Contents

Dedication to the Memory of Eshel Ben-Jacob (1952-20)15)
by Alin Finkelshtein	V
Dedication to the Memory of Fernando Palop (1954-20)15) vii
Preface, Who is Who in Biocommunication	
by Joseph Seckbach and Richard Gordon	ix
Introduction to Biocommunication	
by Joseph Seckbach and Richard Gordon	xv
Foreword, Biocommunication in the Web of Life	
by Ille C. Gebeshuber	xix
About the Editors	lxxvii
Part I Theoretical Approaches	1
1. Molecular Biocommunication Alexei A. Sharov	3
2. Key Levels of Biocommunication Guenther Witzany	37
3. Zoosemiotics, Typologies of Signs and Continua Humans and Other Animals Dario Martinelli	ity Between 63

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

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