

	Preface	vii
	List of Contributors	ix
I	INTRODUCTION	1
1	Theoretical and Methodological Tools for Comparison and Evolutionary Modeling of Communication Systems	3
	D. Kimbrough Oller and Ulrike Griebel	
II	PHILOSOPHICAL ISSUES: CONCEPTIONS AND FOUNDATIONS	13
2	On Reading Signs: Some Differences Between Us and the Others	15
	Ruth Garrett Millikan	
3	Primitive Content, Translation, and the Emergence of Meaning in Animal Communication	31
	William F. Harms	
4	Underpinnings for a Theory of Communicative Evolution	49
	D. Kimbrough Oller	
III	METHODOLOGICAL AND THEORETICAL DEVELOPMENTS FOR THE FUTURE OF EVOLUTIONARY STUDY OF COMMUNICATION SYSTEMS	67
5	Social and Cultural Learning in the Evolution of Human Communication	69
	Luc Steels	
6	The Role of Learning and Development in Language Evolution: A Connectionist Perspective	91
	Morten H. Christiansen and Rick Dale	
7	Repeated Patterns in Behavior and Other Biological Phenomena	111
	Magnus S. Magnusson	
IV	ANIMAL COMMUNICATION SYSTEMS: A COMPARATIVE BASIS	129
8	Social Processes in the Evolution of Complex Cognition and Communication	131
	Charles T. Snowdon	

9	Human Infant Crying as an Animal Communication System: Insights from an Assessment/Management Approach	151
	Donald H. Owings and Debra M. Zeifman	
10	Evolution of Communication from an Avian Perspective	171
	Irene M. Pepperberg	
11	Cephalopod Skin Displays: From Concealment to Communication	193
	Jennifer A. Mather	
V	PRIMITIVE COMMUNICATION SYSTEMS AND LANGUAGE	215
12	The Evolution of Language: From Signals to Symbols to System	217
	Chris Sinha	
13	Cooperation and the Evolution of Symbolic Communication	237
	Peter Gärdenfors	
14	Language, Music, and Laughter in Evolutionary Perspective	257
	R. I. M. Dunbar	
15	Kin Selection and "Mother Tongues": A Neglected Component in Language Evolution	275
	W. Tecumseh Fitch	
16	Language beyond Our Grasp: What Mirror Neurons Can, and Cannot, Do for the Evolution of Language	297
	James R. Hurford	
17	How Far Is Language beyond Our Grasp? A Response to Hurford	315
	Michael A. Arbib	
VI	CONCLUDING REMARKS	323
18	Directions for Research in Comparative Communication Systems	325
	D. Kimbrough Oller and Ulrike Griebel	
	Index	333