why Animals Matter: Animal Consciousness, Animal Welfare, and Human Well-Being

MS Dawkins (2012). Published by Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, UK. 209 pages Hardback (ISBN 978-0-19-958782-7). Price £16.99.

Twenty years ago, the elderly JS Kennedy, after a lifetime of studying the behaviour of locusts and other invertebrates, published his book, *The New Anthropomorphism* (Kennedy 1992). It was, in the words of a eulogistic obituary, the final act in Kennedy's "unremitting campaign — mission almost — against the insidious intrusion of teleological anthropomorphism into behavioral and psychological thinking" (Brady 1997; p 17). One of the targets of Kennedy's criticism was a much younger Oxford colleague named Marian Dawkins who, to Kennedy's obvious consternation, had published widely on 'suffering' in animals (Dawkins 1980).

In her new book, *Why Animals Matter*, Dawkins herself turns a critical eye on anthropomorphic accounts of animals, not because she has joined Kennedy in believing that it is

"unlikely that animals are conscious" (Kennedy 1992; p 24), but because she feels that anthropomorphic thinking is likely to cause animal welfare to be dismissed by sceptics as a misguided preoccupation of the woolly-headed. She is also concerned that animal welfare is being pushed off the world's political agenda by competing concerns including global food security and climate change whose advocates tend to ignore animal welfare as a concern that should be taken into account. In Dawkins' words, "Animal welfare needs new arguments if it is to hold its own against the competing claims now being made on the world's attention. First, it needs the best scientific evidence available, not wishful thinking or anthropomorphism. Second, it needs to be linked to concerns that even people who currently care little or nothing about non-human animals cannot ignore" (p 175).

The result is a book with two fairly separate goals: to put animal welfare on an unassailable scientific footing, and to show why attention to animal welfare is important for practical reasons of human self-interest.

Roughly half the book (Chapters 3–6 out of 10) is devoted to exploring anthropomorphism, consciousness, and emotion, the key question being whether we can have a scientific understanding of the experiential states of animals. After criticising scientists for being too ready to attribute mental and emotional experiences to animals, Dawkins concludes that scientists may legitimately use anecdotes and anthropomorphic thinking as sources of hypotheses but not as scientific evidence (pp 41–42). Dawkins also reviews studies of human consciousness and emotion. She examines, for example, the failure of brain-scan research to find any distinct neural correlate of consciousness that might then be sought in animals, and she notes that people can perform seemingly adaptive and goal-directed behaviour in an apparently automatic and unconscious way. After a very readable analysis of many such types of evidence, she concludes that there is no solid, scientific way to decide whether or not animals "have consciously experienced emotions" (p 103) or other conscious mental experiences.

To put animal welfare on a firmer footing, Dawkins draws on her earlier proposal that the welfare of animals can be boiled down to two 'pillars': that the animal is healthy, and that it "has what it wants" (p 142). In Chapter 8 she develops and explains this very accessible and highly condensed conception of animal welfare, and she uses it to propose how to make animal welfare scientifically watertight and relevant to people.

Chapter 7 deals with the first pillar: animal health. The chapter argues that the health of animals is of great practical importance for people, whether or not they are concerned about animals *per se*. In particular, Dawkins cites the risk of people contracting zoonotic diseases from sick animals, and the role of animal health in food safety and food quality. She also argues that attention to animal welfare can improve animal production, for example through the early detection of disease, and thus support the production of animal-source foods. The chapter, although brief, is a good start at articulating the 'practical' side of animal welfare which undoubtedly accounts for the growing attention to animal welfare in many parts of the world.

Chapter 9 deals with the second pillar: ‘what animals want’. Dawkins reviews research methods including naturalistic observation of how animals live in the wild but proceeds to emphasise more controlled experimental studies of animals’ preferences and motivation, together with studies of aversions and learned avoidance. She notes that when controlled experiments have ‘cracked the code’ by identifying animals’ wants and aversions, then it will often be possible to interpret anticipatory and other types of behaviour as indicators of rewarding or punishing situations. Such research, Dawkins argues, puts the scientific study of animal welfare on a firm scientific footing by demonstrating what animals want without getting into the muddy waters of conscious experience.

The book seems to have three take-home messages for three different audiences. To those who believe that animal welfare is not important in a world of impending food insecurity and climate change, Dawkins replies that paying attention to animal welfare is actually good for people, for example because it protects their health and their food supply. To those who believe that much animal welfare science is wrong-headed because the experiential states of animals fall outside scientific enquiry, the book proposes that if we conceptualise animal welfare in terms of animals’ health and wants, then animal welfare can be studied objectively without making claims about conscious experience. To those who believe that animals are sentient beings whose welfare matters, Dawkins seems to say: carry on, but pipe down about scientific evidence of subjective experience in animals or you’ll have us all dismissed as sloppy thinkers. Although written in a very accessible style that would make it suited to a general audience, *Why Animals Matter* actually raises some of the most difficult and fundamental questions in the field of animal welfare science.

One is the place of narrative or qualitative information in our understanding of animals (Fraser 2009). By recalling the story of Clever Hans (the counting horse) and other examples, Dawkins rightly cautions readers that it is easy to mistakenly attribute mental and emotional states to animals on the basis of ‘anecdotes’. But what about the rich narrative data collected by field biologists who acquire an intimate knowledge of animals in real-life social environments? If such people develop an intuitive understanding of the animals, and if the complexity of the behaviour they observe can only be understood by postulating states like desire, expectation and resentment, are their observations just anecdotes that cannot serve as evidence or are they something more? If the human social sciences recognise that data can be qualitative as well as quantitative, how much, if at all, can the study of animal behaviour be extended in that direction?

A second issue relates to the nature and prevalence of scepticism about experiential states in animals. Classical ethology had a strong streak of ‘scientific scepticism’ which (following Tinbergen 1951) does not deny that animals experience desires and emotions, but considers that these states fall outside the scope of scientific enquiry. JS Kennedy,

although clearly a scientific sceptic, also appeared to be a ‘real-life’ sceptic who suspected that animals lack subjective experience. Such scepticism — the view that animals, like plants, are devoid of feeling and mentation — would indeed be a challenge to social concern over animal welfare, but is real-life scepticism common today? And if real-life scepticism is rare, does it matter very much if scientific sceptics raise epistemologic questions about the limits of scientific understanding of subjective states?

A third question relates to the difference between ‘assumptions’ and ‘presumptions’ in science. Dawkins clearly considers it a mistake for scientists to ‘assume’ that animals have subjective experiences (p 95); but as noted by Stephen Toulmin (1953), scientists often proceed not by assuming but by ‘presuming’ something to be the case as a basis for a programme of research. If the resulting research proves unproductive, for example by failing to make good predictions and explain key phenomena, then the initial presumptions are likely to be replaced by others. In the case of animal welfare, if scientists presume that calves experience pain during dehorning as a basis for research, and if the research leads to analgesic treatments that successfully prevent the struggling and writhing that the scientists attribute to pain, is this not just as valid as other scientists presuming that matter is composed of invisible particles or that the universe began with a Big Bang, or is there some significant dis-analogy among these situations?

Why Animals Matter is a very challenging book which deals with some of the most fundamental issues of animal welfare science: our understanding of animal consciousness, the role of anthropomorphism and scepticism in both science and moral beliefs, the link between animal welfare and practical outcomes such as human health, and indeed how we should conceptualise and study animal welfare. These are tough questions which merit serious thought, and the book represents the views of one of the field’s most seminar thinkers. If readers are not convinced by all of Dawkins’ answers, they can certainly be grateful that she has raised the issues in such an accessible and thought-provoking way.

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