

Contents

<i>Dedication to the Memory of Eshel Ben-Jacob (1952–2015)</i> <i>by Alin Finkelshtein</i>	v
<i>Dedication to the Memory of Fernando Palop (1954–2015)</i>	vii
<i>Preface, Who is Who in Biocommunication</i> <i>by Joseph Seckbach and Richard Gordon</i>	ix
<i>Introduction to Biocommunication</i> <i>by Joseph Seckbach and Richard Gordon</i>	xv
<i>Foreword, Biocommunication in the Web of Life</i> <i>by Ilse C. Gebeshuber</i>	xix
<i>About the Editors</i>	lxxvii
Part I Theoretical Approaches	1
1. Molecular Biocommunication <i>Alexei A. Sharov</i>	3
2. Key Levels of Biocommunication <i>Guenther Witzany</i>	37
3. Zoosemiotics, Typologies of Signs and Continuity Between Humans and Other Animals <i>Dario Martinelli</i>	63

4. Communication as an Artificial Process <i>Massimo Negrotti</i>	87
5. Cybernetic Embryo <i>Richard Gordon and Robert Stone</i>	111
6. Superfast Evolution via Trans- and Interspecies Biocommunication <i>Ille C. Gebeshuber and Mark O. Macqueen</i>	165
7. Channel Capacity and Rate Distortion in Amino Acid Networks <i>Boaz Tamir and Avner Priel</i>	187
8. Communication Languages and Agents in Biological Systems <i>Subhash Kak</i>	203
Part II Experimental Approaches	227
9. Chemical Communication <i>Ally R. Harari and R. Sharon</i>	229
10. <i>Paenibacillus vortex</i> — A Bacterial Guide to the Wisdom of the Crowd <i>Alin Finkelshtein, Alexandra Sirota-Madi, Dalit Roth, Colin J. Ingham, and Eshel Ben Jacob</i>	257
11. The Crosstalk Between Plants and Their Arbuscular Mycorrhizal Symbionts: A Mycocentric View <i>Cristiana Sbrana, Alessandra Turrini, and Manuela Giovannetti</i>	285
12. Attraction of Preferred Prey by Carnivorous Plants <i>Douglas W. Darnowski</i>	309
13. Animal Communication: Competition for Acoustic Space in Birds and Fish <i>Hans Slabbekoorn</i>	327

14. The Contribution of Biocommunication (BICO) to Biomedical and Tissue Engineering: A Tech Mining Study	365
<i>Angela Machado Rocha, Fernando Palop, Maria Clara Melro, and Marcelo Santana Silva</i>	
15. Communication Languages and Agents in Biological Systems	411
<i>Noga Gershoni-Emek, Eitan Erez Zahavi, Shani Gluska, Yulia Slobodskoy, and Eran Perlson</i>	
16. Ethical Methods of Investigation with <i>Pan/Homo</i> Bonobos and Chimpanzees	449
<i>E. Sue Rumbaugh, Itai Roffman, Elizabeth Pugh, and Duane M. Rumbaugh</i>	
17. Conversing with Dolphins: The Holy Grail of Interspecies Communication?	575
<i>Toni Frohoff and Elizabeth Oriel</i>	
<i>Index</i>	599