

Preface

There are several different reasons for writing a book on observing animal behaviour. The first reason (the one that drove me, with a considerable degree of frustration, to think about writing this book in the first place) is the tendency of students and colleagues to ignore the observational phase of a behavioural study and go straight into designing complex experiments without really understanding their animals at all. This often leads them to overlook important aspects of the behaviour of a species, sometimes to design completely inappropriate or impractical experiments, and then to be frustrated when the experiment doesn't 'work'. This book aims to show that a little time spent observing goes a long way to improving research, even if it may also, in the end, involve experimentation.

The second reason grew out of my own interest in animal welfare, particularly that of farm animals. There is a great deal of interest in the welfare of animals in zoos, on farms and in the wild, all places where experiments may not be possible or ethically desirable. This is where observation really comes into its own, particularly where it is systematic and done on a large scale. Animals can be studied '*in situ*', in the place a where they live, and so any results are directly applicable to those situations. The replication needed for statistical analysis can often be achieved by combining data from different sources, giving a picture of the 'real world' that tightly controlled experiments in one place cannot do. The potential of observation as a non-invasive research tool has not yet been fully appreciated and one of the aims of the book is to show people just what can be accomplished without the need for any sort of experimental manipulation.

This leads to a third reason for an interest in observation. The advent of CCTV, video, GPS tracking and other devices that can be installed in farms, zoos, and even on wild animals themselves, now allows us to study the behaviour of undisturbed animals in places where we could not previously follow them and for longer and in more detail than was ever possible before. No longer does observation just mean that which can be collected with pen and paper (although pen and paper still holds an honourable place in behavioural observation). Observation—taken broadly to include the new technology—has an immense potential in the study of behaviour. The aim of this book is

therefore to introduce students (and others) to the power of observation, starting with simple and easily accessible methods suitable for student projects, but opening their eyes to the possibilities that now exist for much more sophisticated analysis of observational data. It aims to show that observational techniques are not the poor relation of experiment but hugely important and informative in their own right.

I should perhaps say what this book is not. It is not a statistics textbook, although I would like to think that at least some readers will come to a better understanding of what statistics is all about in a very painless way through reading about animal behaviour. It should be read alongside one of the excellent introductory books on statistics that are now available, such as Grafen and Hails' *Modern Statistics for the Life Sciences* (2002). Nor is it intended as a comprehensive account of methodology in behavioural research. Martin and Bateson's *Measuring Behaviour* (1993) and Paul Lehner's *Handbook of Ethological Methods* (1996) both go into considerably more detail on techniques, methods, and different experimental designs and should be consulted for a more advanced treatment of topics covered here. Bonnie Ploger and Ken Yasukawa's *Exploring Animal Behavior in Laboratory and Field* (2003) provides many more specific examples and ideas for actual projects. This book's role is as a companion, a guide to the study of animal behaviour. It is primarily intended for students doing undertaking their first research project but I hope it will also be useful to anyone who as ever been fascinated by animal behaviour and wanted to know how to study it further. It stresses the supreme importance of asking the right questions but does not pretend to give a detailed list of all the answers. On the contrary, it aims to get people to think for themselves about what the whole process of doing research is all about and how they might go about finding their own answers in one of the most absorbing areas in the whole of biology. It emphasizes observation rather than experimentation, but observation that has gone beyond 'just' watching to a science in its own right.

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