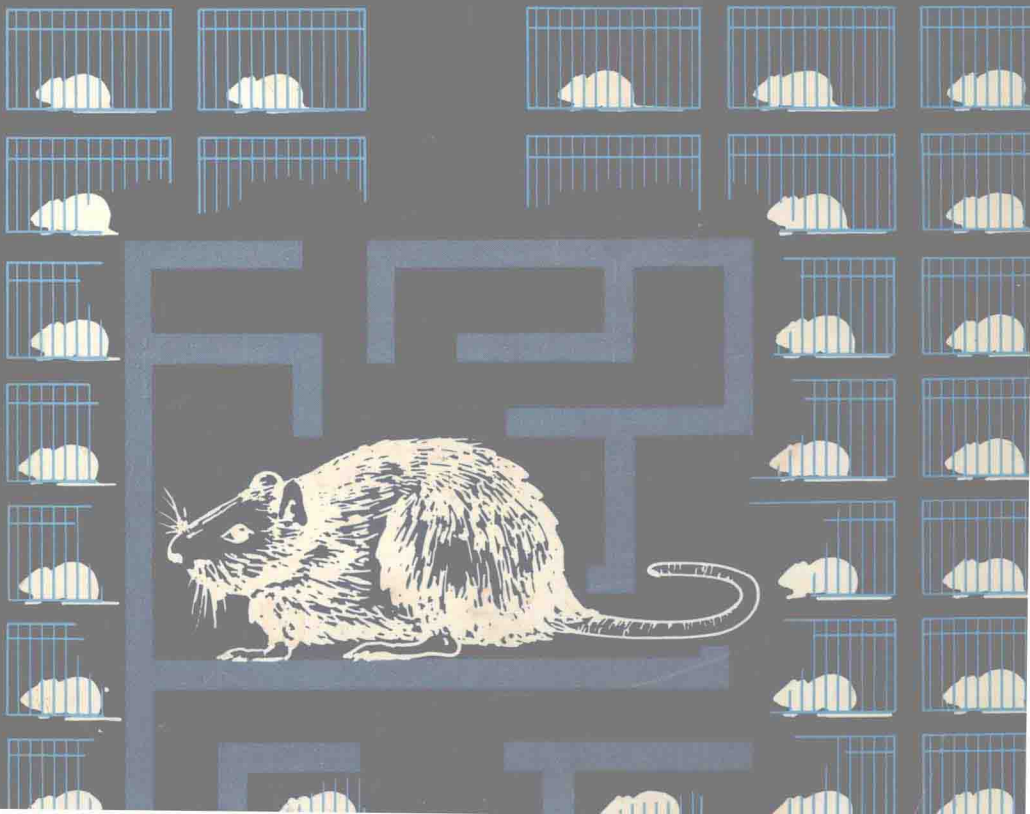


ANIMALS IN RESEARCH

New Perspectives in Animal Experimentation

Edited by DAVID SPERLINGER



Animals in Research

New Perspectives in Animal Experimentation

Edited by

David Sperlinger

Bexley Hospital, Bexley, Kent

JOHN WILEY & SONS

Chichester · New York · Brisbane · Toronto

Copyright © 1981 by John Wiley & Sons Ltd.

All rights reserved.

No part of this book may be reproduced by any means, nor transmitted, nor translated into a machine language without the written permission of the publisher.

British Library Cataloguing in Publication Data:

Animals in research.

I Laboratory animals

I. Sperlinger, David

507'.24 QL55 80-49974

ISBN 0 471 27843 2

Photaset by Thomson Press (India) Limited, New Delhi and printed in the United States of America.

