

Understanding Animal Welfare

The Universities Federation for Animal Welfare

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- Promoting education in animal care and welfare;
- Providing information, organising meetings, and publishing books, videos, articles, technical reports and the journal *Animal Welfare*;
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Sir Peter Medawar CBE FRS, 8th May 1957

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Understanding Animal Welfare

The Science in its Cultural Context

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Foreword

The welfare of animals has, in recent years, become a matter of widespread and prominent concern around the world. Although through history in many societies there have been traditions for respect of and kindness to animals, what is new is that, to a remarkable extent, these matters have come to be on the centre stage. So now – as it has become very clear that, in our growing billions, we directly or indirectly influence the quality of the lives of very many other animals – the natures of all these interactions are, one-by-one and from North to South and East to West, being sifted through, re-examined and reconsidered. What are their impacts from the animals' points of view? Can they be justified? How can adverse effects on welfare be prevented or ameliorated? As this process of radical review progresses, so animal welfare considerations are increasingly informing the ways we should conduct all our dealings with other animals and being formally factored-in to animal management systems.

Although it has gathered momentum only recently, animal welfare science – that directed at determining animals' needs and how these can be met – has already proved to be powerful in changing attitudes and practices and seems likely to become increasingly influential. At this stage it is helpful and constructive – towards charting the best way forward – to reflect upon how and why the current interest in animal welfare has come about, on how welfare science can contribute to tackling problems (which often have major cultural or non-technical aspects), and also on its limitations.

Undertaking broad syntheses is difficult and in his preface to this book, David Fraser mentions some early misgivings in embarking on an introduction and overview of this broad multidisciplinary topic. However, where the various threads of complex subjects can be drawn together to provide a thorough but accessible perspective (that is, where there is someone with the rare combination of knowledge, skills and determination to do it) such synthesis is extremely worthwhile and valuable as this stylish and excellent book demonstrates.

We are most grateful to David Fraser for this book and proud to include it in the UFAW/Blackwell series.

James K. Kirkwood
April 2008

Preface

In a field of science that draws on a number of different disciplines, it may seem unwise for any one person to attempt an introduction and overview of the entire topic. Surely the discussion of stress physiology should be written by a stress physiologist, the health-related parts by a veterinary scientist and so on. I feel, however, that there is also a need for an integrative work that explores the connections between the different types of knowledge we use when trying to understand animal welfare. Especially in a field where different types of scientific information are sometimes used to draw different conclusions, we need to see an overview of the forest even at the expense of expert examination of certain important trees.

The book is divided into three parts. Part I (Chapters 1–4) is about the cultural context in which the field of animal welfare science arose. It tries to show how the ideas in the field were influenced by different modes of thought and by certain historical events at the time when the science began. These chapters also go much farther back in history to argue that animal welfare science should be viewed as one (distinctly contemporary) attempt to solve the ancient moral dilemma of how we ought to treat animals. A sub-theme in these chapters is the mutual influence that occurs between science and other elements of culture.

Part II (Chapters 5–10) is about the methods of animal welfare science. Each chapter deals with a different set of methods: studies of basic health, studies of physiological ‘stress’ responses, studies of abnormal behaviour and so on. These are more conventional review essays, although here too I have tried to bring out some of the context, history and development of the scientific approaches to studying animal welfare, rather than focusing on the most recent or technically advanced examples. I hope that these chapters will serve as accessible introductions to contemporary methods and debates in the field.

With the various methods and their limitations discussed in Part II, Part III (Chapters 11–13) explores the logic involved when we try to draw conclusions about animals welfare, often in complex situations where different types of evidence may point in different directions. These chapters examine some current debates

and applications of the science to policy issues, and use these as talking points to explore some of the ways that ‘facts’ and ‘values’ interact in the conduct and interpretation of animal welfare science and of science generally.

I hope that the book will be of value to several groups of readers. The principal audience consists of those who want an introduction to animal welfare science. I have in mind students, veterinarians, scientists, animal producers, and others in the animal care professions, together with corporate and government workers who are involved in animal welfare and its application. To keep the book accessible to these readers, I have tried to outline and illustrate the key methods and debates of the field without a welter of technical detail.

A second audience consists of scientists and graduate students already working in the field. For them, I hope that Parts I and III will set the field in a cultural and historical context that they will find thought-provoking, explore the origins of some beliefs and assumptions that have become embedded in the field, and examine how debates and disagreements among scientists sometimes boil down to different value-based beliefs and assumptions rather than disagreements on technical matters. Part II will be of less interest to these readers; undoubtedly they themselves could have written more thorough reviews of their specific areas of research. However, I hope these chapters may provide some historical context and integration of ideas that may be of interest even to specialists.

A third audience might be captured under the term ‘science studies’. Animal welfare science is a small, emerging and multi-disciplinary field. It is also an example of ‘mandated science’ – science that has been brought into existence to guide action and policy. I believe that a study of animal welfare science makes points about the place of science in society, the influence of culture and language on science, the interplay of ‘facts’ and ‘values’, and the complexity of interpretation in multi-disciplinary fields. Thus a study of animal welfare science may function as a case study of science and society, in much the same way that examining a small and complex star cluster can serve as an introduction to astronomy.

I HAVE MANY PEOPLE to thank for their support and assistance in writing this book.

First and foremost I am grateful to my wife Nancy who made this project possible through her truly extraordinary support, not only during the two years when the writing was a daily preoccupation, but also during the 37 years when her ability to create a happy home environment, even amid mosquito-infested moose swamps, gave me the freedom to pursue the scientific interests that ultimately resulted in this book.

It is also a pleasure to thank my colleagues in the University of British Columbia Animal Welfare Program, especially my exceptionally supportive co-workers Dan Weary and Marina von Keyserlingk, plus many other valued colleagues in the Faculty of Land and Food Systems, the W. Maurice Young Centre for Applied Ethics, and further afield, most notably historian Rod Preece, and many colleagues who have served with me on animal welfare policy, advisory and funding bodies

including the Animal Welfare Working Group of the World Organization for Animal Health, the Food and Agriculture Organization of the United Nations, the Burger King Corporation, the National Council of Chain Restaurants, the Food Marketing Institute and the Animal Welfare Foundation of Canada.

In an important sense, the book had a gestation period of some 35 years, and many friends and co-workers along the way have made important contributions to my understanding of the field. I would mention in particular Peter Phillips, Brian Thompson, Ed Pajor, Jeff Rushen and others in the former Centre for Food and Animal Research, Ottawa; Harry Lumsden, Ed Addison, Charles MacInnes and Hank Hristienko in the Wildlife Research Section of the Ontario Ministry of Natural Resources; Colin Whittemore, Andrew Fraser, Ian Duncan, Barry Hughes, Mike Gentle, John Savoury and the late David Wood-Gush and Frank Elsley during my years in Edinburgh; S.A. Barnett and Michael Hansell during my years at the University of Glasgow; and Jerry Hogan, Nicholas Mrosovsky, Sarah Shettleworth, and the late I.M. Spigel during my years at the University of Toronto.

I also want to acknowledge the many people who have contributed to the field of animal welfare science whose work I have not cited but who have nonetheless made important contributions to our understanding of the subject. Because my aim was to illustrate and discuss key concepts, rather than provide an exhaustive review, I have selected certain examples to make the points, and am painfully aware of the large amount of good work I have had to pass over. I also want to acknowledge some colleagues whose friendship and hospitality I have made a life of working in this field particularly enjoyable, especially Bo Algers, Mike Appleby, Don Broom, Marian Dawkins, Ian Duncan, Sandra Edwards, Andrew Fei, Andrew Fraser, Bob Friendship, Harold Gonyou, Temple Grandin, Paul Hemsworth, Per Jensen, Jin Suk Kim, Jan Ladewig, Andrew Luescher, Vonne Lund, Guy-Pierre Martineau, Joy Mench, John Patience, Janice Swanson, Joe Regenstein, Bernard Rollin, Paul Thompson and John Webster.

