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Sara E. Kimball

# Contents


Bibliography . . . . . 23
Abbreviations . . . . . 31

**Introduction**

0.1. Recent research on Hittite phonology . . . . . 33
0.2. Audience for and purpose of this work . . . . . 35
0.3. The texts and their chronology . . . . . 37
0.4. Notes on interpretation . . . . . 39
0.5. Notes on transcription . . . . . 42
0.6. Symbols used in this work . . . . . 44
0.7. Phonemic system . . . . . 45

**1. The writing system**

1.1. Principles . . . . . 48
1.1.1. Use of Sumerian and Akkadian . . . . . 48
1.1.2. Polyphonic signs . . . . . 49
1.1.2.1. Ambiguous signs as polyphonic . . . . . 50
1.1.2.2. PAT/PIT . . . . . 50
1.1.3. Origins of Hittite writing . . . . . 53
1.2. Spellings for vowels . . . . . 54
1.3. Plene writing . . . . . 54
1.3.1. Definition . . . . . 55
1.3.2. Frequency . . . . . 55
1.3.3. Plene writing, accent, and vowel length . . . . . 56
1.3.3.1. Plene writing and IE vowel length . . . . . 57
1.3.3.2. Plene writing and accent or ablaut . . . . . 57
1.3.3.3. Plene writing and lengthening of accented vowels . . . . . 59
1.3.3.4. Vowels never written plene . . . . . 59
1.3.3.5. Plene writing in more than one syllable . . . . . 62
1.3.3.6. Long vowels from phonological processes other than lengthening under accent . . . . . 62
1.3.3.7. Plene writing and synchronic accent, vowel length . . . . . 63
1.4. Hyperplene spellings . . . . . 64
1.4.1. Of initial vowels . . . . . 64
1.4.2. Of medial and final vowels . . . . . 65
1.5 Vowel doubling not indicating vowel length . . . . . 66
1.5.1. HU-U- . . . . . 67
1.6. Spellings for front vowels . . . . . 68

1.6.1. Loss of a phonemic distinction . . . 69
1.6.1.1. Early merger . . . 69
1.6.2. Phonemic distinction . . . 70
1.6.2.1. Oettinger's views . . . 70
1.6.2.2. Eichner's views . . . 71
1.6.2.3. Riemschneider's views . . . 71
1.6.2.4. Melchert's views . . . 71
1.6.2.5. Kimball's views . . . 73
1.6.3. Comparison of variation in OH with variation in later texts . . . 73
1.6.3.1. Spellings with CI-I-(IC) and (CI)-I-IC for OH /e/ . . . 74
1.6.3.2. Spellings with CE-E-(EC) and (CE)-E-EC for OH /i/ . . . 74
1.6.3.3. Post-OH free-standing I for OH E . . . 75
1.6.3.4. Post-OH free-standing E for OH I . . . 75
1.6.3.5. Mixed plene and hyperplene spellings for OH /e/ . . . 75
1.6.3.6. Mixed plene spellings for OH /i/ . . . 76
1.6.3.7. Spellings for short front vowels . . . 76
1.6.3.8. Variation in OH spellings for front vowels . . . 77
1.6.3.9. Conclusions . . . 78
1.7. U and Ú . . . 79
1.8. Spellings for diphthongs . . . 80
1.9. Spellings for stops . . . 81
1.9.1. Hittite spellings and Old Babylonian values . . . 81
1.9.2. Spellings for labial stops . . . 82
1.9.2.1. IE *p . . . 82
1.9.2.2. IE *b . . . 82
1.9.2.3. IE *bh . . . 82
1.9.2.4. Spellings with B° . . . 82
1.9.3. Spellings for dental stops . . . 83
1.9.3.1. IE *t . . . 83
1.9.3.2. IE *d . . . 83
1.9.3.3. IE *dh . . . 84
1.9.4. Spellings for velar stops . . . 84
1.9.4.1. IE *k and *ḱ . . . 84
1.9.4.2. IE *g and *ǵ . . . 85
1.9.4.3. IE *ǵh . . . 85
1.9.5. Labiovelars . . . 86
1.9.6. Phonetic interpretations of spellings for stops . . . 86
1.9.6.1. Riemschneider's views . . . 86
1.9.6.2. Eichner's views . . . 87
1.9.6.3. Oettinger's views . . . 87
1.9.6.4. Hart's views . . . 88
1.9.6.5. Conclusions . . . 89
1.10. Sturtevant's Law . . . 90
1.10.1. Pre- and postconsonantal stops . . . 91
1.10.2. Apparent exceptions to Sturtevant's Law . . . 92
1.10.2.1. Single stop from etymologically voiceless stop . . . 92
1.10.2.2. Double stop from voiced stop or voiced aspirate . . . 93
1.10.3. Phonetic interpretation . . . 94
1.11. Double and single writing of continuants . . . 95





1.12. Spellings for nasals . . . 97
1.12.1. Graphic omission . . . 97
1.12.2. NH °M-M° for earlier NH °M° . . . 97
1.13. Spellings for glides . . . 99
1.13.1. Initial . . . 99
1.13.1.1. Standard spellings for initial /w/ . . . 99
1.13.1.2. Ú-WA- and U-WA- . . . 99
1.13.1.3. Spellings for initial /y/ . . . 101
1.13.2. Postconsonantal glides . . . 101
1.13.2.1. Spellings for [CwV] . . . 101
1.13.2.2. Spellings for [CyV] . . . 103
1.13.2.3. Spellings for [CiyV] and [CuwV] . . . 103
1.13.3. Intervocalic /w/ . . . 104
1.14. Spellings for *h* . . . 105
1.15. Spellings for sibilants . . . 106
1.15.1. Phonetic values for °Š° . . . 106
1.15.1.1. °Š° for /s/, /ss/ . . . 106
1.15.1.2. °Š° for /z/, [ž] . . . 106
1.15.2. Phonetic values for °Z° . . . 107
1.15.2.1. °Z° for /s/ or /z/ . . . 107
1.15.2.2. /ts/, /tṣ/, /tˢt/ . . . 107
1.15.2.3. °Z-Z° and °Z°. . . . 107
1.15.3. Spellings for initial clusters of *s plus stop . . . 108
1.15.3.1. Regular spellings . . . 108
1.15.3.2. Alternative spellings . . . 109
1.15.3.3. Phonetic interpretations of IŠ-T° . . . 109
1.15.3.4. Arguments for reading IŠ-T° as [isT] . . . 109
1.15.3.5. Arguments for reading IŠ-T° as [st] . . . 110
1.16. Spellings for consonant clusters, epenthesis . . . 111
1.16.1. CA = [CC] . . . 113
1.16.2. CA-AC = [CC] . . . 115
1.16.3. AC = [C] . . . 115
1.16.3.1. Incorrect syllabification . . . 115
1.16.4. CAC as [CC] . . . 116
1.16.5. Echo vowels . . . 116
1.16.6. Spellings for initial consonant clusters . . . 117
1.16.6.1. CA-C'° beside CE-C'° . . . 117

**2. Basic reflexes of IE accented and unaccented vowels**

2.1. System inherited from IE . . . 119
2.1.1. *a and *ā . . . 119
2.1.2. *i, *u and *ī, *ū . . . 119
2.1.3. Laryngeal coloring . . . 120
2.1.4. *āC vs. *aHC . . . 120
2.1.5. *o . . . 120
2.1.6. Stang's Law . . . 120
2.2. IE to PA and Pre-Hittite . . . 121
2.2.1. *o and *a . . . 121
2.2.2. Reflexes of front vowels . . . 122

2.2.3. Loss of laryngeals and compensatory lengthening . . . 122
2.2.4. Sources of new vowels . . . 123
2.2.4.1. Secondary zero-grade . . . 124
2.3. Lengthening, shortening, and accent . . . 124
2.3.1. Shortening of unaccented long vowels . . . 124
2.3.2. Lengthening of accented vowels . . . 125
2.3.2.1. Oettinger's views . . . 126
2.3.2.2. Eichner's views . . . 127
2.3.2.3. Kimball's views . . . 127
2.3.2.4. Melchert's views . . . 127
2.3.3. Length not due to accent . . . 127
2.3.3.1. Long vowels from inherited long vowels . . . 128
2.3.3.2. Long vowels by compensatory lengthening . . . 128
2.3.3.3. Long vowels by contraction, monophthongization . . . 128
2.3.3.4. Long vowels by analogy . . . 129
2.4. Reflexes of short accented vowels . . . 129
2.4.1. *ó . . . 129
2.4.2. *á . . . 131
2.4.3. *é . . . 132
2.4.4. *í and *ú vs. monophthongized diphthongs . . . 133
2.4.4.1. *í . . . 133
2.4.4.2. *ú . . . 134
2.5. Reflexes of long accented vowels . . . 135
2.5.1. *ó̄ . . . 135
2.5.2. *á̄ . . . 135
2.5.3. *é̄ . . . 135
2.6. Reflexes of short unaccented vowels . . . 136
2.6.1. *o . . . 136
2.6.2. *a . . . 136
2.6.3. *e . . . 137
2.6.4. *i . . . 138
2.6.5. *u . . . 138
2.7. Reflexes of long unaccented vowels . . . 138
2.7.1. *ō . . . 138
2.7.2. *ē . . . 139
2.7.3. *ī . . . 140
2.8. Vowels following laryngeals . . . 140
2.8.1. *e . . . 140
2.8.1.1. *$h_1$e . . . 140
2.8.1.2. *$h_2$e . . . 141
2.8.1.3. *$h_3$e . . . 141
2.8.2. *o . . . 142
2.8.2.1. *$h_1$o . . . 142
2.8.2.2. *$h_2$o . . . 142
2.8.3. *i . . . 143
2.8.3.1. *$h_1$i . . . 143
2.8.3.2. *$h_2$i . . . 143
2.8.3.3. *$h_3$i . . . 143
2.8.4. *u . . . 143





2.8.4.1. *$h_2$u . . . 143
2.8.5. *ē . . . 144
2.8.5.1. *$h_1$ē . . . 144
2.8.5.2. *$h_2$ē . . . 144
2.8.5.3. *$h_3$ē . . . 145
2.9. Vowels preceding laryngeals . . . 146
2.9.1. *e . . . 146
2.9.1.1. *e$h_1$ . . . 146
2.9.1.2. *e$h_2$ . . . 149
2.9.1.3. *e$h_3$ . . . 150
2.9.2. *o . . . 151
2.9.2.1. *o$h_1$ . . . 151
2.9.2.2. *o$h_2$ . . . 151
2.9.3. *i . . . 151
2.9.3.1. *i$h_1$ . . . 151
2.9.3.2. *i$h_2$ . . . 151
2.9.4. *u . . . 151
2.9.4.1. *u$h_1$ . . . 151
2.9.4.2. *u$h_2$ . . . 152
2.9.4.3. *u$h_3$ . . . 152
2.9.5. *ē . . . 152
2.9.5.1. *ē$h_2$ . . . 152
2.9.5.2. *ē$h_3$ . . . 152
2.10. Accented vowels before geminates . . . 153
2.10.1. Before geminate from resonant or stop plus laryngeal . . . 153
2.10.2. Before geminate from nasal plus nasal . . . 154
2.10.3. Before geminate nasal from stop plus nasal . . . 154
2.10.4. Before geminate resonant from resonant plus consonant . . . 154
2.10.5. Before *ss* < **ns* . . . 154
2.10.6. Before *ss* < **$h_1$s* . . . 155
2.10.7. Before expressive geminates . . . 155

**3. Conditioned Changes Affecting Vowels**

3.1. Introduction . . . 156
3.2. *e . . . 156
3.2.1. Raising . . . 156
3.2.1.1. Raising of initial *e . . . 156
3.2.1.2. Raising before nasal plus velar . . . 157
3.2.1.3. Raising before nasal plus nasal . . . 158
3.2.1.4. Raising before *s* plus consonant . . . 158
3.2.1.5. Raising after velar . . . 159
3.2.1.6. Raising between *w* and dental obstruent . . . 160
3.2.1.7. Raising of word-final *e . . . 160
3.2.2. Lowering . . . 160
3.2.2.1. Lowering before *r plus consonant . . . 161
3.2.2.2. Lowering before nasal plus consonant or word boundary . . . 163
3.2.2.3. Lowering before resonant plus laryngeal . . . 165
3.3. *a (PA *a, *o, *$\underset{\circ}{R}$) . . . 166
3.3.1. Weakening to *e*/*i* . . . 166

3.3.2. Variation between *a* and *u* . . . 167
3.4. Lowering of OH /i/ before consonant clusters . . . 169
3.5. **ē* . . . 169
3.5.1. Raising after **h₂* . . . 169
3.5.2. Lowering before nasal plus consonant or word boundary . . . 169
3.6. Assimilation, vowel harmony, umlaut . . . 170
3.6.1. Assimilation of **e ... a* to *a ... a* . . . 170
3.6.2. *u*-umlaut . . . 170
3.6.3. *i*-umlaut . . . 171
3.6.4. Assimilation of /a/ .... /i/ to /i/ .... /i/ . . . 171
3.6.5. Palatal umlaut and replacement of OH [yē] by [ya] . . . 173
3.7. Syncope . . . 173
3.7.1. Prehistoric syncope . . . 175
3.7.2. Syncope within the historical period . . . 175
3.7.3. Syncope of *a* in the vicinity of *y* . . . 177
3.7.3.1. Likely examples . . . 177
3.7.3.2. Unlikely examples . . . 177
3.7.4. Syncope of *a* in the vicinity of *w* . . . 180
3.7.4.1. Likely examples . . . 180
3.7.4.2. Unlikely and problematic examples . . . 180
3.7.4.3. *(u)wa* for *u* . . . 183
3.7.4.4. Variation between *(u)wa* and *u* (conditioning obscure) . . . 186
3.7.4.5. Variation between *we* or *wi* and *u* . . . 187
3.8. Apocope . . . 188
3.8.1. Apocope of **i* . . . 191
3.8.2. Apocope of **e* . . . 191
3.8.3. Apocope of **u* . . . 193
3.9. Anaptyxis . . . 193
3.9.1. In final syllables . . . 193
3.9.2. In initial consonant clusters . . . 193
3.9.3. In consonant clusters with *s* . . . 195
3.9.4. Epenthetic *u* . . . 196
3.10. Nasalization . . . 199
3.11. Vowels in sequence . . . 200
3.11.1. Elision . . . 201
3.11.1.1. In enclitics . . . 201
3.11.1.2. Loss of **e* before **o* or **a* . . . 201
3.11.2. Contraction . . . 201

**4. Diphthongs**

4.1. System inherited from IE . . . 205
4.2. Developments from IE to PA and Pre-Hittite . . . 206
4.2.1. Diphthong plus laryngeal . . . 206
4.2.2. Conditioned monophthongization . . . 206
4.3. **ei* . . . 207
4.3.1. Monophthongization to /ī/ . . . 207
4.3.1.1. After velars . . . 208



4.3.1.2. Other examples of monophthongization to /ī/ . . . 208
4.3.2. Monophthongization to /ē/ . . . 209
4.3.2.1. Before laryngeals . . . 210
4.3.2.2. Before /tṣ/ . . . 210
4.3.2.3. Elsewhere . . . 211
4.3.2.4. Uncertain examples . . . 212
4.3.2.5. Doubtful examples . . . 212
4.3.3. Final **ei* . . . 213
4.4. **oi* . . . 213
4.4.1. Monophthongization . . . 214
4.4.1.1. In final syllables . . . 214
4.4.1.2. Before laryngeals . . . 214
4.4.1.3. Before stops . . . 215
4.4.1.4. Doubtful examples . . . 215
4.4.2. Retention . . . 215
4.5. **ai* . . . 216
4.5.1. Monophthongization . . . 217
4.5.1.1. In final syllables . . . 217
4.5.1.2. Before laryngeals . . . 217
4.5.1.3. Examples unlikely to have had full-grade . . . 217
4.5.1.4. Unlikely and doubtful examples . . . 217
4.6. **eu* and **ou* . . . 218
4.6.1. Monophthongization . . . 220
4.6.2. Ablaut grade uncertain . . . 220
4.7. **au* . . . 222
4.7.1. Monophthongization . . . 224
4.7.1.1. Before laryngeals . . . 224
4.7.1.2. Monophthongization elsewhere . . . 224
4.7.1.3. Examples unlikely to have had full-grade . . . 225
4.7.2. Retention . . . 225
4.8. Long diphthongs . . . 225
4.8.1. **ēi* . . . 226
4.8.2. **ōi* . . . 227
4.8.3. **ēu* . . . 228
4.8.4. **ōu* . . . 229
4.9. Secondary diphthongs . . . 230
4.9.1. *i*-diphthongs . . . 230
4.9.2. *u*-diphthongs . . . 230
4.9.3. Synchronic *eu* . . . 232
4.10. Developments within the historical period . . . 233
4.10.1. Monophthongization of OH *ai* to *e/i* . . . 234
4.10.2. Post-OH *āwi* for OH *au* . . . 234

**5. Syllabic resonants**

5.1. System inherited from IE . . . 235
5.2. IE to PA and Pre-Hittite . . . 237
5.3. Vocalization to AR . . . 237
5.4. Vocalization to AR . . . 238

5.3.1. *r̥ . . . 239
5.3.2. *l̥ . . . 242
5.3.3. *m̥ . . . 243
5.3.4. *n̥ . . . 243
5.3.5. Doubtful examples . . . 246
5.3.6. Secondary vocalization . . . 247
5.4. Vocalization to *uR* . . . 247
5.4.1.1. *r̥ . . . 247
5.4.1.2. *l̥ . . . 249
5.4.1.3. *m̥ . . . 249
5.4.1.4. *n̥ . . . 249
5.4.2. After labiovelar . . . 249
5.4.3. Doubtful examples . . . 250
5.5. Vocalization to *a* . . . 252
5.6. Sievers–Lindeman's Law . . . 253
5.7. Reflexes of syllabic resonants with plene writing . . . 254

**6. Stops**

6.1. System inherited from IE . . . 256
6.1.1. Voicing, aspiration, glottalic theory . . . 256
6.1.2. Plain velars, palatalized velars, and labiovelars . . . 257
6.1.3. "thorn" . . . 258
6.2. IE to PA and Pre-Hittite . . . 259
6.2.1. Initial voicing distinction . . . 259
6.2.1.1. Hittite treatment of dental plus *i/y* . . . 259
6.2.1.2. Luvian treatment of palatalized velars . . . 260
6.2.1.3. Luvian treatment of labiovelars . . . 260
6.2.1.4. Evidence from reduplication . . . 260
6.2.2. Sturtevant's Law, Čop's Law . . . 261
6.2.2.1. Cuneiform Luvian and Palaic . . . 261
6.2.2.2. Čop's Law . . . 261
6.2.3. PA voicing . . . 262
6.3. Initial stops . . . 265
6.3.1. Labials . . . 265
6.3.1.1. *p . . . 265
6.3.1.2. *b . . . 265
6.3.1.3. *bh . . . 265
6.3.2. Dentals . . . 265
6.3.2.1. *t . . . 265
6.3.2.2. *d . . . 265
6.3.2.3. *dh . . . 265
6.3.3. Velars . . . 266
6.3.3.1. *k, *ḱ . . . 266
6.3.3.2. *g, *ǵ . . . 266
6.3.3.3. *ǵh . . . 266
6.3.4. Labiovelars . . . 266
6.3.4.1. *kʷ . . . 266
6.3.4.2. *gʷ . . . 267





6.3.4.3. *gʷh . . . 268
6.4. Medial intervocalic stops . . . 268
6.4.1. Voiceless stops . . . 268
6.4.1.1. *p . . . 268
6.4.1.2. *t . . . 269
6.4.1.3. *k, *ḱ . . . 269
6.4.2. Voiced stops . . . 270
6.4.2.1. *b . . . 270
6.4.2.2. *d . . . 270
6.4.2.3. *g, *ǵ . . . 271
6.4.3. Voiced aspirates . . . 271
6.4.3.1. *bh . . . 271
6.4.3.2. *dh . . . 272
6.4.3.3. *gh, *ǵh . . . 272
6.4.3.4. *gʷh . . . 273
6.4.4. Voiced stops from PA voicing . . . 273
6.4.4.1. After inherited long vowel . . . 273
6.4.4.2. After accented diphthong . . . 274
6.4.4.3. After long vowel from vowel plus laryngeal . . . 274
6.4.4.4. In unaccented syllables . . . 275
6.4.4.5. Uncertain examples . . . 276
6.4.4.6. Problematic examples . . . 277
6.4.4.7. Unlikely examples . . . 278
6.4.4.8. Alternating voiced and voiceless stop within paradigms . . . 279
6.5. Preconsonantal . . . 281
6.5.1. Labiovelars . . . 281
6.5.2. Gemination before laryngeals . . . 282
6.6. Postconsonantal . . . 283
6.6.1. Voiceless stops . . . 283
6.6.2. Voiced stops . . . 284
6.6.3. Voiced aspirates . . . 285
6.7. Conditioned changes affecting dentals . . . 285
6.7.1. Dental plus dental . . . 285
6.7.1.1. Dental stop plus dental stop . . . 285
6.7.1.2. Dental stop plus /tṣ/ < *ti . . . 286
6.7.1.3. *st* plus dental stop or affricate . . . 286
6.7.1.4. /tṣ/ plus cluster with initial *s* . . . 287
6.7.2. Assibilation . . . 287
6.7.2.1. Assibilation of *ty . . . 287
6.7.2.2. Assibilation of *ti . . . 288
6.7.2.3. Assibilation of PA *tʸu . . . 289
6.7.2.4. Assibilation blocked . . . 289
6.7.2.5. *tē . . . 290
6.7.2.6. Assibilation of dental plus *w or *u . . . 291
6.7.3. *dy, *di . . . 291
6.7.4. *dhy . . . 292
6.8. Conditioned changes affecting velars . . . 293
6.8.1. Assimilation to *h* . . . 293
6.8.2. Velar plus *u or *w . . . 293

6.8.3. Palatalization before *a* . . . 295
6.9. Conditioned changes affecting labiovelars . . . 295
6.9.1. Delabialization . . . 295
6.9.2. Develarization . . . 296
6.9.3. Other . . . 297
6.10. Assimilation . . . 297
6.10.1. Dental plus nasal . . . 298
6.10.1.1. **tn* . . . 298
6.10.1.2. **dm* . . . 298
6.10.2. Velar plus dental . . . 299
6.10.3. Following laryngeal . . . 299
6.10.4. Labial plus **s* . . . 300
6.10.5. Other . . . 300
6.11. Devoicing . . . 300
6.11.1. Before **s* . . . 300
6.11.2. Before other voiceless consonants . . . 301
6.11.3. Of final stops . . . 302
6.11.4. In reduplication . . . 302
6.11.5. Of **gi* and **di* . . . 302
6.11.6. Other . . . 303
6.12. Loss . . . 303
6.12.1. Final . . . 303
6.12.2. In clusters . . . 304
6.12.3. *har(k)-* . . . 304

**7. Nasals**

7.1. System inherited from IE . . . 306
7.2. Initial . . . 306
7.2.1. **n* . . . 306
7.2.2. **m* . . . 306
7.2.3. *n* : *d/l* . . . 306
7.3. Intervocalic . . . 307
7.3.1. After short accented vowel . . . 307
7.3.1.1. **n* . . . 307
7.3.1.2. **m* . . . 309
7.3.2. After long accented vowel or diphthong . . . 309
7.3.3. Before accented vowel . . . 310
7.3.3.1. **n* . . . 310
7.3.3.2. **m* . . . 313
7.3.4. In unaccented syllable . . . 314
7.4. Nasal plus stop or affricate . . . 314
7.4.1. Retention . . . 314
7.4.1.1. **n* . . . 314
7.4.1.2. **m* . . . 314
7.4.2. [ŋ] plus velar . . . 315
7.4.3. Loss of nasal . . . 316
7.4.3.1. Loss before dental stop or /ʦ/ . . . 317
7.4.3.2. Loss before velars . . . 318



7.4.3.3. Nasal loss as variable, intrusive nasals . . . 318
7.4.3.4. Loss and assimilation before labial stop . . . 319
7.5. Nasal plus nasal . . . 319
7.5.1. **n* plus **n* and **m* plus **m* . . . 320
7.5.2. **n* plus **m* . . . 320
7.5.3. **m* plus **n* . . . 321
7.5.3.1. Assimilation to *mm* . . . 321
7.5.3.2. Simplification of *mm* to *m* . . . 321
7.5.3.3. Analogical restoration of *n* . . . 322
7.5.3.4. Synchronic treatment . . . 324
7.6. Nasal plus liquid . . . 325
7.6.1. **nr* . . . 325
7.6.2. **mr* . . . 325
7.7. Nasal plus glide . . . 325
7.7.1. Nasal plus **y* . . . 325
7.7.2. Nasal plus **w* . . . 326
7.8. Nasal plus **s* . . . 326
7.8.1. Preconsonantal **ns* and **ms* . . . 327
7.8.2. Inherited prevocalic **ns* . . . 329
7.8.3. Secondary **ns* . . . 330
7.8.4. **ms* . . . 331
7.8.5. Synchronic treatment of *ns* . . . 332
7.8.5.1. *ns* in sandhi . . . 332
7.8.5.2. *ns* at internal morpheme boundary . . . 333
7.9. Nasal plus laryngeal . . . 334
7.9.1. Inherited . . . 334
7.9.2. Secondary and synchronic *nh* . . . 334
7.9.2.1. With consistent *nh* . . . 334
7.9.2.2. With loss of the nasal . . . 335
7.10. Dissimilation . . . 336
7.10.1. Of **n ... m* to *l ... m* . . . 336
7.10.2. Of **m ... n* to *m ... l* . . . 337
7.10.3. Of **n ... n* to *n ... m* . . . 337
7.11. Laryngeal plus nasal . . . 337
7.12. Final . . . 338
7.12.1. **n* . . . 338
7.12.2. **m* . . . 338

**8. Liquids**

8.1. System inherited from IE . . . 339
8.2. IE to PA and Pre-Hittite . . . 339
8.3. Initial . . . 339
8.3.1. **l* . . . 340
8.3.2. **r* . . . 340
8.4. Intervocalic . . . 341
8.4.1. After short accented vowel . . . 341
8.4.1.1. **l* . . . 342