*Animals in
Research*

Acknowledgements

The editor and the publisher wish to thank the following for their kind permission to reproduce previously published material:

British Psychological Society;
Hans Huber Publishers, Bern;
N. Tinbergen

List of Contributors

- DON BANNISTER *Medical Research Council External Scientific Staff,
High Royds Hospital, Ilkley, West Yorkshire,
England*
- MARIAN DAWKINS *Departmental Demonstrator in Animal Behaviour,
Animal Behaviour Research Group, Department of
Zoology, University of Oxford, England*
- CORA DIAMOND *Associate Professor, Department of Philosophy,
University of Virginia, Charlottesville, Virginia, USA*
- ROBERT DREWETT *Lecturer, Department of Psychology, University of
Durham, England*
- RICHARD ESLING *Education Officer, Life Sciences Sector, Technician
Education Council, London, England*
- MICHAEL FESTING *Head of the Genetics Department, Medical Research
Council Laboratory Animals Centre, Carshalton,
Surrey, England*
- MICHAEL FOX *Director, Institute for the Study of Animal Problems,
Washington, DC, USA*
- LOUIS GOLDMAN *Medical Journalist, West Byfleet, Surrey, England*
- HAROLD HEWITT *Honorary Consultant Pathologist, Department of
Morbid Anatomy, King's College Hospital Medical
School, London, England*

- WALIA KANI *Graduate Student, Department of Psychology, University of Durham, England*
- DAVID MACDONALD *Ernest Cook Fellow, Animal Behaviour Research Group, Department of Zoology, University of Oxford, England*
- HEATHER MCGIFFIN *Research Associate, Institute for the Study of Animal Problems, Washington, DC, USA*
- MARY MIDGLEY *Lecturer, Department of Philosophy, University of Newcastle-upon-Tyne, England*
- MARGARET MORRISON *Legislative Associate, The Humane Society of the United States, Washington, DC, USA*
- DAVID PATERSON *General Secretary, British Union for the Abolition of Vivisection, London, England*
- JENNY REMFRY *Assistant Director, Universities Federation for Animal Welfare, Potters Bar, Hertfordshire, England*
- ANDREW ROWAN *Associate Director, Institute for the Study of Animal Problems, Washington, DC, USA*
- RICHARD RYDER *Clinical Psychologist, The Warneford Hospital, Oxford, England*
- DAVID SPERLINGER *Clinical Psychologist, Bexley Hospital, Bexley, Kent, England*

Contents

Introduction	1
<i>David Sperlinger</i>	

PART I ANIMAL EXPERIMENTATION: THE LEGAL AND SOCIAL CONTEXT

1. British Legislation and Proposals for Reform	11
<i>Richard D. Ryder</i>	
2. European Animal Experimentation Law	39
<i>Richard W. J. Esling</i>	
3. Legislation and Practice in the United States	63
<i>Margaret Morrison</i>	
4. Natural Relations—Contemporary Views of the Relationship Between Humans and Other Animals	79
<i>David Sperlinger</i>	

PART II ANIMAL EXPERIMENTATION: MAJOR AREAS OF RESEARCH

5. The Medical Sciences	105
<i>Louis Goldman</i>	
6. The Biological Sciences	123
<i>Jemy Remfry</i>	
7. The Use of Animals in Experimental Cancer Research	141
<i>Harold B. Hewitt</i>	

8. Animal Experimentation in the Behavioural Sciences	175
<i>Robert Drewett and Walia Kani</i>	
9. Ethology—The Science and the Tool	203
<i>David Macdonald and Marian Dawkins</i>	
10. The Use of Animals in Schools in Britain	225
<i>David Paterson</i>	
11. Live-Animal Science Projects in US Schools	239
<i>Michael W. Fox and Heather McGiffin</i>	
 PART III ANIMAL EXPERIMENTATION: SOME GENERAL ISSUES 	
12. Alternatives and Laboratory Animals	257
<i>Andrew N. Rowan</i>	
13. The ‘Defined’ Animal and the Reduction of Animal Use	285
<i>Michael F. W. Festing</i>	
14. The Fallacy of Animal Experimentation in Psychology	307
<i>Don Bannister</i>	
15. Why Knowledge Matters	319
<i>Mary Midgley</i>	
16. Experimenting on Animals: A Problem in Ethics	337
<i>Cora Diamond</i>	
Author Index	363
Subject Index	369

Introduction

DAVID SPERLINGER

The use of live animals as the subjects of research in science and medicine has a long history. The history of those who have protested against this practice is almost as long. The arguments of the two sides have changed very little since the original experiments were conducted. In many respects this is not surprising. Scientific theories and practices may have developed enormously, but the ethical and social questions raised by experiments on animals remain unchanged. On the other hand, discussions about animal experimentation often appear unproductive and ritualistic; the two sides expounding their views *at* each other, with little sense of any attempt to engage in serious debate or to examine what areas of agreement they might share.

