

Preface

Animal communication is not only intriguing, but the scientific study of it has made important contributions to areas such as neurobiology, sensory physiology, ethology, behavioural ecology, and evolutionary biology. Many studies on animal communication have investigated which information is encoded in a given signal and how this information is used by receivers. However, information coding is only one of two crucial steps in communication: before a signal can be detected and recognized it must first be transmitted successfully. Signal transmission is not a trivial task, because the exchange of information between sender and receiver can be crucially constrained by noise, which will lead to errors in the receiver.

Interference of communication by noise may be most obvious in acoustic signalling (and most research has been done in this area) but the problem of signal detection is a general one that applies to all signal modalities. In line with this notion, this book not only considers acoustic communication but also visual, chemical, and electric signals. Within the chapters of this volume you will find reviews of the literature on communication in many different groups of animals, including insects, fish, amphibians, lizards, birds and mammals.

Noise pollution is an issue of growing concern, and this book also addresses the implications of anthropogenic noise for conservation. There are several books that deal with the impact of noise on animal behaviour, and this is with no doubt an important area that needs more research in the future. However, the main thrust of this book is a conceptual one. We advocate that the mitigation of noise is a very fundamental process in communication, and that we need to consider the effects of noise if we want to understand how animal communication systems operate.

It was a great pleasure to work with the 24 biologists who joined their expert forces to write this book, and I would like to thank all of them for their contributions. Without the series editors Vincent Janik and Peter McGregor this book would not exist, not only because they kindly invited me to edit this volume, but they were also most helpful during all stages of the project. Also, I would like to warmly thank Andrea Schlitzberger from Springer Publishing for her patience and for making it all happen.

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