

Contents

<i>List of Figures</i>	<i>page xi</i>
<i>List of Tables and Tableaux</i>	<i>xiii</i>
<i>Preface</i>	<i>xvii</i>
<i>List of Abbreviations</i>	<i>xx</i>
1 Introduction: Background and Optimality Theory	1
1.1 Standard German	1
1.2 Prosodic Hierarchy	2
1.3 Optimality Theory	5
1.4 Markedness and Faithfulness	12
1.5 Structure of the Book	19
1.6 Conventions Used in the Book	22
1.7 What Is (Not) Part of the Book	24
Part I Lower Prosodic Constituents: Moras, Syllables, Feet	
2 The Sounds of German: Phonemes, Allophones and Distinctive Features	27
2.1 Introduction	27
2.2 Phonemes and Allophones	28
2.3 Idiosyncratic and Systematic Alternations	33
2.4 Consonants, Vowels and Diphthongs of German	38
2.5 Distinctive Features: The Content of the Speech Sounds	43
2.5.1 Major Class Features	46
2.5.2 Manners of Articulation	46
2.5.3 Articulators	47
2.5.4 Laryngeal Features	48
2.5.5 Vowel Features	48
2.5.6 Distinctive Features for German Consonants	49
2.5.7 Distinctive Features for German Vowels and Diphthongs	52
2.5.8 Natural Classes and Other Functions of the Features	54
2.6 Linear Model of Feature Representation	55
	v

vi	Contents	
2.7	Non-Linear Model of Feature Representation: Feature Trees	58
2.7.1	Feature Trees for Consonants and Vowels	58
2.7.2	Feature Trees for Contour Segments	61
2.8	Phonological Processes and Class Nodes in Feature Geometry	64
2.8.1	Phonological Processes	64
2.8.2	Phonological Changes in Derivational Phonology	67
2.8.3	Phonological Changes in Feature Geometry	68
2.9	An OT Analysis of Segments and Features	72
2.10	Summary and Conclusion	75
3	Syllables and Moras	77
3.1	Introduction	77
3.2	Syllable Structure and Sonority	78
3.2.1	The Sonority Hierarchy and the Sonority Sequence Principle	78
3.2.2	Positions in the Syllable	81
3.2.3	Affricates	89
3.3	The Syllable Contact Law, Onset Maximization and the Law of Initials	91
3.4	Syllable Constituents: Moras	93
3.4.1	The Role of Moras in the Syllable	93
3.4.2	The Moraic Structure of Tense and Lax Vowels	97
3.4.3	Vowel Length in Earlier Accounts	100
3.5	German Syllables in OT	103
3.5.1	Syllabification and Sonority in OT	104
3.5.2	The Syllable's Constituent Structure in OT	109
3.6	Summary and Overview of the Constraints	115
4	Segmental Alternations	117
4.1	Introduction	117
4.2	Final Devoicing	118
4.2.1	Final Devoicing and the Distribution of Voiced and Voiceless Obstruents	118
4.2.2	Voicing in Ambisyllabic Obstruents and the Puzzle Constraint	123
4.2.3	Optimality-Theoretic Analysis of Final Devoicing	127
4.3	The Dorsal Nasal [ŋ]	132
4.3.1	Distributional Properties	132
4.3.2	More Evidence for the Allophony between [ŋ] and /n/+g/	135
4.3.3	Regressive Assimilation of Nasals to Following Articulators	138

Contents	vii
4.3.4 Derivational Account of the Dorsal Nasal Assimilation	141
4.3.5 The Dorsal Nasal in Lexical Phonology	141
4.3.6 An OT Account of Nasal Assimilation and g-Deletion	147
4.3.7 Summary	155
4.4 Laryngeals: Glottal Stop and [h]	155
4.4.1 The Aspirated Laryngeal [h]	156
4.4.2 Analysis of [h] in OT	157
4.4.3 Distribution of the Glottal Stop	158
4.4.4 Previous Analyses of the Glottal Stop and Glottalization	159
4.4.5 OT Analysis of the Glottal Stop	160
4.5 The Dorsal Fricatives [ç] and [x]	162
4.5.1 The Allophonic Distribution of [ç] and [x]	162
4.5.2 Previous Analyses of the Dorsal Fricatives	165
4.5.3 OT Analysis of the Dorsal Fricatives	167
4.5.4 Hessian Allophony: Coronalization	171
4.6 Glides and Their Allophones	179
4.6.1 The Dorsal Glide /ɰ/	179
4.6.2 The Coronal Glide /j/	186
4.6.3 The Labial Glides [v] and [w]	192
4.6.4 Sequences of Glides	195
4.7 Overview of the Constraints	196
5 The Foot: Lexical Stress in OT	200
5.1 Introduction	200
5.2 Metrical Trees and Metrical Grids	202
5.2.1 Stress as a Relational Notion	202
5.2.2 Metrical Trees	204
5.2.3 Metrical Grids	205
5.3 Lexical Stress in German: Data	206
5.3.1 Data	206
5.3.2 Generalizations	214
5.4 Previous Accounts	217
5.4.1 Wurzel (1980)	217
5.4.2 Giegerich (1985)	218
5.4.3 Vennemann (1992)	219
5.4.4 Summary of the Recent Literature	219
5.5 An OT Analysis of Lexical Stress	221
5.5.1 Regular Patterns	221
5.5.2 Exceptional Patterns of Stress	230
5.6 Overview of the Constraints	237

