

Preface

The idea for this book was first conceived in discussions with Ian Sherman (then at Blackwell Science) who referred us to the Oxford Series in Ecology and Evolution (OSEE) because it seemed the most suitable place for such a book. At that time we were thinking of writing a monograph on shoaling behaviour in fish which was meant to address many of the important issues concerning grouping behaviour. This idea formed the basis of our first book proposal which received mixed responses from both the reviewers and OUP. The main criticism was that a book on shoaling behaviour might be too specialised and would only be of interest to a relatively restricted audience. Kate Kilpatrick, OUP's Biology Editor, then gently persuaded us to broaden the scope of the book so that it would cover grouping animals in general. This seemed a rather daunting task at first given the enormous number of species from very diverse taxonomic groups that would have to be included. Also, the sheer limitless literature that would need to be reviewed presented serious obstacles. After some consideration we decided on the present format which is centred on the conceptual issues of grouping behaviour rather than on taxonomic diversity. We have made an effort to illustrate the concepts with examples from different taxonomic groups. However, our first priority was the quality of the studies and whether they suited our purpose. (Therefore this book is not meant to be an encyclopaedia of grouping animal species.) Nevertheless we have almost certainly overlooked many important studies and likewise it was not possible to present all arguments in their full length given the restricted space that was available. The result is a book which aims to give a broad overview of the literature on current theories and concepts with references to the more specialised texts wherever appropriate.

With a book as broad in scope as ours, it is necessary to make a few disclaimers and state explicitly what we do not cover and why. We do not explicitly discuss the evolution of cooperation, specifically by reciprocal altruism, in this book. One of the requirements for reciprocal altruism to work is that two individuals repeatedly interact (Trivers 1971). It is certainly true that being in a group of stable composition would facilitate such repeated interactions between two individuals. However it is not a prerequisite. The interested reader is directed towards a recent text in the same series devoted to cooperation in animals: Dugatkin (1997). Also, our treatment of the evolution of social insects is rather short to avoid overlap with the book by Crozier and Pamilo (1997) that was also published in the OSEE.

Despite our best efforts, there are probably some mistakes in this book; certainly there are some omissions. It was never our intention to provide a catalogue of all published works with a bearing on animal grouping, but there are probably some works that we overlooked but would have incorporated if only we had known about them. Hence, if readers spot any errors or feel that a particular work has been wrongly excluded, then we would be pleased to hear from you via e-mail: bgyjk@leeds.ac.uk or G.Ruxton@bio.gla.ac.uk. All errors and corrections brought to our attention will be posted on the OUP website at www.oup.co.uk/ISBN/0-19-850818-2.

Over the last two years a large number of people provided help and support in different forms while this project progressed from a book proposal to the final version.

First of all thanks are due to Ian Sherman whose visit to Leeds in 1999 started the whole project with his question: "Is there a book that you would like to write?" Ian was very supportive of our ideas and made the connection to the OSEE for us. It was under the guidance of Kate Kilpatrick, our initial OUP editor, that we made the transformation from a book on fish shoaling to one on grouping behaviour in general. Ian Sherman inherited this book at the stage where we had agreed to write it but had yet to actually write a word. We have both benefited greatly from discussions with Ian. He has provided a fascinating insight into publishing, as well as offering support and encouragement, strongly laced with good advice. Paul Harvey read every word of a full draft, and his perceptive comments spurred us on to make some (we hope) significant improvements.

We would like to acknowledge the people who provided particularly useful comments on specific areas of the text, although in no way do we wish to pass the blame for any errors or omissions on to them. Our thoughts on group selection were greatly improved by advice from Kevin Laland, Lukas Keller and Nick Colegrave. The sections on the benefits of foraging in a group in chapter 2 lean heavily on ongoing discussions between GDR, Rik Smith and Will Cresswell. Daniel Hoare and Iain Couzin made helpful comments on chapter 5. Chapter 6 was partly based on discussion with Roland Tegered and greatly improved by perceptive feedback from Hazel Wright. Vincent Janik, Chris Thomas and Nick Davies provided us with critical feedback on chapter 7 and Charlotte Hemelrijk and Iain Couzin made helpful comments on chapter 9. We are particularly grateful to Steven Simpson for photos of his locusts and for his insightful comments on chapter 8.

Others provided us with useful references, specific ideas or simply with a quiet place to work: Katharina Riebel, Liz Hensor, Charlotte Hemelrijk and Stefan Krause. In particular, Hasso Neumann and Barbara Vogel provided ideal circumstances for a retreat at the Matteschlösschen where a substantial part of this book was written. Their support is gratefully acknowledged.

The smartest thing we did was use Liz Denton to design and draw the figures for us. She took awful photocopies and scribbles and turned them into the clear diagrams that grace this book. Not only that, but she is a model of quick and friendly efficiency that we can only aspire to. The sketches kindly provided by Vicky Mills and Herbert Krause further enhance the figures.

We have both benefited greatly from working in stimulating and interactive departments and would like to thank the many members of staff and students in both Glasgow and Leeds for providing such supportive and creative environments for scientific discussions to flourish.

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A bit about group

Book structure

The benefits of group living

Introduction

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2.1.4 Some unanswered questions in group vigilance

2.1.5 Related issues

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2.2.2 Preemptive stamping

2.2.3 The selfish herd

2.2.4 Defence against parasites

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