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Book review

Songs, Roars and Rituals: Communication in Birds, Mammals, and Other Animals

Lesley J. Rogers, Gisela Kaplan, Harvard University Press, Cambridge, MA, 2000, 207 pp., Hardback: ISBN 0-674-0058-7, US\$ 31.50, £ 21.50, € 36.20, Paperback: ISBN 0-674-00827-8, US\$ 16.95, £ 11.50, € 19.50

Songs, Roars and Rituals is an exciting introduction to the complexities of communication in animals. The authors have revised and updated their successful 1998 book, *Roars and Rituals* with additional recent information. Insights are offered on how animals communicate by sight, sound, smell, touch and electric signalling. A wide variety of communication patterns in many species of birds and mammals are discussed with details on how these communication signals may have evolved. The figures include some of Gisela Kaplan's expressive photographs as well as sound spectrograms of bird songs from recent research.

The first chapter asks “*What is communication?*” The authors propose that animal communication requires that one individual sends a signal, and another individual receives and interprets the meaning of the signal. Communication changes another's behaviour without the need for force or a large expenditure of energy. Intention movements—signalling, for example, that a bird is about to fly—are important in communication. Other signals involve complex, ritualised displays and some signals may be acquired by learning are then passed on from generation to generation.

Chapter 2 deals with different signals involving chemosignals, electrical signals, taste, hearing and vision. The authors compare signals that are successful in different environments: under the sea, in a rain forest, over a noisy background, at dawn and dusk, and in the dark. This chapter also has a useful section on the measurement of communication in animals.

The third chapter is an introduction to the intentionality of signals. The authors emphasise that signalling in animals is not confined to the expression of emotions but that cognitive processes are also involved. Drawing on research on communication between animals and humans, the authors conclude that many species may be capable of understanding aspects of human language. However, detailed examination of the vocalisations of different species reveals that humans are often unable to distinguish between calls that differ from each other; hence, we may not hear differences that animals hear.

Research on communication in birds and mammals is covered in Chapters 4 and 5. Although birds use vocalisations extensively for communication, visual signalling using plumage is also important. The idea that birds have “*facial expressions*” is raised; the authors argue that this is achieved by movement of the beak and independent positioning of feathers around head features. Communication in mammals covers research on facial

expressions, vocal signalling and non-vocal signals. The question is raised of whether animals recognise conspecifics as individuals and the difficulties of knowing how they might do so.

Learning to communicate is the topic for Chapter 6. Evidence indicates that vocalisation in many birds is learnt. Vocal learning of whales, seals and primates is commented on, although the research on some of these species is still sparse.

Chapter 7 deals with the evolution of communication and the contribution of genes. Research on kittens and chickens indicates that early visual experience can alter the way that subsequent information is perceived and processed by the brain. This illustrates the over-riding role of experience during a sensitive period of life.

The final chapter (Chapter 8) examines human–animal contacts. Mythology and fairy tales involving humans and animals often give an insight into how different cultures deal with animals. These stories, the authors suggest, could mould the attitudes of young humans to animals and influence the type of relationship they will develop with animals. The chapter also deals with human–animal relationships and the positive benefits of our association with animals. There is a sobering comment that while we have a widespread association with pets, countless species in the wild are slipping quietly into extinction.

Songs, Roars and Rituals is authoritative, fascinating, and easy to read. It covers all the key aspects of communication in birds, mammals and other animals. The book would be a useful resource for animal behaviour courses, and for researchers and students interested in communication.

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