

CONTENTS

<i>Preface and Acknowledgements</i>	xi
<i>List of Figures</i>	xiii
<i>List of Tables</i>	xiv
<i>List of Contributors</i>	xv

1. Introduction: The evolution of language	1
<i>Maggie Tallerman and Kathleen R. Gibson</i>	

PART I INSIGHTS FROM COMPARATIVE ANIMAL BEHAVIOUR

2. Introduction to Part I: Insights from comparative animal behaviour	39
<i>Kathleen R. Gibson and Maggie Tallerman</i>	
3. Language or protolanguage? A review of the ape language literature	46
<i>Kathleen R. Gibson</i>	
4. Primate social cognition as a precursor to language	59
<i>Robert M. Seyfarth and Dorothy L. Cheney</i>	
5. Cooperative breeding and the evolution of vocal flexibility	71
<i>Klaus Zuberbühler</i>	
6. Gesture as the most flexible modality of primate communication	82
<i>Frans B. M. de Waal and Amy S. Pollick</i>	
7. Have we underestimated great ape vocal capacities?	90
<i>Katie Slocombe</i>	
8. Bird song and language	96
<i>Peter Slater</i>	
9. Vocal communication and cognition in cetaceans	102
<i>Vincent M. Janik</i>	

10. Evolution of communication and language: insights from parrots and songbirds 109
Irene M. Pepperberg
11. Are other animals as smart as great apes? Do others provide better models for the evolution of speech or language? 120
Kathleen R. Gibson

PART II THE BIOLOGY OF LANGUAGE EVOLUTION: ANATOMY, GENETICS, AND NEUROLOGY

12. Introduction to Part II: The biology of language evolution: anatomy, genetics, and neurology 133
Kathleen R. Gibson and Maggie Tallerman
13. Innateness and human language: a biological perspective 143
W. Tecumseh Fitch
14. Evolutionary biological foundations of the origin of language: the co-evolution of language and brain 157
Szabolcs Számadó and Eörs Szathmáry
15. Genetic influences on language evolution: an evaluation of the evidence 168
Karl C. Diller and Rebecca L. Cann
16. Not the neocortex alone: other brain structures also contribute to speech and language 176
Kathleen R. Gibson
17. The mimetic origins of language 180
Merlin Donald
18. Evolution of behavioural and brain asymmetries in primates 184
William D. Hopkins and Jacques Vauclair
19. Towards an evolutionary biology of language through comparative neuroanatomy 198
Wendy K. Wilkins

20. Mirror systems: evolving imitation and the bridge from praxis to language 207
Michael A. Arbib
21. Cognitive prerequisites for the evolution of indirect speech 216
Frederick L. Coolidge and Thomas Wynn
22. The anatomical and physiological basis of human speech production: adaptations and exaptations 224
Ann MacLarnon

PART III THE PREHISTORY OF LANGUAGE: WHEN AND WHY DID LANGUAGE EVOLVE?

23. Introduction to Part III: The prehistory of language: When and why did language evolve? 239
Kathleen R. Gibson and Maggie Tallerman
24. Molecular perspectives on human evolution 250
Rebecca L. Cann
25. The fossil record: evidence for speech in early hominins 258
Bernard A. Wood and Amy L. Bauernfeind
26. The genus *Homo* and the origins of 'humanness' 273
Alan Mann
27. The Palaeolithic record 282
Thomas Wynn
28. Musicality and language 296
Steven Mithen
29. Linguistic implications of the earliest personal ornaments 299
Francesco d'Errico and Marian Vanhaeren
30. Inferring modern language from ancient objects 303
Rudolf Botha

31. Natural selection-itis 313
David Lightfoot
32. The role of hominin mothers and infants in prelinguistic evolution 318
Dean Falk
33. Infant-directed speech and language evolution 322
Bart de Boer
34. Displays of vocal and verbal complexity: a fitness account of language, situated in development 328
John L. Locke
35. Tool-dependent foraging strategies and the origin of language 340
Kathleen R. Gibson
36. Gossip and the social origins of language 343
Robin I. M. Dunbar
37. Social conditions for the evolutionary emergence of language 346
Chris Knight and Camilla Power

PART IV LAUNCHING LANGUAGE: THE DEVELOPMENT OF A LINGUISTIC SPECIES

38. Introduction to Part IV: Launching language: the development of a linguistic species 353
Maggie Tallerman and Kathleen R. Gibson
39. The role of evolution in shaping the human language faculty 361
Stephen R. Anderson
40. The origins of meaning 370
James R. Hurford
41. The origins of language in manual gestures 382
Michael C. Corballis

42. From sensorimotor categories and pantomime to grounded symbols and propositions 387
Stevan Harnad
43. The symbol concept 393
Terrence W. Deacon
44. Words came first: adaptations for word-learning 406
Robbins Burling
45. The emergence of phonetic form 417
Michael Studdert-Kennedy
46. The evolution of phonology 423
Peter F. MacNeilage
47. The evolution of morphology 435
Andrew Carstairs-McCarthy
48. What is syntax? 442
Maggie Tallerman
49. The origins of syntactic language 456
Derek Bickerton
50. The evolutionary relevance of more and less complex forms of language 469
Andrew Carstairs-McCarthy
51. Protolanguage 479
Maggie Tallerman
52. The emergence of language, from a biolinguistic point of view 492
Cedric Boeckx

PART V LANGUAGE CHANGE, CREATION, AND TRANSMISSION IN MODERN HUMANS

53. Introduction to Part V: Language change, creation, and transmission in modern humans 505
Maggie Tallerman and Kathleen R. Gibson

54. Grammaticalization theory as a tool for reconstructing language evolution <i>Bernd Heine and Tania Kuteva</i>	512
55. Domain-general processes as the basis for grammar <i>Joan Bybee</i>	528
56. Pidgins, creoles, and the creation of language <i>Paul T. Roberge</i>	537
57. What modern-day gesture can tell us about language evolution <i>Susan Goldin-Meadow</i>	545
58. Monogenesis or polygenesis: a single ancestral language for all humanity? <i>Johanna Nichols</i>	558
59. Prehistoric population contact and language change <i>Brigitte Pakendorf</i>	573
60. Why formal models are useful for evolutionary linguists <i>Kenny Smith</i>	581
61. Language is an adaptive system: the role of cultural evolution in the origins of structure <i>Simon Kirby</i>	589
62. Robotics and embodied agent modelling of the evolution of language <i>Angelo Cangelosi</i>	605
63. Self-organization and language evolution <i>Bart de Boer</i>	612
64. Statistical learning and language acquisition <i>Katharine Graf Estes</i>	621
65. A solution to the logical problem of language evolution: language as an adaptation to the human brain <i>Nick Chater and Morten H. Christiansen</i>	626
<i>References</i>	640
<i>Author Index</i>	723
<i>Subject Index</i>	736