

Evolution of Communication Systems

A Comparative Approach

edited by D. Kimbrough Oller and Ulrike Griebel

The search for origins of communication in a wide variety of species including humans is rapidly becoming a thoroughly interdisciplinary enterprise. In this volume, scientists engaged in the fields of evolutionary biology, linguistics, animal behavior, developmental psychology, philosophy, the cognitive sciences, robotics, and neural network modeling come together to explore a comparative approach to the evolution of communication systems. The comparisons range from parrot talk to squid skin displays, from human language to Aibo the robot dog's language learning, and from monkey babbling to the newborn human infant cry. The authors explore the mysterious circumstances surrounding the emergence of human language, which they propose to be intricately connected with drastic changes in human lifestyle. While it is not yet clear what the physical environmental circumstances were that fostered social changes in the hominid line, the volume offers converging evidence and theory from several lines of research suggesting that language depended upon the restructuring of ancient human social groups.

The volume also offers new theoretical treatments of both primitive communication systems and human language, providing new perspectives on how to recognize both their similarities and their differences. Explorations of new technologies in robotics, neural network modeling, and pattern recognition offer many opportunities to simulate and evaluate theoretical proposals.

The North American and European scientists who have contributed to this volume represent a vanguard of thinking about how humanity came to have the capacity for language and how nonhumans provide a background of remarkable capabilities that help clarify the foundations of speech.

D. Kimbrough Oller is Professor and Plough Chair of Excellence in the School of Audiology and Speech-Language Pathology, and Ulrike Griebel is an adjunct faculty member in the Department of Biology, both at the University of Memphis. Both are members of the Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria.

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"This is an exciting and timely book. It is exciting because it is written by many of the leaders in the field of animal communication and human language who not only share the latest findings, but also go out on a limb and speculate about future methodological and theoretical directions. It is timely because the fields of animal communication and human language have increasingly come into contact, sometimes with a friendly handshake and sometimes with a fierce hand axe. Here, in one nicely edited book, is the current state of the art, a reconciliation among foes and a coalition among friends."

—Marc D. Hauser, Harvard College Professor, Harvard University, author of *The Evolution of Communication and Wild Minds*

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