The book profited greatly from the suggestions of several friends and colleagues. Drs. Ed Pajor, Evan Fraser and Dan Weary kindly read the manuscript and made many valuable comments. Many individuals provided helpful suggestions and comments on passages or chapters. These include John Barnett, Marc Bracke, Ron Broglio, Robert Dantzer, Marian Dawkins, Ian Duncan, Ingvar Ekesbo, Alan Hein, Paul Hemsworth, Georgia Mason, Jill Mellen, David Mellor, Dana Miles, Elisabeth Ormandy, Viktor Reinhardt, Janeen Salak-Johnson, Ernest Sanford, Chris Sherwin, Ragnar Tauson, Tina Widowski, Nadja Wielebnowski and Yasushi Kiyokawa. I am grateful to all these colleagues for their kindness and attention even when I have not taken their advice.

Several people have helped me find illustrations. These include Ingvar Ekesbo, the children of the late Ruth Harrison, Marlene Halvorsen, Carol Knicely, Hal Markowitz, Nadja Wielebnowski, Yasushi Kiyokawa, Chris Sherwin, Ian Dohoo, Hank Hristienko, Robert Zingg of the Zurich Zoo, and Jim Schulz of the Brookfield Zoo who took the stunning photograph that appears on the cover.

I have been very fortunate to have the research assistance of Jane Orihel, Nicole Fenwick and Anna Drake, all of whom patiently found sources, drew figures, checked details, and graciously tolerated the wild-goose chases I set them on when trying to locate dimly recalled publications. Finally, in a service far beyond any call of duty, my cousin Susan Simons read the entire manuscript and gave me the benefit of her expertise in written English.

In various places I have used or reworked material from my own earlier essays. It would be too tedious for the reader if I attempted to put quotation marks around all the phrases or sentences taken from these sources, so I have chosen instead merely to indicate in the notes where I have drawn on previously published material. In some cases these were from jointly authored essays, and I am grateful to Rod Preece, Dan Weary, Ed Pajor, Barry Milligan, Joy Mench, Suzanne Millman, Ian Duncan and Lindsay Matthews for kindly allowing me to pilfer bits from our joint publications.

Finally I need to express my gratitude to many animals, especially of two species – pigs and moose – whose animal welfare challenges created the scientific questions that have kept me engaged during much of my research career, and have taught me much of what I know about animal welfare. I refer to them repeatedly throughout the book, much as others might cite influential human mentors. If the book seems to rely too much on these species, I can only say that were it otherwise, it would not be my book.

For Nancy

Part I

Animal Welfare in Context

Introduction

In 1964, the Vancouver Aquarium commissioned Mr. Sam Burich, a local sculptor who also had experience as a commercial fisherman, to kill an orca. Orcas, or 'killer whales', are impressive predators that can reach nine metres in length and weigh over eight tonnes. Burich's task was to use the carcass of an orca to make a lifelike replica which would hang from the ceiling in the new foyer of the Aquarium as an impressive display to greet visitors.¹

In May of that year Burich, with ample assistance from scientists, photographers and Aquarium staff who were keenly interested in the project, set up a harpoon gun on a coastal island near a stretch of water where orcas were known to pass. They waited for many weeks, but few orcas came into view and the team had no success in harpooning those that did. Gradually, the scientists and other personnel returned to their normal duties leaving Burich and one assistant to keep up the watch.

Finally, on 16 July the Aquarium received an urgent message. Burich had sunk a harpoon into the body of an orca which was now struggling vigorously on the line but showed no sign of expiring. A hasty decision was made to tow the orca some 60 kilometers to a makeshift enclosure in the port of Vancouver. There the orca, named Moby Doll by its captors who mistook it for a female, quickly became a celebrity. An estimated 20000 people flocked to see it on the first day when public viewing was allowed. Stories about it appeared in *Time*, *Newsweek*, *Life*, *The New York Times* and a host of other publications. A film about the orca and its capture was shown in 43 countries.

The orca died only 75 days after it had been captured, but the experience was enough to demonstrate the huge public interest in a live orca and the unexpected docility of a species that had previously been considered too dangerous to keep in captivity. On this basis, the Aquarium decided to construct a tank large enough to accommodate a live orca display, and for the next three decades a series of wild-caught orcas became the star attractions of the Aquarium.

¹This story is related in Newman, M.A. 1993. *The History of the Vancouver Aquarium*. Vancouver Public Aquarium Association, Vancouver. I am grateful to Peter Hamilton for bringing this book to my attention.

By the 1990s, however, the Aquarium found itself facing increasing pressure from critics, the media, and some of their own paying customers who questioned the ethics of keeping captive orcas. Surely, the critics argued, such an intelligent and social animal must live a miserable and unhealthy life swimming in a concrete tank and putting on daily shows for the amusement of spectators. After a lengthy debate, the Aquarium decided that it would no longer keep wild-caught orcas in their facility. Releasing a long-captive orca to the ocean was out of the question because it would likely die of starvation. Instead, in 2001 the Aquarium transferred its last orca to a facility in San Diego where she would at least have more space and the company of other orcas.

The Vancouver orcas provided one small example of a profound change in human attitudes toward animals that occurred in the second half of the twentieth century, especially in the European and English-speaking countries. The change was paralleled in virtually every aspect of the human use of animals. A few examples follow.

In the 1950s, many jurisdictions in North America paid out public funds as ‘bounties’ to encourage citizens to kill wolves as a public service, either to protect livestock or to increase populations of deer and other wild ruminants that formed the basis of recreational hunting. However, research in the relatively new scientific fields of ecology and animal behaviour had already begun portraying wolves as intelligent animals that live in tight-knit families and serve the vital ecological function of keeping natural prey populations healthy.² Wildlife biologist Aldo Leopold even used a gruesome encounter with a family of wolves to communicate his developing respect for wild nature:

We saw what we thought was a doe fording the torrent, her breast awash in white water. When she climbed the bank toward us and shook out her tail, we realized our error: it was a wolf. A half-dozen others, evidently grown pups, sprang from the willows and all joined in a welcoming melee of wagging tails and playful maulings In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy; how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable side-rocks We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes – something known only to her and to the mountain.³

Faced with such depictions of wolves by scientists, public perception of wolves underwent a remarkable change, to the point that bounties were eliminated in

²Dunlap, T.R. 1988. *Saving America's Wildlife: Ecology and the American Mind, 1850–1990*. Princeton University Press, Princeton.

³Leopold, A. 1948. *A Sand County Almanac*. Republished 1987, Oxford University Press, New York. The quotation is from pages 129–132.

most areas, and public funds were used instead to protect wolves, and even to re-establish them in areas where they had been exterminated as a matter of public policy barely a generation before.

In Britain during roughly the same period, hunting itself was at the centre of a raging controversy. The practice of hunting deer and foxes by running them with dogs and mounted hunters had been a target for animal protectionists for many decades, but there was little government support for any action against this favoured sport of the wealthy land-owning class. In 1951 a committee appointed by the British government considered the issue, but it recommended that hunting should be permitted to continue as long as the amount of suffering inflicted on the animals is not greater than what would be caused by other means of controlling animal numbers.⁴ In the 1990s, a study was finally commissioned whose goal was, in essence, to address the issue raised by this committee. The study looked for evidence of suffering caused to deer by hunting with dogs and horses, and compared that to evidence of suffering caused by other means of killing the animals such as stalking them and shooting them from a distance. The report concluded that, 'All available evidence strongly suggests that hunting with hounds poses a greater welfare problem for individual deer than stalking'.⁵ The day after the results of the study were announced, the hunting of deer with dogs was banned on the lands of Britain's National Trust (the organization that had commissioned the study), and within a few years, the British House of Commons passed legislation to ban all such hunting throughout the country.