In terms of the numbers of animals involved it may seem strange that such strong passions are aroused by experiments on animals. Thus in Britain, for example, over *fifty* times as many animals are slaughtered for food as are used for experimental purposes. However, debates over the fate of farm animals rarely produce the strength of feeling found in discussions about experimental animals. Part of the reason for this seems to lie in the particularly difficult and distinctive moral issues raised by animal experimentation. Thus, from the anti-vivisectionist point of view, the over-riding concern is that pain is deliberately inflicted on many experimental animals; while many vivisectionists are equally convinced of the importance of their work for human welfare.

The two sides in the debate can be sketched in the following way:

The anti-vivisectionist position, includes arguments such as:

(1) No matter how important the aim of the experiment may be, one cannot be justified in inflicting pain on animals in order to obtain it. (A weaker version of this argument would stress that many animal experiments are for unimportant purposes, which cannot justify the suffering inflicted on the animals. This version would allow that there *might* be some purposes for which the infliction of pain was justified.)

(2) Many experiments are of little or no relevance to humans and their welfare; little of benefit to humans has come from animal experiments, that could not have been arrived at by other means.

(3) Much experimental use of animals could be eliminated by the use of various alternative techniques.

(4) Humans have no right to use animals for practices such as scientific research.

The vivisectionist position, includes arguments such as:

(1) Most animal experimentation is directed towards increasing human knowledge and/or human welfare. Major advances in human welfare would not have been achieved without such experiments.

(2) Few animal experiments involve serious pain to animals and experimenters strive to minimize any pain that is inflicted on animals.

(3) The use of animals in research could not be reduced by the use of alternative techniques and scientists, in any case, use such techniques whenever they are available.

(4) Humans have the right to use animals in order to achieve important human ends.

The positions characterized above obviously represent the extremes in the debate. It is disturbing, however, how frequently the issues are presented in such a polarized way, with the arguments (on both sides) including not only statements about ethical positions but also assertions about the actual and potential benefits to be derived from animal experiments. Such discussions often seem to turn into morality plays, where Reason is pitted against Emotion—with the scientists taking the former role and those concerned with animal welfare the latter. (See, for example, from the scientific side, Shuster (1978) or the papers given to a conference of the American Public Health Association (1967) which were designed to document 'the benefits to men and animals that result through research using animals'. On the animal welfare side, Ruesch's (1979) book is explicitly designed as a text to show the reader how he can, and why he should, put a stop to all animal experiments.)

However, there have been signs recently of a willingness by both sides to look for areas of possible agreement. Thus in Britain, for example, several anti-vivisection organizations have established research funds to encourage scientists to develop alternative techniques which do not involve (or require fewer) animals (see, as one example, the report of a symposium on this topic organized by the National Anti-Vivisection Society (1976)). Similarly the Royal Society for the Prevention of Cruelty to Animals organised a symposium, in 1978, attended mainly by scientists, which looked at the reduction and prevention of suffering in animal experiments. On the other side, the Research Defence Society, which has vigorously championed the right of scientists to experiment on animals,

commissioned a book examining alternatives to animal experiments (Smyth, 1978).

This is not to say that agreement is about to be reached. But it does suggest that there is the possibility of a more reasoned and fruitful debate on the issues involved—and there *are* major issues raised by the use of live animals in research. For example, assuming that it is accepted that we should not cause suffering to animals needlessly, what purposes can be regarded as justifying what kinds of experiments? Given that we have to balance the interests of humans and animals, what interests of humans should be counted in the balance—efforts to understand and cure cancer, the production of new drugs to treat athlete's foot, increasing our knowledge about how the brain works, developing a new cosmetic?