8.4.1.2. *r . . . 342
8.4.2. After long accented vowel, diphthong . . . 343
8.4.2.1. *l . . . 343
8.4.2.2. *r . . . 344
8.4.3. Before accented vowel . . . 344
8.4.4. In unaccented syllable . . . 344
8.5. Geminates not from assimilation . . . 344
8.5.1. °L° and °L-L° . . . 344
8.5.2. °R° and °R-R° . . . 345
8.6. Preconsonantal . . . 347
8.6.1. *l . . . 347
8.6.2. *r . . . 347
8.6.3. Liquid plus *y . . . 347
8.6.4. Assimilation of *ln to ll . . . 348
8.6.5. *rs . . . 349
8.6.5.1. Prevocalic *rs after short accented vowel . . . 350
8.6.5.2. Preconsonantal *rs . . . 350
8.6.5.3. *rs in unaccented syllable . . . 351
8.6.5.4. rz from *rs . . . 352
8.6.6. Liquid plus laryngeal . . . 352
8.6.6.1. *lH . . . 352
8.6.6.2. *rH . . . 352
8.7. Postconsonantal . . . 352
8.7.1. *l . . . 352
8.7.2. *r . . . 353
8.8. Loss of r . . . 353
8.8.1. Final . . . 354
8.8.2. Preconsonantal . . . 356
8.8.3. Intervocalic . . . 357
8.8.4. Unetymological r . . . 358
8.9. Dissimilation . . . 359
8.9.1. Of *r ... r to r ... n . . . 359
8.9.2. Of *l ... l to l . . . 359
8.9.3. Of *r ... l to r ... n . . . 359
8.9.4. Of *r ... r to r . . . 359
8.9.5. Uncertain examples . . . 359
8.10. Final . . . 360

**9. Glides**

9.1. System inherited from IE . . . 361
9.2. Initial . . . 361
9.2.1. *y . . . 361
9.2.1.1. Loss before *e . . . 361
9.2.1.2. Loss before *i . . . 362
9.2.1.3. Retention before back vowels . . . 363
9.2.2. *w . . . 363
9.3. Intervocalic . . . 364
9.3.1. *y . . . 364





9.3.1.1. Loss . . . 364
9.3.1.2. Chronology of loss . . . 366
9.3.1.3. Secondary VyV . . . 367
9.3.2. *w . . . 369
9.4. Preconsonantal . . . 369
9.4.1. Glide plus laryngeal . . . 369
9.5. Postconsonantal . . . 370
9.5.1. *y . . . 370
9.5.1.1. Retention . . . 370
9.5.1.2. *y following laryngeal . . . 371
9.5.2. *w . . . 372
9.5.2.1. Loss between dental stop and *o or *ō . . . 372
9.5.2.2. Retention . . . 372
9.6. Sievers–Lindeman's Law . . . 373
9.7. Dissimilation of *uw and *wu to um . . . 374
9.7.1. Dissimilation of *uw to um . . . 374
9.7.2. Dissimilation of *wu to um . . . 375
9.7.3. *uw via Sievers–Lindeman . . . 375
9.7.4. Unlikely examples . . . 376
9.7.5. Secondary uw . . . 377
9.7.5.1. Analogical uw . . . 377
9.7.5.2. [uw] via glide insertion . . . 377

**10. Laryngeals**

10.1. System inherited from IE . . . 379
10.1.1. Loss of laryngeals . . . 379
10.1.1.1. Loss of laryngeals in consonant clusters . . . 379
10.1.1.2. Loss of laryngeal in o-grade formations . . . 380
10.1.1.3. Loss after s mobile . . . 381
10.1.1.4. Stang's Law . . . 382
10.1.2. Laryngeal metathesis . . . 382
10.2. IE to PA and Pre-Hittite . . . 384
10.2.1. Loss and compensatory lengthening of vowels . . . 384
10.2.2. Loss of $*h_1$ . . . 384
10.2.3. Developments affecting $*h_3$ . . . 384
10.2.4. Laryngeals and PA voicing . . . 387
10.2.5. Vocalization . . . 387
10.3. Initial . . . 388
10.3.1. $*h_1$ . . . 388
10.3.1.1. Prevocalic . . . 389
10.3.1.2. Before syllabic resonant . . . 389
10.3.1.3. Before consonantal resonant . . . 389
10.3.1.4. Before stop, *s . . . 390
10.3.1.5. Before glide . . . 391
10.3.2. $*h_2$ . . . 392
10.3.2.1. Prevocalic . . . 393
10.3.2.2. Before syllabic resonant . . . 393
10.3.2.3. Before consonantal resonant . . . 393

10.3.2.4. Before *s . . . 393
10.3.3. *h3 . . . 393
10.3.3.1. Prevocalic . . . 393
10.3.3.2. Before syllabic resonant . . . 394
10.3.3.3. Before stop . . . 394
10.4. Intervocalic . . . 395
10.4.1. *h1 . . . 395
10.4.2. *h2 . . . 395
10.4.2.1. After short accented vowel . . . 395
10.4.2.2. After long accented vowel, diphthong . . . 398
10.4.2.3. In unaccented syllable . . . 399
10.4.3. *h3 . . . 399
10.5. Preconsonantal . . . 400
10.5.1. *h1 . . . 400
10.5.2. *h2 . . . 400
10.5.2.1. Retention . . . 401
10.5.2.2. Retention before *s and *w . . . 402
10.5.2.3. Loss before stops . . . 403
10.5.3. *h3 . . . 403
10.5.4. Laryngeal plus laryngeal . . . 404
10.5.5. Laryngeal plus glide . . . 404
10.6. Postconsonantal . . . 405
10.6.1. *h1 . . . 405
10.6.2. *h2 . . . 405
10.6.3. *h3 . . . 405
10.7. Gemination of stop plus laryngeal . . . 406
10.7.1. Voiced stop plus *h2 . . . 407
10.7.2. Voiceless stop plus *h2 . . . 408
10.7.3. Voiced aspirate plus *h1 . . . 409
10.7.4. Voiceless stop plus *h1 . . . 409
10.7.5. Laryngeal unclear . . . 410
10.7.6. Etymology unclear . . . 410
10.8. Gemination of resonant plus laryngeal . . . 410
10.8.1. *lh1 . . . 412
10.8.2. *lh2 . . . 413
10.8.3. *rh2 . . . 413
10.8.4. *rh3 . . . 414
10.8.5. *nh1 . . . 414
10.8.6. *nh2 . . . 415
10.8.7. *nh3 . . . 416
10.8.8. *mh2 . . . 416
10.8.9. Laryngeal unclear . . . 417
10.9. Vocalization of medial laryngeals . . . 417
10.9.1. Vocalization to /a/ . . . 418
10.9.1.1. *h1 . . . 418
10.9.1.2. *h2 . . . 418
10.9.1.3. *h3 . . . 419
10.9.1.4. Laryngeal unclear . . . 420
10.9.2. Vocalization to /u/ . . . 420





10.9.2.1. Likely examples . . . 420
10.9.2.2. Uncertain examples . . . 421
10.10. Loss of *h2 . . . 422
10.10.1. Loss between consonants . . . 422
10.10.2. Loss by dissimilation . . . 424
10.10.3. Dissimilation of h ... h to h ... k . . . 425
10.11. Final . . . 425
10.11.1. *h1 . . . 425
10.11.2. *h2 . . . 425
10.11.3. *h3 . . . 426

**11. Sibilants**

11.1. System inherited from IE . . . 427
11.1.1. IE */s/ . . . 427
11.1.2. s mobile . . . 427
11.2. IE to PA and Pre-Hittite . . . 427
11.2.1. Luvian reduction of initial *s plus stop . . . 427
11.2.2. PA *s and *ss . . . 428
11.2.2.1. Medial *s and *ss . . . 428
11.2.2.2. Gemination of *s before resonants . . . 428
11.2.2.3. Gemination of *s after resonants . . . 428
11.3. Initial *s . . . 429
11.3.1. *s plus vowel . . . 429
11.3.2. *s plus stop . . . 429
11.3.2.1. *sp . . . 429
11.3.2.2. *st . . . 430
11.3.2.3. *sk . . . 431
11.3.3. *s plus continuant . . . 431
11.3.3.1. *sl . . . 431
11.3.3.2. *sm . . . 431
11.3.3.3. *sy . . . 432
11.3.3.4. *sw . . . 432
11.3.4. *s plus laryngeal . . . 433
11.3.4.1. *sh1 . . . 433
11.3.4.2. *sh2 . . . 433
11.3.4.3. *sh3 . . . 434
11.4. Intervocalic *s . . . 434
11.4.1. After short accented vowel . . . 435
11.4.1.1. Apparent examples of *V́sV > V̄ssV . . . 436
11.4.1.2. Apparent examples of *V́sV > V̄sV . . . 437
11.4.1.3. Explanations for apparent *V́sV > V̄sV . . . 438
11.4.1.4. Explanations for apparent *V́sV > V̄ssV . . . 438
11.4.2. After long accented vowel, diphthong . . . 439
11.4.3. Before accented vowel . . . 440
11.4.4. In unaccented syllable . . . 442
11.4.5. Spellings for enclitics . . . 442
11.4.6. Other examples of intervocalic ss . . . 443
11.5. Preconsonantal *s . . . 443

11.5.1. *s plus stop . . . 443
11.5.1.1. *s plus voiceless stop . . . 443
11.5.1.2. *s plus voiced stop . . . 444
11.5.1.3. Gemination of *s before stops . . . 444
11.5.2. *s plus liquid or nasal . . . 444
11.5.2.1. *sr . . . 444
11.5.2.2. *sl . . . 445
11.5.2.3. *sn . . . 445
11.5.2.4. *sm . . . 446
11.5.3. *s plus glide . . . 446
11.5.3.1. *sy . . . 446
11.5.3.2. *sw . . . 447
11.5.4. *s plus laryngeal . . . 447
11.5.4.1. *sh$_1$ . . . 447
11.5.4.2. *sh$_2$ . . . 447
11.5.5. *s plus z ([ʦ]) . . . 448
11.6. Postconsonantal *s . . . 449
11.6.1. Stop plus *s . . . 449
11.6.1.1. Dental stop plus *s . . . 449
11.6.1.2. Labiovelar plus *s . . . 449
11.6.2. Resonant plus *s . . . 449
11.6.3. Laryngeal plus *s . . . 450
11.6.3.1. *h$_1$s . . . 450
11.6.3.2. *h$_2$s . . . 450
11.6.3.3. *h$_3$s . . . 451
11.6.4. /s/ plus /s/ . . . 451
11.7. z for *s . . . 451
11.7.1. Substratum influence . . . 452
11.7.2. From IE *s . . . 452
11.7.2.1. Certain examples . . . 452
11.7.2.2. Less certain examples . . . 452
11.7.2.3. Explanations . . . 454
11.7.2.4. z from a source other than *s . . . 454
11.8. Final *s . . . 455

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HAB see Sommer, HAB

Hagenbuchner, Korrespondenz A. Hagenbuchner, Die Korrespondenz der Hethiter. Heidelberg, 1989.

Harv. IE St. Harvard Indo-European Studies. Department of Linguistics, Harvard University, Cambridge, Mass.

Hatt. A. Goetze, Hattusilis. Der Bericht über seine Thronbesteigung nebst den Paralleltexten. (MVAeG 29.3). Leipzig, 1925.

HED J. Puhvel, Hittite Etymological Dictionary. Berlin: de Gruyter, 1984 ff.

HEG J. Tischler, Hethitisches etymologisches Glossar. Mit Beiträgen von Günter Neumann.. (IBS 20). Innsbruck, 1977 ff.

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Hethitica Hethitica. Louvain-la-Neuve.

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HSClPh Harvard Studies in Classical Philology. Cambridge, Mass.

HT Hittite Texts in the Cuneiform Character in the British Museum. London, 1920.

HTR H. Otten, Hethitische Totenrituale.. (VIO 37). Berlin, 1958.

HS Historische Sprachforschung (formerly Zeitschrift für Vergleichende Sprachforschung (KZ)). Göttingen

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HW J. Friedrich, Hethitisches Wörterbuch. Kurzgefaßte kritische Sammlung der Deutungen hethitischer Wörter. Heidelberg, 1952–54; Ergh. 1–3 = Ergänzungshefte 1 (1957), 2 (1961), 3 (1966).

HW$^2$ J. Friedrich and A. Kammenhuber, Hethitisches Wörterbuch, 2nd ed., Heidelberg, 1975 ff.

IBK Innsbrucker Beiträge zur Kulturwissenschaft (Sonderheft). Innsbruck.

IBS Innsbrucker Beiträge zur Sprachwissenschaft. Innsbruck.

IBoT Hatice Bozkurt, M. Çığ and H. G. Güterbock, eds., Istanbul Arkeoloji Müzelerinde Bulunan Boğazköy Tableterinden Seçme Metinler. I-III, Istanbul, 1944, 1947, 1954.

IBoT IV M. Eren, ed., Istanbul Arkeoloji Müzelerinde Bulunan Boğazköy Tabletleri IV. Istanbul, 1988.

IF Indogermanische Forschungen. Leipzig – Berlin.

Illich-Svitych, Nominal Accentuation Illich-Svitych, V. M., Nominal Accentuation in Baltic and Slavic (R. L. Leed and R. F. Feldstein, transl.). Cambridge, Mass., MIT Press, 1979.

IncLi Incontri Linguistici. Florence.

Int. Journal Slav. Ling. and Poetics International Journal of Slavic Linguistics and Poetics. Columbus, Ohio.

Ivanov, Xettskij Jazyk V. V. Ivanov, Xettskij Jazyk. Moscow, 1963.

JAC Journal of Ancient Civilizations. Changchan, China

JANES Journal of Ancient Near Eastern Society. New York.

JAOS Journal of the American Oriental Society. New Haven, Connecticut.

JCS Journal of Cuneiform Studies. Cambridge, Mass.

JEOL Jaarbericht van het Vooraziatisch-Egyptisch Genootschap (formerly Gezelschap) "Ex Oriente Lux". Leiden.

JIES The Journal of Indo-European Studies. Washington, D. C.





JKF Jahrbuch für kleinasiatische Forschungen. Heidelberg – Istanbul.

JNES Journal of Near Eastern Studies. Chicago.

Kadmos Kadmos. Zeitschrift für vor- und frühgriechische Epigraphik. Berlin.

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KBo Keilschrifttexte aus Boğazköi.

KIF F. Sommer and E. Ehelolf, eds., Kleinasiatische Forschungen. Weimar, 1927–30.

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Kratylos Kratylos. Kritisches Berichts- und Rezensionsorgan für Indogermanische und Allgemeine Sprachwissenschaft. Wiesbaden.

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Kronasser, EHS H. Kronasser, Etymologie der hethitischen Sprache. Wiesbaden, 1962–66.

KUB Keilschrifturkunden aus Boğazköi.

KZ Zeitschrift für Vergleichende Sprachforschung (Kuhns Zeitschrift). Vols. 1–99). Göttingen.

Language Language. Journal of the Linguistic Society of America. Baltimore.

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Laroche DLL see DLL

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Linguistica Linguistica. Ljubljana.

Ling. Posnaniensis Lingua Posnaniensis. Poznan.

LRB Y. Le Brun, ed., Linguistic Research in Belgium. Wetteren, 1966.

Lyc. Lex.$^2$ H. C. Melchert, Lycian Lexicon (second fully revised edition). Chapel Hill, 1993.

MAOG Mitteilungen der Altorientalischen Gesellschaft.

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MDOG Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin. Berlin.

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MIO Mitteilungen des Institutes für Orientforschung. Berlin.
MS see Goetze-Pedersen, MS
MSS Münchener Studien zur Sprachwissenschaft. Munich.
Mşt Inventory numbers of tablets found at Maşat-Höyük
Muséon Le Muséon. Revue d'études orientales. Louvain.
MVAeG Mitteilungen der Vorderasiatisch-ägyptischen Gesellschaft. Leipzig
MVAG Mitteilungen der Vorderasiatischen Gesellschaft. Leipzig.
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Orbis Orbis. Bulletin international de documentation linguistique. Louvain.
Oriens Oriens. Journal of the International Society for Oriental Research. Leiden.
Orientalia Orientalia. Rome.
Otten, HTR see HTR
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PW see Kimball, PW
RA Revue d'Assyriologie et d'Archéologie orientale. Paris.
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Reconstruction La Reconstruction des Laryngales. Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège. Paris, 1990.



REL Revista española de linguistica. Madrid.
RHA Revue hittite et asianique. Paris.
RO Rocznik Orientalistyczny. Warsaw.
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Slav. Rev. Slavistična Revija. Ljubljana.
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Sommer, HAB F. Sommer and A. Falkenstein, Die hethitisch-akkadische Bilingue des Hattusili I. (ABAW NF 16). Munich, 1938
Sprache Die Sprache. Zeitschrift für Sprachwissenschaft. Vienna.
StBoT Studien zu den Boğazköy-Texten. Wiesbaden, 1965 ff.
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THeth. Texte der Hethiter. Heidelberg.
Tischler HEG see HEG
TPS Transactions of the Philological Society. London.
UF Ugarit-Forschungen. Neukirchen – Vluyn.
VBoT A. Goetze, ed., Verstreute Boghazköi-Texte. Marburg, 1930.
Viator Viator. Medieval and Renaissance Studies. Los Angeles.
VIO Veröffentlichungen des Instituts für Orientforschung der Deutschen Akademie der Wissenschaften, Berlin.
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Winterowd, Culture and Politics of Literacy H. R. Winterowd, The Culture and Politics of Literacy. New York-Oxford, 1989.
WO Die Welt des Orients. Göttingen.
WVDOG Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft.
WZKM Wiener Zeitschrift für die Kunde des Morgenlandes. Vienna.
Yoshida, Mediopassive K. Yoshida, The Hittite Mediopassive Endings in *-ri*. Berlin – New York, 1990.
ZA Zeitschrift für Assyriologie und verwandte Gebiete. Berlin.

ZDMG Zeitschrift der Deutschen Morgenländischen Gesellschaft. Leipzig–Wiesbaden.

Zinko, Vertretung Die Vertretung der grundsprachlichen Diphthonge im Hethitischen. Diss. Graz, 1981.

## Abbreviations

| | |
|---|---|
| abl. | ablative |
| acc. | accusative |
| act. | active |
| adj. | adjective |
| Aeol. | Aeolic |
| Akk. | Akkadian |
| Alb. | Albanian |
| aor. | aorist |
| Arm. | Armenian |
| Att. | Attic |
| Att.-Ion. | Attic-Ionic |
| Av. | Avestan |
| Balt. | Baltic |
| Bav. | Bavarian |
| Bret. | Breton |
| c. | communis |
| caus. | causative |
| Celt. | Celtic |
| CLuv. | Cuneiform Luvian |
| CGk. | Common Greek |
| Cyp. | Cypriote |
| Cz. | Czech |
| Dan. | Danish |
| dat. | dative |
| dat.-loc. | dative-locative |
| dem. pro. | demonstrative pronoun |
| denom. | denominative |
| dial. | dialectal |
| dir. | directive |
| Dor. | Doric |
| du. | dual |
| dur. | durative |
| dup. | duplicate |
| ex. | example |
| f. | feminine |
| Gaul. | Gaulish |
| GAv. | Gathic Avestan |
| gen. | genitive |
| Gk. | Greek |
| Gmc. | Germanic |
| Goth. | Gothic |
| hap. leg. | hapax legomenon |
| Hatt. | Hattic |
| Heb. | Hebrew |
| Hesych. | Hesychius |
| HLuv. | Hieroglyphic Luvian |
| Hitt. | Hittite |
| Hmc | Homeric |
| Hurr. | Hurrian |
| IE | Indo-European |
| Icl. | Icelandic |
| I-Ir | Indo-Iranian |
| imp. | imperative |
| impf. | imperfect |
| inf. | infinitive |
| inst. | instrumental |
| intr. | intransitive |
| Ion. | Ionic |
| Iran. | Iranian |
| it. | iterative |
| Ital. | Italic |
| Kurd. | Kurdish |
| L. | line |
| Lat. | Latin |
| Latv. | Latvian |
| Lith. | Lithuanian |
| loc. | locative |
| Lyc. | Lycian |
| MDu. | Middle Dutch |
| med.tant. | medium tantum |
| Mod. Pers. | Modern Persian |
| MHG | Middle High German |
| midd. | middle |
| MIr. | Middle Irish |
| MLG | Middle Low German |
| MNdl. | Middle Netherlandic |
| MW | Middle Welsh |
| Myc. | Mycenaean |
| NE | New English |
| n. | neuter |
| NeoBab. | neo-Babylonian |
| NHG | New High German |
| NNorw. | New Norwegian |
| nom. | nominative |
| nom.-acc. | nominative-accusative |
| NW | New Welsh |
| OCS | Old Church Slavonic |
| OE | Old English |
| OFris. | Old Frisian |
| OHG | Old High German |

| | |
|---|---|
| OIcl. | Old Icelandic |
| OIr. | Old Irish |
| OLat. | Old Latin |
| ON | Old Norse |
| OPers. | Old Persian |
| OPruss. | Old Prussian |
| ORuss. | Old Russian |
| OS [OSax.] | Old Saxon |
| Osc. | Oscan |
| OSw. | Old Swedish |
| OW | Old Welsh |
| PA | Proto-Anatolian |
| Pal. | Palaic |
| PCelt. | Proto-Celtic |
| perf. | perfect |
| Pers. | Persian |
| PGk. | Proto-Greek |
| pl. | plural |
| PLuv. | Proto-Luvian |
| PN | proper name |
| Pol. | Polish |
| Pre-Hitt. | Pre-Hittite |
| pres. | present |
| PSlav. | Proto-Slavic |
| ptcp. | participle |
| PToch. | Proto-Tocharian |
| refs. | references |
| rel.-int. | relative-interrogative |
| Russ. | Russian |
| RV | Rig Vedic |
| SCr. | Serbo-Croatian |
| sg. | singular |
| sig. aor. | sigmatic aorist |
| Skt. | Sanskrit |
| Slav. | Slavic |
| Slov. | Slovenian |
| subst. | substantive |
| Sum. | Sumerian |
| Sw. | Swedish |
| Toch. | Tocharian |
| trans. | transitive |
| Ugr. | Ugaritic |
| Umb. | Umbrian |
| vbl. noun | verbal noun |
| Ved. | Vedic |
| voc. | vocative |
| W. | Welsh |
| w. n. | with note |
| w. refs. | with references |
| YAv. | Young Avestan |

# Introduction

## 0.1. Recent research on Hittite phonology

For the nearly 60 years between Hrozný's decipherment of Hittite in 1915 ("Die Lösung des hethitischen Problems", *Mitteilungen der Deutschen Orientgesellschaft* 56 (1915) 17–50) and the 1970's, Indo-Europeanists understood the historical phonology of Hittite and its sister languages in the Anatolian family less precisely and less thoroughly than they understood the phonological histories of the other Indo-European languages. In large part this was because the cuneiform syllabary used by Hittite scribes is less revealing of phonological detail than the alphabets in which other IE languages are written. Sources of corroborating evidence are limited too. Unlike languages such as Latin or Sanskrit, which have left modern descendants whose phonology can be compared with that reconstructed for earlier periods, the Anatolian languages have no modern counterparts. In part, the lack of certainty about Hittite historical phonology also reflected the fact that the relative chronology of most texts was not firmly established. Although by the 1930's, the linguistic and orthographic features that characterize texts from the Old Kingdom were recognized (see especially Sommer and Falkenstein, *HAB*), most texts from this period were available only in copies made during the Empire period, and these are not entirely reliable in preserving the orthography of the earliest periods. Texts from the middle period (MH texts) were not reliably distinguished from either OH texts or NH texts until the late 1960's. This lack of knowledge about the relative chronology of texts made statements about sound change and synchronic variation less accurate than those that could be made for other IE language families in which the relative chronology of documents was securely established.

Lack of agreement on basic points of phonology does not, however, imply that there was no work done in this area. Hrozný's extensive publication of his decipherment, *Die Sprache der Hethiter* (1917), included an appendix on Hittite reflexes of IE sounds. By the 1930's enough was known for handbook treatments. Friedrich, *Hethitisch und "kleinasiatische Sprachen"* (1931) provided a discusssion of the writing system and a basic phonology. Sturtevant provided the most extensive handbook treatment for a long time. The first edition of his *Comparative Grammar* (1933) included chapters on the cuneiform writing system used by the Hittite scribes and on the development of Indo-Hittite phonemes in Hittite. This work provided the sole English basic grammar and account of historical phonology for nearly twenty years until it was superseded by a second edition in 1952, revised with the assistance of A. Hahn. Friedrich's *Hethitisches Elementarbuch, Band I* (first published 1940; revised edition 1960) was intended as a teaching grammar and its brief discussion of phonol-

ogy was primarily synchronic. In 1956, H. Kronasser published *Vergleichende Laut- und Formenlehre des Hethitischen*, which contained a handbook treatment of phonology and orthography, and in 1962, the first volume of his *Etymologie der hethitischen Sprache* with sections on phonology and orthography appeared. Other works with influential discussions of phonology included Milewski, *L'indo-hittite et l'indo-européen* (1936), Sommer, *Hethiter und Hethitisch* (1947), Pedersen, *Lykisch und Hittitisch* (1945), *Hittitisch und die anderen indoeuropäischen Sprachen* (1948), Kuryłowicz's state of the art report in *PICL* 8 (1957) 216–43, and Benveniste, *Hittite et indo-européen* (1962). Rosenkranz's *Vergleichende Untersuchung der altanatolischen Sprachen* (1978) contains short discussions of much phonological work done up to the mid-1970's.

Many significant papers on important phonological problems were also published during this interval. Sturtevant's pioneering work of the 1920's through 1950's, much of it published in *Language*, the Journal of the Linguistic Society of America, included work on vowels, diphthongs, and consonants; it forms the basis for much of his treatment of phonology in the two editions of his *Comparative Grammar*. By the 1960's his conclusion that single and double writing of stops reflected IE voicing distinctions (first published in *JAOS* 52 (1932) 1–12) was widely, though not universally, accepted. B. Čop did extensive work on consonantism, much of which was published in Yugoslavian journals not widely read in the west. B. Rosenkranz's papers from the late 1950's and early 1960's, including, "Der Wechsel von Media und Tenuis im Hethitischen" (*Akten des 24. internationalen Orientalistenkongresses*, 1957, 161–2), "Zur hethitischen Orthographie und Lautlehre", (*Fs Friedrich*, 1959, 417–26), and "Zu einigen Verbalformen des Hethitischen" (*ZA* 55, 1961, 105–13), helped to establish that Indo-European ablaut is reflected in morphophonemic alternations among consonants and vowels. J. Puhvel's work on laryngeals, "Evidence in Anatolian" (published in 1965) in *Evidence for Laryngeals* (79–92) and the accompanying review article by Polomé in the same volume summed up much of what was known about reflexes of IE laryngeals in Anatolian during this period. F. O. Lindeman's 1965 paper, "Note phonologique sur hittite *eku-* 'boire'" (*RHA* 76, 29–32) provided text-based arguments for retention of preconsonantal labiovelars. Nadia van Brock's 1966 study of spellings in °Z° and °Z-Z° attempted to formulate rules of the distribution of these affricates. But there was little general agreement on basic points among scholars working on Hittite phonology, and few of these papers found their way to prominent positions in the handbooks of Kronasser and Friedrich.

Contributions of Hittite and Anatolian evidence for the reconstruction of the IE sound system were somewhat less limited. From 1927, when J. Kuryłowicz identified Hittite *h* with de Saussure's coefficient sonantique **A* (*Fs Rozwadowski* 95–104), until the 1970's, the major contribution of the Anatolian languages to our understanding of IE phonology was to provide evidence for the existence of consonantal laryngeals in IE and for some of their phonetic features. But, although the literature on Anatolian evidence for laryngeals published between 1927 and 1970 was voluminous, it too was marked by general lack of agreement on basic points, for example, whether $*h_3$ left any consonantal reflexes in Anatolian, or the causes, significance, and even the phonological distribution of single and double writing of intervocalic and post-consonantal *h*.



