MARIAN STAMP DAWKINS

THE SCIENCE OF
ANIMAL WELFARE

UNDERSTANDING WHAT ANIMALS WANT

THE SCIENCE OF ANIMAL WELFARE

The Science of Animal Welfare

Understanding What Animals Want

Marian Stamp Dawkins

Department of Zoology
University of Oxford, UK

OXFORD
UNIVERSITY PRESS

The welfare of animals must depend on an understanding of animals and one does not come by that understanding intuitively: it must be learned.

P. B. Medawar (1972) *The Hope of Progress*

Contents

Preface

I wrote this book for two reasons. One was to clarify what is meant by animal welfare in a way that would be accessible to anyone, whatever their views on animals and whether they are scientists or non-scientists. The other was to put an animal's point of view at the centre of how we assess their welfare.

The book is not intended either as a textbook or as a campaigning book. It is more a guide for anyone who is interested in animals and how their welfare can best be assessed scientifically. There are full references to the scientific literature so I hope that it will be useful to scientists and to students, particularly in biology and veterinary medicine, but I also hope that it is self-contained enough to be clear to everyone else, whatever their background or previous knowledge. My aim is to show how science can be used to discover what is best for animal welfare, but to do so in a way that leaves it up to each individual reader to decide for themselves how the facts we have discovered should be used to change, or not change, the way animals are treated.

I would like to thank numerous colleagues for discussions that have helped in the writing of this book, including Christine Nicol, Sabine Gebhardt-Henrich and Edmund Rolls. Conversations with David Wood-Gush are still vividly remembered.

One small point. I have used the term 'animal' throughout the book to mean 'non-human animal'. Of course we humans are animals too, but to keep saying 'non-human' gets tedious after a while and makes sentences clumsy. So please take the term 'animal' as a convenient shorthand, not as a statement about our wider relationship to the rest of the animal kingdom.

M.S.D.

Oxford
October 2020

1

Animal Welfare: The Science and Its Words

If you are human, you cannot help being touched in some way by the other animals that share this planet with us. Even if you are unaware of them, they affect your health, the food you eat, the medicines you take. And if you interact with them in any way, you will know how profoundly animals can also affect our lives as companions, pests and sources of great wonder and beauty.

The welfare of different species—and no-one knows exactly how many of them there are—is of increasing importance to many people. In response to rising public concern, the past 40 years has seen an unprecedented growth in laws and regulations to protect animals and, more positively, to give them better lives.

However, if these laws and regulations are really to achieve their aim of improving the lives of animals, they need to be evidence-based—that is, based on what can actually be shown to improve animal welfare rather than on what well-meaning people imagine might improve it. Different animal species are different—different from us and different from each other. We all share the same needs for basics such as nutrition and shelter, but there are vast differences in how these needs are met because of our differences in lifestyle, environment and genetics. These differences need to be researched and understood if good welfare and quality of life are to be achieved for all species.

That is where the science of animal welfare comes in. It is a science dedicated to providing an evidence-based approach to animal welfare. But it is a science with some rather peculiar problems of its own, arising partly out of its subject matter (what is animal welfare?) and partly out of its frequent use of emotionally laden words such as 'suffering', 'fear' and 'stress' that carry with them built-in views about what is good or bad. Unlike, say, geology, which can be defined as the study of the Earth and its rocks without expressing any opinion about what ought to be done about either the Earth or its rocks, animal welfare science is deeply enmeshed in the power of its own words. The word 'welfare' itself expresses the view that achieving good welfare is a desirable aim, and calling an animal 'fearful', 'frustrated' or even just 'restricted' presupposes the conclusion that what is happening to the animal must be bad for it and should be stopped. Just think of the difference that is implied by describing an animal as 'calm' and describing that same animal as 'inactive' or 'inert' and you can see the power of words to

completely alter our view of a situation and give a very different steer as to what ought to be done about it.

So the words we use to describe animals and their welfare are not neutral. They come loaded with emotional overtones of what is good or bad. They are full of their own implications of what ought to be done and subtly encourage the kind of thinking (all too easy to slip into anyway) that bypasses careful consideration of what is actually happening and what scientific evidence we need to gather.