Changing attitudes toward animals influenced biomedical research as well. In the 1950s, scientists used hunters in Africa to shoot female chimpanzees so as to capture their infants who were then raised in steel cages and used as subjects – even as living test-crash dummies – in various sorts of research. The most famous of these was nick-named 'Ham', short for the Holloman Aerospace Medical Center, who was used to test the safety of a spacecraft before it carried a human into space. Then in the late 1960s, Jane Goodall began publishing her stunning field research on chimpanzees, with widespread public exposure through television and magazines together with her eminently successful book *In the Shadow of Man*.⁶ Through Goodall, people were exposed to the real-life story of 'MacGregor', a chimpanzee who was stricken with polio in adulthood and tried pathetically to re-establish friendly relations with his old group members despite being partly paralysed; and 'Mike' an undistinguished member of his troop who learned to intimidate the older males by charging into their midst while banging paraffin cans together and thus catapulted himself to the top of the dominance hierarchy.

⁴Turner, E.S. 1964. *All Heaven in a Rage*. Michael Joseph, London.

⁵Bradshaw, E.L. and Bateson, P. 2000. Welfare implications of culling Red Deer (*Cervus elaphus*). *Animal Welfare* 9: 3–24. The quotation is on page 21.

⁶Goodall, J. 1971. *In the Shadow of Man*. William Collins, London.

The result of the observations by Goodall and others was that the chimpanzee was transformed from a mere curiosity – a smudgy and disposable carbon copy of a human being – to a precious cousin of humanity, similar yet different in interesting ways, whose quality of life and very survival were being tragically threatened by human actions. In 1985 the United States amended its Animal Welfare Act to require, among other stipulations, that steps be taken to provide for the ‘psychological well-being’ of captive primates.⁷ By the 1990s, harmful research on chimpanzees and other great apes had become highly controversial,⁸ to the point that two countries (New Zealand and the Netherlands) passed legislation to prohibit it.

It was in agriculture, however, that the changes were most remarkable, if only because of the vast numbers of animals involved.

In the decades after the Second World War, farm animal production underwent a major revolution in the industrialized countries. Previously, most production had used fairly traditional methods that relied on human labour for routine tasks such as collecting eggs and removing manure. Then animal agriculture in the industrialized countries began a massive move toward more automated production methods, generally involving ‘confinement’ housing systems. These included tiers of cages for laying hens, narrow ‘gestation stalls’ where sows were confined during most of pregnancy, and individual crates for calves raised for veal. Almost as soon as they were invented, however, the industrialized methods were attacked by critics who alleged that animals could not possibly live happy, healthy lives under such unnatural conditions. Near the end of the century, backed up by a growing body of scientific research, the European Union passed three agreements on farm animal welfare. These required their member countries to phase out the use of crates for veal calves, to enlarge and improve cages for laying hens, and to severely limit the use of stalls for pregnant sows,⁹ thereby over-hauling some of the predominant technology of the vast animal-production industry throughout most of Europe.

In all the above examples, we see that a half-century that began in one cultural climate – a climate where it seemed modern and progressive to take orcas from the wild for display, to exterminate wolves, to capture infant chimpanzees for research, and to keep laying hens in tiers of cages – ended in a very different climate where such actions were increasingly a subject for debate, disagreement and sometimes reform.

It was during this period of changing attitudes that the scientific study of animal welfare began, initially as a response to public concern about the welfare of animals, and then increasingly as a force that guided and sometimes motivated reforms.

⁷Rowan, A.N. and Rosen, B. 2005. Progress in animal legislation: Measurement and assessment. Pages 79–94 in *State of the Animals III* (D.J. Salem and A.N. Rowan, editors). Humane Society of the United States, Washington.

⁸Cavalieri, P. and Singer, P. (editors). 1993. *The Great Ape Project: Equality beyond Humanity*. St. Martin’s Press, New York.

⁹Stevenson, P. 2004. *European Union Law on the Welfare of Farm Animals*. Compassion in World Farming Trust, Petersfield, UK.

Animal welfare was, however, a most unusual subject for scientific research. A good deal of science has traditionally been motivated by a simple desire to understand the world around us. For Galileo (1564–1642), a desire to understand the movements of the heavenly bodies led to the research that formed the basis of astronomy. For the engineer-geologist William Smith (1769–1839), a fascination with fossilized marine organisms led to the research that became the field of stratigraphy. Other fields of science grew from a more practical motivation. The studies of Louis Pasteur (1822–1895), which contributed so much to the germ theory of disease, began with his attempt to find ways to prevent wine from spoiling. In contrast to these various cases, animal welfare science did not occur because people suddenly became curious about the well-being of animals, or because they were pursuing a practical goal such as creating ‘cruelty-free’ cosmetics, but rather as a response to ethical concerns about the treatment of animals and debate about the kind of life they should be allowed to live.

If this made animal welfare science an oddity, to some people it was also an impossibility. For one thing ‘welfare’, and roughly similar terms such as ‘well-being’ and ‘quality of life’, are rather nebulous concepts whose meaning will vary from person to person and from culture to culture. It is hard enough to agree on how to define quality of life for human beings, let alone for laboratory mice. Moreover, animal welfare is at least partly a ‘mentalist’ concept – a concept that includes mental states such as pain, distress and comfort; yet many scientists in the twentieth century held that the mental states of animals are not open to scientific enquiry. Worst of all, animal welfare is a morally charged concept, intimately linked to debates about how we *ought* to treat animals; yet Western thought has long favoured the view that we cannot give empirical, scientific answers to ethical questions. How, then, could there possibly be a ‘science’ of animal welfare?

TO UNDERSTAND THIS PARADOX, in addition to looking at the technical aspects of animal welfare research, we also need to reflect on the nature of science and its role in culture.

People seem to recognize that the arts are cultural activities that draw on (or react against) certain cultural traditions, certain shared understanding, and certain values and ideas that are characteristic of the time and place in which the art is created. In the case of science, however, opinions differ. Some scientists, like the great biologist J.B.S. Haldane (1892–1964), see science in a similar light – as a historical activity that occurs in a particular time and place, and that needs to be understood within that context.¹⁰ Others, however, see science as a purely ‘objective’ pursuit, uninfluenced by the cultural viewpoint and values of those who create it. In describing this view of science, philosopher Hugh Lacey speaks of the belief that there is

¹⁰For example, Haldane, J.B.S. 1923. *Daedalus, or Science and the Future*. Republished 1930, Kegan Paul, Trench, Trubner & Co, London.

an ‘underlying order of the world’ which is ‘simply there to be discovered – the world of pure “fact” stripped of any link with value’. The aim of science (according to this view) is ‘to represent this world of pure “fact”, ... independently of any relationship it might bear contingently to human practices and experiences’.¹¹

A similar debate arises over the relation of science and ethics. One view, expressed in 1975 by a committee of scientists in the United States, is that the activities of scientists ‘are conditioned and directed at every turn by considerations of human values’.¹² In the nineteenth century, however, when there was still active debate about the boundary between science and fields like theology and philosophy, a number of influential scientists proposed a clear separation of science from ethics and other areas that involve values. Sociologist Max Weber (1864–1920), whose scientific studies were fundamental to social policy, held (in the words of sociologist Ralf Dahrendorf) that ‘statements of fact are one thing, statements of value another, and any confusing of the two is impermissible’.¹³ The French physicist and mathematician Henri Poincaré (1854–1912) proposed:

Ethics and science have their own domains, which touch but do not interpenetrate. The one shows us to what goal we should aspire, the other, given the goal, teaches us how to attain it. So they never conflict since they never meet.¹⁴

Thus, in Poincaré’s terms, we might say that an archeologist’s decision to excavate an ancient grave site is ‘touched’ by ethical issues related to the importance of preserving historic artefacts and showing respect for human remains; however, the ethical issues do not ‘penetrate’ into the actual scientific issues being investigated such as the time when the burial occurred and the significance of the artefacts that were buried with the dead.