The 1970's and 1980's saw a significant increase in publications on Hittite historical phonology. A central work was H. Eichner's article, "Die Etymologie von heth. *mēhur*", *MSS* 31 (1973) 53–107. Although ostensibly an etymology, this article had important excursuses on Anatolian reflexes of $*h_1$, IE diphthongs in Anatolian, and the significance of single and double writing of consonants. The latter, along with an article by Morpurgo Davies that appeared in *KZ* 96 (1982/3) 254–70 and work of Oettinger (especially *Stammbildung* 46, 403, 449–50, and *KZ* 92 (1978) 84–5), and Čatsanicos (*BSL* 81 (1986) 159–61), and Starke's work on Luvian (see especially *StBoT* 31, 97–9, 567, 572), established the widely-accepted theory of Proto-Anatolian lenition, or voicing, of IE voiceless stops after long accented vowels and diphthongs and in unaccented syllables. This in turn, along with extensive studies of Hittite and Luvian consonantism such as G. Jucquois, "Aspects du consonantisme hittite" (*Hethitica* 1 (1972) 59–128) and B. Čop, "Eine luwische orthographisch-phonetische Regel" (*IF* 75 (1971) 85–96), has provided confirmation for Sturtevant's Law and explained many apparent exceptions. Melchert's book, *Studies in Hittite Historical Phonology*, which appeared in 1984, contains significant discussion of glides, diphthongs, and front vowels. Articles by Hart (*BSOAS* 43 (1980) 1–17) and Carruba (*KZ* 95 (1981) 232–48) established a connection between plene writing of vowels and the Indo-European accent. Kimball, in her dissertation, *Hittite Plene Writing* (1983) and subsequent work (*IF* 91 (1986) 83–4) provides arguments for understanding plene writing as marking vowels lengthened when accented and through other phonological processes.

Recent work has also made significant contributions to the understanding of Indo-European phonology. Eichner first suggested in his article in *MSS* 32 that several instances of Anatolian single *h* from IE $*h_2$ after front vowel and of *h* followed by front vowel were evidence that IE $*\bar{e}$ was not colored to $*\bar{a}$ before or after $*h_2$, and subsequent work on Luvian and non-Anatolian languages has provided support for this idea (references are provided by Mayrhofer, *Idg. Gr.* 132–3). Melchert's article on Luvian reflexes of IE velars in *Studies in Memory of Warren Cowgill* (1988) 182–204, and subsequent articles in *HS* 101 (1988) 220–4, 241–3, HS 102 (1989) 23–32 and *MSS* 50, 97–101 have provided confirmation for the reconstruction of a three-way contrast among plain velars, palatalized velars and labiovelars for Common IE.

## 0.2. Audience for and purpose of this work

This book is intended both for specialists in the fields of Anatolian phonology and Indo-European and historical linguistics and for scholars involved in more general work on languages, literature, and culture of the ancient Near East. Its goals are to collect and evaluate research on Hittite historical phonology, concentrating on work of the past 30 years, and to attempt to provide a coherent and systematic treatment of the development of Hittite phonology from Indo-European to the late second millennium B. C. E., at least as far as our current knowledge of Hittite texts permits. The first goal is evaluative. I try to explain areas of general agreement, elucidate controversies, and evaluate claims about sound change between IE and Hittite in light of evidence attested in the texts, rejecting those claims that philologi-

cal evidence does not support. The second goal is, I hope, constructive. There are now broad areas of general, if not universal, agreement among researchers currently doing work on Hittite historical phonology on matters such as the representation of vowel length and/or accent by plene writing or the Proto-Anatolian lenition, or voicing, of voiceless stops and *$h_2$ after long accented vowels, reflexes of accented diphthongs, and in unaccented syllables. While many differences still remain, enough interesting and philologically sound work has been done over the past 30 to 40 years to make an attempt to reconcile some of the differences feasible.

I have concentrated on Hittite because it is the Anatolian language for which the most data are available. Evidence from the Luvian languages, Palaic, and Lydian is of course crucial in establishing PA sound changes. The roles these languages play in discussions in this work are roughly comparable to the roles evidence from Oscan, Umbrian, and the minor Italic dialects would play in a comparable work on Latin. In general, I try to provide representative dated samples of spellings for words that are discussed and phonetic transcriptions that are to be taken as hypotheses about how words were pronounced.

This book concentrates on the work of the past 40 years both because it has not been collected in a central source such as a handbook and because much of this work has been informed by increasing precision in the dating of texts. I have, however, made extensive, though not always systematic, reference to prior work for several reasons. In some cases, statements made in sources that are still widely consulted, especially by non-specialists, stand in need of modification or correction. For example, Sturtevant, *CGr*$^2$ 40–1, argues for an unconditioned vocalization of the IE syllabic resonants *$\underline{r}$ and *$\underline{l}$ to [ur] and [ul]. While there is evidence for such a treatment, it seems to have occurred only after labiovelars and postconsonantal *$w$ {5.4.}.

Ideas also recur, and several ideas that have proved fruitful and interesting in modern work were first mooted much earlier. For example, the idea that plene writing might mark reflexes of IE short vowels that were lengthened under accent has gained currency since the early 1980's, but this idea was first suggested by Hrozný himself in a footnote in *Die Sprache der Hethiter* (186–7), and was raised a number of times in work of the 1920's through 1970's {1.3.3.3.}. Sturtevant (*AJPh* 48 (1927) 249) first noted that *dān* "second(ly)" : IE *$dw\bar{o}$ "two" implied loss of *$w$ between obstruent and *$o$ or *$\bar{o}$. It is only much more recently that scholars have recognized the implications of this claim for reconstructions of the PA and Pre-Hittite vowel systems. Since *$w$ was preserved between *$d$ and *$\bar{a}$ in *tuwān* "from here ... (from there)" < IE *$dw\bar{a}m$ we have solid evidence that IE *$o$ and *$a$ and *$\bar{o}$ and *$\bar{a}$ remained distinct into Pre-Hittite, a conclusion that should require extensive revision of conventional reconstructions for PA and Pre-Hittite {2.2.1}. The PA voicing, or lenition, of IE voiceless stops after long accented vowels, after reflexes of accented diphthongs, and in unaccented syllables, which is now accepted in some form by several researchers, was prefigured by Rosenkranz's (*Beitr. Luv.* 35–7) and Čop's (*Linguistica* 5 (1964) 33) suggestions that exceptions to Sturtevant's Law involving single stops for reflexes of IE voiceless stops might be due to a sound change comparable to Verner's Law in Germanic {6.2.3.}. In some cases too, statements made by earlier researchers form the basis on which assumptions that underlie more recent work rest, and these assumptions need to be questioned. For example, Sturtevant's claim



(*Language* 6 (1930) 25–35, *CGr*$^1$ 99–104) that IE short diphthongs were monophthongized unconditionally and its correlate, that synchronic *ai* and *au* were descendents of IE long diphthongs or diphthongs arising from secondary sources, has long been generally accepted. It formed a basis for thinking on phonology and for a number of etymologies that were proposed subsequently. I accepted it myself until I did the research for this book and found that the etymologies that were cited to support monophthongization of non-final *$ai$, *$oi$ and *$au$ not preceding a stop or laryngeal were out of date, dubious, or otherwise open to question {4.4., 4.5., 4.7}.

## 0.3. The texts and their chronology

Some of the confidence with which scholars have been able to make statements about the phonological development of Hittite was made possible by Otten's publication in 1953 and 1955 of the "Zukrasi text" (*MDOG* 86 (1953) 59–64, *KBo* VII), the first original text from the Old Kingdom that could be securely dated. Subsequent work on ductus and orthographic conventions have led most scholars in the field to divide the texts into three chronological periods, conventionally labeled: Old Hittite, Middle Hittite, and Neo-Hittite, and to distinguish the features of copies of Old and Middle Hittite texts made in the Empire period. I am following the convention adopted by Oettinger (*Stammbildung* and other works) in using OH+ for copies of Old Hittite originals and MH+ for copies of MH originals. Work on texts dating up to the late 1970's is summarized in Heinhold-Krahmer et al., *Probleme* (1979); important subsequent discussions include those of Neu, *StBoT* 25 (1980), Neu and Klinger, *Hethitica* 10 (1990), Oettinger, *Stammbildung* (1978), and Melchert, *Ablative and Instrumental* (diss., Harvard, 1977), *Studies in Hittite Historical Phonology* (1984) 79–83. See also Starke, *StBoT* 30 (1985) 420–59 on the dating of Cuneiform Luvian texts.

The dating of texts as OH originals is based on the lists and discussions provided by Kammenhuber, *KZ* 83 (1969) 256–89, Starke, *StBoT* 23, 10–11, Melchert, *Ablative and Instrumental* 41–63, Oettinger, *Stammbildung* 574–6, Kimball, *PW* appendix, Starke, *StBoT* 31, Neu and Klinger, *Hethitica* 10 (1990) 130–60, and the dating of individual texts in the *Chicago Hittite Dictionary*. Dating of Middle Hittite texts is based on the lists compiled by Houwink ten Cate, *Records*, Melchert, *Ablative and Instrumental*, Oettinger, *Stammbildung*, Kimball, *PW*, appendix, and individual texts dated in *CHD*, and on the discussions of ductus and linguistic features given in these works and in Neu-Rüster, *Fs Otten*$^1$ 221–42 and Neu and Klinger, *Hethitica* 10.

Since texts from early in the reign of Suppiluliuma I represent the transition from MH to NH and share characteristics of texts of both periods, texts from this era are given the designation Supp. I if original compositions and Supp. I+ if copies (e.g. KBo V 3). Texts are dated as NH originals when they describe events from the reigns of kings from the Empire period. Dating of texts as NH originals is also based on the dating of texts in Melchert's *Studies in Hittite Historical Phonology* and on the dates given for texts in *CHD*. Texts from the reigns of last Hittite kings (Tudhaliya IV and Suppiluliuma II) show a number of characteristics which distinguish them from earlier NH texts, including increased use of ideograms, many of which appear for the

first time in texts from this period, and increased Luvian influence (Kammenhuber, *KZ* 83, 262–3, Otten-Kühne, *StBoT* 16, Melchert, *SHHP* 81–3). NH texts could, therefore, be further subdivided into texts from the reigns of Mursilis II through Hattusilis III and texts from the reigns of Tudhaliya IV and Suppiluliuma II, but I have not chosen to do this systematically. Texts designated as undated (U) are either small fragments that provide too little material for a reliable dating, or texts which were probably written in the Empire period and show no features characteristic of copies or adaptations of OH or MH originals but which cannot be securely dated as original NH compositions.

Original compositions of the OH and MH period are systematically distinguished from copies or adaptions made during the Empire. These texts are often reliable in preserving archaisms in syntax or phonology (e.g. spellings for verbs in *-iya-* with *e*-grade suffix such as *ú-e-mi-ez-zi, i-(e)-ez-zi*, use of the sentence particles *su* and *ta*, use of the conditional *takku*, and use of the directive in *-a*). But it is also clear that scribes of the NH period sometimes modernized copies of older originals to conform to the linguistic characteristics and scribal practice of their own period. Indeed, one of the distinguishing features of these copies is that they show a mixture of archaic and recent forms and spellings. On the one hand, copies provide examples of spellings that occur in OH or MH originals but seem rare or non-existent in NH originals. On the other hand, the scribes who copied these texts sometimes followed NH spelling conventions. For example, in copying OH exemplars the scribes sometimes spelled *issa-*, iterative of *iya-* "make, *do*", *(i)-is-sa-* in accord with OH practice (e.g. 3 sg. pres. *is-sa-an-zi* KUB XXIX 1 II 5, sup. *i-is-su-wa-an* KUB I 16 II 25, cf. OH *i-is-si-wa-an* in KBo VIII 42 Rs 2), but sometimes they used the NH spelling *(e)-e-es-sa-* (e.g. 3 sg. pres. *e-es-sa-i* KBo VI 45 IV 4, *e-es-sa-a-i* KBo VI 4 II 13, cf. *i-is-sa-ai* in the OH version, KBo VI 2 II 25, 2 sg. imp. *e-is-si* KUB I 16 I 22, sup. *e-es-su-wa-an* KBo III 1 I 22). Some texts, especially collections of rituals such as KBo VII 1 + KBo III 8, contain archaic language and are probably copies or adaptations of material from the OH or MH periods made during the Empire period, but cannot be assigned to an OH or MH exemplar with confidence. I have followed the practice of Hoffner and Güterbock in the *Chicago Hittite Dictionary* of designating these as Pre-NH.

The evidence of copies has to be used with caution, not only because they show a mix of archaic and more recent scribal conventions, but also because they may contain false archaisms based on the scribe's idea of what the earlier language should have looked like (cf. Melchert, *SHHP* 81 n. 4). Melchert (*ib.* 79 n. 1) cites as an example the use of enclitic personal pronouns with dative-locatives, which occurs only in copies, and indicates that the scribes of the NH period no longer understood the OH forms. An orthographic parallel would be occasional NH spellings with *ai*-diphthongs for OH /ē/ or /ĕ (e.g. 3 sg. pret. *a-ip-ta* KBo V 6 I 11 (NH) for [ēpta] "seized" or *[ap-p]a-iz-zi-an* KUB XII 66 IV 2 (OH+), *[ap-p]a-iz-zi-us-sa* ib. IV 3, *ap-pa-iz-z[i-is]* Bo 777 R. col. 6 (*StBoT* 18, 41) for [apētsya-] (4.10.1.)). These indicate that the scribe was aware of words in which his /ē/, /ĕ/ or other front vowel corresponded to °A-I° in OH documents and erroneously asumed that they could be regarded as equivalents in these words. But false archaisms may themselves be a source of evidence for linguistic change. For example, the sporadic NH spellings in



°A-I° for OH /ē/ or /ĕ/ provide corroboration for the idea that spellings such as nom. sg. *ge-re-e-ez-za* "flood" (OH+) and *ka-re-ez* (NH) as opposed to OH *ka-ra-i-iz* = [grāits] do indicate a monophthongizaton to [grēts] (4.10.1.).

## 0.4. Notes on interpretation

In interpreting spelling and spelling variation I have tried to be as conservative as the data will allow. I try not to assume sound change or synchronic processes unless there are compelling reasons to do so and, preferably, solid independent evidence. Spellings for consonant clusters offer a case in point. Since the writing system provided no way of "stopping" a syllable (i.e. indicating that a sign was to be read C/ rather than /CV/ or /VC/) the scribes had to resort to various devices to write most initial clusters of two or more consonants and most clusters of three consonants. One such device would be the use of graphic or "dead" vowels, i.e. the use of CV or VC signs in the value /C/ (e.g. *te-re-e-ep-zi* "plows" = [trēptsi]? or *ka-ra-i-iz* "flood" = [grāits]?) and CVC signs in the value CC (e.g. *li-in-kat-ta* "(s)he swears an oath" = [liŋgta]?). At the same time, the possibility that some clusters were broken up by epenthesis cannot be ignored, and epenthesis can be variable in its realization in speech, depending on tempo, style, and other linguistic and sociolinguistic factors.

I am assuming that a vowel that breaks up the reflex of an IE consonant cluster is more likely to be a graphic vowel than an epenthetic vowel unless I find good evidence to the contrary. For example, *tūhusiya-* = [tūḫusya-] "keep quiet" beside Skt. *tūṣṇīm* "quietly, silently", Av. *tūšni-* should be from **tḗuHs-ye o-*. Since a **[tūhsiya-] could be written ***tu-u-uh-si-ya-* it seems likely that the second °U° is real (4.6.1., 3.3.2., 3.9.4.). For other words, the evidence suggests a vowel is graphic only. For example, a scribe confronted with the problem of spelling forms of the paradigm of *link-* "swear an oath" in which the stem [liŋg-] preceded an ending with initial consonant apparently had a number of options. He could leave out the nasal (e.g. 3 sg. pres. *li-ik-zi*) = [liŋgtsi] (1.12.1.), 3 sg. pret. *li-ik-ta* = [liŋgta]), he could use °A° as a dead vowel (e.g. *li-in-ga-zi* = [liŋgtsi] (1.16.1.), *li-in-kat-ta* = [liŋgta] (1.16.4.)), or he could use a VC sign that echoed the color of the root vowel (e.g. *li-in-ik-ta* = [liŋgta] (1.16.5.)). It seems more sensible to regard these variant spellings as ways of coping with the problem of spelling the cluster [ŋgt] than to posit phonological nasal loss, two different kinds of anaptyxis, and a thematic stem [liŋga-].

In practice, however, additional evidence can complicate interpretations. There is other evidence for loss of nasals before stops (7.4.3.) (and note *li-ku-wa-an-ni* HT 1 I 34) and the spelling *li-in-ga-u-en* (HT 1 I 43) for the first person plural preterit, which could be spelled *li-in-ku-en* = [liŋgwen], might point to the existence of a thematic *hi*-conjugation stem (see *CHD* 63 with refs.). I think neither of these last two possibilities likely, however. The nasal is not normally dropped before endings beginning with /w/ in *link-* and verbs of similar structure, and the double nasal of *li-in-ku-an-ni* is highly unusual. Perhaps the scribe of HT 1 was simply highly creative in his approach to spelling [ŋgt].

For evidence that the final vowel of the third person singular preterit ending is genuine, see 3.9.1.

I have also tried to remember that the scribes knew the language they were writing better than I do. This may seem an obvious point, but it is sometimes forgotten by modern scholars interpreting dead languages. There is sufficient evidence from modern studies of reading to conclude that good readers do not always make use of all the phonetic and phonemic detail spellings provide in interpreting texts (see e.g., Winterowd, *Culture and Politics of Literacy*, 57–83). Nor do readers normally need completely unambiguous spellings to read without confusion. Readers of modern English, for example, may not be able to interpret the word *bow* in isolation, but given a context (e.g., "Robin was a good shot with a bow and arrow" or, "The conductor invited the members of the orchestra to take a bow") they know what it means and how to pronounce it. We have no reason to conclude that the cognitive abilities of ancient people were any different from ours.

In fact, readers in some ancient societies seem to have had a toleration for ambiguity, which is as much a social matter as a cognitive one, much greater than what we are accustomed to. Classic examples are provided by the lack of systematic indications of voicing distinctions for stops in the Linear B and Cypriote syllabaries and the lack of a distinction between /r/ and /l/ in Linear B. The Greek language did have phonemic voicing and distinct phonemes /r/ and /l/ at this time, but the lack of ways to indicate them apparently did not bother the people who used these systems, since they made no effort to introduce ways of making the distinctions in the several hundred years the systems were in use.

This suggests that we should be careful to remember that ambiguity that is vexing to us was not necessarily a problem for Hittite scribes and that we cannot assume that a particular spelling convention that resolves ambiguity for us necessarily was adopted for the purpose. For example, the plene writing in *pe-e-da-an* "place" indicates to modern scholars that the initial ambiguous sign PE/I is to be read with *e*-vocalism; we do not know that the Hittite scribes used it for that function (1.5.). But, just because ambiguity did not always have to be resolved, we cannot assume that the scribes never invented ways to resolve it. There is good evidence that the scribes of the NH period adopted the convention of following the sign HU (  ), which looked something like RI/TAL (  ) with U written as a ligature (i.e.  ). Presumably this did function to distiguish HU from RI/TAL even though there were few, if any, semantic or grammatical contexts in which the signs would could have been confused (1.5.1.).

I have also tried not to assume that the practice of literacy in Hittite society was identical to its practice in modern American society. A modern reader may be accustomed to thinking of reading as an activity done in silence by a solitary individual whose apprehension of the texts is a solely visual matter. Many of us tend to think of the act of transcribing a finished text (i.e. writing in the physical sense) as done by a single individual working in silence. These were not, however, common ways of reading, writing, or consuming literacy in Greek or Roman society or in European society up until the Renaissance. There is, for example, considerable evidence for reading aloud as the normal way of apprehending a text up through the Middle Ages (see Saenger, *Viator* 13 (1982) 365–414, who documents a shift from oral to visual



and silent reading, composing, and copying during the late Middle Ages) and for composition done through dictation in the Roman Empire (Saenger, *ib.* 371–2) and Middle Ages (*ib.* 381–2). The process of copying a text was normally oral; that is one scribe would read aloud while another or others would take down what he said as dictation. Skeat, *Proceedings of the British Academy* 42 (1956) 179–208, documents the use of oral copying in the Classical and Medieval worlds as a method of book publication, and Saenger (*op. cit.* 383) describes how some members of monastic orders were troubled by the conflict between their vows of silence and the speaking that composing and copying demanded.

We do have some evidence for similar practices among the Hittites, who used both *halzāi-* "call out" (alone and with the adverb *peran*) and *mēma-* "speak, say" for the process of reading a tablet. We also know that kings and others could access the information in tablets by having someone read to them. For example, in KUB I 16 III 56–7 (HAB 14) Hattusilis I enjoins his grandson Mursilis to have his instructions read monthly: *nu kī [tuppi]* ITU-*mi* ITU-*mi peran-tet halzessandu* "Let them read this tablet before you every month". An intriguing passage from the Middle Hittite birth ritual, KBo XVII 65, suggests that others had access to material in tablets by having scribes read aloud to them. The ritual is a compilation of birth rituals, and the original seems to have been taken down by a scribe from the descriptions of the ritual practitioner. A few passages may provide a clue as to how this woman used literacy:

Vs. 37–39 *[hassannas-ma ma]hhan* EZEN *hassi-za kuwapi nu* EZEN *mahhan ie̯nzi* (38) *[n-as* $^{GIŠ}$*kurtas iy]anza n-as* $^{URU}$*Kizzuwatna nu-mu-kan* EZEN KAxU-*it* (39) *[U$^{?}$L karta-n]an apēz uppahhi* "But when it is time for the Festival [of the Wo]mb – (that is) at the time when she gives birth – how they perform the festival – (38) [It is writ]ten up [as a *kurta*-tablet] (probably a wooden tablet). And it is (from) Kuzzuwatna. And I [do not know] the festival orally (39) [by heart, b]ut (rather) I will fetch it from there". (Transcription and translation after Beckman, *StBoT* 29, 137–6).

ib. Rs. 45–6: *hassannas-ma mahha[n* EZEN *hā]ssi-za kuwapi nu* EZEN *mahha[n ie̯n]zi n-as* $^{GIŠ}$*kurtas ianza* (46) *n-as* $^{URU}$*Kizzuwatn[a nu-mu-kan]* EZEN KAxU-*it* U$^{?}$L *karta n[-an ...]x apēz udanzi* "But when (it is time for) [The Festival] of the Womb – (that is) at the time when she [gi]ves birth – how they [per]form the festival – it is written up as a *kurta*-tablet (46) and it is (from) Kizzuwatna. [And I] do not know the festival orally, by heart, but (rather) they will bring [it] ... from there". (Beckman, *ib.* 144–5).

Although Beckman, the editor of this text, assumes (163–4) that it is the scribe who does not know the festival by heart, it is hard to believe that a scribe would have had any reason to have memorized a birth ritual. It seems much more likely that it is the ritual practitioner who intended to send for the tablet to aid her memory (cf. ib. Vs. 44–5, 46 for references to material on other, separate, tablets).

It is possible that at least some of the copies of OH or MH exemplars that have come down to us were such oral copies. I know of no direct evidence for the Hittites using this method of making copies, but Kraus, *Vom mesopotamischen Menschen*, 18–32, suggests that it was not unknown in other cuneiform traditions. At the very least, it is likely that a scribe reading or copying a text would have had the text in his own pronunciation running through his mind as he worked. Examples where plene

spellings or other spellings in copies of OH texts replicate or resemble spellings in OH originals and differ from those in NH compositions can suggest that the scribes may have checked copies against originals at some stage in the copying process (and the scribe doing the reading, of course, had the original in front of him). Where OH and NH spellings differed significantly it is logical to assume that the scribe might have used some version of an "Old Hittite" pronunciation (e.g. it seems unlikely that a scribe would have systematically pronounced OH *ú-e-mi-ez-zi* "(s)he finds" = [wemyĕtṣi] as [wēmyatṣi], spelled in NH *ú-e-mi-(ya)-az-zi*).

It seems possible that the scribe making the copy and attempting to reconcile differences between his own phonemic system and that of the OH archetype might have produced interesting mistakes in his copies that provide evidence for his own phonemic system. For example, although spellings for front vowels were fairly standardized in the MH and NH periods, and much of the variation in texts from these periods can be explained as the result of sound change, analogy, or changes in orthographic conventions, the texts provide a small number of spellings with signs in the wrong etymological values, such as *ku-i-e-da-ni* for [kʷēdani] "to whom", *ku-i-en-zi* for [gʷēntṣi] "(s)he kills" or $^{URU}$*Ne-i-sa* "city of Nēsas" for [nēsa], that seem unlikely to have been produced by a scribe for whom the difference between /ē/ and /ī/ was phonemic, but which might be explained as the choices of a scribe who knew that OH texts had more plene spellings than contemporary texts and, while taking the text down as dictation, chose the etymologically wrong repeating vowel.

## 0.5. Notes on transcription

I use four levels of transcription: transliteration, continuous, phonemic, and phonetic. **Transliteration** is a conventional version of syllabified writing. Capitals indicate signs and spellings: e.g. AT =  , Ú = , PA =  . °I° indicates a sign with /i/, (e.g. ŠI, PE, IP etc.), °T° indicates a sign with dental stop (e.g. AT, ET/D, TAG etc.). Capitals are also used to indicate ambiguity, e.g. *ú*-E/IT-*ti* "year" (dat.) is read [wīti] (cf. OH *ú-i-it-ti*) or [wētti] (cf. OH *ú-e-et-ta[-antānni]* "in the space of a year").

Signs ambiguous with respect to voicing of a final stop take their reading from a preceding sign, e.g. *tu-e-ek-ka-*, *tu-e-eg-ga-* "body, self", *tu-uk-ka-(a)-ri*, *tu-ug-ga-(a)-ri*, *tu-uq-qa-(a)-ri* "is visible, of importance", *har-tag-ga*, *har-tak-ka* "bear", *tak-kan-zi* "they resemble", or *tag-ga-lie-e-et* "he surrounded". The default transcription is voiceless, e.g. *ú-e-ek-zi* "asks", *e-ep-zi* "takes". Signs ambiguous with respect to front vowels are transliterated *e*C, C*e*, *i*C, C*i* where the reading is supported by plene writing or other evidence, e.g. *pe-ra-an* "in front of" = *pe-e-ra-an*, *pe-di* "in place" = *pe-e-di*, *ú-ek-zi* "asks" = *ú-e-ek-zi* etc. In transliteration I have avoided, for reasons of typographical convenience, using diacritics not applicable to the Hittite use of cuneiform when transcribing actual words. For example, signs of the Š-series were used to transcribe the sibilant phoneme /s/ that was probably dental or alveolar . Aside from °Z°, which has a fairly restricted distribution in spelling pre- and postconsonantal /s/, the other signs used for sibilants in Akkadian syllabaries were not used. Since



°Š° did not contrast with these other signs, the diacritic does not provide the reader any useful information. Similarly, PAR did not normally contrast with BAR or with any other sign for a sequence of labials stop plus °A° plus /r/ and is here transliterated PAR. By contrast, the scribes used both  U and  Ú to spell /ū/, /u/ and /w/, and diacritics have been used to differentiate these signs. When capitalized, the syllabified transliteration does describe signs, and there I have kept the diacritics. Diacritics are also retained in Sumerian and Akkadian words and names.

