Contents

Pref	ace >	by Noam Chomsky ix ki dgments xiii			
Intr	oduct	ion 1			
	Language as a Uniquely Human Trait 1				
	Language as a Specific Cognitive System 3				
	Language as a Brain System 5				
Part	: I 1	3			
1	guage Functions in the Brain: From Auditory Input to Sentence Comprehension 15				
	1.1	A Cognitive Model of Auditory Language Comprehension 15			
	1.2	Acoustic-Phonological Processes 20			
	1.3	From Word Form to Syntactic and Lexical-Semantic Information 27			
	1.4	Initial Phrase Structure Building 32			
	1.5	Syntactic Relations during Sentence Processing 43			
	1.6	Processing Semantic Relations 56			
	1.7	Thematic Role Assignment: Semantic and Syntactic Features 62			
	1.8	Processing Prosodic Information 71			
	1.9	Functional Neuroanatomy of Language Comprehension 82			
2	Excursions 85				
	2.1	Language Comprehension and Production: A Common Knowledge Base of			
		Language 85			
	2.2	Language Comprehension and Communication: Beyond the Core Language			
		System 95			

Part II 101

3 The Structural Language Network 103

- 3.1 The Neuroanatomical Pathways of Language 103
- 3.2 Pathways in the Right Hemisphere and Cross-Hemispheric Pathways 112
- 3.3 The Neuroanatomical Pathway Model of Language: Syntactic and Semantic Networks 115

4	The	Functional Language Network 121	
	4.1	The Neuroreceptorarchitectonic Basis of the Language Network	121
	4.2	Functional Connectivity and Cortical Oscillations 125	
	4.3	The Neural Language Circuit 134	
Part	III	143	

5 The Brain's Critical Period for Language Acquisition 145

- 5.1 Neurophysiology of Second Language Learning 146
- 5.2 Critical and Sensitive Periods of Learning: Facts and Speculations 155
- 5.3 Universality of the Neural Language Network 157

6 Ontogeny of the Neural Language Network 163

- 6.1 Language in the First Three Years of Life 165
- 6.2 Language beyond Age 3 183
- 6.3 Structural and Functional Connectivity during Development 191
- 6.4 The Ontogeny of the Language Network: A Model 196

Part IV 201

7 Evolution of Language 203

- 7.1 Theories of Language Evolution 203
- 7.2 Processing Structured Sequences in Songbirds 205
- 7.3 Comparing Monkeys and Humans 207
- 7.4 Paleoanthropological Considerations of Brain Development 219

8 The Neural Basis of Language 221

- 8.1 An Integrative View of the Language Network 223
- 8.2 Epilogue: Homo Loquens—More than Just Words 231

Glossary 233 Notes 241 References 245 Index 281