Poincaré’s view may make a plausible fit with much so-called ‘curiosity-driven’ science that is done primarily to understand the world around us, but today a good deal of science comes from a different mould. The term ‘mandated science’ refers to science that is done for a particular social purpose, for example to guide action, policy or legislation. Scientific studies on topics such as food safety, occupational health, biological diversity and agricultural sustainability are not done primarily out of curiosity but to answer questions of importance to society, often because people are concerned that the right course of action is not being followed, or that

¹¹Lacey, H. 1999. *Is Science Value Free? Values and Scientific Understanding*. Routledge, London. The quotation is on page 3.

¹²Edsall, J.T. 1975. *Scientific Freedom and Responsibility: A Report of the AAAS Committee on Scientific Freedom and Responsibility*. American Association for the Advancement of Science, Washington. The quotation is on page 6.

¹³Dahrendorf, R. 1987. Max Weber and modern social science. Pages 574–580 in *Max Weber and His Contemporaries* (W.J. Mommsen and J. Osterhammel, editors). Allen & Unwin, London. The quotation is on page 577.

¹⁴Lacey, 1999, page 1.

important safeguards are not in place. People are concerned, for example, about the safety of the food they eat, about health problems that may result from their working environments, about the loss of species from the planet, and about the ability of agricultural systems to continue producing adequate food in the future. These concerns, and the debates that arise, lead society to ‘mandate’ research to explore the concerns and often to make recommendations about whether and how certain changes should be made. In such fields, public concerns and associated debates play a key role in causing the research to be undertaken, and they also help to shape exactly what science is done and how it is applied.

Animal welfare science is a ‘mandated’ field. It began because ethical concerns arose in society about the welfare of animals, and these led to debates and disagreements that involved researchable issues such as: are hens frustrated when confined in cages? how can we maintain the psychological well-being of primates in laboratories? what are the long-term consequences for orcas of living in aquaria? do deer suffer more when chased by dogs than when killed in other ways? and are farm animals healthier and more content if they are kept outdoors? When these questions and many others arose, the field of animal welfare science emerged as a means of providing answers.

This book is intended as an overview of this emerging field – its methods, insights, contributions, and limitations. I hope it will also serve as a case study in mandated science by bringing out how the field developed in response to social concerns, how it was shaped by the cultural context in which it emerged, and how it is applied to issues of practice and policy in the everyday world.

In this first part of the book, I focus on the cultural context. Chapter 1 uses two case studies to describe some elements of the historic debate about the proper treatment of animals; I see these as setting the stage because animal welfare science represents one modern attempt, which to a degree competes with earlier attempts, to grapple with the age-old problem of animal ethics. Chapter 2 looks at how our understanding of animals has changed over the centuries and how these changes have been accompanied by evolving views of what constitutes proper treatment of animals. In this chapter I argue that there has been a complex conversation between scientific knowledge and popular understanding of animals, and that each has influenced the other. Chapter 3 discusses four world-views in Western thought which I believe influence contemporary ideas about what constitutes a good life for animals. Here we encounter some of the tension in Western culture between, for example, values based on rationality and control of nature on the one hand, *versus* emotion and respect for nature on the other. Chapter 4 describes the concerns about the treatment of animals that emerged in the twentieth century and how they gave rise to, and helped to shape, scientific research on animal welfare.

Animals and Moral Concern



When debate emerged about the proper treatment of animals in the late twentieth century, it was not the first time that the issue had arisen, but it was the first time that science had been called upon to clarify the issues and guide the resulting reforms. To understand how science contributed to the process, it helps to see the twentieth century debate in light of some earlier instances when issues of animal ethics were approached in quite different ways.

PERHAPS THE FIRST WELL RECORDED debate about the proper treatment of animals occurred in Greece, beginning in the sixth century BC.

In its use of animals, ancient Greece had much in common with modern Europe roughly a century ago. Horses were used for transportation, racing and warfare, and oxen for tilling the land. Sheep were raised for wool and also, like cattle and goats, for milk and cheese. Meat was eaten from these species as well as pigs. A good deal of the slaughtering of animals occurred in the course of religious sacrifice followed by feasting on the carcass. Dogs, as well as being used for guarding and warfare, were kept as companions by people of all social classes, and some of these animals received funerals and tombstones carved with touching epitaphs that spoke about the mutual affection between the dog and its owner.¹

Animals were also the subject of scientific research. Aristotle (384–322 BC), as the foremost natural historian of ancient Greece, maintained a collection of wild animals as part of the reference material of his school in Athens, and was supported

¹I am drawing this information mainly from *Works and Days* by Hesiod, published as pages 9–30 (D. Grene, translator) in: Nelson, S.A. 1998. *God and the Land: The Metaphysics of Farming in Hesiod and Vergil*. Oxford University Press, Oxford; and from *Georgics* by the Latin poet Virgil, published as: Lembke, J. (translator). 2005. *Virgil's Georgics*. Yale University Press, New Haven. Dog tombstones are described by: Bodson, L. 2000. Motivations for pet-keeping in ancient Greece and Rome: a preliminary survey. Pages 27–41 in *Companion Animals and Us* (A.L. Podberscek, E.S. Paul and J.A. Serpell, editors). Cambridge University Press, Cambridge.

in this by his most famous pupil, Alexander the Great, who brought back exotic animals from his military campaigns. Aristotle's *History of the Animals* records a remarkable amount of information (and some mis-information) about both zoology and animal husbandry. On the subject of pigs, for example, he made a variety of observations that modern science has borne out: that the number of piglets born in a litter will be reduced if the boar is required to mate too often; that allowing the animals to stay cool in hot weather is important to maintain their appetite; and that over-feeding a sow during pregnancy can result in poor milk production during lactation.²

The ancient Greeks also engaged in vigorous debate about how animals ought to be used and treated. The earliest radical voice was that of Pythagoras (born about 580 BC), who is remembered today mainly for his contributions to mathematics, including the geometric theorem that bears his name. In his own day, however, Pythagoras was a diverse and highly influential thinker who held strong views on the ethical treatment of animals. None of his own writing survives, but several centuries after his death the Roman writer Ovid (43 BC–AD 17) wrote a long poem on 'The Teachings of Pythagoras'. In the poem Pythagoras proposes close connections between humans and animals, and he declares that it is 'wicked as human bloodshed to draw the knife across the throat of the calf' (Box 1.1).³ A more modern translation might read 'Meat is murder' – a slogan that is sometimes scrawled across the walls of butcher shops by vegetarian protesters armed with aerosol paint cans. The medium has changed, but the message hardly at all.