This book is an attempt to cut through the words and unclear definitions that often confuse thinking about animal welfare and to lay out a truly scientific, animal-centred way of defining good welfare. We will see that it is possible to define animal welfare in an objective way that can be easily applied and understood (Chapters 2 and 3) and to use this definition to evaluate the different kinds of information we now have to make evidence-based decisions about how to improve it (Chapters 4, 5, 6 and 7). The thread running through the book is the importance of taking into account what animals themselves want, so that welfare is viewed not just from a human perspective but from the animal's point of view too.

Making what animals want the very heart of what 'welfare' is allows us to bring together many years of research by many people and to show how apparently different ideas fit together. As we will see, it also allows us to resolve many of the controversies that have arisen about what are valid or invalid measures of welfare. In that sense, the book sets out to be a straightforward look at animal welfare science today.

There is another sense, however, in which it which it departs quite radically from some current definitions, particularly those that define animal welfare primarily in terms of conscious experience. For the reasons explained in Chapter 2, the definition of 'animal welfare' we will be using rests entirely on what we can actually observe and measure in practice—that is, on how animals behave and their physiology. It does not mention, at least in the first instance, sentience or what animals are consciously feeling. Defining welfare without consciousness does not, of course, deny animal sentience or imply that animals lack conscious experiences. It simply means—temporarily—leaving the issue to one side on the grounds that consciousness is itself so difficult to study that including it in the definition of welfare only leads to confusion and controversy. In fact, as we will see in Chapter 2, one of the main reasons why there is currently no generally agreed definition of welfare is because there is no generally agreed definition of consciousness. A definition of welfare that does not mention conscious feelings can therefore be thought of as an intellectual safety device, a way of avoiding being distracted by terms that are difficult to define or emotionally loaded. Using this device, we can arrive safely at testable, objective hypotheses about what animal welfare is and how it could be improved. Then, in Chapter 8, we throw off the safety harness and look at what we now know about animal sentience and its role in animal welfare.

First, however, we need to look at the biggest of all word problems that animal welfare science faces—a definition of what welfare is.

2

What Is Animal Welfare?

Fifty years ago there was no recognized science of animal welfare. There was just a collection of vets, ethologists, geneticists and other people scattered around the world who were linked by the belief that animal welfare was important and deserved to be taken seriously as a science in its own right. With such diverse starting points, a single definition of 'welfare' was unlikely to emerge easily.

What is more surprising is that now, with animal welfare science an established discipline, with its own journals and textbooks and international societies, there is still no agreed definition of 'welfare' or a consensus on how to improve it (Green and Mellor 2011; Ede et al. 2019; Weary and Robbins 2019; Polgár et al. 2019). Some people, for example, argue is that the only way to guarantee the welfare of an animal is to make its environment as 'natural' as possible, whereas others will claim that a natural life does not guarantee good welfare and that animals' needs can be better met in a controlled, if artificial, environment. Each side here is using a different definition of 'welfare', different methods for assessing it and coming up with a completely different answer as a result. About the only thing that commands a measure of universal agreement is that welfare is very complex and that assessing it requires evidence from many different sources (Mason and Mendl 1993; Fraser 2008; Mellor 2016a). But from a practical point of view, this is clearly not good enough. For something as important to many people as animal welfare, and certainly for trying to make improvements to the lives of animals, we need to know what welfare *is*, not just that it is difficult to define.

We therefore start our exploration of animal welfare (or 'well-being' as it is sometimes called) by trying to say exactly what it is we are talking about. Furthermore, this needs to be done in terms that everyone—farmers, vets, politicians, philosophers, scientists and the general public—can all understand and buy into. Animal welfare may now be a scientific discipline but it is one that touches the rest of the world very directly. People everywhere therefore want access to the important advances that are being made in understanding the worlds of animals.

In this chapter, we will see that there are two main reasons why people disagree about what the term 'animal welfare' should mean. One is the multiplicity of different ways that are now used to measure 'welfare', including physiology, health, hormone levels, behaviour, immunology and choice tests, which may all give conflicting answers. This leaves people unable to agree on which ones to rely on and which ones deserve top priority in the definition of 'good welfare'. The other is the widespread desire to put subjective