**Continuous** transcription is used primarily for citation forms and sometimes for individual sounds or sequences of sounds. It is based on canonical representations of transliterated spellings as continuous strings. I have tried here to find a compromise between transcriptions that will be familiar to most readers and transcriptions that provide the least distortion of the phonology. Traditional transcriptions such as *tēkan* = *te-e-kan* "earth" or *kuwāpi* = *ku-wa-a-pi* "wherever" are conventionally vocalized or subvocalized by English speakers as [tekɑn] and [kuwɑpi], even though the Hittites probably said [dēgan] and [kʷābi]. But the spellings *dēgan* and *kwābi* are rare in literature on Hittite, and they may look alien to readers. The danger of such transcriptions, however, is that they may distort the interpretation of the spellings that actually occur in the texts. An especially pernicious example is the influence of the conventional transcriptions of ambiguous signs with front vowels with CI and IC as default values on the phonological interpretation of front vowels. A spelling such as *pi-di* "place" (dat.-loc. sg.) is, as a result, interpreted as [pidi] by some scholars. We have no independent evidence, however, that the Hittite themselves pronounced the word this way, and indeed, spellings with plene writing (*pe-e-di*, *pe-e-ti*) argue strongly against that interpretation.

Citation forms are based on the oldest examples that I know of. In continuous transcription the macron indicates doubled vowels, whether or not they are phonetically long vowels (as in e.g. *āppa* "after" = *a-ap-pa* [āpa], *sēszi* "sleeps" = *se-e-es-zi* [sēstṣi], *iskīsa* "back" = *is-ki-i-sa* [iskīsa], *isnūri-* "dough" = *is-nu-u-ri* [isnūri]) or indications of something else (e.g. *sūwant-* "full" = *su-u-wa-an-t* [suwānt-] with the sequence [ūw]). The macron is not, however, normally used in citing forms spelled in NH with the ligature HU-U- (e.g. *huēkzi* "strikes" = *hu-u-e-ek-zi*). Hyperplene spellings are not distinguished at this level from plene spellings (e.g. *ānt-* "warm" = *a-a-an-t*°).

Postconsonantal /w/ is transcribed as *Cu* before front vowels, e.g. *huēkzi* "strikes" (= *hu-e-ek-zi*, [hwēgtṣi]), *atuēni* "we eat" (= *a-tu-e-ni*, [adwēni]), *dankuī* "dark" (= *da-an-ku-i*, [dankwī]). The sequences [Cwā] and [Cwa] are transcribed *Cuwa-*, e.g. *tuwān* "from here (... from there)" = *tu-wa-a-an*, [dwān]). The spelling CU-A° = [Cwā] or [Cwa] in early texts is transcribed *Cu-a*°, e.g. *wēlluas* "meadow" (gen.) = *ú-el-lu-as*, [wēllwas]. The spellings CU-Ú/U-V- and CU-Ú/ U-WA- are rendered as *CūV* and *Cūwa-*, e.g. *tūwaz* "from afar" = *tu-u-wa-az* [duwāṭṣ] and *sūwānt-* "full" = *su-u-wa-an-t*° [suwānt-]. Transcriptions for /y/ are parallel: *Cie-* and *Ciu-* represent CI-E- and CI-U- = [Cyē], [Cye] and [Cyū], [Cyu], e.g. *siedani* dem. pro. dat. sg. (= *si-e-da-ni*, [syēdani]). A spelling CI-YA- for [Cyā] or [Cya] is transcribed *Ciya*, e.g *wemiya-* "find" (= *ú-e-mi-ya-*, [wēmya-]), *iyami* "I make" (= *i-ya-mi*, [yami]). *CīV* represents CI-I-V- in e.g. *sīēsk-* "shoot" (= *si-i-e-es-k*°, [siyēsk-]), *mīūs* "mild" (= *mi-i-ú-us*, [miyūs])

and *sīus* "god" (= *si-i-us*, [siyūs]), while *Cīya-* represents CI-I-YA-, e.g. *sīya-* "shoot, spurt" (*si-i-ya-*, [siya-]). It is not clear whether the spellings CI-I-V and CI-I-YA- always represent [CiyV] and [Ciya] by regular sound change or analogical extension in texts written in the NH period, and spellings with CI-I-V- where [CiyV] would not be expected, such as *ú-e-mi-i-er* "they found" in NH texts, may indicate [CyV].

Since the the orthography does not distinguish between prevocalic labiovelars and sequences of velar plus [w], sequences of labiovelar plus front vowel are transcribed *kue-*, *kui-*, e.g. *kuēnzi* "(s)he kills" (*ku-e-en-zi* = [g$^{w}$ēnṭsi]), *kuis*, *kuit* rel.-int. pro. nom. sg. c. and nom.-acc. sg. n. (*ku-is*, *ku-it* [k$^{w}$is], [k$^{w}$it]). At the level of continuous transcription no distinction is made between voiceless consonants (e.g. *a-ap-pa-an* "after" = [āpan], *tu-e-ek-ka-* "body, self" = [twēka-]) and true geminates (e.g. *a-ar-ri* "washes" = [ārri] or *me-ek-ki-*, *me-ek-ka-*, *me-eg-ga-*, *me-eq-qa-* "numerous" = [mēkki-], [mēkka-]). Graphic vowels may be shown, e.g. *pahh(ha)s-* "protect" (= *pa-ah-ha-as-* [pahs-], *ēs(sa)ri-* "figure, shape" (= *e-es-sa-ri* = [ēssri-]).

**Phonemic** transcription indicates underlying structure and individual phonemes (e.g. /ē/, /e/, /t/, /d/, /h/, /ḫ/) while **phonetic** transcription indicates realization in pronunciation: e.g. *nu-us* "and they" = /nu-as/ → [nus]; *hu-uk-ki-is-k°* iterative stem of *huēk-* (= [hwēg-]) "recite a spell" = /hug-sk-/ → [hukisk-]; *pe-e-ra-as-mi-it* "in front of them" = /pēran-smit/ → [pērasmit]. At the phonemic level true geminates are noted, e.g. [ēssri-] (= *ēs(sa)ri-*, *e-es-sa-ri-*) "shape, form", and are distinguished from voiceless consonants spelled with double consonants, e.g. [mekki-] (= *mekki-*, *me-ek-k°*, *me-eg-g°*, *me-eq-q°*) "numerous" < **megh₂-*, but [twēka-] (= *tuēkka-*, *tu-e-ek-ka-*, *tu-e-eg-ga-*, *tu-e-eq-qa-*) "body, self" < **tuék-*. Voicing of stops is also noted: e.g. [gissar] (= *kissar*, *ki-is-sar*) "hand"; [dēgan] (= *tēkan*, *te-e-kan*) "earth"; [dagnī] (= *taknī*, *tak-ni-i*) "earth" (dat.); [abās] (= *apās*, *a-pa-a-as*) "that".

## 0.6. Symbols used in this work

| | |
|---|---|
| /h/, [h] | a voiceless velar, glottal or pharyngeal fricative |
| /ḫ/, [ḫ] | a voiced glottal or pharyngeal fricative |
| [ts] | a sequence of voiceless dental/alveolar stop [t] plus [s] |
| /tṣ/, [tṣ] | a palatal affricate from **ti/*ty* |
| [t$^{s}$t] | a dental/alveolar affricate from a sequence of dental stop plus dental stop |
| */ǣ/ | the PA reflex of **eh₁* |
| **ə̯R* | PA reflex of a syllabic resonant, **R̥* |
| **R̥R* | prevocalic syllabic resonant via Sievers or Lindeman's Law |
| [k$^{w}$] | voiceless labiovelar stop |
| [g$^{w}$] | voiced labiovelar stop |
| /z/, [z] | voiced counterpart of /s/, [s] |



## 0.7. Phonemic system

I am working with the following phonemic system:

### Vowels

Old Hittite (Pre-OH?)

| | short | | | long | | |
|---|---|---|---|---|---|---|
| | front | | back | front | | back |
| high | /i/ | | /u/ | /ī/ | | /ū/ |
| mid | | /e/ | | | /ē/ | |
| low | | /a/ | | | /ā/ | |

IE **o*, **ō* and **a*, **ā* remained distinct into Pre-Hittite, and technically, it is possible that they had not merged in the historical period, even though the writing system does not differentiate them (2.2.1.). I am, however, following convention in transcribing the reflexes of **o* and **ō* with *a*, *ā*. It is also possible that the language had one or more varieties of /ə/. The reflex of vocalized **h₂* seems to have been a *ə*-like vowel with articulation that was front enough to have triggered palatalization and subsequent loss of IE **g* in the Luvian word for "daughter" (IE **dhugh₂tér-* > PLuv. **dugətér* > **du(u)ətarr-* (10.2.5.)). The anaptyctic vowel that developed after final postconsonantal stops in third person singular preterits from consonant stems (e.g. Hitt. *e-ep-ta* "(s)he seized" = [ēpta]) may have been a *ə*-like vowel that did not merge with IE **a* in Lycian (3.9.1.). The epenthetic vowel that developed before syllabic resonants in PA seems to have been a short, *ə*-like vowel that was not lengthened in Pre-Hittite even when it came to be accented (5.3.). There is, in addition, perhaps some evidence for close vowels /e̯/ and /ē̯/ (2.2.2.).

Short /i/ may have been realized phonetically as lax [ɪ] before the velar nasal [ŋ] since **é* was raised to a high front vowel that is not normally spelled with plene writing before this sound (3.2.1.2.).

By the NH period OH /ē/ and /ī/ had probably merged in a single front vowel, though evidence for the phonemic status of short front vowels is more difficult to interpret (1.6.3.9.). Although there is some evidence that the merger of long front vowels had begun in OH (1.6.3.8.), I have chosen to reference phonemic and phonetic transcription of forms with front vowels to OH forms either attested or implied (e.g. *mi-li-it* "honey" = OH **[mēlit]* with OH /ē/, NH *hu-u-i-it-ti-ya-* = OH [hwēttya-] with OH /ē/). The OH evidence for merger or for variation not explainable as the result of conditioned sound change, analogy, or factors other than unconditioned merger is very limited, and I think I am on safe ground in doing so.

### Diphthongs

The language had at least two diphthongs, here transcribed *āi* and *āu* = /āi/, /āu/. Given inconsistency in the use of plene writing to mark vowel length, it is not

clear whether long diphthongs /āi/ and /āu/ were opposed to short /ai/ and /au/. There is some evidence for long diphthongs /āi/ and /āu/ in unaccented syllables {2.3.3.1.}. Spellings in °A-E° beside °A-I° and °A-I-I° may point to a range of pronunciations /āe/ to /āi/. It is possible that the MH and later spelling of OH /āi/ as *āwi* before syllables with /i/ or /y/ {4.10.2.} indicates a pronunciation [ãi]. There is also evidence for /*ēu*/ arising from secondary sources {4.9.3.} and perhaps /īu/ or /iu/ from IE **éu* {4.8.3.}.

## Stops

| | labial | dental/alveolar | velar | labiovelar |
|---|---|---|---|---|
| voiceless | /p/ | /t/ | /k/ | /$k^w$/ |
| voiced | /b/ | /d/ | /g/ | /$g^w$/ |

There is no evidence to support loss of voicing distinctions in initial position {6.2.1.}, and there is evidence to support labiovelar articulation both before vowels and before consonants {6.5.1.}.

The stops were opposed to true geminates /pp/, /tt/ and /kk/, before which accented vowels were not regularly lengthened {2.10.}. Strictly speaking, I am assuming the voicelessness of the geminates, but other evidence indicates that IE **h*$_1$ and **h*$_2$, the two laryngeals before which we have evidence for gemination, were voiceless, and they are likely to have caused devoicing as well as gemination of a preceding stop.

## Nasals and liquids

The language seems to have had /n/ and /m/ opposed to geminate /nn/ and /mm/ and /r/ and /l/ opposed to /rr/ and /ll/.

Minimal pairs indicate a contrast between geminates and non-geminates (e.g. *a-ri* "arrives" = [āri] : *a-ar-ri* "washes" = [ārri]) {1.11.}. Although spellings with doubled resonants do seem mostly to indicate a linguistic reality, it is possible that some are artifacts of scribal preferences, e.g. the increasing use of CVC signs in the NH period. For example, spellings with doubled °M-M°, some of which involve the use of CVC signs (e.g. DAM) occur in texts written in the NH period where OH and MH have single °M°, and it does not seem likely that these indicate a sound change /m/ > /mm/ {1.12.2.}. It is possible that variant spellings in °R-R° beside °R° are attempts to indicated a trill {8.5.2.}. The nasal phoneme /n/ was probably realized as [ŋ] before velars {3.2.1.2.}.

## Glides

The language had palatal and labiovelar glides /y/ and /w/ beside [iy] and [uw] {1.13.2.}.



## *h* and *hh*

Although there is evidence for a phonemic distinction between initial **h*$_2$ and **h*$_3$ in PA, the writing system offers no way of determining whether the two remained distinct into the historical period. In intervocalic position **h*$_2$ split into voiceless **h* and voiced **ḫ* in PA {10.4.2.}. Forms such as *pa-a-ah-hu-ur* "fire" = [pāhur] and *la-a-hu-i* "(s)he pours" = [lāḫui] indicate that the voicing distinction was later phonemicized.

## Sibilants and affricates

The language had an /s/ and a geminate /ss/. The latter occurred between vowels and before and after resonants and contrasts with /s/ in intervocalic position. There is no concrete evidence to suggest that single °Š° indicated voiced /z/ beside °Š-Š° = /s/. There may also have been a /z/ arising through voicing assimilation before resonants and in initial position for reasons unknown {11.8.}.

There is ample evidence for an affricate, here transcribed as palatal /tṣ/, that was phonemically distinct from [ts] from /t/ plus /s/ and from the cluster [t$^s$t] that arose from sequences of dental stop plus dental stop {1.15.2.2.}.

# Chapter One

# The writing system

Eichner, *Lautgesch. u. Etym.* 120–65; Friedrich, *HE* 21–5; Kammenhuber, *HdO* 173–4; Melchert, *AHP* 12–35; Neu-Rüster, *HZ* 15–19; Rosenkranz, *Vgl. Unters.* 26–31; Sampson, *Writing Systems* 47–61; Sturtevant, *CG*$^2$ 1–4, 10–28.

## 1.1. Principles

The cuneiform syllabary used to write Hittite is descended from a Sumerian ideographic writing system that evolved during the Fourth and Third Millennia BCE into a partially syllabic system. Although the Sumerians themselves took the first steps in turning the system into a syllabary (Sampson 54–5), the syllabic principle in cuneiform writing was greatly extended during the Second Millennium by speakers of Akkadian, a Semitic language, who adapted the system for the needs of writing their own language, which had a structure much different from Sumerian.

### 1.1.1. Use of Sumerian and Akkadian

The Sumerian and Akkadian origins of Hittite writing reveal themselves in a number of scribal practices. Sumerian words were frequently used as ideographs (e.g. GIŠ, GIŠ-*ru* = Hitt. *tāru* "wood"), and Akkadian words and phrases were used in writing Hittite documents. Sometimes the scribes used Sumerian or Akkadian grammatical elements to indicate case or number distinctions, e.g. the Sumerian plural endings MEŠ and HI.A with ideograms or Hittite words to indicate plurals, the use of Akkadian prepositions such as *ANA* "to" or *IŠTU* "with" to indicate Hittite grammatical cases, or with Akkadian case endings as complements, conflations such as DINGIR$^{LUM}$, DINGIR$^{LIM}$ "divinity", cf. Akk. nom. sg. *-ilum*, gen. sg. *-ilim*). Another practice that originated in Sumerian and is found in other cuneiform traditions is the use of determiners, e.g. Sumerian  GIŠ "wood" preceding words designating wood or items made of wood such as $^{GIŠ}$*har-na-a-u* "birth stool", $^{GIŠ}$ERIN "scale(s), balance", $^{GIŠ}$KÍN "(tree)fruit", or Sumerian  (also the sign for "god", *dingir*, and transcribed D when functioning as determiner) preceding divine names, e.g. $^{D}$UTU "Sungod", $^{D}$*He-pa-at* "Hebat", $^{D}$*Te-le-pe-nu-us* "Telepenu", (cf. $^{M}$*Te-le-pe-nu-us*, a



man's name with Sumerian , also the sign for "one", as determiner indicating a male human being). The use of two or more signs for some syllables (e.g.  U and  Ú, both of which were used as /u/ or /w/), is another characteristic inherited from Summerian and Akkadian. The use of phonetic complements was also taken from Sumerian and Akkadian scribal practice. We know from the use of phonetic complements that Sumerograms were read as Hittite words, e.g. LUGAL-*us* "king" (cf. Sum. *lugal* "king" and Hitt. *ha-as-su-us* = [hassus] id.), GUL-*hu-un* (cf. Sum. *gul* "strike" and Hitt. *wa-al-hu-un* "I struck" = [walhun]).

It is less clear whether Akkadian words occurring in Hittite passages were always read in Hittite. Hittite phonetic complements are fairly rare with Akkadian words, though occasional spellings like *ŠUM-an* (= Akk. *šum* "name" plus Hitt. *-an*, nominative-accusative singular ending of *lāman* "name") suggest that the Akkadian words could be read as Hittite (Friedrich 22–3). It is possible that Akkadian in Hittite texts could function much as Latin abbreviations such as *etc.*, or *loc. cit.* can in English formal or academic writing; they were perhaps not always intended to be pronounced and they could be rendered in the original language (cf. "et cetera", loco citato", "exempli gratia") or in translation (cf. Eng. "and so forth", "for example" and "in the place cited", and note that the latter two are common vocalizations of *e. g.* and *loc. cit.*). A spelling like DINGIR$^{LIM}$-*ni*, however, which is made up of Sumerian *dingir* "god" plus a truncated version of the Akkadian nominative ending *-ilum* plus a Hittite phonetic complement *-ni*, was presumably pronounced in Hittite as (dat.) *siuni* "to the god".

### 1.1.2. Polyphonic signs

Multiple readings of many signs (called polyphony, when this refers to different phonological values) are an important inheritance from Sumerian and Akkadian scribal practice. Multiple readings originated in the adaption of the primitive Sumerian ideographic system, which was first used for accounting, into a partially syllabic system better suited to more complex genera such as literature and personal letters. Polyphonous readings became more numerous as the system was adapted for writing Akkadian. In the system adopted by the Hittites, polyphony was well established and could be quite complex. For example, the sign  , read in Sumerian as *an* "heaven" or *dingir* "god", was used as a Sumerogram AN "heaven" (= Hitt. *nēpis*), or DINGIR "god" (Hitt. *sius*, Luv. *massani-*). It was also used in Sumerograms that were combinations of Sumerian words e.g.  AN.BAR "iron" (Hitt. and Luv. *hapalki*),  AN.NA (NAGGA) "tin" (Hitt. & Luv. reading unknown),  AN.TA.LÙ "occultation, or darkening, eclipse of a star" (Sumerian technical term, Hitt. reading unknown),  AN.TA "upper" (Hitt. *sarāzzi-*) and  KUR AN.TA "upper land" (Hitt. *udnē sarāzzi*). It could also function as a determinative preceding divine names, a function in which it was presumably not pronounced, and can be thought of as adding the meaning "god" or "divine" (e.g.

 DUTU "the Sungod", "Divine Sun" = Hatt. *Estan*, Hitt. *Istānu* = [istānu], Luv. *Astan* (?) and *Tiwaz*). The sign  also had phonetic values in Hittite and Akkadian. In Hittite it was normally read [an], e.g. *an-tu-wa-ah-ha-as* "human being" = [andwahhas], *la-a-ma-an* "name" = [lāman], *ki-ya-an-ta* "they are lying, are placed" = [kiyanta]; before velars, it probably rendered the nasal allophone [ŋ], e.g. *ha-ma-an-kan-zi* = [hamaŋgantsi], *ka-a-an-ki* = [kāŋki] in narrow transcription. In Akkadian, however, it could be read [il], and scribes of the NH period sometimes used it in its Akkadian phonetic value in writing Hittite or Luvian proper names, e.g. *Mur-si*-DINGIR$^{LIM}$ = *Mursili*, *Hat-tu-si*-DINGIR$^{LIM}$ = *Hattusili* (for further Sumerographic values, see Neu-Rüster, *HZ* 92–3). A few signs were used in Hittite with two or more unrelated phonetic readings, e.g.  RI/TAL = [ri], [re] and [tal] or [dal].

### 1.1.2.1. Ambiguous signs as polyphonic

So-called ambiguous signs can also be viewed as polyphonic signs with phonetic values that are closely related. An ambiguous sign such as E/IR, which may be read [er] or [ir] depending on context, may be thought of as an abstract representation of front vowel plus the phoneme /r/; similarly, AT/D may be viewed as an abstract /a/ plus dental stop realized as /d/ or /t/ depending on context. Ambiguous signs may have more than two realizations, e.g. E/I/T/D "front vowel plus dental stop" may be read as [et], [it], [ed] or [id], PE/I "labial stop plus front vowel" may be read as [pe], [pi], [be] or [bi], and KAT "velar stop – *a* – dental stop" may be read [kat], [gat], [kad], [gad] and as [kt] with dead vowel {1.16.4.}.

Presumably, a scribe reading and writing his native language would have little difficulty resolving such polyphony in context. We have no evidence that scribal practices that are inconvenient or confusing from a modern scholar's point of view, such as signs that ambiguously represent /e/ or /i/, or signs that may represent either a voiced or voiceless stop, posed much of a communication problem for native speakers. Indeed, the scribes seem to have expanded the system's inherent polyphony. Hart (*TPS* 1983, 109–11) notes a tendency, seen also in the Akkadian used at Boghazköy, and carried virtually to its logical extreme in the Mitanni Letter, to expand use of one of a pair of voiced/voiceless CV signs at the expense of the other. For example, except in a few common words which may have had canonized, traditional spellings (e.g. *uk-tu-u-ri* "eternal") the sign DU was used more commonly than TU in Hittite documents from the MH period on. Many apparent instances of variation in spelling front vowels from OH and later texts can be explained if we assume that ostensibly unambiguous signs were used polyphonically, e.g. *pe-e-tu*-MI-*ni* StBoT 25, 3 I 27 "we take away" beside OH and later *pe-(e)-tu-me-(e)-ni* and *pe-du-me-ni* = [pēdumēni], *ti-e-pu* "(a) little" StBoT 25, 23 Rs. 7 for (OH etc.) beside *te-e-pu* = [dēbu] (see Melchert, *SHHP* 83–4 and Oettinger, *Stammbildung* 135 n. 3, *Gds Kronasser* 163 w. n. 3).

### 1.1.2.2. PAT/PIT

Goetze, *Madd.* 55–7, *Tunn.* 49 n. 53; Güterbock, *ZA. NF* 8 (1934) 225–32; Hart, *TPS* 1971, 96–103; Hoffner, *Fs Otten*[1] 100–104; Melchert, *AHP* 33–4; Pedersen, *Ar. Or.* 7 (1935) 80–8; Puhvel, *Heth. u. Idg.* 209–217, *Fs Neumann* 317–19; Sturtevant, *Language* 13 (1937) 285–91.



The sign PAT/PIT was highly polyphonic in Akkadian. In the Akkadian of Hattusas it has the values BE, BAD, BAT and MIT (Güterbock, Hoffner, Puhvel, *Heth. u. Idg.* 209) and other values occur in Akkadian used elsewhere. For Hittite documents, the values PIT (= [peT], [piT], [beT] and [biT]) and PAT (= [paT], [baT]) are assured by variant spellings (Goetze, Hart, Puhvel). Beside *pat-tar* "basket, tray" (OH etc.), oblique stem *pat-ta-n°*, *pad-da-(a)-n°* (OH etc.) the spelling *pa-at-tar* occurs in StBoT 25, 137 I 7 and KBo III 41 + KUB XXXI 4 Vs 2 (OH+), and *pa-at-ta-ni[(-)* (loc. or inst.) occurs in StBoT 25, 122 II 3 and 7 beside *pad-da-(a)-ni* (OH) and *pat-ta-ni* (OH). The reading PIT (PET) is confirmed for *pittulia-* "anguish, constriction, anxiety" by *pi-tu-li-an* in KBo XVIII 151 Rs 10, 11 (OH?/MH?), cf. OH acc. pl. *pit-tu-li-us* e.g. StBoT 25, 4 IV 10, 27. The verb *piddai-*, *pittiya-* "flee" (e.g. 3 sg. pres. *pid-da-a-i*, OH, MH etc., 3 pl. *pit-ti-an-zi*, MH, OH+ etc., 3 sg. pret. *pid-da-a-is*, MH, NH) and its derivatives $^{LÚ}$*pittiyant-*, $^{LÚ}$*pitteyant-* "fugitive" and *pittinu-* (OH), *pittenu-* (MH etc.) "make flee" should be read with [pit-] or [pet-] based on $^{LÚ}$*pi-te-an-tí* KUB XL 5 II 10 (OH+) (Puhvel, *Heth. u. Idg.* 212). For *pittalā(i)-* "set free, neglect" (*pit-tal°*) the reading with [pit] ([pet]) is established by 3 pl. pres. *pi-it-ta-la-an-zi* KUB IX 32 Vs 27 (MH+, cf. *pit-ta-la-an-zi* in dup. KUB IX 31 III 46), pret. *pi-it-ta-la-a-ir* KUB XXI 27 I 17 (NH), and it. 3 sg. pret. *pi-it-ta-le-es-ke-et* KUB XIX 12 II 41 (NH) (Puhvel *ib.* 212–4). Puhvel (213) notes that the vocalism of other words is ambiguous because PAT/PIT alternates neither with PA-AT- nor with PI-IT-, e.g. *pit-tar* "wing" (NH), gen. *pit-ta-na-as* = [pettar] < **péth₁-r* or coll. **peth₁-ōr* or [pattar] < **póth₁-r* : **peth₁-* "fly" {10.7.4.} (cf. Puhvel, *Heth. u. Idg.* 212–3 = 360–1): *pi-it-tal-wa-an-(t°)-* "thin, light, slender, plain" perhaps = [pittalwant-] with PED-D° = [pett] < **peth₂lu̯ént-* > [pettalā-] : **peth₂-* "spread open", but a reading PAT-T° = [patt-] cannot be excluded {10.7.2.}. Similarly, PAD-DA- "dig" (OH etc.) is (*pace* Puhvel, *ib.* 214–6 = 361–3) ambiguous between PAD-D° = [batt] < **bhodh₂-* (as in Lat. *fodire* "dig" and OCS *bodǫ*, *bosti* "stab, pierce") or PED-D° = [bett] < **bhedh₂-* (as in Lith. *bedù*, *bèsti* "stab, dig") {10.7.6.}.