The debate that pitted the followers of Pythagoras against certain opposing views has been carefully documented by classicist Richard Sorabji in his book, *Animal Minds and Human Morals: The Origins of the Western Debate*.⁴ As Sorabji notes, the followers of Pythagoras saw 'kinship' as the key to determining the proper objects of moral concern, and they advanced strong arguments for perceiving kinship between humans and other species: we are made from the same elements, we are permeated by the same breath, and animals and humans alike are animated by the same reincarnated souls. On this basis the Pythagoreans rejected the killing of animals for food or religious sacrifice, and Pythagoras (according to legend) once stopped a man from beating a dog on the grounds that he could recognize the voice of a dead friend in the dog's cries.⁵

²Fraser, D., Friendship, R.M. and Martineau, G.-P. 1994. Aristotle on pigs: husbandry, health and natural history of pigs in ancient Greece. *Pig News and Information* 15: 77N–80N.

³Ovid. The Teachings of Pythagoras. Republished 1955 as pages 367–379 in *Ovid's Metamorphoses* (R. Humphries, translator). Indiana University Press, Bloomington. The quotation is on lines 465–466.

⁴Sorabji, R. 1993. *Animal Minds and Human Morals: The Origins of the Western Debate*. Cornell University Press, Ithaca, USA.

⁵Burnet, J. 1930. *Early Greek Philosophy*, 4th edition. Adam and Charles Black, London. The anecdote is related on page 84.

Box 1.1 A passage from 'The Teachings of Pythagoras' by the Latin poet Ovid (43 BC-AD 17) expressing the view that the bodies of both humans and animals are the dwelling places for reincarnated souls, and urging people to avoid killing or consuming animals.

The heavens and all below them, earth and her creatures,
All change, and we, part of creation, also
Must suffer change. We are not bodies only,
But wingèd spirits, with the power to enter
Animal forms, house in the bodies of cattle.
Therefore, we should respect those dwelling-places
Which may have given shelter to the spirit
Of fathers, brothers, cousins, human beings
At least, and we should never do them damage,
Not stuff ourselves like the cannibal Thyestes.
An evil habit, impious preparation,
Wicked as human bloodshed, to draw the knife
Across the throat of the calf, and hear its anguish
Cry to deaf ears! And who could slay
The little goat whose cry is like a baby's,
Or eat a bird he has himself just fed?
One might as well do murder; he is only
The shortest step away. Let the bull plow
And let him owe his death to length of days;
Let the sheep give you armor for rough weather,
The she-goats bring full udders to the milking.
Have done with nets and traps and snares and springes,
Bird-lime and forest-beaters, lines and fish-hooks.
Kill, if you must, the beasts that do you harm,
But, even so, let killing be enough;
Let appetite refrain from flesh, take only
A gentler nourishment.

From 'The Teachings of Pythagoras' by Ovid. Republished 1955 as pages 367–379 in *Metamorphoses* (R. Humphries, translator). Indiana University Press, Bloomington.

The view that souls migrate between human and animal bodies continued in Hindu and other Eastern thought, but the idea was soon dropped in the West. By about 300 BC, however, the Greek Theophrastus proposed a concept of kinship between species that has a much more modern, Western ring. He noted that people who are born from the same ancestors are naturally kin, but so too, he claimed,

are fellow citizens sharing the same land, fellow Greeks sharing the same nation, and fellow humans sharing the same nature. By viewing kinship as expanding in these widening circles – a metaphor commonly used by animal ethics philosophers today – Theophrastus argued that humans are also kin to animals because they have the same bodily organs, the same tissues and fluids, and the same appetites, emotions, perceptions and reason.⁶

The debate, however, was far from one-sided. Aristotle, through his philosophy and natural history, had concluded that although humans and animals share many characteristics such as perception and emotion, humans alone have the capacity for *logos* or reason. For Aristotle (Sorabji noted) this was simply a factual conclusion about the mental capabilities of animals. However, thinkers of the Stoic school – a rival to the Pythagoreans – made it the basis for their ethical position on animals. The Stoics saw justice as rooted in the concept of mutual ‘belonging’.⁷ Some Stoics applied the notion of belonging narrowly, to ourselves and our offspring; others applied it more widely to all virtuous people, or even to all fellow humans. But the Stoics considered that no such community of belonging can exist between rational and non-rational beings. Hence, what had been for Aristotle a purely factual conclusion about the mental powers of animals was used by the Stoics as the basis for the ethical conclusion that animals fall outside the sphere of human justice and moral concern.

Another rival theory was that of the Epicureans. Epicurus (c. 341–271 BC) maintained that a good life is a happy, hedonically pleasant life to be achieved not through the pursuit of transitory pleasures, but by avoiding pain and suffering and by fulfilling natural and wholesome desires. The Epicureans viewed justice as a contract or agreement between different people to avoid causing harm to each other. Justice, because it requires a measure of agreement about what constitutes acceptable behaviour, could not be applied to animals because animals lack the powers of reason needed to enter into such a contract. Thus, Epicurean theory, like Stoic theory, denied that the principles of justice apply to animals on the grounds that animals are irrational.⁸

These arguments put the onus on those who sought to protect animals to show that Aristotle’s original conclusion was incorrect, and Plutarch (AD 46–119), a prominent Latin essayist and biographer, took up this cause with gusto. In an essay on ‘the cleverness of animals’, he produced many anecdotes to argue that animals use reason. He noted, for example, that in Thrace, people use a fox to test whether it is safe to venture onto ice. The fox walks warily on the ice and listens carefully. If it hears running water, it deduces that the ice is not thick and returns to shore, but if there is no sound, then it proceeds ahead. Plutarch also told the story of a mule that was employed to carry bags of salt. Upon falling down while fording a river, the mule discovered that if the bags became soaked, the load would become lighter because some of the salt would dissolve away. The mule then began sinking down deliberately in any water that it crossed. This bad habit was finally cured when the owner of the mule secretly

⁶Sorabji, 1993, pages 177–178.

⁷Sorabji, 1993, page 184.

⁸Sorabji, 1993, page 124.

filled the bags with sponges rather than salt, and the animal thereafter took great care not to wet its load. Plutarch also recounted a famous case of a dolphin that befriended a boy, and would let the boy ride on its back to the delight of the local people. One day, however, in stormy weather, the boy fell off and drowned. The dolphin recovered the boy's body and brought it to shore, and then lay beside the boy, refusing to leave until it too had died. Plutarch's explanation was that the dolphin saw itself as partly to blame for the boy's death and thought it right to share his fate.⁹

In another essay, Plutarch invented a satirical dialogue between Ulysses, the Greek hero of the Iliad, and Gryllus, one of Ulysses' sailors whom the enchantress Circe had turned into a pig. Ulysses was determined to release his men from Circe's evil spell, but Gryllus, having experienced life as both a human and an animal, was not at all sure that he wanted to be human again. The reason: animals are more rational. When animals meet, he noted, they are not unduly impressed by another's fine clothing; they follow natural and necessary desires, uncontaminated by a lust for wealth; they mate only in the proper season and in a natural manner; their sexual appetites are awakened by the natural odours of the body, not by artificial ointments and perfumes; they eat simple food that is easily obtained, thus avoiding the indigestion that befalls people from an excessive quantity and variety of foods; and animals teach their children useful skills while avoiding the human penchant for knowledge 'that has no point or purpose'.¹⁰

Apart from the issue of rationality, debate also arose over whether it is natural for humans to eat meat. In the fourth century BC, the non-vegetarian Heraclides had concluded that meat-eating must be natural for humans because the practice has been universal since the invention of fire. Nor can meat be bad for us, he claimed, judging from the prowess of such strictly carnivorous animals as wolves and lions.¹¹ Untrue, claimed Plutarch in 'On the Eating of Meat'. Nature has obviously not equipped us to eat meat because we find meat disagreeable unless we transform it by cooking and by adding spices.¹² As for humans being natural carnivores, how many human meat-eaters could catch animals with their teeth and eat them alive?

