

Preface

As with most projects of this nature, this book began innocently. At the 1989 Animal Behavior Society meetings at Northern Kentucky University, only a handful of papers were presented on cooperative breeding and alloparental care in mammals. Two of these contributions were by the editors of this volume. At the time, much of the excitement generated by new research on cooperative breeding, either empirical or theoretical, was coming primarily from ornithologists. Woolfenden and Fitzpatrick's monograph on the Florida scrub jay and Brown's review of helping behavior in birds had been published in the previous five years. Two additional volumes, Stacey and Koenig's edited volume on long-term field studies of cooperative breeding in birds and Koenig and Mumme's monograph on the acorn woodpecker, were to be published in the immediate future. Yet it was surprising, at least to us, that, with the exception of a couple of reviews in scientific periodicals, no systematic survey or compilation of issues on cooperative breeding in mammals existed at the time.

A simple conversation was held between the editors at the 1989 meetings as we walked across a campus quad at Northern Kentucky University. The conversation, the gist of which was "someone ought to organize something," led to a proposal to the Animal Behavior Society to conduct a symposium on the topic. We are grateful to the ABS and to Lynne Houck and the other members of the program committee for approving this request and sponsoring our symposium at the 1992 ABS meetings in Kingston, Ontario. At this meeting, we gathered together eight distinguished presenters in a symposium that stretched over two days. By all estimates, the symposium was a great success and the presenters played to a full house at the Kingston meetings.

We received, from many in the field whom we respect, strong positive feedback on both the organization and the content of the symposium, and the question of publication was raised. Primarily at the urging of Paul Sherman,

we explored the possibility of producing an edited volume that would summarize the proceedings of the symposium. Although initially hesitant, we felt, in light of the dearth of a single compendium on cooperative breeding in mammals and the favorable reaction of our colleagues, that it would be a worthwhile venture. Two additional goals directed our philosophy toward publication. First, we felt that the book would serve the discipline best if each of the contributions covered broad territory, made new contributions to the understanding of the origins and maintenance of cooperative breeding, and synthesized a large body of literature. In other words, our insistence to authors was that their chapters be more than just summaries of the past five years of their research program. Second, we had been limited by time constraints at ABS to limit the number of participants, and as a consequence several important long-term research programs were not included in that program. Therefore, we took the opportunity to expand the coverage to more taxa and to gain a better representation of scientists addressing both proximate and ultimate issues in cooperative breeding. The expanded volume now contains 12 content-oriented chapters on alloparental care, delayed dispersal, and reproductive suppression in mammals from scientists who are among the most active in this field.

As with any project of this magnitude, many people deserve credit for their unsung contributions along the way. The hosts of the ABS meetings in Kingston, Laurene Ratcliffe and Kathy Wynne-Edwards, provided a supportive environment in which to hold the symposium. We also are grateful to Dr. Robin Smith of Cambridge University Press for patience and guidance along the way during the preparation of the book. John Vandenberg provided the senior editor with a supportive environment at North Carolina State University in which to pursue the early stages of this project. Rick Lee, at Miami University, graciously provided advice on editing a symposium volume.

We also would like to thank all of the individuals who reviewed manuscripts in draft stages for us. These include the contributors to the book, each of whom critiqued one or more of the chapters. In addition, the following persons provided helpful critiques and commentaries on chapters in the book: Andrew Baker, Stanton Braude, Nancy Marusha Creel, Steve Emlen, J. P. Hearn, John Gittleman, M. S. Gosling, Jennifer Jarvis, Walt Koenig, Dan Leger, A. S. I. Loudon, David Macdonald, Betty McGuire, Jo Manning, Craig Packer, Hudson Reeve, Anthony Rylands, Ann Rypstra, Wendy Saltzman, Colleen Schaffner, John Schneider, Steve Schoech, Nancy Schultz-Darken, Tessa Smith, Sandra Vehrencamp, and Rosie Woodroffen.

For the editors, Beth McDonald at the University of Nebraska at Omaha

and Darla Lipscomb at Miami University of Ohio provided excellence in editorial assistance in the final, obsessive-compulsive phase of the preparation of the volume. Nancy Solomon was supported by funds from the National Institutes of Health (MH 52471-01), and Jeff French was supported by funds from the National Science Foundation (IBN 92-09528 and OSR 92-55225) during the preparation of the volume. Thanks to Denise for keeping the marmoset colony going and to Colleen for keeping everything else afloat during this time. Finally, deep gratitude is expressed by the editors to support from friends and especially loved ones, whose unflagging enthusiasm kept spirits alive. Thanks to all.

1.1 Introduction

Evolutionary biologists and comparative psychologists have long been interested in species that display a social system labeled "cooperative breeding," in which non-parents of the social group assist in raising offspring that are not their own offspring. Other definitional hallmarks of cooperative breeding systems include (a) the reproductive activities of these help-giving individuals, and (b) help (1) is social dispersal from the social group, (2) reproductive non-parents assist (3) are for others' offspring. The individuals engaging in care of young may be nonbreeding adults or subadults (usually called helpers, nursery males, or alloparents), or they may be reproductive adults sharing in the care of young with other breeders in the social group. In the former, all three of the previously mentioned characteristics are met, whereas in the latter, typically only the latter characteristic is required for groups to be considered cooperative breeders. The type of care given to young by alloparents is quantitatively distinct and includes patterns identified as both direct and indirect care identified by Levine-Dick (1991) as those patterns that change as a function of the individual offspring that are cared for (e.g., provisioning with food) and nonprovisionary care (e.g., grooming) that do not vary with the number of offspring being cared for (e.g., brood defense).

The above definition has received considerable support from biologists,