This book aims at contributing to the more reasoned debate which is developing. The contributors were asked to have as basic premises: (i) that some current animal experimentation in medicine and science produces important benefits to humans and that some such experimentation will be necessary for the foreseeable future and (ii) that amongst the current uses of animals in experiments there will be cases where there is over-use or mis-use of animals or where the experiments appear to be for relatively trivial ends. This book does not aim, therefore, to catalogue (or to deny) the many ways that animals are often brutally treated in experiments without any apparent justification (in terms of significant human interests); this has already been done in other places (see, for example, Pratt, 1976; Ruesch, 1979; Ryder, 1975; Singer, 1976). Nor does it aim to offer easy justification for all current scientific practices with animals. It aims instead to tackle the important issues involved in a serious and critical way. It attempts to evaluate, in the context of particular scientific disciplines, areas where the use of animals in experiments is producing significant benefits and is contributing to the tackling of major issues, but also to raise questions about the areas where there are no such benefits or where the experiments result in a large degree of suffering to the animals involved. The focus of the book is research in medicine and the main scientific disciplines, since many of the more difficult problems about the use of animals concern work in these areas. For scientific and medical research *may* involve important human interests, although the labels 'scientific' or 'medical' in themselves give little indication of the value of any particular piece of research.

The book is divided into three parts. Part I aims to place the scientific activity of animal experimentation in the wider social, political, and legal context in which it occurs. Part II examines some of the most important areas of science and medicine in which animals are used. Part III looks at some general issues which are common to many fields of animal experimentation.

The use of animals in experiments is determined not only by scientific theories and practices, but also by what is socially and legally permitted in any given society. Part I explores how different countries have attempted to control animal

experimentation, how this legislation has been implemented in practice, and recent proposals for the reform of such legislation. It also considers some recent changes in attitudes to animals generally. It begins with Ryder examining the legal and political framework in which animal experiments in Great Britain take place. The *Cruelty to Animals Act 1876* is the earliest example of attempts to legislate on animal experimentation, and it remains in operation over 100 years later. There are, however, as Ryder discusses, two proposals before the Houses of Parliament, at the time of writing, to reform this Act. (These recent attempts at legislative reform appear to reflect an increased public concern about this issue. A concern which was taken up in the manifestos of the two major political parties in the 1979 British general election, which referred to the need to reform the law relating to animal experimentation. It is also shown by the popularity of two recent novels (Adams, 1977; Kotzwinkle, 1976) which have experimental animals as their 'heroes'.) Esling, in his chapter, describes the enormous range of legislation relating to animal experimentation that is currently in operation in the rest of Europe. He draws attention to the trend in more recent legislation to take account of the increased public concern for the welfare of experimental animals. This is seen, for example, in the stress laid on the experimenter's obligation to make use of alternatives to animals where ever possible. Morrison, in her chapter on legislation in the United States, points out that in spite of the huge government investment in animal experiments, the present federal laws are limited in scope and ineffectively enforced. All three of these writers point to areas where the current legislation needs to be reformed if the welfare of animals in scientific laboratories is to be improved. But scientists, as well as being influenced by the legal framework in which their experiments take place, also have to take account of attitudes to animals generally. For such attitudes will play a part in forming the views of the experimenters themselves about their animal subjects, as well as being a significant factor in determining the general public's attitude to the use of animals in research. Sperlinger, in his chapter, looks at some of the major strands in current attitudes to animals, in particular he focuses on views about the nature of the relationship between humans and the other animals.

