

# Contents

Notes on symbols	ix
1 Introduction and orientation	1
1.0 Introduction	1
1.1 Background and theoretical orientation	1
1.2 Sources of data	3
1.3 Arrangement of the chapters	3
2 Definition and phonological status of prenasalization	6
2.0 Introduction	6
2.1 The problem of definition	7
2.1.1 Phonetic definition	7
2.1.2 Phonological definition	10
2.1.2.1 Strategy of definition	11
2.1.2.2 Phonological prenasalization	14
2.2 Phonological markedness	23
2.2.1 Theoretical background	23
2.2.2 Clicks	26
2.2.3 The markedness of prenasalized consonants	31
2.2.3.1 Phonological implications	31
2.2.3.2 Frequency of distribution	31
2.2.3.3 Allophonic variation	36
2.2.3.4 Neutralization and diachronic developments	38
2.2.3.5 Child language and distributional limitations	44
2.2.3.6 Phonological and grammatical markedness	45
2.3 Summary	50
2.4 Notes	51
3 Prenasalized consonants: Units or clusters?	54
3.0 Introduction	54
3.1 Strategy of determination	54
3.2 General considerations	61
3.3 Syllable structure considerations	67
3.3.1 Elicited syllabification	67
3.3.2 Secondary evidence for syllabification	70

3.3.2.1	Language games	70
3.3.2.2	Rhythmic considerations	71
3.3.3	Syllable structure arguments	73
3.4	Motivation for a feature analysis	79
3.5	Summary	90
3.6	Notes	92
<b>4</b>	<b>Formal representation of prenasalized consonants</b>	<b>94</b>
4.0	Introduction	94
4.1	Formal representation	94
4.1.1	Distinctive feature proposals	94
4.1.2	Complex symbols	98
4.2	Feature analyses: Theoretical considerations	100
4.2.1	Orthogonality	100
4.2.2	Question of subclass	102
4.2.3	Conclusion	112
4.3	Phonetic vector specifications	113
4.3.1	Consonant incompatibility	113
4.3.2	Diachronic developments	117
4.4	Summary	120
4.5	Notes	120
<b>5</b>	<b>Phonetic evidence for a cluster analyses</b>	<b>122</b>
5.0	Introduction	122
5.1	Vowel quality	123
5.2	Vowel nasality	124
5.2.1	General background	124
5.2.2	Prenasalized consonants and vowel nasality	126
5.2.3	Conclusion	134
5.3	Vowel quantity	134
5.4	Syllabicity alternations	139
5.5	Summary	141
5.6	Notes	141
<b>6</b>	<b>A derivational model for nasal-oral unification</b>	<b>143</b>
6.0	Introduction	143
6.1	Theoretical background	143
6.1.1	Definition	143
6.1.2	Unification in Delaware	144
6.1.3	Oates' bi-level approach	146
6.1.4	Nasals as syllable codas	149
6.1.5	Myers' derivational model	154

6.2 Relationship of phonetic processes and unification	159
6.2.1 Homorganicity and unification	159
6.2.2 Secondary phonetic processes and unification	162
6.3 Derivational model	168
6.3.1 Sketch of the model	168
6.3.2 Explanatory value of the model	173
6.4 Initial prenasalization and unification: An alternative model	177
6.5 Summary	186
6.6 Notes	187
 7 Prenasalized consonants: Processes of origin	189
7.0 Introduction	189
7.1 Nasal abutment	189
7.1.1 Morphological processes	190
7.1.2 Phonological processes	193
7.1.3 Metathesis	195
7.1.4 Conclusion	196
7.2 Environmental shielding processes	196
7.2.1 Theoretical considerations	196
7.2.2 Shielding of oral vowels	199
7.2.3 Shielding of nasal vowels	201
7.2.4 Complex shielding series	204
7.2.5 Excursus on formalism and explanation	205
7.3 Shielding within clusters	214
7.3.1 Prenasalization of nasal consonants	215
7.3.2 Prenasalization of oral consonants	218
7.3.3 Conclusion	219
7.4 Spurious, spontaneous, and intrusive nasalization	220
7.4.1 Sinhalese	220
7.4.2 Apache	222
7.4.3 West Atlantic, Celtic, Nilotic, Austronesian	223
7.4.4 Kikongo	226
7.5 Some problematic cases	228
7.5.1 Narragansett	228
7.5.2 Breton	229
7.5.3 Bantu	229
7.5.4 Conclusion	230
7.6 Summary	231
7.7 Notes	232

<b>8 Phonetic processes in derivation</b>	<b>235</b>
8.0 Introduction	235
8.1 Processes affecting oral consonants	235
8.1.1 Post-nasal voicing	236
8.1.2 Post-nasal hardening	237
8.1.3 De-explosion	239
8.1.4 Ejectives	240
8.1.5 Clicks	241
8.1.6 Aspirates and aspiration	242
8.1.6.1 Loss of aspiration	243
8.1.6.2 Development of aspiration	243
8.1.7 Nasal + /h/	246
8.1.8 Conclusion	248
8.2 Processes affecting nasal consonants	250
8.2.1 Nasal assimilation	250
8.2.2 Nasal devoicing	251
8.2.3 Nasal deletion	252
8.2.4 Nasal absorption	253
8.2.5 Conclusion	254
8.3 Summary	255
8.4 Gemination of consonants and prenasalization	256
8.5 Notes	261
 <b>9 Implications and conclusions</b>	 263
9.0 Introduction	263
9.1 Explaining markedness	263
9.1.1 Class markedness	263
9.1.2 Markedness within the class	266
9.2 Universals in reconstruction	267
9.2.1 Reconstructing process	267
9.2.2 Reconstructing state	271
9.2.3 Conclusion	272
9.3 Implications and directions for future research	272
9.3.1 Complex sound types	272
9.3.2 Universals of secondary nasality	275
9.4 Summary	276
9.5 Notes	276
 <b>References</b>	 278