The value BE (= [pe], [be]) used by Hrozný in *Sprache der Hethiter* and advocated by Sturtevant, Güterbock, and Puhvel, but doubted by Goetze, Pedersen, and Friedrich, is more controversial. In some cases, the etymologies cited in support of this reading do not work (e.g. Sturtevant's connections of *padda-* (*pedda-*) "dig" with IE **bheidh-* "split" and of the intensifying particle *-pat* with **bhe-*/**bho-*). In other cases they rest on identifications that are shaky or have subsequently been proven incorrect (e.g. Sturtevant's and Güterbock's (*Madd.*) early conflation of *pe-(e)-da-* "bring" (as *pé-(e)-da-*) with *pid-da-* "render, pay"). But Puhvel adduces some limited support for this reading. He bases his argument for the reading PÉ (=[pe], [be]) in some words on the interpretation of *pe-e-da-i* in KUB XXIX 30 III 9 (OH) as "digs" (duplicates have *pennai* "drives") and reads *pé-da-ah-hi* "digs" rather than PAD-*da-ah-hi* in KBo XVII 5 II 2 (OH = StBot 25, 5 II 2), claiming that the spelling with  was standardized in NH as a way of avoiding confusion with the *hi*-verb *pēda-* "bring" (the verb meaning "dig" is otherwise spelled PAD-DA- (PED-DA-). The interpretation of *pe-e-da-i* as "digs" in KUB XXIX 30 III 9, a passage from the Law Code, is not, by itself, implausible, since the direct object is 1 *akkālan* "one furrow". But the scribes' substitution of *pennāi* "drives" in the NH duplicates KBo VI 26 I 46–7 and KBo VI 13 I 1–2 has a parallel in *aggalan ... pennāi* in KUB XXXIX 14 II 5–6

(OH+) and suggests that one did not necessarily "dig" furrows; if so, then it might be possible to understand OH *akkālan pēdai* as "brings off" or "completes one (more) furrow".

See now the remarks of Melchert, *AHP* 33, which cast doubt on Puhvel's interpretation.

The enclitic intensifying particle is always spelled ⊢◁ and its pronunciation is not, therefore, known. The reading *-pat* is, as Puhvel (216 = 363) and Hoffner (103) note, based on Pedersen's etymological connection with the Lithuanian particle *pàt* (e.g. in *taĩp pàt* "likewise") and with Lith. *pàts* "self" (cf. also the Latin intensifying particle *-pte* in e.g. *meopte* "my own"). Both Puhvel (217=364) and Hoffner (103–4) note that there is some evidence for interpreting the particle as vowelless (at least in some environments) like its putative Latin cognate. Hoffner suggests that the syllabification in II-*us*-"PAT"-*at* in KUB XIII 4 II 50 (interpreted by Goetze (*Tunn.*) as evidence for reading II-*us*-BE-*at*, because a [pat] would be more likely to have been spelled **II-*us-pat-ta-at* or **II-*us-pa-ta-at*) is evidence for a pronunciation [pt], since **-*pat-ta-at* or **-*pa-ta-at* would have implied a pronunciation with a vowel (cf. also Puhvel, *loc. cit.*). Hoffner further suggests that the syllabification here (which would be unusual for [*s*-PVT-V]) could itself point to a reading [pt]. Hoffner also notes that spellings such as *a-pi-ya-pat*, *ki-i-pat* and *ke-e-da-i-pat*, which Goetze (*Tunn.*) had claimed argued against [pat] with voiceless stops, because neither stop is doubled, might be interpreted as additional evidence for [pt], since the scribes would not necessarily have doubled stops in a consonant cluster. (Cf. nom. sg. *har-ta-ga-as* "bear" (MH), *har-ta-ka-as* (OH) = [hartka-] beside *har-tag-ga-as* (OH etc.) or *[ka]-a-sa-ta-as-ma-as-kan* StBoT 25, 3 I 11 = *ka-a-sa-ta-as-ma-as-kan* 4 I 6 = [kās-ta-smas-kan] {1.10.2.1.}. However, since the particle always occurred in an unaccented environment, an initial prevocalic **p* should presumably have been voiced after vowels. If final stops were not voiced in PA {3.9.1., 6.11.3.}, then a postvocalic **t* should have remained voiceless in absolute final syllables; but it is possible that a voiced /d/ was generalized from prevocalic contexts where **t* would have become /d/ by PA voicing.

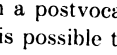
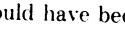
For arguments against reading the particle with a vocalic ending see Hoffner, *loc. cit.* For syntactic and semantic support for the connection with Lith. *pàt* etc., see Hart.

The variant spellings for *pēd(d)unās* (gen.) a ritual plate or platter (e.g. gen. sg. *pe-e-du-na-as* KUB XXIX 4 I 18, NH, beside PAT-*tu-na-a-aſs* (read PÈ-*tu-na-a-as*) KUB XII 1 III 1, NH, PAD-*du-na-as* (read PÈ-*du-na-as*) KUB XLII 69 Vs 18, NH), and those for *pēdumas* (gen.), the same object, or a similar one (gen. *pe-du-mſa-as* KUB XLII 26 Vs 5, NH, *pe-e-du-ma-as* KUB XLII 11 Vs 3, NH) in *Fs Neumann* are more compelling as evidence. He analyzes *pēdunas* as the genitive of a **pēdur*, ultimately belonging with *pēda-* "bring", and *pēdumas* as originally the genitive of *pētumar*, verbal noun of *pēda-*. The interpretation of *pēdumas* seems plausible, but variants with PAD-D° etc. do not appear to be attested. It is possible, however, that the spellings with ⊢◁ indicate scribes' interpretations of *pēdunās* as a derivative of *pid-dai-* "render". See also Melchert, *AHP* 34, who analyzes these forms as Hitticized genitive singulars of a Luvian verbal noun **padduna-* from a verb **padda-* corresponding to Hittite *pēda-* "bring, carry".



## 1.1.3. Origins of Hittite writing

Gamkrelidze, *Ar. Or.* 29 (1961) 406–18; Hart, *TPS* 1983, 102–13, 133; Kammenhuber, *HdO* 161–4.

Akkadian cuneiform split into two versions, Assyrian and Babylonian, which were distinguished by sign shapes, use of signs, and the values of some signs. The Assyrian version was used in the Antolian merchant colonies at Kültepe-Kanis, Alişar and at Boğazköy-Hattusas, although the later Hittites used an Old Babylonian version for writing both Hittite and diplomatic Akkadian. The Babylonian version, as its name suggests, originated in Babylon, but was no longer used there by the time of Hamurabi (ca. 1792–50), shortly before the date of the earliest Hittite cuneiform documents (Kammenhuber, *HdO*). The Old Babylonian cuneiform used at Boğazköy had affinities with versions in use at Nuzi, Ugarit (Ras Shamra), and the North Syrian sites Alalah (18thc), Qatna (mid. 2nd mil.), and with the versions used in the Hurrian of the Mitanni letter (ca. 1400) found at El Amarna in Egypt. Hittite cuneiform and these syllabaries have been termed "Western syllabaries", "Akkado-Hittite syllabaries" and "Hurro-Hittite". They share several features which are archaic from the point of view of the latest Old Babylonian and can be traced back to an earlier Old Akkadian stage of development (Gamkrelidze, Hart, 103). These are: a lack of special signs for Akkadian emphatics (the sign QA was used at Boğazköy but only as a homograph of KA and GA, and it was mainly reserved for medial position), a more archaic representation of Proto-Semitic sibilants than the version used in Babylon, and a lack of systematic use of single signs to indicate voicing distinctions among stops (i.e. the signs conventionally transliterated with voiceless stops cannot necessarily be read as voiceless stops and those transliterated with voiced stops cannot necessarily be read with voiced stops). In these syllabaries, the sign  (used as PI elsewhere) had the value *wV*. This is the sign transliterated as *WA* = [wa] in Hittite; it was used also in the values [wi] and [wu] elsewhere and in Boghažköy texts in Hattic, Palaic, and Hurrian. The sign  (BI in Old Akkadian) was used as PÍ (in Hittite = [pe], [be], [pi] and [bi]).

The resemblance of these features to the Hurrian of the Mitanni letter and to other cuneiform syllabaries used to write Hurrian convinced some scholars that the Hittites learned writing from a Hurrian source. Gamkrelidze, and following him, Kammenhuber, however, maintain that it is more likely that the Hittites came into contact with writing in North Syria and first used a syllabary in use there, and that the practice of spelling reflexes of IE voiceless stops with doubled stops was invented by Hittites as a way of indicating a phonemic distinction in their language. Similarities to Hurrrian writing would reflect later Hurrian contact with these syllabaries under this hypothesis. Kammenhuber, however, is skeptical of the idea that the Hittites knew writing before the time of the Old Assyrian Merchant Colonies. Hart, who claims the North Syrian syllabaries were Hurrian influenced, notes (105–6) that there is evidence that the Hurrians knew how to write as far back as the Old Akkadian period, and that there is no chronological objection to Hurrian influence on the North Syrian syllabaries.

The question of Hurrian origin or influence is important in analysing the representation of stops in Hittite. Akkadian had a phonemic distinction between voiced and voiceless stops. Presumably, if the Hittites had retained a voicing distinction and had first learned a syllabary in which voicing distinctions were made systematically with single stops, we would expect a high degree of correlation between Old Babylonian values for voiced and voiceless and Hittite values based on IE etymologies. Unlike Akkadian, Hurrian had a length distinction and voicing was allophonic. Stops were automatically voiceless when initial and in intervocalic position when long but were voiced in intervocalic position when short. The intervocalic long voiceless stops were conventionally written double. Scribes adapting the syllabary for Hittite, if they were native speakers of Akkadian, which had phonemic voicing, or native speakers of Hittite, which probably had phonemic voicing, would have tended to hear and spell Hurrian single intervocalic stops as voiced and to hear and spell double stops as voiceless (cf. Hart, 103–6), and, unless they themselves were aquainted with the Old Babylonian values, they would have spelled Hittite voiceless stops with double stops and voiced stops with single stops. Had the Hittites acquired a version of Akkadian cuneiform that had been heavily influenced by Hurrian, or had they acquired cuneiform from Hurrian speakers, we would expect little correlation between Old Babylonian values and expected etymological ones but a strong correlation between single and double writing of internal stops and IE voicing distinctions; and the evidence of the texts bears this interpretation out.

## 1.2. Spellings for vowels

Friedrich, *HE* 25–28; Sturtevant, *CGr*$^2$ 18–24.

Vowels may be spelled with the independent vowel signs A, E, I, U and Ú (e.g. *a-ri* "arrives" = [āri], *e-ku-zi* "drinks" = [eg$^{w}$tsi], *i-da-a-lu* "evil" = [idālu], *ú-da-i* "brings" = [udai]), with CV and VC signs either alone or in combination (e.g. with CA *ta-ga-a-an* "on earth" = [dagān], with AC *ap-pa-(a)-an-t°* ptcp. "captured" = [apānt-], with CA-AC *si-pa-an-ta-an-zi* "they make a libation" = [spăntsi], with CA-A-AC *ka-a-an-ki* "hangs" = [kānki]), or with CVC signs (e.g. with CAC *kat-ta* "down" = [kata], with CEC *e-ser* "they were" = [ēsĕr]).

## 1.3. Plene writing

Bader, *Rec.* 9–10; Carruba, *KZ* 95 (1981) 232–48; Čop, *Linguistica* 4 (1961) 59, *Linguistica* 6 (1964) 63–4 n. 118; Eichner, *Lautgesch. u. Etym.* 150–4; Friedrich, *Heth.* 19–20; Goetze, *Madd.* 80–1 n.4; Georgiev, *Fol. Ling.* 4 (1970) 182–4, *BalkE* 26 (1983) 16–21; Hart, *BSOAS* 43 (1980) 1–17; Hrozný, *SH* 186–7; Kammenhuber, *HdO* 175–7; Kimball, *PW* (*passim*), *IF* 91 (1986) 83–4; Kronasser, *VLFH* 35–6, 37, *EHS* 27–8; Kurylowicz, *PICL* 8 218–9; Lindeman, *Sprache* 29 (1987) 41–3; Melchert, *SHHP* 40 w.n. 82, 84 n. 11, 89, *AHP* 27–9; Pedersen, *Hitt.* 3–4, 5, 34, 164, 194; Oettinger, *Stammbildung* 447–50, 566 n. 12, *Gds Kronasser* 167–8; Otten-Souček, *StBoT* 8, 45–7; Riemschneider, *Fs Otten*$^{1}$ 276 w.n. 23; Rosenkranz, *Fs Friedrich* 417–26, *ZA* 54 (1961) 105–8, *Vgl. Unters.* 30, 34–6; Sturtevant, *CGr*$^{1}$ 61–4, *CGr*$^2$ 23–4; Watkins, *Ériu* 27 (1976) 116, 117, *Fl. u. Wb.* 367, *Gds Kronasser* 255–6; Weitenberg, *u*-Stämme 347–50.

## 1.3.1. Definition

*Plene* writing is the repetition of identical vowel signs in the spelling of vowels or diphthongs. The cuneiform syllabary employs five common patterns for spelling vowels with plene writing:

**Initial vowels**: $V_1$-$V_1$C-: *a-ap-pa, a-ar-as-zi, e-es-zi, e-es, i-it, i-it-te-en, ú-uk, u-un-ha-an-zi;* **absolute final vowels**: -C$V_1$-$V_1$: *tak-na-a, da-a, ud-ne-e, le-e, tak-ni-i, a-as-su-u, su-u, ka-ru-ú;* **non-initial vowels in open syllables**: (-)C$V_1$-$V_1$-C : *sa-a-ru, i-da-a-lu, te-e-kan, ne-e-wa-an, pe-e-da-an, ha-li-i-na-as, is-ki-i-sa, hu-u-ma-an-(t°), pu-ru-u-ut, hu-ú-ni-ik-zi;* **non-initial vowels in closed syllables:** (-)C$V_1$-$V_1$-$V_1$C: *ka-a-an-ki, ta-ga-a-an, la-a-ak, ta-a-an, Ḫa-le-e-en-ti-u, me-e-er-ta, da-as-ke-e-er, se-e-er, zi-i-ik, ha-as-ti-i-it, su-u-us, su-u-un, su-ú-un, a-pu-u-us, a-pu-u-un, ku-u-us, ku-u-un.*

The spelling -$V_1$-$V_1$C occurs in closed syllables with initial glide spelled I = [y] and Ú (U) = [w]: *i-e-ez-zi* = [yētṣi], *ú-e-ek-zi* = [wēktṣi], *a-ú-e-er* = [awēr], *da-as-sa-u-e-es* = [dāssawēs]; closed syllables with consonant plus /y/ spelled CI: e.g. *is-hi-ú-ul* = [ishyūl], *ha-an-te-ez-zi-e-es* = [hantetṣyēs]; with consonant plus glide spelled CI-I- = [Cy] or [Ciy] e.g. *ar-ki-i-e-es* = [argiyēs](?), *is-pi-i-e-er* [spiyēr], *pi-i-e-er* = [piyēr], *mi-i-(ú)-un* = [miyūn]; in closed syllables with consonant plus /w/ spelled CU: e.g. *hu-e-ek-zi* = [hwēgtṣi], *tu-e-ek-ka-* = [twēka-]; after KU indicating syllable-initial labiovelar: e.g. *ku-e-er-zi* = [kʷērtṣi]; and after vowels: e.g. *ne-e-a-an-(t°)* (NH) = [nēānt-].

## 1.3.2. Frequency

Plene writing was never used with absolute consistency in texts of any period. Even for words that are usually spelled with plene writing, sporadic spellings without it can be cited, e.g. *w[a]-tar* "water" StBoT 25, 59 I 11, *wa-tar* ib. II 8, KBo III 60 I 6 (OH+) beside *wa-a-tar*, which is standard in OH and later; nom.-acc. sg. n. *aṣ-ṣu* "good" KBo XVIII 151 Vs. 13 (OH?/MH?) (note *a-as-su* ib. Rs. 18), gen. sg./pl. *as-su-wa-as* KUB XXXVI 40 IV 10 (OH?), nom.-acc. pl. n. *as-su-u* KUB II 2 III 13 (NH), beside *a-as-su-(u), a-as-sa-wa-*.

As a general rule, plene writing is more frequent in early texts (texts in OH ductus and many MH texts) than it is in original compositions of the NH period, a phenomenon well established both in work on text dating and in philologically-based studies of plene writing (Otten-Souček, Hart, Carruba, Kimball). The latter studies are based wholly or in large part on material from OH and MH texts or copies. Systematic work needs, however, to be done on plene writing in NH originals and on establishing conventions for its use in NH copies of earlier texts.

Even within the OH period use of plene writing was inconsistent (Kronasser, *EHS* 28, Otten-Souček 44–5, 47, Carruba 235, Kimball, *PW* 43–53, Weitenberg 348). Sometimes it may have been omitted because a scribe ran out of space at the end of a line (Otten-Souček 47, Rosenkranz 30). In a text like StBoT 25, 59, a three-column tablet in which it is used very infrequently, it may have been omitted to save space. Spellings with and without it can be cited for the same forms of a paradigm within individual texts: nom. sg. $^{LÚ}$*a-su-sa-a-la-as*, a cult functionary, StBoT 25, 54 IV 13, *a-su-sa-la-as* ib. II 16; nom. pl. *a-su-sa-a-le-es* ib. III 6, *a-su-sa-le-eṣ* IV 1, *a-su-sa-le-es-sa* III 12, acc. pl. *a-sụ-sa-a-lu-us* II 23, *a-su-sa-lu-uṣ* I 8, *a-su-*

*sa[-l]u-us* I 27, *a-su-sa-lu-us* IV 8; *[hu-]e-ek-zi*, "(s)he recites spells", StBoT 25, 110 II 12, *hu-e-ek-zi* ib. II 19, 29, *h[u-ek-z]i* III 6; *me-e-ma-i*, "(s)he speaks", StBoT 25, 110 II 5, 12, 19, 25, 33, *me-ma-i* ib. III 6, *me-e-ma-i* StBoT 25, 113 II 21, *me-e-ma-i* ib. III 8, 10, *me-ma-i* II 2, III 12; *[pe]-e-hu-te-ez-zi*, "(s)he takes", KBo VI 2 I 37, *pe-hu-te-ez-zi* ib. I 40; *si-p[a-a-an-ti*, "(s)he makes a libation", StBoT 25, 51 Vs.? I 6, *si-pa-an-ti* ib. I 4; *ta-a-i-ez-zi*, "(s)he steals", KBo VI 2 I 39, 42, 45 etc., *ta-i-ez-zi* ib. III 54, IV 19 etc.

Plene writing may even be omitted when, at least from our point of view, it signals an important functional distinction. For example, in *r/n*-stems nominative-accusative singular versus plural is marked synchronically by lengthening of the suffix vowel in many forms, but clear examples of plurals without it do occur, e.g. *har-sa-ar-ra* "and heads" SBoT 25, 4 I 18 beside *har-sa-a-ar-ra* ib. IV 29. Similarly, in some root-accented *u*-stem adjectives the distinction between singular and plural nominative-accusative neuter was marked by lengthening of the suffix vowel of the latter, e.g. nom.-acc. sg. *a-as-su* "good" with /-u/ < *-*u* {2.6.4.}, but plural *āssū* (e.g. *a-as-su-u* StBoT 25, 122 II 10) with /-ū/ < *-*u-h₂* {10.11.2.}. Yet there are clear examples of *a-as-su* in plural function (e.g. KUB XXXIII 68 II 12, MH). Similarly *i-da-a-lu* "evil" (e.g. KBo XV 10 II 15, III 57, MH, KBo XXIV 1 II 19, MH, KUB XXIX 1 II 21, OH+, *da-as-su* "strong" (e.g. KUB XXXI 141 Vs. 4, NH) and *hwesu* "raw, alive" (e.g. *s[u-up-pa hu-e-sú ze-an-da* KUB LI 47 I 10, U) show up in plural function without plene writing of the final vowel (Weitenberg, *u*-Stämme 312, 370, 478 n.799).

Given that plene writing was never used consistently and that it tended to be less frequent in post OH texts than it was in OH texts it is not possible to confirm Watkins' suggestion (*Gds Kronasser* 256) that lack of plene writing in these neuter plurals points to a post OH loss of distinctive length in final syllables.

The lack of consistency in the use of plene writing has a number of methodological implications. First, it cannot be maintained with any confidence that lack of plene writing in any isolated instance has linguistic significance. Second, it is difficult to establish with certainty that plene writing is missing in individual forms, paradigms or morphological categories, or in specific phonological environments, unless a sufficiently large number of tokens is attested in early (preferably OH) texts (Kimball, *PW* 53–4).

An exception to the inconsistency in use of plene writing is the spelling of non-enclitic monosyllables, which normally do have plene writing, e.g. 2 sg. imp. *e-es* "be!", *e-ep* "take!", *e-et* "eat!", *i-it* "go!", *da-a* "take!"; 3 sg. pres. *da-a-i* "(s)he takes"; 3 sg. pret. *da-a-as* "(s)he took"; dem. pro. nom. sg. c. *ka-a-as*, acc. sg. c. *ku-u-un*, nom.-acc. sg. n. *ki-i*, nom.-acc. pl. n. *ke-e*, first person singular personal pronoun *ú-uk* (Sturtevant, *CGr*² 24, Kronasser, *EHS* 29, Pedersen, *Hitt.* 34, Otten-Souček, 44–5, Rosenkranz, *Vgl. Unters.* 30).

## 1.3.3. Plene writing, accent, and vowel length

The view expressed by Sturtevant, *CGr*², Kronasser, Kammenhuber, *HdO* and Otten-Souček (45–6), that plene writing, while it may have had some limited uses, e.g. to disambiguate vowel color or indicate that a vowel is not a dead vowel (Kron-

asser, *VLFH* 35–6), was not used systematically to indicate a functional distinction, was a minority view, though influential. Other scholars have sought explanations for plene writing as an indicator of accent or vowel length.

### 1.3.3.1. Plene writing and IE vowel length

In Akkadian, plene writing in open syllables ($CV_1$-$V_1$-) may indicate vowel length and researchers have suggested that the Hittites, being acquainted with this use, may also have sometimes indicated long vowels in this fashion (Pedersen, *Hitt.* 5, Hart, *BSOAS* 40.1 w. refs., Riemschneider 276, cf. also Sturtevant, *CGr*$^2$ 23, who noted that in the Akkadian of Boğazköy etymologically short vowels are frequently written plene). Carruba, however (233), claims that Mesopotamian influence is unlikely, noting that although plene writing in most frequent in OH texts it is less common in contemporaneous Old Akkadian texts than in texts of other periods.

Researchers have also noted apparent correspondences between Hittite plene writing and inherited vowel length or possible long vowels arising through compensatory lengthening, monophthongization of diphthongs, or contraction. Pedersen, *Hitt.* 5, drew readers' attention to *la-a-ma-an* "name" : Lat. *nōmen* id. Kuryłowicz (219) suggested that indicating length arising through monophthongization or contraction might be one of its functions. Oettinger (*StBoT* 22) noted a correlation between nouns with plene writing in inflectional syllables and putative **-eh₂*-stems, e.g. *hāssa-* "hearth": gen. *ha-as-sa-a-as*, dat. *ha-as-si-i* (with dat. < **-éi*) : Lat. *āra* "altar", cf. also Weitenberg, *u*-Stämme 347–50 (though he rejects the idea that plene writing indicates a long vowel from **Vh₂* in *a-as-su-u*, *ha-as-sa-a-as*, *ha-as-si-i* etc.). Georgiev (*BalkE*), Melchert (*SHHP* 40 w.n. 82) and Watkins (*Gds Kronasser*) note plene writing that may indicate long vowels that arose via compensatory lengthening after loss of **h₂*, e.g. in verbs with the suffix *-ā(i)-* (IE **-eh₂-yé/ó-*), collectives in *-āwar* (e.g. *karāwar* "horn"), abstract suffix *-ātar* (from **-eh₂-tr̥*), *tāy/e-* "steal" (**(s)teh₂-i-*). Georgiev (*Fol. Ling.* 4, 184) notes instances where reflexes of monophthongized diphthongs are spelled with plene writing. But since vowels that cannot be reflexes of IE long vowels may also be spelled with plene writing (e.g. *ta-a-ru* "tree" < IE **dóru*, *e-es-zi* "is" < **h₁ésti*, *pe-e-da-an* "ground" < **pédom*), the idea that plene writing indicates inherited long vowels never won widespread acceptance (see Hart, *BSOAS* 43, 2–3).

### 1.3.3.2. Plene writing and accent or ablaut

A number of scholars have made observations suggesting why plene writing might mark accent, or at least have something to do with a phenomenon associated with accent. The normal spelling of non-enclitic monosyllables with plene writing has often been cited as evidence [1.3.3.]. Pedersen (164) suggested that plene writing in the second syllables of disyllabic and longer words (e.g. *i-da-a-lu-us* "evil", *da-ma-a-is* "other") might indicate a shift of length and/or stress to the second syllable.

The earliest systematic work on plene writing and its relation to accent, or to ablaut, and by implication, accent, was done by Rosenkranz in the late 1950's and early 1960's (*Fs Friedrich*, *ZA NF* 54 ; see also *Vgl. Unters.* 30, 34–5). Rosenkranz made a number of observations on how plene writing is distributed by morphological category in the paradigms of ablauting verbs. He found that in several morphologi-

cal categories where plene writing may occur for a suffix vowel the root has zero-grade and does not show plene writing (e.g. infinitive in *-ānna*, *ku-ra-a-an-na* : *kuēr-* "cut", *ap-pa-a-an-na* : *ēpp-* "take, seize"). Similarly, the root syllables of iteratives in *-sk-*, which should be zero-grade in archaic iteratives from ablauting verbs, lack plene writing (e.g. *ap-pi-is-k°* : *ēpp-*, *ak-ki-is-k°* : *āk(k)-* "die", *hu-uk-ki-is-k°* (and *hu-u-uk-ki-is-k°* with ligature *hu-u-* {1.5.1.}) : *huēk-* "strike"). Vowels with plene writing, by contrast, tend to coincide with expected full-grades (see also Pedersen, *Hitt.* 168–70, Georgiev, *Fol. Ling.* 4 183; Hart, *BSOAS* 43, 3, and Eichner, *Lautgesch. u. Etym.*). Rosenkranz did not claim that plene writing indicates accent, but he did connect it with full-grade vowels, and these should be reflexes of accented vowels. The vowels without plene writing, by contrast, he claimed had very short varieties of [ə].

Later, the idea that plene writing might mark accent was also endorsed by Watkins, *Fl. u. Wb.*, *Ériu* 27, and Melchert, *SHHP* 84 n. 11, Lindeman, *Sprache* 27, and the idea that plene writing corresponds to expected full-grades was mentioned by Kammenhuber, *KZ* 83 (1969) 270 w.n. 38, and Heinhold-Krahmer et al., *Probleme* 166.