Part II looks at some of the main fields of science and medicine where animals play a significant part in research. The areas examined are: medicine (by Goldman), biological sciences (by Remfry), cancer research (by Hewitt), behavioural research (by Drewett and Kani), and ethology (by Macdonald and Dawkins). The space available to the contributors did not allow them to provide highly detailed reviews of the experimental literature. In addition, they were asked to try to make these chapters accessible to the non-specialist, to those who may be concerned about the issues involved but who may lack the technical knowledge required to evaluate work in a particular area. Each of these chapters picks out the major issues which are raised by experiments in their particular field. They give examples of particular pieces of research which illuminate the problems to be

faced. They examine cases where the experiments appear to be of value and also look at experiments which appear to be questionable (on the grounds of, for example, the suffering caused to the animals, or because of the pointless or trivial nature of the experiments themselves). These contributions bring out very clearly the complexity of the issues involved and the absurdity of attempts to praise or condemn 'animal experimentation' as a whole. It is only by examining particular experiments, *in their scientific context*, that it is possible to arrive at any balanced assessment of how much value to humans (or other animals, see particularly the chapters by Remfry and by Macdonald and Dawkins for discussions of this topic) is to be derived from any particular experiment or how much the animals' suffering has been for quite worthless ends. This suffering may, of course, not only involve painful or unpleasant experimental procedures but may also arise from the inevitable restraints of laboratory life. This issue is referred to in the chapters by Drewett and Kani and by Macdonald and Dawkins. The latter authors, as well as exploring issues relating to ethological experiments with animals, also point out that ethology can be used as a tool for *understanding* animals. It seems essential, if we are to reduce the suffering of animals both in the animal houses prior to experimentation and in the experiments themselves, that we have a thorough understanding of the animals which are being used. We cannot assume that other animals will react to conditions as would a human being. Ethology provides us with a methodology, which is potentially much less intrusive and damaging to the animals concerned than many of the procedures examined in the other chapters of Part II, to enable us to begin to gain some knowledge about our animal subjects.

The contributors in this section of the book also look at the extent to which animals could be replaced by alternatives in their particular fields. This issue is also raised in the last two chapters of Part II, on the use of animals in schools in Great Britain (by Paterson) and in the United States (by Fox and McGiffin). These two chapters also emphasize how crucial experiences with animals in schools may be in forming 'scientific' attitudes to the use of animals. If using live animals as the subjects of research involves scientists learning to inhibit to some degree their natural reactions to animals (see Sperlinger's chapter for discussion of this point), experiences at school seem likely to play a significant role in this process. More humane attitudes to animals in schools may be a vital first step in any attempts to introduce more humane methods in animal experiments and to reduce the numbers of animals used.

Part III turns to look at some more general issues raised by the whole area of animal experimentation. It begins with Rowan examining what has become known as the question of 'alternatives'; that is, the various ways in which animals may be dispensed with in experiments or, where they are used, smaller numbers of animals can be involved or any suffering that is inflicted can be reduced. In his chapter Rowan focuses particularly on toxicity testing, but the issues to which he draws attention apply to most fields of animal experimentation. He emphasizes

that alternatives will not provide a quick and simple solution to the problems involved in using animals in research, although they do have an important role to play. He, like the authors in Part II, stresses the necessity of looking at alternatives in the context of answering *particular* research problems; they do not provide a general answer, which can be simply duplicated from one area of research to another. Festing, too, looks at the ways in which fewer animals might be used in research. He describes several ways in which this aim could be achieved *and* scientific validity enhanced—e.g. by improvements in the quality of animals used, in the design of experiments, or in the analysis of experimental data. Rowan and Festing, in their respective chapters, concentrate on some of the ways in which current uses of animals may be invalid, wasteful, inefficient, etc., and they point to some practical changes which could be made to improve current practices.