Theophrastus contributed to the debate by refuting the anti-vegetarian argument (heard then as now) that if we avoid harming animals, then logically we should also avoid harming plants. This is not so, Theophrastus argued, because we can more justly claim ownership of plants given the labour that we put into cultivating them, because plants are not unwilling to give up their fruit, and because we are so much more similar to animals than to plants.¹³

⁹Plutarch. The cleverness of animals, both of the sea and of the land. Republished 1971 as pages 97–158 in *Plutarch Moral Essays* (R. Warner, translator). Penguin Books, Harmondsworth, UK. The fox story is on page 121, the mule on page 126, and the dolphin on page 156.

¹⁰Plutarch. On the use of reason by 'irrational' animals. Republished 1992 as pages 383–399 in *Plutarch Essays* (R. Waterfield, translator). Penguin Books, London. The quotation is from page 397.

¹¹Sorabji, 1993, page 178.

¹²Sorabji, 1993, page 178.

¹³Sorabji, 1993, page 176.

Plutarch's cause was later taken up by the philosopher Porphyry (AD 232–309) in a book-length treatise, *On Abstinence from Killing Animals*.¹⁴ The book took the form of a letter to a fellow philosopher in which Porphyry criticized his colleague for abandoning vegetarianism. Porphyry argued that the purity and self-discipline of a vegetarian diet is important for those who devote themselves to an intellectual life, but he also assembled many arguments, some repeated from Plutarch and other sources, to show that animals are rational beings and that killing them for the pleasure of the palate is unjust. Like Plutarch he noted that animals live ordered, rational lives; for example, they mate to produce offspring, and cease mating when the female is pregnant, unlike humans who are driven by mere lust. He noted the complexity of their communication:

Animals are heard to speak differently when they are afraid, when they are calling, when they are asking to be fed, when they are friendly and when they are challenging to a fight. The diversity is so great that even those who have given their life to observing animals find it very difficult to distinguish the variations, because there are so many.

He noted that rabid dogs are observed to become mad when they contract rabies, but how could an animal be considered mad unless their normal lives are governed by reason and intelligence? Most significantly, Porphyry added an argument that was to become pre-eminently important in modern times: that animals deserve moral consideration because they, like us, have the capacity 'to feel distress, to be afraid, to be hurt, and therefore to be injured'.

But should we treat animals well simply out of benevolence, or does justice demand it? Do animals, in fact, have rights? Plutarch argued that even if we refuse to apply the principles of justice to animals, at least we should be benevolent toward them.¹⁵ However, Porphyry based his call for vegetarianism not on human kindness but on the properties of animals themselves – specifically their many similarities to humans. As Sorabji noted, this emphasis 'makes his call for justice look more like an assertion of their rights'.¹⁶

This classical debate was so comprehensive that I find it difficult to identify arguments advanced today that were not touched on in ancient Greece. Hermarchus (third century BC) anticipated the ecological arguments of modern hunters: that we must kill animals or they would become too numerous and bring destruction on themselves and the environment. Porphyry, foreshadowing the anti-hunt lobby, refuted this claim on the grounds that nature is self-regulating and that other species would restore a natural balance if only humans would withdraw.¹⁷

¹⁴Porphyry. *On Abstinence from Killing Animals*. Republished 2000 (G. Clark, translator). Duckworth, London. The quotations are from pages 82 and 91.

¹⁵Sorabji, 1993, pages 118 and 125.

¹⁶Sorabji, 1993, page 156.

¹⁷Sorabji, 1993, page 184.

Plotinus (AD 205–270) anticipated modern veganism by refusing medicines made with animal ingredients.¹⁸ And if we can perceive a rough functional analogy between modern biomedical testing and the classical use of animals in sacrifice and divination – activities that were also viewed as ways to obtain useful knowledge and prevent future harm to people – then even modern opposition to the use of animals in science had a parallel in the ancient world.

IN THE RATIONAL WORLD of ancient Greece, theories of justice and principles of ethics were major elements in the debate over the treatment of animals. However when the debate was replayed in England during the eighteenth and nineteenth centuries, the proper treatment of animals was decided less by logical debate (although that was certainly present) and more by extending to animals an ethic of the heart coupled with a zeal for social reform.

In a book with the homey title, *Love for Animals and How it Developed in Great Britain*, philosopher Dix Harwood described how concern for animals (for which Britain is famous today) developed from the most unpromising beginnings.¹⁹ As late as the 1600s, Harwood noted, brutality to both humans and animals was sufficiently commonplace in Britain to provoke surprised comment by visitors from continental Europe. The practice of boiling criminals in oil was used only briefly in the 1500s, but hot-iron branding of criminals and vagrants, amputating hands for petty theft, and severing ears for failure to attend church, persisted long after. Capital punishment by hanging or dismemberment was so common that it formed a regular public spectacle. The 38-year reign of Henry VIII, from 1509 to 1547, saw 72 000 hangings, generally involving a slow death by strangulation unless, as a German visitor to England noted, friends had been engaged to pull at the legs of the dangling victim in order to speed the process.²⁰

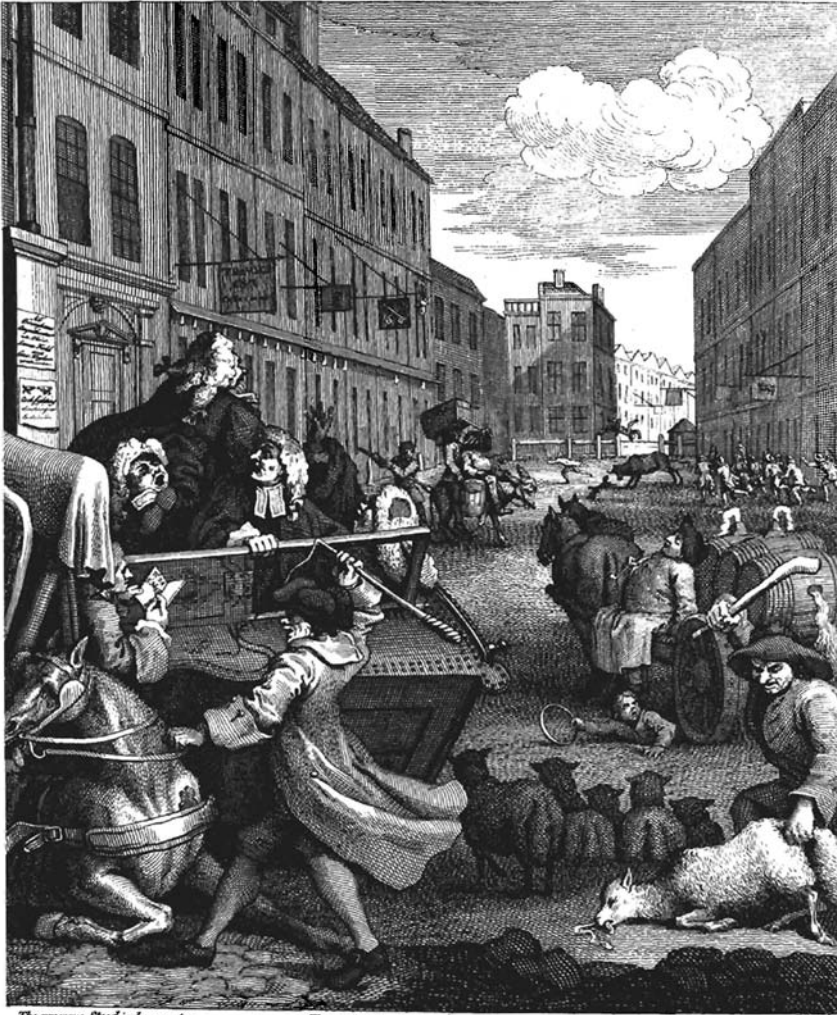
Against such a background, cruelty to animals was simply an aspect of daily life. In the mid-1700s, the British artist William Hogarth (1697–1764) produced a series of four engravings that illustrated the uses and abuses of animals that flourished at the time. In one of the pictures, called the ‘Second Stage of Cruelty’, a callous coach driver is beating a delicate horse that has stumbled when trying to pull a coach over-filled with corpulent passengers (Figure 1.1). Nearby, a drover is driving sheep through the street to a slaughterhouse, and he clubs one of the animals to death for failing to stay bunched with the flock. Further back two men are goading an over-loaded donkey. All of these were no doubt common occurrences in the streets of London at the time.