The critical article that established a connection between plene writing and the IE accent was published by Hart in *BSOAS* 43 (1980) 4–15. Using data from early (OH, MH, and OH+) texts, Hart examined the distribution of plene writing by morphological category in verbal and nominal paradigms where the effects of an IE mobile accent might be expected to persist. She noted that plene writing occurs in the first and second person plural present and preterit endings with ablaut (especially in *hi*-conjugation verbs) where the root should have zero- or reduced-grade; e.g. *tu-me-e-ni*, *da-at-te-e-ni* beside 1 sg. pres. *da-a-ah-hi*, 3 sg. *da-a-i*. Other evidence for the connection between plene writing and accent comes from the distribution of plene spellings in nominal paradigms (10–11). A number of inherited, archaic neuter *r/n*-stems show patterned variation in plene writing by syllable, e.g. nom.-acc. sg. *e-es-har* "blood" with accented, full-grade root but OH gen. sg. *is-ha-na-a-as*, dat. *is-ha-ni-i* with accented ending and possibly zero-grade root; nom.-acc. sg. *wa-a-tar* "water" < **wódr̥*, but dat. *ú-i-te-e-ni* < **wedéni* (13). Hart also discussed plene writing in participle and infinitive forms of ablauting *mi-* and *hi*-conjugation verbs; e.g. *la-ga-a-an*, *pi-ya-a-an*, inf. *ap-pa-a-an-na*, *wa-ga-a-an-na*, noting, as did Rosenkranz, that these typically lack plene writing of their root vowels. Further, she noted examples of plene writing in the endings of the third person plural and imperative of several *mi*-verbs, e.g. *a-ta-a-an-zi* "they eat", *ap-pa-a-an-du* "let them seize". These examples, however, come from NH copies of OH texts, and plene writing does not occur in these endings in OH originals (Kimball, *PW* 745–52). This suggests that the long vowel may not be original here, but analogical from the participle in *-ānt-* < **-ónt-*. Hart (6–10) contrasts middles with plene writing for vowels of the third person singular present and imperative endings *-Ca-a-ri*, *-Ca-a-ru* and zero-grade root (e.g. *mi-ya-a-ri*, *la-ga-a-ri*) with the normal early spellings of these endings in acrostatic paradigms (*ki-(i)-sa-ri*, *e-sa-ri*, *ne-e-a-ri*), noting that the endings continue **-ó-ri* on the one hand, but * *´-or-i* on the other.

In a study published a year later, Carruba, *KZ* 95 (1981) 232–48, also linked plene writing and accent, noting (238–40) places where it seems to shift during the course of nominal and verbal inflection.

### 1.3.3.3. Plene writing and lengthening of accented vowels

The first suggestion that plene writing might mark reflexes of IE short vowels that were lengthened under accent was made by Hrozný himself in a footnote in *Sprache der Hethiter* (186–7). Čop also made this suggestion (*Linguistica* 4, *Linguistica* 6). While several researchers considered this idea, it was usually rejected for a number of reasons. Friedrich, Goetze and Sturtevant (*CGr*$^{1}$ 63) claimed that the language would have had too many long vowels. Sturtevant also noted that an accent strong enough to determine vowel quality might be expected to cause loss of vowels in unaccented syllables, and saw little evidence for this.

In recent years this idea has been taken up by several scholars. Oettinger, *Stammbildung* 447–9 (cf. also *ib.* 396 and 566 n. 12) marks accented vowels lengthened in initial open syllables of trisyllabic words with macrons, but does not systematically study plene writing. Georgiev, *BalkE* 18–9, suggests that accented vowels were somewhat longer than unaccented vowels and that the Hittite scribes used plene writing to indicate this.

Kimball (*PW*, *IF* 91) presents several arguments for understanding plene writing as representing vowel length and for interpreting vowels spelled with plene writing that correspond to IE short accented vowels as lengthened under accent. A major portion of the work (111–638) is devoted to discussing paradigms and lexical items where plene writing coincides with the expected IE accent. The arguments that plene writing indicates vowel length are based on two observations: that there are words or morphemes with plene writing that corresponds to a long vowel in an accented or unaccented syllable that arose through monophthongization, contraction, compensatory lengthening, or other phonological process, and that there are words or morphemes which are not spelled with plene writing but which surely were accented synchronically and historically. Most of these fall into coherent groupings based on phonetic or etymological context, and this suggests that accented vowels failed to lengthen in several phonological environments. Although several of the conclusions Kimball reaches stand in need of modification, there are a couple of additional environments that can be added to those she cites.

### 1.3.3.4. Vowels never written plene

It is likely that **é* and the reflexes of **éh*$_1$ (PA **ǽ*) and **éi* resulted in /ĕ/ before the affricate /ţ/ from **ti/ty* (Kimball, *PW* 683–709). A clear example comes from spellings for third person singular presents of iteratives in *-sk-*, which are always spelled °*s-ke-ez-zi* or °*s-ke-zi* = /-skĕtşi/ < **-sḱéti* and never **°*s-ke-e-ez-zi* or **°*s-ke-e-zi*, even in OH texts, where plene writing is in general most frequent, e.g. from OH: *an-ni-is-ke-ez-zi* "works, does" KBo VI 2 I 18; *ap?]-pi-is-ke-ez-zi* "seizes(?)" StBoT 25, 64 L. 3; *[e-ed-ri-]-iṣ-kẹ-ẹz-zi* "feeds" KBo VI 2 IV 59; *is-pa-an-za-as-ke-e[z-zi* "makes a libation" StBoT 25, 66 L. 3; *pa-ap-par-as-ke-ez-zi* "sprinkles" StBoT 25, 42 II 11 = StBoT 25, 43 I 10; *tar-si-ke-ez-zi* "says" KBo XXII 2 Rs 4; *za-as-ke-ez-zi* "puts(?)" StBoT 25, 137 III 15; *zi-ik-ke-ez-zi* "puts" StBoT 25, 43 IV 3; *zi-i-nu-us-ke-ez-zi* "crosses" KBo VI 2 II 30. By contrast, sporadic spellings occur with plene writing in other forms of the paradigm with *e*-grade thematic vowel, e.g. 2 sg. pres. *ak-ku-us-ke-e-si* StBoT 25 110 II 16, 1 pl. pres. *ak-ku-us-ke-e-wa-ni* StBoT 25, 140 Rs. 7 (*eku-* "drink"); 1 pl. pres. *zi-ke-e-ú-*

*e-n/i* KBo III 40 L. 5 (OH+), 3 sg. pret. *zi-ke-e-et* KBo XXII 2 Vs. 3 (*tēhhi, dāi-* "put"); 1 sg. pres. *da-as-ke-e-mi* StBoT 25, 4 IV 10, 3 pl. pret. *da-<as>-ke-e-er* KBo VI 2 I 14 (OH), *da-as-ke-e-er* ib. I 58 (*dā-* "take"); 3 sg. imp. *se-es-ke-e-ed-du* = KUB XIII 1 I 27 (MH) (*sēs-* "sleep"). Although these spellings are less common than spellings without plene writing, they should represent regular [-skē-] from **-skḗ-* {2.4.3.}.

Note also OH *us-ki-i* StBoT 25, 123 L. 10 with raising of final **é* to **ī* and lengthening {3.2.1.7.}. For the analogical [-ā-] of [-skā-] see {2.4.1.}.

Short /e/ from **é* would also be expected in third person singular presents from denominatives in *-yé/ó-*, i.e. **-yé-ti* > [-yĕtsi] spelled *-Ci-ez-zi*, and such spellings do occur in OH and later texts, e.g. from OH: *i-e-zi* "does, makes" KBo VI 2 I 60, *i-ez-zi* ib. 50, 51, KBo IX 73 Vs.6; *su-wa-i-ez-zi* "looks" KBo VI 2 I 2, 3 12, 21 etc.; *su-ú-ez-zi* "pushes" KBo VI 2 IV 48; *ta-i-e[z-zi* "steals" KBo VI 2 IV 42; *ti-i-ez-zi* "steps" StBoT 25, 12 I 5, 14, StBoT 25, 127 II 8, StBoT 25, 47 III 8. However, from OH on, spellings with plene writing, *-Ci-e-ez-zi* suggest that [-yē-] from **-yé-*, which was regular in other forms with *e*-grade thematic vowel, was generalized to the third person singular present: e.g. *a-ni-e-ez-zi* "does" KUB XXIX 30 II 21 = [anyētsi]; *i-e-ez-zi* "does, makes" KBo VI 3 III (MH) = [yētsi]; *pi-i-e-ez-zi* "sends" (= [piyētsi]) KUB XXXVI 106 Vs.5 (OH); *si-i-e-ez-zi* "shoots" (= [siyētsi]) Tunn. II 43 (MH+), KUB XXIX 8 II 9, 11 (MH); *su-ú-i-e-ez-zi* "pushes" (= [suwyētsi]) KUB VIII 81 + III 7 (Supp. I); *ti-i-e-ez-zi* "steps" (= [tiyētsi) KUB XXIX 30 Vs.7, 19 (OH). Since plene writing was not used consistently, it is impossible to determine whether the spellings without plene writing in third person singular forms indicate the expected short vowel or the analogical long vowel. Post-OH spellings in *-Ci-(i)-e-ez-zi* for root-accented *-yé/o*-verbs are common (e.g. KBo VI 3 III 35 etc. (MH dup. of KBo VI 2), *da-i-e-ez-zi* KBo VI 3 III 30, *ta-a-i-e-ez-zi* KBo VI 3 IV 40) suggesting that they, like the denominatives, generalized the allomorph [-yē-]

The reflex of PA **ē̆* < IE **éh₁* seems to show up as /ĕ/ before /ts/ in third person singular present forms of *tē-* "speak, say" < *IE **dheh₁-* {2.9.1.1.}. The normal spelling is *te-ez-zi* from OH on (e.g. KBo VI 2 IV 47, OH). Exceptions are very infrequent, but they do occur in OH and MH (note *te-e-e[z-zi* StBoT 25, 56 IV 20, *te-e-ez-zi* KUB XVII 10 III 3, MH). They presumably reflect analogical extension of /ē/ from other forms of the paradigm with [dēC-], e.g. 1 sg. pres. *te-e-mi* = [dēmi].

The accented diphthong **éi* shows up as /ĕ/ in *hantezziya-* "first" < **h₂ntéityo-*, normally spelled *ha-an-te-ez-zi-(ya)-* from OH on {4.3.2.2.}. Its antonym should probably be read *ap-pe-ez-zi-(ya)-* "last" = [apĕtsya-] {4.3.2.2.}. In *sarāzzi-* "above" (e.g. nom.-acc. sg. n. *sa-ra-a-az-zi* KUB XXXI 127 II 1 (MH+), gen. *sa-ra-a-a[z-zi]i-ya-as* ib. Vs.. 40) the long vowel is analogical from the base *sarā*. In *wezzi* "comes" < PA **(o)wéi-ti* {4.3.2.3.} spellings with plene writing occur in the earliest texts (e.g. *ú-e-ez-zi* StBoT 25, 3 III 13, beside *ú-ez-zi* ib. I 40, StBoT 25, 4 I 13, II 16, IV 10); but the long vowel can have been generalized from other forms of the paradigm, e.g. 3 sg. pret. *ú-e-et*.

Accented vowels may also have failed to lengthen before some heavy obstruent clusters, for example, some clusters with labiovelars; cf. *nekuz* "night" < **nég$^{w}$ts*, spelled *ne-ku-uz, ne-ku-uz-za* = [nĕg$^{w}$ts]? {6.5.1.} and *tekkussiya-* "show" < **dék$^{w}$s-ye/o-*, spelled *te-ek-ku-us-si-(ya)-* = [dĕk$^{w}$ssya-]? {6.5.1.}, neither of which has plene writing,

although neither is well attested in early texts. Clusters of stop or resonant plus laryngal or the resulting geminates seem also to have blocked lengthening (*PW* 778, 783, 787, 788, 801–25), since plene writing of reflexes of accented vowels does not regularly occur before these sounds (e.g. *me-ek-ki-*, *me-ek-ka-*, *me-eg-ga-*, *me-eq-qa-* "numerous" = [mēkki-], [mēkka-] < **mégʰ₂-i-*, **mégʰ₂-oi-* {10.7.1.}). Apparent exceptions can be explained as analogical. The plene writing in the consonant stem nom.-acc. sg. n. *[m]e-e-ek* StBoT 25, 23 Rs. 6, nom. pl. c. *me-e-ek-e-es* ib. Rs. 5, beside acc. sg. c. *me-ek-kan* KBo XXI 68 I 4 (OH), *me-ek-kan* (OH+), *me-ek-ke-e-es* KUB XLIII 22 I 9 (U), *me-ke-es* KUB XLII 29 Vs.? II 5 (NH), acc. pl. c. *me-ek-ku-us* KUB XLIII 23 Rs. 20, 22 (OH?/MH?; also OH+) may be regular in the nominative-accusative singular neuter, where the root-final stop is also regularly single. If the final laryngeal had been lost before gemination, lengthening would have applied as in any other monosyllable with final consonant, i.e. **mégʰ₂* > **mégʰ* > [mēg]. Alternatively, a final geminate may have been simplified before lengthening, i.e. **mégʰ₂* > **mégg* > **mégʰ* > [mēg]. The long vowel of OH *hu-e-et-ti-ya-*, Post-OH *hu-i-it-ti-ya-* "drag, lead" = [hwēttya-] < **h₂wédʰ₂-ye/o-* can be analogical from the athematic stem *huēzz-* (e.g. 2 sg. pres. midd. *hu-e-ez-ta* KUB XVII 10 IV 2, MH) = [hwēᵊt-] < **h₂wéd-T-* < **h₂wédʰ₂-T-* with loss of the laryngeal between stops {10.10.1.}.

The high front vowel (perhaps phonetically [ɪ]) that resulted from **e* before [ŋk] or [ŋg] {3.2.1.2.}, is not normally spelled with plene writing, although in most of the contexts in which it occurs, it should be the reflex of an accented vowel. In athematic verbs such as *link-* "swear an oath" or *nink-* "lift" the root was presumably accented in the singular, and the plural has a generalized full-grade; yet the vowel here is not normally spelled with plene writing. Similarly, *ma(n)ninkwa-* "short, low, near", and derivatives, which are well attested in early texts, and which had a suffix [-inkʷa-] from IE **-énkʷo-*, do not have plene writing ***-ni-i-(in)-ku-(wa)-*. The vowel of the suffix of causatives in *-nink-* comes ultimately from an accented vowel (IE **-né-k/g[h]-* > **-nēk/g-* > *-nēŋk/g-* > [-niŋk/g-] {3.10.}, but plene writing also does not occur here. It is possible, however, that in these verbs the accent was shifted to the initial root syllable (note *hu-u-ni-(in)-k°*, *hu-ú-ni-ik* = [hūniŋg-]?) "harm, damage" < **h₂u-ne-g(h)-* (*PW* 406–7, 485).

NH 2 sg. imp. *li-i-ik* KBo IV 14 I 41 (NH), 2 pl. *le-e-ek-te-en* 942, Z Rs.? 2 (CHD OH/NS) may have secondary or emphatic lengthening {1.3.3.7.}.

Kimball claims (708–800, *IF* 91) that reflexes of syllabic resonants do not have plene writing, even when they came to be accented in Pre-Hittite and that this indicates that syllabic resonants vocalized with a short *ə*-like vowel that failed to lengthen. There are a few clear examples that support this interpretation.

The third person plural present ending *-anzi* in athematic verbs is normally without plene writing, even in OH, where is is well attested (PW 745–52). Since **-ént-* seems to have resulted in [-ānt-] (note MH *ki-iṣ-du-wa-a-an-[du]-uṣ* "hungry" KUB XIV 1 Vs. 9 < **Kest-wént-* {3.2.2.2.}), the lack of plene writing suggests that the ending is [-ănṭsi], generalized from zero-grade **-n̥ti* of reduplicated and acrostatic verbs {5.3.4}. Some apparent exceptions can be explained as analogical, others may be Sievers variants in **R̥R*, which became [āR] {5.6.}, and a few may be scribal errors {5.7.}.

Some of the evidence that Kimball cites for the claim that reflexes of syllabic resonants were not lengthened, however, will probably not work. It now seems clear that **e* was lowered to *a* before **r* plus consonant and before resonant plus laryngeal (Kimball, *MSS* 53 (1992) 82–3, 88–90). This suggests that *mi*-verbs in C*ă*rC- such as *kar(ap)p-* "lift, undertake" and *istar(ak)k-* "be sick", or *tarh-* "overcome", which Kimball (*PW* 790–800) claims have a generalized zero-grade root *C$_{\text{r}}$C > C*ă*rC-, with root accent > C*ă*rC in the singular can continue full-grade *C*e*RC. It is likely that spellings in CAR-C°, which are normal for most of these verbs, can represent reflexes of full-grade vowels, and CAR-C°- can be read with a long vowel (i.e. *tar-ah-zi* = [tārhtsi] < **tắrhti-* < **térh$_2$-ti*. Note that **érs* became [ārs] in *ārs-* "flow" < **h$_1$érs-* {3.2.2.1.}, preconsonantal **én* became [ān] with lowering except before velars {3.2.2.2.}, and that original long vowels are sometimes spelled with CVC signs (e.g. NH *mar-ak-zi* for strong stem [mārg-] as in OH *ma-a-ar-ka-ah-he*.

### 1.3.3.5. Plene writing in more than one syllable

Other evidence for plene writing as indicating vowel length comes from words with plene writing in more than one syllable, which are usually derived forms in which the plene writing indicates the long vowel of a suffix or ending and a base with analogical long vowel (*PW* 5–6), e.g. OH *sa-a-ak-ta-a-iz-zi* KBo VI 2 I 17 "takes care of a sick person" with suffix [-āi-], [-ā-] from **-āyé/ó-* and a base *[sākta-] "sickness" < **sókto-* {2.4.1.} or nom. pl. c. *i-da-a-la-u-e-es*, e.g. KBo XV 10 I 13, 15, 23, 27, 33 (MH) = [idālauwēs] from [idālu-] "evil" < Pre-Hitt. **edwól-u-* plus animate nominative plural ending [-ēs] < **-éyes* {9.3.1.1.}. Typically, the scribes did not conscientiously or consistently mark both long vowels; instead they marked the long vowel of one syllable or the other, giving the impression that the plene writing shifted. One example is *mālā(i)-* "approve of" = [mālā(i)-], a denominative in *-ā(i)-* < PA **-āyé/ó-* to a **māla-* "good" (or sim.) < **mólo-*: 3 sg. pres. *ma-a-la-i* (NH), 3 pl. *ma-a-la-an-zi* (NH), ptcp. nom.-acc. sg. n. nom.-acc. sg. n. *ma-a-la-an* (NH), beside 2 sg. pres. *ma-la-a-si* (NH), 3 sg. *ma-la-a-i* (NH), 3 sg. pret. *ma-la-a-it* (NH), ptcp. nom. sg. c. *ma-la-a-an-za* (NH), nom.-acc. sg. n. *ma-la-a-an* (NH) beside 2 sg. pres. *ma-a-la-a-si* KUB XL 1 Rs.! 21 (NH) {8.4.1.1.}.

### 1.3.3.6. Long vowels from sound changes other than lengthening under accent

Another argument for analysing plene writing as indicating vowel length is that there are some long vowels spelled with plene writing that arose from phonological processes other than lengthening under accent; this also explains plene writing in more than one syllable in some words. Long vowels in unaccented syllables arose though compensatory lengthening (e.g. nom.-acc. pl. *a-as-su-u* "good(s)" (OH, OH+) = [āssū] < **h$_1$ós-uh$_2$* (*PW* 486–8), *tūriye/a-* "harness" (*tu-u-ri-e-*, OH etc.), either [tūryē-] < **twr̥H-yé-* or [dūryē-] < **dhur̥H-yé-* (cf. *PW* 513–16)), and through monophthongization of *āi* in iteratives in *-skē/a-* from verbs in *-ā(i)-* (e.g. *a-ru-ú-i-is-ke-ez-zi, a-ru-ú-e-es-kan-zi, a-ru-e-es-kan-zi* : *aruwā(i)-* "prostrate oneself") {4.10.1.}. Animate nominative plurals may have an ending [-ēs], spelled *-e-es, -Ce-e-es*, which originiated in *i*-stems through loss of intervocalic **y* and later contraction (**-éyes* > **-ées* > **-ēs* {9.3.1.1.}), but it was extended analogically to root-accented nouns and adjectives (e.g. OH *ma-a-ri-e-es* "spears", Post-OH also *ma-a-ri-i-e-es* = [māryēs]; OH *da-as-sa-u-e-[es* "strong" = [dāssawēs]). It is possible too that reflexes of IE long diphthongs remained long even when unaccented (note, eg. e.g. *sāgāi-* "omen" :acc. sg., *sa-a-ga-a-in* KBo XIV 86 + IV 7 (MH+) = [sāgāi-] < PA **sā́gōi-*. For a fuller account see 2.3.3.1.



Lindeman, *Sprache* 29, takes the plene writing in the final syllable of *a-as-su-u* as an indication of accent, reconstructing **esú* = Gk. ἐύς "good". However, this reconstruction will not explain the /ā/ of the Hittite word.

### 1.3.3.7. Plene writing and synchronic accent, vowel length

A few examples of possible lengthening of vowels as a synchronic process indicated by plene writing have been cited, but none has been confirmed. Oettinger, *Stammbildung* 231, suggests that plene writing in *tu-ua-a-at-tu* "have mercy!" and, *ib.* 188–9, in 2 sg. imp. *ha-a-ni-is* "draw water!" indicates emphatic lengthening (note, however, that plene writing is attested elsewhere in the paradigm of the latter verb, e.g. 3 sg. pres. *ha-a-ni* KBo II 8 I 23 (NH), 3 pl. *ha-a-na-an-zi* KBo XXIII 27 II 30 (U), ptcp. nom. sg. c. *ha-a-an-za* KUB IX 28 II 12 (OH+)). Oettinger also (*loc. cit.*) explains °U-WA- for °U° in the imperative *tu-ua-a-at-tu* "be merciful!" (OH), *tu-ua-ad-* (MH), *du-ua-du* (MH) from a verb *tuttu-* "be merciful" as emphatic lengthening, but [uwa] occurred elsewhere in the paradigm by MH (cf. cf. vbl. noun *du-ua-du-mar* KUB XXX 10 Vs. 10.) {3.7.4.4.}. Eichner, *Lautgesch. u. Etym.* 143–4 n. 64, explains the peculiar spellings with plene writing and gemination in *la-a-am-ma-a-mi-it* KUB I 16 III 13 (OH+) for *la-a-ma-an* "name" as reflecting similar prosodic changes in emphatic speech, and Neu, *StBoT* 18, 67 n. 9, suggests that the unusual plene writing in *pe-ra-a-am-mi-i[t]* "in front of me" in KUB XXXVI 98 + L. 79 (NH copy of OH KBo III 22, which has *pe-e-ra-am-mi-it*) points to a shift of accent onto the second syllable with the addition of the enclitic pronoun. However, such shifts in plene writing with the addition of an enclitic are rare, and these two cases are probably mistakes. It is possible that the plene writing in 2 sg. imp. *li-i-ik* "swear an oath!" KBo IV 14 I 41 (NH) and 2 pl. imp. *le-e-ek-te-en* 942/Z Rs.! 2 (CHD OH/NS), from a paradigm that does not otherwise have plene writing, may, however, have emphatic lengthening.

Some scholars claim that plene writing is omitted from root or final syllables when an enclitic is attached (Kammenhuber, HdO 176–7, Otten-Souček, StBoT 38, 50, Carruba, *StBoT* 32, 31–2, *KZ* 95, 237). From *StBoT* 8 (*StBoT* 25, 2–8) Carruba cites: *a-pa-at-ta* "and that" StBoT 25, 4 IV 29, cf. *a-pa-at-ta[(-)* StBoT 25, 103 Rs. 4 (= dem. pro. *apāt* plus *-a-* "and", cf. *a-pa-a-at*), *a-pa-at-ta-[an]* StBoT 25, 3 I 31 (= *apāt* plus *-a-* "and" plus particle *-an*), *er-ma-as-ma-as-kan* StBoT 25, 4 I 7 (= *ērman* "sickness" plus *-smas-* "their" plus particle *-kan*, cf. *e-er-ma-as-me-et* = *ērman-smet* in StBoT 25, 3 III 11 = 4 III 11 and *e-er-ma-an* in 3 IV 2), *har-sa-a-ar-ra* "and heads" StBoT 25, 4 I 18 (= *harsārr-a*, cf. *har-sa-a-ra* ib. IV 29, *har-sa-a-a[r-r]a* 3 I 23, *har-sa-a-[ar-ra* ib. IV 33). In *StBoT* 2, Carruba cites from KBo XV 25 (MH?) *m]a-a-ah-ha-a[n* Vs. 38, *ma-a-ah-ha-an* Rs 23 but *ma-ah-ha-an-ma-at* Rs 6, *ma-ah-ha-an-ma-as* Rs 13, *ma-ah-ha-an-[ma]* Rs 20). But, since plene writing was not used consistently even within single texts, it is not clear that lack of plene writing is significant in these forms, and Weitenberg, *u*-Stämme 350, and Kimball, *PW* 281 n. 34, 308, 425 n. 5,

note that there are many examples of plene writing before particles: e.g. with plene writing normal for a non-final vowel: *ma-a-ah-ha-an-ma* StBoT 25, 87 L. 7, *[p]e-e-ra-am-mi-it* "in front of me" KBo III 22 Rs. 79 (OH), *pe-e-ra-an-pat* StBoT 25, 54 II 15, *pe-e-ra-as-se-et* "in front of him" StBoT 25, 3 I 33, *pe-]e-ra-as-si-it* StBoT 25, 4 I 25, *pe-e-ra-an-n[a* "and in front" StBoT 25, 27 Rs! 22, *a-pa-a-as-pat* KBo VI 2 I 19, 53, 59 (OH), *a-pa-a-sa* ib. IV 15, *a-pu-u-un-pat* ib. II 32 (= dem. pro. nom. sg. c. *apās,* acc. sg. c. *apūn*). Although as Otten and Souček note, plene writing attested for the last syllable of *ki-is-sa-ri-i* "hand" (StBoT 25, 3 I 28) is missing in *ki-is-sa-ri-is-mi* (= *kissari-smi* "their hand") ib. I 30 and *ki-is-sa-ri-<is>-mi* (StBoT 25, 4 I 15), plene writing occurs elsewhere before enclitics (e.g. *ut-ne-e-t[e-et* "your country" StBoT 25, 122 III 2, *ki-i-ma* "but that" (nom.-acc. sg. n.) StBoT 25, 109 III 10 (beside *ki-ma* ib. III 7 and StBoT 25, 110 III 9), *ke-e-ma* (nom. pl. c.) StBoT 25, 122 II 8, *ke-e-ma* StBoT 25, 137 III 5, *ke-e-ma-as-ta* StBoT 25 109 II 13 (both with nom-acc. pl. n. *kē*), *pa-ra-a-ma* StBoT 25, 97 L. 4, StBoT 25, 110 III 4 (= *parā* "forth" plus *-ma* "but"), *pa-ra-a-ma-as* StBoT 25, 42 II 24 (= *parā* plus *-ma-* plus subject pronoun *-as*), beside *pa!-ra-ma-* StBoT 25, 109 II 17 and *pa-ra-ma-as-ta* StBoT 25, 110 II 2, 22, 27.