viii Contents

6	Schwa and Syllabic Sonorants	239
6.1	Introduction	239
6.2	Distributional Properties of Schwa Syllables	240
6.2.1	Distribution of Schwa Syllables	240
6.2.2	Schwa as a Reduced Vowel	241
6.3	Schwa as a Morpheme	242
6.4	Syllabic and Non-Syllabic Sonorants in Stems, Compounds and Derivation	243
6.4.1	Undersived Stems	244
6.4.2	Compounds	246
6.4.3	Derived Stems	246
6.5	Syllabic and Non-Syllabic Sonorants in Inflectional Suffixes	249
6.5.1	Non-Syllabic Inflectional Suffixes	250
6.5.2	Syllabic Inflectional Suffixes	250
6.6	Is Schwa an Epenthetic Segment?	253
6.7	OT Analysis of Inflectional Suffixes	254
6.7.1	Infinitives	254
6.7.2	Nominal Inflectional Suffixes	260
6.7.3	Adjectival Inflectional Suffixes	262
6.8	Summary and Overview of the Constraints	266

Part II The Higher Prosodic Constituents: Prosodic Words, Prosodic Phrases and Intonation Phrases

7	The Prosodic Word	271
7.1	Introduction	271
7.2	Monomorphemic Words and Clitics	273
7.3	The Prosodic Structure of Inflectional Prefixation	277
7.3.1	Inflectional Prefixation: Participial <i>ge-</i>	277
7.3.2	OT Analysis of the Inflectional Prefix <i>ge-</i>	282
7.4	The Prosodic Structure of Derivation	284
7.4.1	Derivational Suffixation	284
7.4.2	Derivational Prefixation	300
7.5	The Prosodic Structure of Compounds	307
7.6	Prosodic Morphology	316
7.7	Nominal Plural Inflection	317
7.7.1	Data and Generalizations of Nominal Plural Inflection	317
7.7.2	OT Analysis of Nominal Plural Inflection	327
7.8	Linking Elements (<i>Fugenmorpheme</i>)	331

Contents	ix
7.9 Suffix-Induced Umlauting	334
7.9.1 Umlauting Elicited by <i>-chen</i>	334
7.9.2 OT Analysis of Umlauting Elicited by <i>-chen</i>	340
7.10 <i>i</i> -Formation: A Templatic Derivational Process	345
7.10.1 Data of <i>i</i> -Formation	345
7.10.2 OT Analysis of <i>i</i> -Formation	348
7.11 Reduplication	351
7.11.1 Properties of Reduplication Patterns	351
7.11.2 OT Analysis of Reduplication Patterns	352
7.12 Conclusion and Overview of the Constraints	353
8 Prosodic Phrasing	357
8.1 Introduction: Disambiguation by Prosodic Phrasing	357
8.2 An OT Model of Prosodic Phrase Formation	361
8.3 The Effect of Information Structure on Prosody	372
8.3.1 Focus and Givenness	372
8.3.2 Topic	379
8.4 Disambiguation by Prosody	382
8.5 Overview of the Constraints	386
9 Tones and Intonation	388
9.1 Introduction	388
9.2 The German Tone Sequence Model	389
9.2.1 Tonal Grammar	390
9.2.2 Discrete Tones	394
9.2.3 Continuous Melody	395
9.3 Tonal Scaling	398
9.3.1 Individual Pitch Accents	398
9.3.2 Declination	399
9.3.3 Downstep and Upstep	399
9.3.4 Final Lowering	403
9.4 Nuclear and Prenuclear Melodies	403
9.4.1 Falling Contour: (L)H*L ⁻ L%	404
9.4.2 Falling-Rising Contour: (L)H* L ⁻ H%	407
9.4.3 Rising Contour: (H)L* H ⁻ H%	409
9.4.4 Two Nuclear Contours with Final Plateau: Falling Vocative and Rising-Plateauing	411
9.4.5 Timing of Tone Alignment	414
9.4.6 Prenuclear Contours	416

x	Contents	
9.5	Phrasing and Intonation	419
9.6	OT Model of Intonation	421
9.7	DIMA: A Phonetic Annotation System	424
9.8	Summary of the Chapter	426
10	Conclusion and Survey of the OT Constraints Used in the Book	428
	<i>References</i>	435
	<i>Index</i>	455
	<i>List of Constraints</i>	458