¹⁸Sorabji, 1993, page 172.

¹⁹Harwood, D. 1928. *Love for Animals and How it Developed in Great Britain*. Republished 2002 as *Dix Harwood's Love for Animals and How it Developed in Great Britain (1928)* (R. Preece and D. Fraser, editors). Edwin Mellen Press, Lewiston, USA. Page numbers cited are based on this edition.

²⁰Harwood, 1928, page 50.

SECOND STAGE OF CRUELTY.



*The generous Steed in hoary Age
Subservient by Labour lies,
And moans a cruel Master's rage,
While Nature Strength declines.*
by W. Hogarth.

*The tender Lamb o'er-drove and fatig'd,
Amidst expiring Throats;
Shouts forth its innocent complaint
And dies beneath the Flows.*

*Inhuman Wretch! say whence proceed'st
This coward Cruelty?
What Interest springs from barbarous deeds?
What Joy from Misery?*

Figure 1.1 'Second Stage of Cruelty': one of William Hogarth's depictions of cruelty to animals in the streets of London. Bull-baiting, with a dog being thrown into the air, is shown in the upper right-hand portion of the picture. Elsewhere a coach-driver is beating his horse who has stumbled while trying to pull a coach over-filled with corpulent lawyers, a drover is clubbing a sheep that did not remain bunched with the others on its way to slaughter, men are goading an over-loaded donkey, and, to introduce the point that callous treatment of animals goes hand-in-hand with harm to people, a careless cart-driver is about to run over a child. Reproduced with permission, © the Trustees of The British Museum.

But Hogarth's purpose in creating these grim scenes was not merely descriptive. He deliberately made the engravings in a coarse-grained style so that many copies could be produced cheaply for wide distribution, because the pictures were intended as a kind of visual sermon to the masses. Hogarth was a believer in moral progress, and he considered that stamping out cruelty to animals was important for improving the moral tone of society. One of his arguments was that callousness toward animals creates a spirit of callousness toward people. To make this point, Hogarth depicted the cruel coach driver of the Second Stage as a hideous murderer in the third engraving of the series. But to foreshadow the idea that cruelty to animals goes hand in hand with harm to people, Hogarth included a careless carter in the Second Stage, who is about to run down a child that has fallen in the street.

At the very back of the Second Stage of Cruelty, Hogarth also included a form of animal abuse that was to become one of the first targets of humane reform. This was the ancient sport of bull-baiting which reached its peak of popularity around 1600 and was not finally abolished by law until 1835. Harwood described the procedure:

A bull selected and trained at great expense was first tethered in the baiting ring – the village green in the provinces or privately owned gardens in London. Sometimes his own horns were cut off and the great horns of an ox were fastened to his head, though tipped with leather to save the dogs a goring. The bull was usually given rope enough to turn with ease and watch the stealthy approach of his opponents. The object of the game was for the dog to catch the bull by the nose and if possible make him roar. The most exciting moment in the baiting usually came when a dog got a firm hold on the bull and refused to let go till his teeth were knocked out or until his master pried him loose with a crowbar.²¹

Over the seven hundred years that it flourished in England, animal baiting and fighting underwent many refinements. Bear-baiting made for a diverting change – but a costly one owing to the scarcity of bears and the greater likelihood that the dogs would be killed. Other variations involved lions, monkeys, and horses. Some sports allowed the human audience to take part in tormenting the animals. In one variation a blinded bear was secured by a chain and whipped by a circle of five or six men. In another, a chicken was buried in the ground with only the head protruding, and human contestants attempted to knock the bird's head off with a well-aimed blow from a stick. As a French visitor commented in the late 1600s, 'Our neighbours the English like blood in their games'.²²

Despite this chilling history, English attitudes toward animals underwent a gradual shift during the 1700s as part of a general awakening of feelings of pity, kindness and moral sense – an attitude which came to be known as 'sensibility'.

²¹Harwood, 1928, pages 45–46.

²²Harwood, 1928, page 50.

An early harbinger of the new attitude was a book entitled *Characteristics of Men, Manners, Opinions, Times*, published in 1711 by Anthony Ashley Cooper (1671–1713), the third Earl of Shaftesbury. To Shaftesbury, people have an inherent moral sense by which they intuitively recognize justice, generosity and sympathy as good; and the essence of moral behaviour is to follow the dictates of these tender feelings. ‘To love and to be kind’, wrote Shaftesbury, ‘... is to feel immediate satisfaction and genuine content’.²³ But if people are so naturally inclined to kindness and sympathy, why was the world such a brutal place? Despite their natural affection for good, thought Shaftesbury, humans sometimes succumb to ‘unnatural passions’ for revenge, luxury and delight at inflicting suffering. Thus, he claimed, the cruelty that he saw in everyday life was a perversion of human nature that needed to be stamped out:

To delight in the Torture and Pain of other Creatures indifferently, Natives or Foreigners, of our own or of another Species, Kindred or no Kindred, known or unknown; to feed, as it were, on Death, and be entertain’d with dying Agonies; this ... is wholly and absolutely unnatural, as it is horrid and miserable.²⁴

And in this quotation, even as he stated his view that cruelty is a perversion, Shaftesbury made it clear that he viewed cruelty to humans and cruelty to those ‘of another Species’ as products of the same defect of moral character.

However, Shaftesbury’s sensibility was not the only ethical innovation of the century. As the ‘English Enlightenment’ unfolded during the 1700s, philosophers rejected traditional morals that were rooted in the authority of the church and the law, and looked instead for a rational basis for ethical behaviour. Jeremy Bentham (1748–1832) was one of the early champions of the view that we should judge the rightness or wrongness of an action, not by the virtuous intentions from which it springs, or by whether it conforms to established rules, but according to the consequences that flow from it.²⁵ Good acts, Bentham maintained, are those that promote the greatest amount of good (and conversely prevent the greatest amount of evil) for the greatest number of those concerned. In other words, we should judge the rightness or wrongness of an action by its ‘utility’ in causing good outcomes, and the theory came to be called ‘Utilitarianism’. Moreover, Bentham had very specific definitions of good and evil. For Bentham (echoing the ideas of the Greek Epicurus) good meant happiness, and evil meant pain and suffering.

²³Harwood, 1928, page 146.

²⁴Shaftesbury, Third Earl of (Anthony Ashley Cooper). 1711. *Characteristics of Men, Manners, Opinions, Times*. Republished 1964 (J.M. Robertson, editor). Bobbs-Merrill, Indianapolis. The quotation appears in Treatise IV, Book II, Part II, Section III, on page 331 of the Robertson edition.

²⁵Bentham, J. 1789. *Introduction to the Principles of Morals and Legislation*. Republished 1961 as pages 5–398 in *The Utilitarians*. Dolphin Books, Garden City, USA.