Carruba, *KZ* 95, 245, suggests that plene writing in *ma-a-an* "if, like, just as", which is never enclitic, indicates strong independent accent but that the optative particle *man,* which is often enclitic and usually spelled *ma-an,* by contrast, was weakly accented or unaccented. He notes that the optative particle tends to have plene writing when it heads a particle chain. See also Melchert, *AHP* 106–8 for examples of plene spellings that are claimed to represent synchronic lenghthening of accented vowels.

## 1.4. Hyperplene spellings

Hart, *BSOAS* 43 (1980) 3 w. n. 3; Goetze, *JAOS* 74 (1954) 187; Goetze-Pedersen, *MS* 31 n. 1; Melchert, *AHP* 27–29; Oettinger, *MSS* 34 (1976) 136, *Stammbildung* 436–7; Sturtevant, *CGr*$^1$ 65, *CGr*$^2$ 18.

Repetition of two or more isolated vowels, $V_1$-$V_1$-CV, $V_1$-$V_1$-$V_1$C, $CV_1$-$V_1$-$V_1$, and $CV_1$-$V_1$-$V_1$-$V_1$C, often termed hyperplene spelling, is rare in native Hittite words and nativized loanwords. Such spellings are restricted to just a few lexical items and most examples of initial hyperplene spellings involve °A°. Hyperplene spellings should not be confused with spellings for medial closed syllables in -$CV_1$-$V_1$-$V_1$C-, which are by no means uncommon.

### 1.4.1. Of initial vowels

Sturtevant (*CGr*$^1$) claimed that hyperplene spellings occurred only before *r* and nasals, but since then they have been observed in other environments. It has been claimed (Sturtevant, *CGr*$^1$, *CGr*$^2$) that in a few words hyperplene spellings may indicate hiatus after the loss of a medial consonant or point to the existence of weak intervocalic glide (Goetze, Goetze-Pedersen), e.g. *a-a-an-t*° "warm" < **áy-n̥t-, a-a-ri* "is warm" < **áy-ori* {9.3.1.1.}. But initial hyperplene spellings also occur in contexts where they clearly do not indicate hiatus: e.g. *a-a-an-si* "wipes" KUB XXX 41 I 14 (OH+) beside *a-an-si, a-an-* < PA **áms-* {7.8.4.}; *a-a-ra-i-e-er* "arose" KUB XXIX 1 I 4 (OH+) < PA **óry-ēr*. Generally plene writing is omitted in spelling initial long vowels before open syllables (Oettinger, *Stammbildung* 402 n.6, Eichner, *Gds Kronasser* 24 n. 40, Kimball *PW* 640–83) cf. e.g. *a-ki* "dies" (never ***a-a-ki*) = [ā#gi] or *e-ku-na-* "cold" (never ***e-e-ku-na-*) = [ē#gu#na-]), but in a few instances $V_1$-$V_1$-*CV* seems to be an attempt to indicate an initial long vowel in this context: *a-a-ri* "arrives" (e.g. StBoT 25, 71 II 4, III 4, StBoT 25, 112 II 17, 23, KBo XXI 93 I 11, OH+), beside *a-ri* (OH etc. *passim*) = [ā#ri] < **ór-ei* {CR}; *a-a-ra* nom.-acc. pl. n. "right, due, proper concern" (e.g. KUB XXIX 1 I 4, OH+), beside *a-ra* (MH etc.) = [āra] < **áro* {2.4.2.}; *a-a-pi* "sacrificial pit for summoning the underworld gods" (nom.-acc. sg. n. *a-a-pi* e.g. KUB XLI 8 III 13, 17 and dupl. KBo X 45 III 22, 26, both MH+, acc. sg. c. *a-a-pi-in* KBo X 45 III 25) = [ā#bi]. The word is a loanword with Hurrian *ābi* as its intermediate source (see *HED* 1, 99–102, *HEG* 1,47 and Starke, *StBoT* 31, 211–12), and there appears to be no independent reason for positing an immediate preform with intervocalic **y*.

In a few other words it is not clear whether hyperplene spellings indicate hiatus because meanings or etymologies are obscure: $^{LÚ}$*a-a-an-da-as-sa-an* (?) KUB XLIII 53 I 18, *a-a-an-da-as-sa-an* StBoT 25, 9 IV 7 (meaning unclear; see Neu, *StBoT* 26 n. 76 and Kümmel, *StBoT* 3, 90, who tentatively suggests "person with a fever" because of the similarity to *a-a-an-t* ° warm"); *a-a-an-ki-is-sa* Bo 3367 + 7939 Vs. 7 (*HED* 1,73), a (prickly?) green garden plant, beside *a-an-ki-is* ° and *an-ki-s* °.

Hyperplene spellings with vowels other than °A° are extremely rare: e.g. *i-e-ni* "the aforementioned" KUB I 16 III 40 (OH+) beside *e-ni* and *i-ni* = [ēni]; < **ēni* {7.3.2.}; *ha-as-ta-i-i* "bone(s) KUB V 1 I 75, IV 6 (NH) beside *ha-as-ta-(a)-i, ha-as-ta-e* < **h₂ést[H]-ōi* {4.8.2.}; gen. *i-e-es-na-as* "of blood" KUB XVII 18 II 31 (NH), beside *e-es-na-* for [ēssna]- < **h₁ésn-* < **h₁ésh₂n-* {10.1.1.1.}; note also nom.-acc. sg. *i-e-es-sar* e.g. KUB XXIV 13 II 24 (MH+), *i-e-es-sar* KUB XLI 21 IV 4 (MH+) = [ēssar].

Initial hyperplene spellings occur fairly frequently in Cuneiform Luvian, and (*pace* Starke, *StBoT* 31, 101 w.n. 256) they do not inevitably indicate disyllabic pronunciations, but seem instead to be tied in with a general tendency to use plene spellings for initial vowels. One word has *I-I-CV-*, 3 sg. pret. *i-i-ta* "went" (*CLuv. Lex.* 85). Some words with hyperplene spellings have Hittite cognates that do not have plene writing: (Kammenhuber, *HdO* 176, Kimball, *IF* 91 (1986) 87): e.g. *ānniya-* "work, do": 3 sg. pres. *a-a-ni-i-t[i]* (*CLuv. Lex.* 17, *StBoT* 31 101 n. 253); *a-a-an-ta* "into" (*CLuv. Lex.* 18) beside *a-an-t/da, an-t/da;* cf. Hitt. *an-da, an-ta;* $^{SAL/LÚ}$*a-a-an-ni-in-ni-ya-mi-* "cousin" (*CLuv. Lex.* 16, also in Hittite contexts) beside Hitt. *an-na-* "mother".

### 1.4.2. Of medial and final vowels

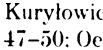
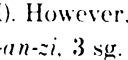
Medial and final hyperplene spellings are also extremely rare. A few may indicate hiatus, e.g. and nom.-acc. pl. neut. *su-u-ú* "full" (beside *su-u*) < **séuh₃-u-*, acc. sg. *su-u-ú-un* e.g. KBo XXV 72 L. 20 (OH?/MH?) < **séuh₃-u-n* (or based on nom.-acc. pl. n. *su-u-ú?*). {10.4.3.}; *la-a-a* 2 sg. imp. of *lā(i)-* "loosen", e.g. KBo XI 14 II 16, 18 (MH) < **loh₁-éye/o-* (Melchert, *SHHP* 37–8). Hiatus is also possible in *me-e-e-ni* KUB XLII 105 III 6 (NH) and *me-i-e-ni* ABoT 1 I 3 (Pre-NH) with hyperplene and I for OH /ē/ for *(witti) me-e-ni* < *mē(y)ani* = [mēyan°] < [mēan°] < **méh₁-h₃on-* {9.3.1.3.}, but hiatus is unlikely

in *si-i-e-ni-it* KBo XV 34 II 8 (MH+), instrumental singular of *sīna-* "figure" (OH *si-i-na-*) and *ha-as-sa-u-ú-i*, KUB VII 7 L. 8 (OH+), dative-locative singular of *hassu-* "king". The spelling *ku-i-e-en-zi* for [gʷēntsi] "(s)he kills" < **gʷhénti* with "mixed" hyperplene writing {1.6.3.5.} is virtually unparalleled, and hiatus is impossible here.

## 1.5. Vowel doubling not indicating vowel length

Carruba, *KZ* 95 (1981) 233; Kronasser, *EHS* 34, 36; Kuryłowicz, *PICL* 8, 218; Melchert, *SHHP* 86–7; Neu, *StBoT* 25, XIII; Otten-Souček, *StBoT* 8 47–50; Oettinger, *Stambildung* 436–7 n. 91; Pedersen, *Hitt.* 6–7; Rosenkranz, *Vgl. Unters.* 30; Sturtevant, *CGr*$^1$ 64, *CGr*$^2$ 23–4; Weitenberg, *u*-Stämme 346, 349, 351.

The only certain example is HU-U-, written as a ligature in Empire period texts and read [hu]. Other examples that have been cited either indicate long vowels or post consonantal glides.

Pedersen, *Hitt.* 6–7, Kuryłowicz, *PICL* 8, 218, and Otten-Souček 47–50, note that the spellings CU-Ú-WA and CU-U-WA would have indicated that the sign  was to be read /wa/ rather than /pi/, /pe/, /bi/, or /be/, values it had in the Assyrian ductus. However,  was not used in these values in writing Hittite, and it would not have needed disambiguation. Oettinger, *Stammbildung* 436–7 n. 91, claims that in 3 sg. pres. *a-a-an-si* "(s)he wipes" the hyperplene writing disambiguates the reading (cf. DINGIR$^{LIM}$ "divinity" =  , or, AN-SI). However, plene writing occurs elsewhere in the paradigm (e.g. 3 pl. pres. *a-an-sa-an-zi*, 3 sg. pret. *a-an-as*, imp. *a-an-as-du*, it. *a-an-as-ke-*). There is no independent evidence for reading CU-U-UN as [Cuʷn] with Weitenberg, *u*-Stämme 346, 349, 351.

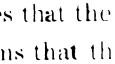
It is widely held that plene writing of °E° and °I° served to distinguish /e/ and /i/ when these vowels could only be written with ambiguous signs. In part, this view is encouraged by transcriptions with CI and IC as default values for ambiguous signs, e.g. *pi-e-da-an* = [pedan] "place", *ú-e-ik-zi* = [wektsi] "asks for" (Hart, *BSOAS* 43, 1–2, 4, 5, Kronasser, Kuryłowicz, *PICL* 8, 218, Otten-Souček, *StBoT* 8, 54–50, Pedersen, *Hitt.* 6–7, Rosenkranz, *Vgl. Unters.* 30, Sturtevant, *CGr*$^1$ 64, *CGr*$^2$ 23–4, Weitenberg, *u*-Stämme 349). Melchert and Neu, who use CE and EC when these values are supported by plene writing or other evidence (i.e. *pe-e-da-an*, *pe-da-an*, *ú-e-ek-zi*, *ú-ek-zi*), also mention plene writing as disambiguating vowel color. Since plene writing of °E° is frequent, especially in early texts, before and after unambiguous signs (e.g. *se-e-es-zi* "sleeps", *e-es-mi* "I am", *ne-e-pi-is* "heaven"), use in this environment is explained as an analogical extension of the spelling with plene writing to contexts where it was not necessary. Although Carruba, *KZ* 95, 233, views this use of plene writing with skepticism, since he posits merger of /e/ and /i/, other scholars who also posit merger, view the spellings with plene writing as etymological (Hart, Otten-Souček, Sturtevant).

Although such plene spellings may disambiguate vowel color for modern scholars, it is not certain, however, that the Hittites themselves used plene writing in this function. It is important to remember that the scribes were writing their native language. Spellings that are ambiguous or confusing to us need not have confused them. A scribe reading his native language would know from context what value to assign an ambiguous sign. For example, *a-ku-wa-a-an-na ú-e*-E/IK-*zi* would have been readily interpretable as [agʷānna wēktsi] "(s)he asks for water" without any need to disambiguate the vowel of the verb. This is the sort of cognitive task English speakers do when they distinguish *gh* as /f/ in *enough* or *laugh*, as Ø in *through* and as indicating a diphthong /ai/ in *night*, or when they sort out the pronunciation and meaning of *bow* in context. We have no reason to believe that Hittite scribes were any less capable of such discrimination than literate 20th century English speakers.

Plene writing of °E° is also paralleled by plene writing of °A°, occurring, for example, where an accented *e*-grade would be expected or where a long vowel from another process would be likely. It is not clear either why, if plene writing was used to disambiguate vowel color, plene writing of °I°, which should presumably have unambiguously indicated /ī/ or /i/, is much less frequent than plene writing of °E°.

### 1.5.1. HU-U-

Kimball, *PW* 566–7; Kronasser, *EHS* 28; Rosenkranz, *Fs Friedrich* 420 w. n. 10, *Beitr. Luv.* 33, *ZA NF* 20 (1961) 109.

A spelling HU-U occurs fairly frequently in texts written during the NH period in contexts where a long vowel is unlikely. Rosenkranz, Kronasser, and Kimball suggest that this spelling differentiated HU from the similar-looking RI TAL. Kimball notes that the HU and U are usually written close together as a ligature  and claims that this is a spelling innovation of the NH period. The earliest examples, however, appear to be MH, although the spelling only becomes common in texts written in the NH period.

HU-U is used for etymological [hw] in e.g. *huēk-* "slaughter", 3 sg. pres. *hu-u-e-ek-zi* KUB XVII 24 III 3 (NH), pret. *hu-u-e-ek-ta* KBo XXII 6 I 18 (OH+); *hues-* "live, be alive": 3 sg. pres. *hu-u-i[s-zi* KUB XXIX 33 II 6 (OH+); *huisu-* "alive, raw": nom.-acc. sg. n. *hu-u-e-su* KBo IV 9 I 12 (OH+), KBo XXVI 159 L. 7 (NH), *hu-u-i-su* KBo III 63 II 11 (OH+), KBo XXII 180 I 9, 13 (NH), KUB XVII 24 II 7 (NH) = [hwēsu] < **h₂wésu-* {11.4.1.2.}; *huis(s)uē-* "be/stay alive": 3 sg. *hu-u-is-su-u-ez-zi* KBo V 3 III 31 (NH copy of text of Supp.I, = *hu-is-su-ez-zi* in dup. KBo XIX 44 Rs. 19); *huis(s)uant-* "alive": acc. sg. c. *hu-u-i-is-wa!-an-da-an* KBo III 38 Rs. 25 (OH+) = [hwiss-] < **h₂wes-* {11.5.3.2.}; *huēttḫ(iya)-* "pull, drag, draw": 1 sg. pres. act. *hu-u-et-ti-ya-mi* VBoT 24 III 13 (MH+), 2 pl. *hu-u-et-ti-ya-at-te-ni* KUB XIII 6 II 9 (MH(?)+), 3 pl. pres. act. *hu-u-i-it-ti-ya-an-zi* KUB II 5 I 8 (OH+), midd. *hu-u-et-ti-ya-an-ta* KBo VI 26 IV 5 (OH+), 1 sg. pret. act. *hu-u-i-it-ti-ya-nu-un* KBo II 5 II 3 (NH, *hu-it-ti-ya-nu-un* ib. III 50), dur. 3 sg. pres. *hu-u-i-it-ti-ya-an-na-i* KUB XXXII 8 III 8 (NH), it. 3 sg. imp. act. *hu-u-i-it-ti-ya-an-ni!-is-ke-ed-du* KUB XXVIII 29 II 29 (OH+) = [hwētt(ya)-] < **h₂wédh₂-(yo-)* {10.7.1.}.

HU-U- is found in the reflex of an unaccented zero-grade in *huēk-* "conjure": 3 pl. pres. *hu-u-kan-zi*, e.g. KUB XVII 24 II 13, 15 (NH), 1 pl. pret. *hu-u-ga-u-en* KUB XVIII 12 Vs. 13 (U), ptcp. acc. pl. c. *hu-u-kan-du-us* KUB XXV 27 II 23 (MH+), gen./dat.-loc. pl. *hu-u-ga-an-da-as* KUB VII 1 II 13 (Pre-NH) = *hu-u-ug-an-ta-as* in dup.

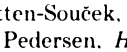
KBo XXII 145 II 5), inf. *hu-u-kan-na* KUB XVII 24 II 14, it. *hu-u-uk-ki-is-ke-ez-zi* KUB XXXII 8 III 10 (OH+); *huēk-, huk-* "strike, slaughter": 3 pl. pres. *hu-u-kan-zi* e.g. KUB XXXVI 89 Vs. 4 (NH), KUB VII 5 III 3 (MH+), KUB LIII 4 Rs. 23, 37, 38 (but *hu-kan-zi* Vs. 16, *hu-k[an-zi* Vs. 17, *h]u-kan-zi* Vs. 18), inf. *hu-u-kan-na* KUB LIII 4 Rs. 10, vbl. noun nom.-acc. sg. *hu-u-ga-tar* KUB LIII 4 Rs 15 (Pre-NH), dat.-loc. sg. *hu-u-ke-es-ni* KUB XXX 32 IV 14 (NH), inf. *hu-u-ga-an-na* KBo XXIX 72 + XIV 96 Vs. 8 (NH), *hu-u-kan-na* KUB LIII 4 Rs 10 (Pre-NH), it. 3 pl. pres. *hu-u-ki-is-kan-zi* e.g. KBo XV 33 III 28 (MH), KUB LIII 4 Rs. 10, *hu-u-ke-es-kan-zi* KUB XXII 27 IV 7 (OH+), sup. *hu-uk-ki-is-ke-u-wa-an* KUB XLIII 4 Rs. 9 = [hūg-], [hūkskē-] < **ḫ̯ug(h)-, *ḫ̯ug(h)-skē-* {4.7.5.}.

These spellings should not be confused with genuine indications of a sequence /h/ or /ḫ/ followed by /ū/. The latter can also be spelled HU-Ú- (e.g. *hu-ú-ni-ik-zi* "batters, damages" KBo VI 2 I 16 (OH) beside *hu-u-ni-ik-zi* ib. I 13, ptcp. nom. sg. c. *hu-u-ni-kan-za* ib. I 15, *hu-u-ni-in-kan-za* ib. I 14, perhaps = [hūniŋg-] < Pre-Hitt. **húnēng-* with accented shifted to the initial syllable). Spellings for [hū] or [ḫū] should occur in early texts and be found more consistently than the ligature (e.g. *hu-u-t/da-* "haste", *hu-u-d/ta-a-ak* "straightaway, forthwith" with [hūda-] < **ḫ̯uhɪ-to-*, spelled with HU-U- from MH on {6.4.4.3.}) and they should be restricted to syllables in which a long vowel from accented **u*, *u*-diphthong or from **uH* is likely. The etymology of *hu-u-ma-an-t°/d°* "all" is not known, but the early and frequent spellings with HU-U- suggest a long vowel.

## 1.6. Spellings for front vowels

Carruba, *KZ* 95 (1981) 233; Crossland, *TPS* 1951, 123–4; Eichner, *Lautgesch. u. Etym.* 141–3; Friedrich, *ZA NF* 5 (1929) 45 n. 1, *HE* 25; Kimball, *PW* 55–97; Kronasser, *VLFH* 37–8, *EHS* 19–20; Melchert, *SHHP* 78–156, *AHP* 25–6; Neu, *StBoT* 18, 38 n. 6; Otten-Souček, *StBoT* 8, 56–7; Oettinger, *Stammbildung* 533–45, *Gds Kronasser* 163 w.n. 3; Pedersen, *Hitt.* 5–6; Riemschneider, *Fs Otten*[1] 276–81; Rosenkranz, *Vgl. Unt.* 36; Sturtevant, *CGr*[1] 52, *Language* 18 (1942) 181–6, *CGr*[2], 29–30; Zinko, *Vertretung* 28, 52–3, 61, 63.

The interpretation of spellings for front vowels is one of the most difficult areas in Hittite phonology because many signs in the cuneiform syllabary used by the Hittites can be read either as CE, EC, CEV or CI, IC, CIV depending on context. The ambiguity of signs to modern scholars has also influenced interpretations of the language's phonology. Systems of transliteration may increase the amount of apparent variation without providing evidence for or against a phonemic distinction between /e/ and /i/ or /ē/ and /ī/. In a system of transcription in which ambiguous signs are assigned a default value °I° transcriptions with °I° cannot be used as evidence for merger or conditioned sound change. For example *pi-da-an, pi-di* (= *pe-da-an, pe-di*) beside *pi-e-da-an* and *pi-e-di* (= *pe-e-da-an, pe-e-di*) do not by themselves provide evidence for a change of /e/ or /ē/ to /i/.

The prevalence of ambiguous signs may also have encouraged scribes to use ostensibly unambiguous signs with both E-values and I-values. Even in OH, instances of apparent variation can be explained this way (Melchert, *SHHP*, 83–4): e.g. with TE for TI, DI: dat. *pe-te* "place" (= *pe-(e)ti/di*) StBoT 25, 32 L. 9; NE for NI *a-ne-e-mi* StBoT 25, 3 II 2, *a-ne-e-[nu-un* KBo III 22 Rs, 48 = [anyēmi], [anyēnun] : *aniya-* "work, do"; NI for NE *ga-ni-es-zi* KBo XXII 2 Vs. 17, KBo VI 2 I 43, 46, *ga-ni-es-ser* KBo XXII 2 Vs. 18 (cf. *ga-ne-es-zi* ib. KBo VI 2 I 38, *ga-ne-[es-zi* III 33, *g]a-n[e-es-zi* III 38), *ga-ni-es-ser* = [gnēss-] : *ganess-* "recognize"; with MI for ME *pe-e-tu-mi-ni* StBoT 25, 3 I 27, *pe-e-tu-mi-en* KBo IX 73 Vs. 4 beside *pe-du-me-ni* StBoT 25, 4 I 25 and *pe-e-tu-me-(e)-ni;* with SI for SE(?) *wa-as-se-e[z-zi* StBoT 25, 63 Rs? 3; *wa[-as]-s[i]-X* ib. Vs.? 10 (reading considered questionable by Neu, StBoT 26 n. 62); with plene writing: *]ku-e-in[-* KBo IX 73 Vs. 15 (for *ku-e-en[-*"kill"?); *ni-e-ku-sum-mu-us* "our sisters" KBo XXII 2 Vs. 18 beside *ni-ku-us-mu-us* "our sisters" ib. Vs. 19 (stem [nēga-]); *ti-e-pu* "(a) little" StBoT 25, 23 Rs. 7 (for *te-e-pu* = [dēbu]). The genitive of the first person plural personal pronoun is spelled *an-zi-X* in KBo XXII 2 Vs. 12 (cf. also *an-zi-la-wa-ra-at* StBoT 25, 103 I 6). Otten (*StBoT* 17, 6) restores *an-zi-l[a]* and Melchert (*SHHP* 94 n. 38) restores *an-zi-l[a]* with *-a-* "but". The expected spelling should probably be *an-zé-e-el* (or *an-zi-e-el* with ZI for [antsēl] < **n̥sé-*. However, ZÉ is rare in OH and ZI was normally used in its stead (see Melchert, *loc. cit.*). Oettinger, *Stammbildung* 135 n. 3, notes that NI might have been used as a shorter alternative for NE (e.g. *ha-ni-es-te-ni* and in verbs in [ŋK] such as *sar-ni-en-ki-is-ki-mi)*. He also (*Gds Kronasser*) notes the common use of MI for ME (i.e. as MÉ) in graphic medial syllables (e.g. *sa-mi-en-ta, ha-me-in-k/ha-mi-en-k*), although MI (  ) is more complex than ME (  ). Such spellings are very frequent NH texts as are spellings with CI-IC for OH /ē/.

### 1.6.1. Loss of a phonemic distinction

A widespread view endorsed by Kronasser and Friedrich in their handbooks, and implied, for example, in the alphabetization adopted by Kammenhuber for *HW*[2] and Hoffner-Güterbock for *CHD* is that variation in spelling shows that /e/ and /i/ were not distinct phonemes. Friedrich suggests that spelling variation indicates that /e/ was a close vowel approaching /i/ (/I/?) in pronunciation. A competing view, that lack of variation, especially in the spelling of common words, indicates an original phonemic distinction that was lost at some point, perhaps even earlier than the oldest texts that have yet been found, but was artificially preserved by traditional spellings has also won adherents.

#### 1.6.1.1. Early merger

Sturtevant, *Language* 18, who examined a corpus of texts, posited a phonemic distinction in the earliest phases of the language that was later lost. In Sturtevant's view apparent lack of variation could be attributed to a conservative spelling tradition. It should be noted that the only old ductus text in Sturtevant's corpus was KBo VI 2, the Old Hittite copy of the Law Code. Sturtevant's conclusions were accepted by Crossland and Rosenkranz, and similar conclusions were reached by Otten-Souček, Neu, Carruba, Zinko, Hoffner-Güterbock and Kimball. Crossland, *TPS* 1951, 123–4, suggested that the phonemic distinction had been lost by the historical period and that reflexes of **ē*, **ēi*, and **ei* were more commonly written with °I° than reflexes of **i*, and **ī* were written with °E°.

In the preface to *CHD* (3/1 (1980) xvi), Hoffner and Güterbock claim that /e/ and /i/ were kept apart in texts in typical old script but had begun to merge by the end of the OH period and had completely merged by the Empire period. Otten-Souček, though noting some variation in the texts they edited, claim a phonemic distinction for Old Hittite (old ductus) texts that was lost after the OH period. Neu expresses reservations about a merger but notes that **e* remained in *ēs-* "be" (*e-es-mi* etc.) while the thematic vowel of iteratives in *-ske/a-* had become *-i-* in OH. Carruba posits an original distinction and merger by the OH period. Kimball posits a phonemic distinction in OH that was lost through merger sometime in the MH period.

## 1.6.2. Phonemic distinction

Other scholars have worked with a phonemic distinction at all periods. Oettinger, Eichner, Riemschneider, and Melchert have each presented evidence for a distinction from spellings that do not vary, and each explains apparent exceptions with °I° for expected /ē/ or /ĕ/ or with °E° for expected /ī/ or /ĭ/ as results of conditioned sound change, analogy, or orthographic practice.

### 1.6.2.1. Oettinger's views

Oettinger, *Stammbildung* 533–45, provides spellings for **ĕ*, **ē*, and **ei* according to position in the word and signs available for spelling the vowel and accepts a phonemic distinction between /ĕ/, /ē/, and /i/ for all periods of the language. He posits raising of **e* to /i/ in initial and final syllables, and in syllables preceding a syllable with /i/ or /ī/, a change he calls *i*-umlaut (e.g. OH *ú-i-it-ti* dat.-loc. sg. "year" < **wét-i* < **wét-ei*).