The remaining chapters in Part III take a rather broader perspective, looking at some theoretical and philosophical issues raised by animal experimentation. Bannister's chapter focuses on the use of animals in psychological research, but, unlike Drewett and Kani, he does not attempt a detailed evaluation of work in this area. Rather he examines the theoretical assumptions underlying the use of animals in psychology and argues that the use of animals is linked to a particular (and, in his view, limited) definition of psychology. Bannister confines his argument to psychological work, but the issues he raises concerning the links between methodology and theory obviously have a much wider application. Thus, for example, it is clear that the use of animals in some medical research is tied to a particular approach (emphasizing cure rather than prevention) to disease and its treatment. If a model of medicine were generally adopted which emphasized the ways in which disease might be prevented, rather than searching for ever newer forms of treatment to *cure* disease, this alone could have an enormous impact both upon the numbers of animals experimented upon *and* upon human health. Midgley, in her chapter, examines one of the most central defences that is offered as a justification for animal experiments—namely, that the experiment will advance human knowledge. She points out some of the difficulties involved in such a defence and explores what would be needed to make such a defence a meaningful one. In the final chapter, Diamond looks in some depth at two characteristic and opposed views of animal experimentation. She discusses how these two views differ not only in their attitudes to the experimental animals but even over the fundamental question of whether or not there is a moral issue to be faced in this area. She also draws attention to some of the underlying assumptions of these two opposed views, noting their similarities as well as their differences.

The contributors to this book do not share a unified position towards animal experimentation. Indeed, they encompass a very diverse range of views about the validity and morality of much research on animals. Nonetheless, certain common concerns and themes do emerge from many of the chapters. Firstly, there is the desire to tackle the issues raised by the use of live animals in

experiments in a fresh and undogmatic way, trying to get away from the strait-jacket of the old arguments on this subject. Secondly, there is an emphasis on evaluating the ethical and scientific problems, which are undoubtedly raised by animal experiments, in relation to *particular* experimental questions. Evaluations of wide areas or of 'animal experimentation' as a whole have often, in the past, led to the vociferous proclamation of unsupported arguments and sweeping generalizations (by both pro- and anti-vivisectionists). Focussing on narrower areas of animal experimentation is likely, from the evidence of these chapters, to produce a more detailed and reasoned debate. Thirdly, there is considerable agreement that much could be done to reduce both the number of animals involved in experiments and the amount of suffering that is caused to those animals which are experimented upon. And fourthly, and perhaps most importantly, a consistent theme throughout the book is that such a reduction in the numbers of, and the suffering to, experimental animals will not only be of benefit to the animals but will also lead to improvements in the meaningfulness and validity of the experiments themselves.

This book does not pretend to offer any easy solutions to the dilemmas raised by the use of live animals as experimental subjects in science and medicine. It will, however, have served its purpose if it contributes to changing the terms of the debate on this issue and brings forward recognition of the fact that 'animal welfare' and 'science' are not necessarily irreconcilably opposed. Many fewer animals could unquestionably be used in experiments, with a resulting benefit not only to the animals but to science (and thus to humanity) as well. Science itself is ill served by badly conceived, poorly designed, and trivial experiments and such experiments must cause particular concern when they involve taking the lives of, or causing suffering to, animals. However, even if the arguments put forward in this book were to be acted upon (with a subsequent reduction in the use of animals in research), the controversy over the experiments that remained would, rightly, still continue. But at least the issues to be faced would be clearer for all to see; the debate would be a real one.

REFERENCES

- Adams, R. (1977). *The plague dogs*, Allen Lane, London.
- American Public Health Association (1967). 'Vivisection—vivistudy: the facts and the benefits to animal and human health', *American Journal of Public Health*, **57**, 1598–1626.
- Kotzwinkle, W. (1976). *Doctor Rat*, Aidan Ellis, Henley-on-Thames.
- National Anti-Vivisection Society (1976). *The moral, scientific and economic aspects of research techniques not involving the use of living animals*, National Anti-Vivisection Society, London.
- Pratt, D. (1976). *Painful experiments on animals*, Argus Archives, New York.
- Ruesch, H. (1979). *Slaughter of the innocent*, Futura Publications, London.
- Ryder, R. (1975). *Victims of science*, Davis-Poynter, London.
- Shuster, S. (1978). 'The anti-vivisectionists—a critique', *New Scientist*, **77**, 80–82.
- Singer, P. (1976). *Animal liberation*, Jonathan Cape, London.
- Smyth, D. H. (1978). *Alternatives to animal experiments*, Scolar Press, London.

