Contents

Preface ix

1	Introduction to the Study of Speech Sound Disorders by Nicholas W. Bankson, John E. Bernthal, and Peter Flipsen Jr.
	An Evolving Area of Practice 1 A Working Framework 2 The Scope of the Problem 3 The Cause of the Problem 4 The Importance of the Problem 5 Approaching the Problem with Evidence 5
2	Normal Aspects of Articulation 7 by Ray Kent
	Structure of Language 7 Fundamentals of Articulatory Phonetics 11 Coarticulation: Interactions Among Sounds in Context 36 Aerodynamic Considerations in Speech Production 40 Acoustic Considerations of Speech 42 Sensory Information in Speech Production 44 Summary of Levels of Organization of Speech 44 Concluding Note on Implications for Speech Acquisition 46 Questions for Chapter 2 48
3	Speech Sound Acquisition 49 by Sharynne McLeod
	Relevance of Understanding Typical Speech Sound Acquisition for SLPS Models of Speech Acquisition 50 How Speech Acquisition Data Are Obtained 59 Overall Sequence of Speech Sound Acquisition 64 Phase 1: Laying the Foundations for Speech 65 Phase 2: Transitioning from Words to Speech 70 Phase 3: The Growth of the Inventory 72 Phase 4: Mastery of Speech and Literacy 87 Factors Influencing Typical Acquisition of Speech 89 Conclusion: Understanding and Applying Typical Speech Acquisition 91 Questions for Chapter 3 92

_	
4	Factors Related to Speech Sound Disorders 93 by Peter Flipsen Jr., Nicholas W. Bankson, and John E. Bernthal
	Structure and Function of the Speech and Hearing Mechanism Motor Abilities 105 Cognitive-Linguistic Factors 111 Psychosocial Factors 116 Conclusion 121 Questions for Chapter 4 122
5	Classification and Comorbidity in Speech Sound Disorders by Peter Flipsen Jr., John E. Bernthal, and Nicholas W. Bankson
	Organically Based Speech Sound Disorders Childhood Apraxia of Speech Speech Sound Disorders of Unknown Origin Comorbidity 144 Conclusion 149 Questions for Chapter 5 149
6	Assessment: Data Collection 150 by Nicholas W. Bankson, John E. Bernthal, and Peter Flipsen Jr.
	Speech Sound Sampling 150 Screening for Speech Sound Disorders 151 Comprehensive Speech Sound Assessment: The Assessment Battery 153 Assessment in Very Young Children 166 Related Assessment Procedures 168 Conclusion 175 Questions for Chapter 6 175
7	Assessment: Decision Making 176 by John E. Bernthal, Nicholas W. Bankson, and Peter Flipsen Jr.
	Case Selection 176 The Nature of the Problem 188 Target Selection 190 Other Factors to Consider in Intervention Decisions 194 Computer-Assisted Phonological Analysis 195 Case Study: Assessment Data 196 Conclusion 200 Questions for Chapter 7 200
8	The Basics of Remediation and Evidence-Based Practice by Nicholas W. Bankson, John E. Bernthal, and Peter Flipsen Jr. Basic Remediation Considerations Facilitating Generalization 206 Dismissal from Instruction 213
	Some Basics of Evidence-Based Practice 215

CONTENTS

	Conclusion 222 Questions for Chapter 8 222
9	Motor-Based Treatment Approaches 223 by Peter Flipsen Jr., John E. Bernthal, and Nicholas W. Bankson
	Approaches to Intervention 223 Treatment Continuum 224 Motor Learning Principles 225 Optimizing Learning: The Challenge Point Framework 227 Teaching Sounds/Establishment 228 Beyond Individual Sounds 235 Core Vocabulary Approach 242 The Use of Nonspeech Oral-Motor Activities 243 Childhood Apraxia of Speech 244 Treating Older Children and Adolescents 252 Case Study Revisited: Motor Perspective 257 Questions for Chapter 9 258
10	Linguistically Based Treatment Approaches 259 by Peter Flipsen Jr., Nicholas W. Bankson, and John E. Bernthal
	Minimal Pair Contrast Therapy 260 Cycles Phonological Pattern Approach (CPPA) 266 Broader-Based Language Approaches 269 Remediation Guidelines for Linguistically Based Approaches 273 Case Study Revisited: Linguistic Perspective 274 Questions for Chapter 10 276
11	Language and Dialectal Variations by Brian A. Goldstein and Aquiles Iglesias
	Dialect 277 Characteristics of American English Dialects 279 Phonology in Speakers of Language Varieties Other Than English 285 Phonological Development in Bilingual Children 292 Assessment Considerations for Children from Culturally and Linguistically Diverse Populations 294 Intervention for Speech Sound Disorders in Children from Culturally and Linguistically Diverse Populations 296 Summary 299 Questions for Chapter 11 300
12	Phonological Awareness: Description, Assessment, and Intervention 302 by Brigid C. McNeill, Laura M. Justice, Gail T. Gillon, and C. Melanie Schuele
	What Is Phonological Awareness? 302 Phonological Awareness as Literacy Development 304 The Development of Phonological Awareness 305 Phonological Awareness Development and Reading 307 Phonological Awareness and Speech Sound Disorders 309

viii

The Role of the Speech-Language Pathologist 311

Assessment 312 Intervention 316

Phonological Awareness Experiences for Preschool Children 319 Promoting Phonological Awareness in School-Age Children with Speech

Sound Disorders 320

Questions for Chapter 12 324

Appendix A: Procedures for Teaching Sounds 325

Appendix B: Activities for Facilitating Phonemic Awareness in

School-Aged Children 329

Appendix C: Accent Modification 331

References 334

Index 369