Hence, in the phrase later coined by John Stuart Mill (1806–1873), a good action is one that causes ‘the greatest happiness of all those whose interest is in question’.²⁶

Like Shaftesbury, even as he expounded his ideas, Bentham realized that his criterion for good outcomes could be applied not only to humans but to all animals that can experience happiness and suffering. As he put it, the question we should ask, when deciding whether to include other beings within the scope of moral concern, is not ‘Can they *reason*?’ (the criterion used by the Stoics), ‘nor, Can they *talk*? but, Can they *suffer*?’²⁷

The approaches to ethics proposed by Shaftesbury and Bentham had profound implications for the proper treatment of animals, and these became a common theme in works of moral philosophy during the 1700s. William Wollaston’s *Religion of Nature Delineated*, published in seven editions from 1722 to 1750, proposed that animals are less sensitive than human beings because they, living only in the present, lack the reflection on the past and future that plays so great a role in the subjective lives of people; yet where physical pain is involved, we ought to take the greatest care not to cause needless anguish to animals.²⁸ Henry St. John Bolingbroke (1678–1751) went much further in proposing similarities between humans and other species. An ‘absurd and impertinent vanity’ he called the human tendency to dismiss animals as mere automatons or to claim that their behaviour is governed only by instinct when their intelligence and ours obviously share important elements.²⁹ David Hartley, in *Observations on Man* (1749) claimed that animals are like humans in ‘the Formation of their Intellects, Memories and Passions, and in Signs of Distress, Fear, Pain, and Death’, and that we owe greater consideration to the pain and pleasure that animals experience.³⁰

By the end of the 1700s, whole books were appearing on animal ethics, some with a decidedly radical tone.³¹ George Nicholson’s *On the Conduct of Man to Inferior Animals* (1797) and Joseph Ritson’s *An Essay on Abstinence from Animal Food as a Moral Duty* (1802) urged a major change in our dealings with animals including the complete abandonment of meat-eating. John Lawrence, in his *Philosophical and Practical Treatise on Horses* (1791) even called for legal recognition of animal rights:

No human government, I believe, has ever recognized the *jus animalium* which surely ought to form a part of the jurisprudence of every system founded on the principles

²⁶Mill, J.S. 1863. *Utilitarianism*. Republished 1961 as pages 399–472 in *The Utilitarians*. Dolphin Books, Garden City, USA. The quotation is on page 291.

²⁷Bentham, 1789, page 381.

²⁸Harwood, 1928, page 158.

²⁹Harwood, 1928, page 158.

³⁰Harwood, 1928, page 159.

³¹Preece, R. 2001. Introduction (pages 1–37) in *An Essay on Humanity to Animals* (1798) by Thomas Young (R. Preece, editor). Edwin Mellen Press, Lewiston, USA. The Nicholson book was republished in 1999 as *George Nicholson’s On the Primeval Diet of Man (1801): Vegetarianism and Human Conduct Toward Animals* (R. Preece, editor). Edwin Mellen Press, Lampeter, UK.

of justice and humanity ... I therefore propose that the Rights of Beasts be formally acknowledged by the State and that a law be framed upon that principle to guard and protect them from acts of flagrant and wanton cruelty, whether committed by their owners or others.³²

Some of the most influential writing, however, came from reformers who maintained a more conservative stance and sought to change the treatment of animals in ways that were more in line with the established norms of the day. Among the reformers were several English priests who, in the mid-1700s, wrote sermons and essays with titles like *Free Thoughts upon the Brute Creation*, *An Essay on the Future Life of Brutes*, *An Apology for the Brute Creation* and *The Duty of Mercy and the Sin of Cruelty to Brute Animals*.³³

One of the most influential of these, in the view of historian Rod Preece, was the Reverend Thomas Young's *An Essay on Humanity to Animals*, initially published in 1798 and reprinted in abridged form in 1804, 1809 and 1822 to support attempts to pass animal protection legislation in those years.³⁴ Young was neither a vegetarian nor a promoter of animal rights but rather a sober clergyman who based his arguments on the authority of Christian scripture and by calling on his fellow citizens to exercise conventional Christian virtues which were too often forgotten in humankind's dealings with other species. Many of the points Young stressed remain key elements of animal welfare reforms today. He pointed out the importance of understanding sentience and sensitivity to pain in animals, and of accommodating the needs of animals in practical ways. He commented on the friendship that arises between people and animals, and the duties implied by that relationship. He noted that those who abuse animals often go on to commit violence toward humans. Even his approach to animal experimentation – calling on scientists not to abandon all use of animals in research but to minimize animal suffering, avoid duplication of experiments, and to use animals only in pursuit of 'some great and public good' – is very much in line with current thinking about the use of animals in science. The reasonableness of Young's views, aided no doubt by his 'eminent respectability' as an Anglican clergyman and Fellow of Trinity College, Cambridge,³⁵ made him a particularly effective voice for change.

With such respected figures arguing the cause of animals, it became feasible to attempt legislative reform. The first attempt was a bill to ban bull-baiting, proposed in 1800. However, opponents defeated the bill by arguing that bull-baiting should remain because it was traditional, it helped to build character, it provided

³²Turner, 1964, page 74.

³³The essays, listed by Preece 2001, were John Hildrop, *Free Thoughts upon the Brute Creation*, 1742; Richard Dean, *An Essay on the Future Life of Brutes*, 1767; James Granger, *An Apology for the Brute Creation*, 1772; and Humphry Primatt, *The Duty of Mercy and the Sin of Cruelty to Brute Animals*, 1776.

³⁴Preece, 2001.

³⁵Preece, 2001, page 8.

amusement for the poor, and because laws should not meddle with the lives of people unless other people were harmed.³⁶ A second attempt was defeated in 1802, and another in 1809 even though the proponent of the bill claimed that he had received ‘three trunk-loads’ of letters of support from the public. In 1821 Richard Martin, a wealthy land-owner from rural Ireland, introduced his Ill-Treatment of Horses bill. The attitude of some members of Parliament is captured in E.S. Turner’s description of the proceedings. When an alderman suggested,

that protection should be given to asses, there were such howls of laughter that *The Times* reporter could hear little of what was said. When the chairman repeated this proposal, the laughter intensified. Another Member said Martin would be legislating for dogs next, which caused a further roar of mirth, and a cry ‘And cats!’ sent the House into convulsions.³⁷

The next year, however, Martin tried again with an expanded bill which included cattle as well as horses, and this time it was passed. But when prosecutors attempted to use the new law to bring bull-baiting to an end, they found that the courts did not consider bulls to be ‘cattle’. Various other attempts at legislation occurred in the intervening years until baiting was finally made illegal in 1835.³⁸

The British debates of the eighteenth and nineteenth centuries took place in a highly stratified society where traditional authority and the class system were important for the success of social reforms. The involvement of aristocrats and land-owners such as Martin, combined with the support of many clergy, played a key role in the movement for reform of animal treatment. And in 1840, when the 21-year-old Queen Victoria allowed the fledgling Society for the Prevention of Cruelty to Animals to add the prefix ‘Royal’ to its name, the cause of humane treatment of animals had itself come of age as an established element of British society.

IN THE TWO EXAMPLES we have followed – Greece in classical times and England during the eighteenth and nineteenth centuries – we see that the proper treatment of animals is an ancient ethical dilemma that has resurfaced in different cultures and different times, and on each occasion people have approached it in a manner distinctive of their society. When the issue arose in classical times, the Greeks treated it with their characteristic mixture of logic and philosophical theory. When it arose in England during the eighteenth and nineteenth centuries, it was approached with that culture’s characteristic mix of moralizing, sermon-writing and legislative reform, aided by the authority of the church and the class system.

³⁶Turner, 1964, pages 110–114.

³⁷Turner, 1964, page 127.

³⁸Turner, 1964, page 137.