

## PREFACE

In seeking contributors to this volume, we set out to recruit active and original workers on acoustic communication in birds. In June 1993 we wrote to 39 colleagues whose research and thinking we respected, and we asked: What ideas excite you most now? Please tell us in a relatively brief chapter. Keep your approach broad and integrative, with an ecological and evolutionary focus. Identify the status of current research in your field and the important ideas that you feel will dominate research in the future.

The response was swift; a few prospective authors declined because of other commitments, but most responded with great enthusiasm. After surveying the topics on which the participants chose to write, we expanded the coverage of topics by supplementing the original list of authors with other invitations. During the following year, we lost some authors and gained a few, and some were asked to be coauthors. The book took shape and in December 1994, only 18 months after we had made our first contacts, the completed manuscript was sent to Cornell University Press for review.

The 26 chapters in this book cover a broad spectrum. They are organized into five parts plus an appendix. Each part is preceded by an introduction that explains the relationships among the parts, the rationale for grouping particular chapters, and relationships among chapters within parts.

Part I is on development, because it seems logical to begin at the beginning. Individual birds must become competent at communicating, and that competence begins early in life. The focus in this section is on acknowledging and then trying to understand the diversity of developmental modes among birds; three chapters cover chosen species (two songbirds and a parrot). Display repertoires develop in individuals, so Part II focuses on vocal repertoires, both how they are classified (by us and the birds) and how birds use them. Part III covers vocal variation in time and space. How vocal displays develop dictates, to a considerable extent, the extent of temporal and spatial variation that occurs within and among populations. The five chapters in this part explore diverse topics: cultural evolution, systematics, speciation, and differences in communication systems among tropical and temperate species. To be useful in communication, all the vocal displays used by

birds must be controlled by the brain and perceived appropriately by the sensory system—topics addressed in Part IV. The chapters in this part discuss the neuroendocrine control system, morphological and physiological constraints on sound production, display detection, sex differences in display recognition, and individual recognition.

Individuals develop (Part I) repertoires of displays (Part II) that vary in space and time (Part III); the great variety of displays must be produced and perceived (Part IV) during acts of communication (Part V). The five chapters in Part V are concerned with the use of interactive playback to study dynamic exchanges between individuals, communication networks in populations, the dawn chorus and other diel patterns of displaying, and the evolution of female choice based on vocal displays. The book concludes with an appendix that describes where and how to archive recordings and pleads for cooperation among bird recordists in preserving the precious tape recordings on which our knowledge is based. For some species and for some natural areas, these recordings will be the only ones ever made, so recordists have an overriding responsibility to document their recordings and to archive them where they can be curated properly.

We hope that our efforts to produce this volume will be rewarded in several ways. First, we want the book to be a showcase for the exciting research being done on acoustic communication in birds. Second, we hope that this book will suggest rich ideas for future work. We especially hope to excite young investigators and to direct them to intriguing problems in avian bioacoustics. The wealth of challenging research problems suggested by the chapter authors should occupy researchers for decades, and there is a pressing need for work on certain poorly known groups and threatened areas. Last, and perhaps most important, we are concerned for the survival of the birds themselves. The rate of habitat loss everywhere is high and accelerating, and we hope that fundamental knowledge of bird behavior will help to arrest these losses. Some studies will have direct benefits in conservation; others will contribute indirectly, by enhancing awareness and appreciation. In the end, humanity will save only those parts of the natural world that it has come to understand and love, and we hope this book will make a significant contribution to that appreciation.

We are especially grateful to the contributors. We asked for “not just another book chapter,” but for their best effort. They accepted our challenge and produced remarkable chapters that capture the excitement and broad scope of modern research on bird sounds. We appreciate the authors’ tolerance when we requested just a little bit more—sometimes clarification of a phrase, sometimes modification of letter sizes in figures, sometimes substantial reorganization or rewriting. Finally, we are grateful to the authors for contributing to the greater endeavor of understanding how and why birds vocalize; without this group of scientists, our world would be far duller, and humanity would know far less about birds.

Toby Gaunt, Ohio State University, provided a critical and insightful review of the entire book manuscript. We appreciate his thoughtful suggestions and sense of



humor. Penny Jaques was instrumental in converting alien formats to our chosen word-processing package.

We thank Robb Reavill and especially Helene Maddux of Cornell University Press. They have been enthusiastic supporters of this project and have helped us realize our hope for a useful and interesting book published in a timely manner, at a price affordable for students. We also thank Mindy Conner for her attention to fine detail in the copyediting.

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