As Melchert notes, Oettinger's survey of spellings does not provide adequate evidence to establish a phonemic distinction. Oettinger does not, for example, systematically contrast spellings for /i/ with those for /ē/ and /ĕ/ (*SHHP* 79). He also does not treat ambiguous signs in a systematic fashion: thus *it-ri-(ya)-* "feed" (beside *e-et-ri-(ya-)*) is cited as showing raising of initial **ē*, and *pi-di*, dat.-loc. of *pēdan* "place" (beside *pe-e-di*, *pe-e-ti*) is cited as showing raising of /ĕ/ by *i*-umlaut, but the ambiguous signs in *hu-it-t°* "lead, draw" (beside *hu-e-iz-ta*), *ku-ir-zi* "cuts" (beside *ku-e-ir-zi*), *tu-ik-ka-* "body, self" (beside *tu-e-ik-ka-*) and in *ki-ir-*, *gi-ir-* "heart" (Oettinger's transcriptions) are to be read with /ĕ/. Oettinger does note variation in spellings with unambiguous signs after Ú and CU (e.g. in *ú-e-te-n°* beside *ú-i-te-n°* in the oblique stem of *wātar* "water", *ú-i-mi-ya-* beside *ú-e-mi-ya-* "find" and *ku-i-en-zi* beside *ku-(e)-en-zi* "kills"), but does not explain how these are to be reconciled with a phonemic distinction. Although there is evidence for raising of final **e* in OH {3.2.1.7.}, the evidence does not support raising of initial **e* {3.2.1.1.} or *i*-umlaut {3.6.3}.

### 1.6.2.2. Eichner's views

Eichner, *Lautgesch. u. Etym.* 142 n. 62, stressing the consistency of spellings for many words, gives examples of words that do not show variation in NH texts. He also cites apparent examples of *e/i* variation in OH texts (142–3) that may be explained as the result of sound change or analogy (e.g. OH third person singular enclitic personal pronoun *-sse* < *-*soi*, but *-ssi* in MH and NH with analogical /i/ from the dative possessive *-ssi*; OH first person singular present *hi*-conjugation ending *-hé* < PA **-h₂ai* "normalized" to *-hi* with *-i* from the *mi*-conjugation present (142); *u*-stem vocative *-i/e* (e.g. in the word for "king" LUGAL-*i* LUGAL-*e*) with substitution of *-i* for expected *-e* (142–3 n. 63).



### 1.6.2.3. Riemschneider's views

Riemschneider's conclusions are based on a study of spellings for velar stop plus front vowel. He argues that while the sign KE/I could represent velar stop plus /e/ or /i/, the sign GE/I was used only in the value /ge/ (i.e. velar stop plus /e/). He claims (276) that alternating spellings with GE/I beside KE/I are rare, words being typically spelled with one sign or the other. He observes (276–7) that while plene writing *ki-i-* and *ke-e-* is common, GE/I is usually not followed by plene writing, and *ge-e-*, when it occurs, alternates with KE/I = [ke] or [ge] or with *ke-e-*, but never with *ki-i-*. Note, however, that the spellings *ki-i-nu-*, *ge-e-nu-* and *gi-i-nu-* are found for *kīnu-* "open a vessel" < **gih₁-n(e)u-* {1.6.3.2.}, and *ge-e-* occurs in *gēnu-* "knee" {7.3.1.1.}.

### 1.6.2.4. Melchert's views

Melchert's work is a careful, philologically based study of spellings for front vowels by source from a corpus of original compositions from OH, MH, and NH. He works with a system of three short front vowels: a close /ę/ (from monophthongized *i*-diphthongs and sequences of **Vh₁y*), a more open /e/ (IE **e*, **ē*?), and /i/ (IE **i*, **ī*?, **iH*?). These vowels, he suggests, were probably opposed to long counterparts /ę̄/ (IE **ēi*?), /ē/ (IE **ē* and **eh₁*), and /ī/ (IE **ī* and **i*), but he finds no consistent evidence from orthography for a length distinction, regarding plene writing of front vowels as primarily an indication of vowel color. He finds evidence for a phonemic distinction between /e/ and /i/ in texts of all periods, but finds evidence suggesting merger of /ę/ and /i/ in texts from the reigns of Tudhaliya IV and Suppiluliuma II.

He explains many apparent examples of variation as reflecting conditioned sound change, analogy, or changes in scribal practice. Melchert demonstrates that many apparent examples in OH of /i/ for expected /e/ involve raising of inherited **e* or **ē*. He quite rightly does not accept spellings with ambiguous signs transcribed with °I° as evidence for variation, merger, or sound change. The conditioned sound changes he accepts or proposes for OH are for the most part plausible and well supported by the evidence of the texts; these include raising of **e* to /i/ before nasal plus nasal or nasal plus velar (193–4), raising of unaccented **e* to /i/ (104–6), and raising of **ē* after **h₂* (111–12). Some of his explanations for variation in OH are more open to question as are some of his proposals for sound change and variation in MH and NH (e.g. the claim (153–5) that OH /i/ was lowered to /e/ in NH before obstruent clusters followed by heterosyllabic /a/ {see 3.4.}).

The variation in OH that Melchert describes as conditioned which seems most open to question is spellings with free-standing E or I after /w/ spelled Ú or CU. This is also a context in which variation seems especially frequent in later texts. A few examples occur in OH originals: *wēlt-* "year" in *ú-e-et-ta-[an-na-an-da-an-ni*,

dative-locative of *wettannandātar* "(new) year's festival" KBo III 22 Rs 64 beside *wītt-* in dat.-loc. sg. *ú-i-it-ti* KUB XXIX 32 L. 2 and gen. pl. *ú-i-ſit-ta-an-na* StBoT 251 I 2 and the ambiguous spelling *ú-E/It-ti* KBo III 22 Vs. 10 < IE **wét-* "year"; *wete-* "build" (3 sg. pres. *ú-e-te-ez-zi* KUB XXIX 29 vs 6, ptcp. nom.-acc. sg. n. *ú-e-ta-an* StBoT 25, 140 Rs. 16 beside acc. pl. c. *ú-i-ta-an-tu-us* KUB XXXVI 108 Vs. 6, 8) probably from **we-dheh$_1$-* (original position of the accent unclear {see {2.9.1.1.} for a possible explanation of the variation}; and *ú-i-it* "came" in StBoT 25, 123 L. 4 beside *ú-e-et*, which could have have /ī/ from < **ei* {4.3.2.3.}; (but note *ha-an-ti-iz-zi-an* for *ha-an-te-ez-zi-* "first" ib. L. 8). Melchert adds *tuh-hu-es-sar*, a substance used for purification, (e.g. StBoT 25, 36 III 3, StBoT 25, 73 L. col. 6) beside *tuh-hu-is-sar* (StBoT 25, 27 Rs! 17), but this might be explainable as IŠ for EŠ. In *pal-ú-i[s-ke-ez-zi* (?) StBoT 25, 69 II 6 (?) beside *pa[l-ú-e-es-kan-zi* StBoT 25, 76 L. col. 9 : *palwā(i)-* "recite(?)" the front vowel is the product of a late monophthongization of /ai/ or /āi/, and it is possible that it was an especially close vowel different from OH /ē/ from inherited **é*, **ḗ*, and **eh$_1$*. Variation between *(C)e-e-es-k°* and *(C)i-i-is-k°* is extensive in Post-OH iteratives from verbs in *-ā(i)-* {4.10.1}.

Melchert (112–13) posits sporadic raising of **e* to /i/ between /w/ and a dental obstruent in OH and later texts. These spellings may instead be artifacts of the writing system, and the apparent conditioning may be a product of limited sample size. To spell a sequence of /w/ plus front vowel the scribe normally had to use a free standing vowel sign E or I (the sign WI was not introduced until NH and it is fairly uncommon). Variation after Ú and CU also occurs in Post-OH texts and is not confined to contexts where the following consonant is a dental obstruent {1.6.3.3.}. It is difficult to see how a scribe in whose mind a phonemic distinction between front vowels was firmly entrenched would have chosen I when he meant to write /wē/ or /wĕ/ or E when he meant to write /wī/ or /wĭ/. Even in OH the spellings may, therefore, indicate the beginnings of merger.

Melchert restricted his Post-OH corpus to MH and NH historical texts that could be securely dated to the reigns of particular kings. His reason for doing so was to exclude later copies of OH and MH material in which, as he explains (81 n. 4), the scribe copying a text might not only have reproduced archaic features from the archetype, he may also have misused or distorted them. Melchert notes that copies do show variation between °E° and °I°, but explains that since there was some change in the distribution of /e/ and /i/ from OH to NH, a scribe looking at an OH archetype would be confronted with spellings that suggested a pronunciation alien to him, he might not understand the rationale for the distribution of °E° and °I°, and in attempting to imitate the older phonemic system he would make mistakes that would lead to the production of "linguistically unreal forms which never existed".

Melchert is right to view the evidence of copies with skepticism, since false archaisms are well known from such texts. But by excluding copies from his study, Melchert deprives himself of an important source of evidence for loss of phonemic distinctions. Melchert assumes that copies were visual copies, i.e. that the scribe making a copy was looking at the archetype and making a transcription of what he saw. But it is possible that at least some copies were "oral" copies. That is, they were made by having one scribe read the archetype out loud and another or others transcribe what they heard.{0.4.}. It seems likely that under these circumstances differences between the phonemic system of the NH scribe and that of the OH archetype could lead to a higher proportion of mistakes in copies than in contemporaneous compositions taken down from dictation (although spellings with I for expected /ē/, /ĕ/ and with E for expected /ī/, /ĭ/ also occur in original compositions). False archaisms themselves can be very valuable evidence because of what they reveal about the scribe's linguistic system. Perhaps "mixed" plene and hyperplene spellings such as *ku-i-e-en-zi* "kills" for OH *ku-e-e-en-zi* = [g$^{w}$ēntsi] or *ú-i-el-ku-(wa)* "grass, hay" for *ú-e-el-ku-(wa)* = [wēlku-] < **wélĥu-* can be viewed as false archaisms based on the idea that archaic texts had plene writing more frequently than contemporary compostions written by scribes for whom the choice between using E or I as repeating vowel had no basis in linguistic reality.



### 1.6.2.5. Kimball's views

Kimball (*PW* 55–97) argues that a relative lack of variation that cannot be explained by conditioned sound change or borrowing in OH originals indicates that /ē/ and /ī/ and /e/ and /i/ had not merged in OH. She contends that increasing variation in MH and NH texts suggests that the front vowels started to merge in /ī/ and /ĭ/ at some point in MH and had completed this merger by the NH period. Like Melchert, she excludes spellings with ambiguous signs transcribed with °I° as evidence for variation, sound change, or merger. As evidence for her claim she presents OH spellings for words or morphemes with front vowels, systematically comparing them with MH and NH examples (including copies of OH and MH texts) that show variation, e.g. p. 59 OH spellings for the iterative suffix [-ske-] in *°s-ke-e(C)* compared with MH and later spellings in *°s-ki-i(C)* (59–60), OH *kat-ti-* "with" plus enclitic personal pronoun beside *kat-te-* in later copies (66–7). Note, however, that examples such as it. 3 sg. pres. *zi-ik-ki-i-it* KUB XXIV 4 + Rs 6 (MH, for *°s-ke-e-et* = OH [-skēt] < **-(s)ké-t* could be explained as analogical from the second person singular imperative in *°s-ki-i* = [skī], which has raising of final **e* {3.2.1.7.}. The three other examples of Post-OH spellings in *s-k-ki-i* Kimball cites are of second person singular imperatives. She notes spellings with unambiguous signs in the "wrong" value in both OH and in later texts, claiming them as evidence for merger or the beginnings of merger, and implies that they are more frequent in Post-OH texts than they are in later ones. Although this study is philologically based, Kimball does not consider whether the relatively low level of variation she finds in OH originals might be comparable to the level of variation in the wider corpus from which her Post-OH spellings are drawn.

## 1.6.3. Comparison of variation in OH with variation in later texts

I am excluding from consideration words for which Melchert posits NH lowering of OH /i/ (/ī/) before obstruent clusters followed by heterosyllabic /a/. This is not an unlikely context for lowering, but if evidence from copies is considered, the shift from spellings with °I° to those with °E° is somewhat earlier than Melchert suggests (see {3.4.}).

Use of the free standing signs E and I should be especially revealing. Though the large number of signs that were ambiguous (including signs readable as CEC or CIC) may have encouraged scribes to regard any sign with a front vowel as potentially ambiguous, it is unlikely that a scribe who did distinguish front vowels in his own grammar would have had any reason to treat E and I as ambiguous. Contexts in which free standing E and I would be used include spellings for front vowels after Ú and *Cu* = /w/ and [Cw], initial and final open syllables (i.e. E-EC-, I-IC- and -CE-E, -CI-I) and plene spellings for long vowels. Here we can distinguish between "mixed" plene spellings and hyperplene spellings and signs used in the etymologically "wrong" value with plene writing. Mixed plene spellings are instances where a free standing I or E is used before or after a sign in the "right" etymological value but clashes with the value of the sign it precedes or follows (e.g. *ku-i-en-zi* for [gʷēntsi] "kills" or $^{URU}$*Ne-i-sa* for *Ne-e-sa*), and mixed hyperplene spellings are those in which two repeating vowels clash (e.g. *ku-i-e-da-ni* = [kʷēdani]). Although the use of signs in the wrong values may have been encouraged by the existence of ambiguous signs, it seems unlikely that a scribe with a phonemic distinction would have chosen to precede or follow an unambiguous sign in the "correct" value with a clashing free standing sign. The interpretation of spellings such as *ti-e-pu* is different. If the scribe were using TI in the value TE, then the choice of E is logical, and the spelling is essentially a normal plene spelling (i.e. TÉ-*e-pu*) comparable to e.g. *pe-e-da-an* (= PE/I-*da-an*).

If examples of apparent variation in Post-OH texts are compared with examples of apparent variation from OH texts significant differences emerge. While virtually all examples from OH can be explained as resulting from orthographic, phonological, or other linguistic factors, there is a small residue of spellings in Post-OH texts that seem best explainable if we assume unconditioned merger at least of long front vowels.

### 1.6.3.1. Spellings with CI-I-(IC) and (CI)-I-IC for OH /ē/

*hu-u-i-it-ti-ya-nu-ut* 3 sg. pret. of *huēltiya-* "drag, draw" KBo II 5 II 3 (NH; for more examples see {2.10.1.}), cf. OH 3 pl. midd. *hu-(e)-et-ti-an-ta* (Law code) = [hwēttya-] < **h₂wédh₂-yo-* {10.7.1.}; *tu-i-ik-ku-us* KUB VII 1 I 40 (Pre-NH), *tu-u-i-ig-ga-as* ib. I 31 for *tu-e-ek-ka-*, *tu-e-eg-ga-* "body, self" = OH *[twēka-] < **twéko-* {2.4.3.} (though this text, a copy of an earlier archetype, is notorious for its peculiar forms); *ti-i-it* "said" KBo III 36 I 24 (OH+) for *te-e-et* = [tēt] {2.9.1.1.}. An additional example might be provided by *su-ú-i-il* "thread" KUB XII 51 I 8 (NH) beside *su-u-e-el* (MH?/NH?), if this is [suwēl] from **suh₁-él* {10.4.1.}

### 1.6.3.2. Spellings with CE-E-(EC) and (CE)-E-EC for OH /ī/

OH *si-i-na-* "figure" (e.g. acc. sg. *si-i-na-an* StBoT 25, 3 I 3, IV 18 = 4 IV 14, dat. sg. *si-i-ni* StBoT 25, 3 IV 30 = 4 IV 26) but Post-OH *se-e-na-* (e.g. nom. sg. *se-e-na-as* KBo XV 2 Vs. 16 (NH), KUB XXVII 38 I 19 (NH), acc. *se-e-na-an* KBo XV 2 Vs. 6, dat.-loc. *se-e-ni* in dup. KUB XVII 14 Rs. 13, etymology unknown); *inu-* "make warm" 3 sg. pres. *e-nu-zi* KUB XLIV 61 Rs. 20, NH) beside OH *i-nu-ut-te-en* = stem [inu-] < **i-n(e)u-* {4.5.1.3.}; *līla-* "pacification, conciliation": gen. sg. *le-e-la-as* KBo II 8 I 15 (NH), KUB IX 15 II 24 (NH) beside dir. *li-i-la* (NH) = [līla-] < **lílloh₁-o-*, cf.



denominative *līlā(i)-* "pacify, conciliate": 3 sg. imp. *le-e-la-ad-d[u* KUB XLI 19 Vs. 12 (MH+, cf. 3 sg. pret. *li-la-a-it* ib. Vs. 17) {2.4.4.1.}; dat. *hi-e-e[l]-li* "enclosure" KBo XIX 145 III 44 (U) for *hi-i-li* "courtyard" (with rare °L-L° for °L° = [hīla-] < **h₂élo-* {2.8.5.2, 8.4.2.1.}; *kīnu-* "open a vessel": 3 pl. *ke-e-nu-wa-an-zi* KUB XXV 23 IV 51 (NH), *ge-e-nu-an-zi* KBo II 7 Vs 9 (NH) beside *ki-i-nu-* (MH, NH), *ki-nu-* (MH+, NH), *gi-nu-* (MH+) = [gīnu-] < **ĝhih₁-n(e)u-* {10.1.2.}, rel.-int. pro. nom.-acc. sg. n. *ku-e-et* KBo XXII 6 I 12, 23 (OH+) for *ku-it* = [kʷīt].

### 1.6.3.3. Post-OH free-standing I for OH E

*i-sa-ri* KBo XV 25 I 30 (MH?), cf. OH *e-sa-ri* "sits" with root [ēs-] < **h₁és-*; *i-ni* "the aforementioned" KBo V 4 I 13, 17 (NH), KBo XVI 25 I 37, 37 (MH), KUB XXIX 1 I 35 (OH+) = [ēni] < **én-i* {7.3.2.}; adv. *i-di* "on that side, beyond" KBo VI 26 II 5 (OH+ cf. *e-di* in OH dup. KBo VI 2 I 50) < **édi*; *ekuna-* "cold" (e.g. acc. sg. c. *i-ku-na-an* KBo IV 9 V 47 (OH+), dat.-loc. sg. KUB XXIX 41 L. 4, 7, 10 (MH), inst. sg. *i-ku-ni-it* KUB XXIX 50 IV 18, MH), fientive: *i-ku-ni-es-zi* 1214/z. L. 6 (*HED* 2, 258), factitive *i-ku-na-ah-hu[-* KUB XXXIX 41 Vs. 6 (OH+) beside *e-ku-na-as*, *e-ku-ni-* and OH *e-ki* (dat.) "ice"; the stem should probably be [ēguna-] < **yégu-* {3.6.3.} (a shift of the accent onto the /u/ seems unlikely and is unsupported by plene writing); after /w/: *wewakk-* "ask" but *ú-i-wa-ak-ke!-ten* KUB IX 34 III 40 (MH+ beside *ú-e-wa-ka[n-z]i* ib. II 37), cf. °E° in 3 sg. pret. *ú-e-wa-ak-ta* KUB XLIII 23 Rs 12 (OH?/MH?), which perhaps points to Pre-Hitt. **wé-wok-*.

### 1.6.3.4. Post-OH free-standing E for OH I

*ha-an-te-i* KUB XLI 21 IV 18 (MH+, note *i-e-es-sar* "blood" for OH *[ēssar], [ēshar] ib. IV 4); after /w/: *u*-stem dat.-loc. sg. *a-as-sa-u-e* KUB XXXI 127 IV 1 (MH+), *i-da-la-u-e* KUB XXIX 1 III 11 (OH+), *pa-an-ga-u-e* KUB XXXI 42 II 22 (MH+), KUB XXV 36 II 10 (OH+), (*pa-an-ga-u-e-ya* ib. II 14), *te-pa-u-e* KUB XXXIII 106 II 5 (NH), LUGAL-*e-mu* KUB XXIX 1 I 21 (OH+), LUGAL-*u-e-mu* ib. I 23, *i-da-a-la-u-e* KUB XXXI 74 III 10 (MH+), *i-da-a-la-u-e* KBo II 3 II 36 (MH+) for OH *-i*, *-ī* < **-i*, **-éi* (?) {4.3.3.}.

### 1.6.3.5. Mixed plene and hyperplene spellings for OH /ē/

*ku-i-en-zi* "kills" KBo III 34 II 17 (OH+) beside OH etc. *ku-(e)-en-* for [gwēn-] < **gʷhén-* {2.4.3.}; relative-interogative pronoun gen. *ku-i-e-l(a-as)* KBo VI 15 IV 9 (OH+) for *ku-e-la-as*, dat.-loc. sg. *ku-i-e-da-ni* KUB VI 46 III 50, 61 (NH) for *ku-e-da-ni* = [kʷēdani]; indef. pro. nom. sg. c. *ku-e-is-ki* KUB XIV 14 Rs. 18 (NH); $^{URU}$*Ne-i-sa* KUB XXVI 71 I 10, 17 (OH+) for [nēsa] < **knés-* (cf. $^{URU}$*Ka-ni-is* with unaccented **e* > *i*); *hu-i-el-la-a-it* "flew" (?) KUB XXXIIII 120 I 22 (NH, source unclear); *i-e-es-sar* "blood" KUB XXIV 13 II 24 (MH+), KUB XLI 21 IV 4 (MH+ beside *ha-an-te-i* ib. IV 18), gen. *i-e-es-na-as* KUB XVII 18 II 31 (NH) for OH *[ēssar], [ēshar], *[ēssnas] {10.1.1.1.}; after /w/: animate nominative plural ending [-ēs] < **-eyes* {9.3.1.1.} in *i-da-la-u-i-es* KUB XIII 9 I 9 (MH+), HUL-*u-i-es* KUB XIX 55 Vs. 14 (U), *te-e-pa-ú-i-es* KBo VI 5 IV 26 (OH+); *ú-i-el-ku* "grass, hay" KUB XXX 53 + II 7 (U), *ú-i-el-ku-w[a* KUB XII 63 Vs. 35 (MH) for [wēlku-] < **wélku-*, *ú-i-el-lu-i-kan* KBo XXX 2 L 14 (NH) "meadow" (OH *ú-e-el-lu* = [wēllu-]) < **wélnu-* {8.6.4.}; *ú-i-e-ri-ya-an-[t]e-es* KUB XXVI 50 Rs. 12 (OH+) for *ú-e-ri-ya-* = [wērya-] < **wérh₁-ye/o-* {2.4.3.}; *kap-pu-u-i-e-ez-zi* 56/v (*Stammbildung* 332) for *kap-pu-u-(e)-ez-zi*.

### 1.6.3.6. Mixed plene spellings for OH /ī/

*mīnu-* "make mild": 3 pl. pres. *mi-e-nu-u-e-er* KUB XIX 22 r. col. 3 (Supp. I), 3 sg. imp. *mi-e-nu-ud-du* KUB XVII 12 II 14 (NH) beside *mi-i-nu-* (NH) = [mīnu-] < **mih₁-n(e)u-*, cf. *mīūs* "mild" < **mih₁-ú-* {2.4.4.2.}.

### 1.6.3.7. Spellings for short front vowels

Evidence for merger of /ĕ/ and /ĭ/ is more difficult to interpret, in large part because of the ambiguities of the writing system and how it was used. If we disregard spellings with single sign in the "wrong" value as unreliable evidence then what is left is use of free standing I and E and spellings with two signs, at least one of which is unambiguous and used in the wrong value (i.e. CI-IC for /ĕ/, as in PI-IŠ for [pĕs] or ŠI-IŠ for [sĕs] and CE-EC for /ĭ/ as in PE-EŠ for [pĭs], SE-EŠ for [sĭs]), and some examples of each do occur. Since there are few unambiguous signs with EC or IC, the latter spellings, should be somewhat rare. They also have to be interpreted with caution. Presumably a spelling CI-IC for /ĕ/ could have been provoked by the scribe's use of CI in the "wrong" value /Ce/.

The spelling CI-IC for /ĕ/ should be very rare, both because of the scarcity of unambiguous signs for EC and because /ĕ/ was not a common phoneme. One example, however, occurs as early as OH: nom.-acc. sg. n. *ha-an-ti-iz-zi-an* StBoT 25, 123 L. 8. The antonym can be read *a-pe-ez-zi-(ya)-* = [apĕtsya-] in texts of all periods. {4.3.2.3.}.

The spelling CE-EC for /ĭ/ occurs in, for example: *lingāi-* "oath": e.g. gen. sg. *le-en-ki-ya-as* e.g. KBo X 12 III 24 (NH), ABot 56 I 26 (NH), *le-en-ki-as* KBo VI 34 IV 11 (MH+); dir. *le-en-ki-ya* ib. IV 18 (but *li-in-ki-ya* II 45), dat.-loc. *le-en-qa-a-i* KUB XLIII 72 II 7 (NH), *le-en-qa-i* KBo IV 3 Vs. 10 (NH) and *link-* "swear an oath": 2 pl. imp. *le-en-ik-ten* KUB XXVI 1 III 54 (NH) beside *li-in-ga-en*, OH, *li-in-ga-in*, MH, *li-in-ga-i* (MH+), *li-in-ga-e*, MH, *li-in-ki-(y)a-* (OH etc.), and *li-ik-* (OH), *li-in-k* = [liŋgāi-], [liŋkya-], [liŋk-] < **h₁lengh-* {3.2.1.2.}; *nep-pe-es* "heaven": IBoT I 30 Vs. 3 (OH?+), KUB XXXVI 55 II 24 (MH?)+, KUB XL 13 Rs! 11 (MH+).

A clear set of examples of free-standing E for /ĭ/ occurs after /w/ in the oblique stem of *wātar* "water" *ú-e-te-n°* in gen. sg. *ú-e-te-na-as* (NH), dat. sg. *ú-e-te-ni* (MH etc.), abl. sg. *ú-e-te-na-za* (MH etc.), inst. sg. *ú-e-te-ni-it* (OH+, NH) for [widēn-] < **wed-én-*, cf. gen. sg. *ú-i-te-na-as* KUB XLIII 23 Rs. 6 (OH?/MH?) and dat. sg. *ú-i-te-e-ni* KBo V 2 I 20, II 12, 13, 17, (MH+); there seems to have been no form in the Pre-Hitt. paradigm from which /ē/ < **é* could have been generalized {2.6.3.}.

### 1.6.3.7. Post-OH free-standing E for /y/

There are a few examples, confined to Post-OH texts, in which /y/ is spelled with E. It is difficult to understand how such spellings could have been used by scribes for whom E and I represented distinct phonemes: e.g. *pe-e-i-ya-an-zi* KUB XII 19 III 14 (MH+), *pe-e-ya-zi* KUB XIII 9 III 5 (MH+) for *pi-i-e-*, *pi-(i)-ya-* "send away"; *ú-e-i-ya-at-t[en]* KUB XIX 1 II 49 (NH), *ú-e-ya-at-tin* KUB XIV 14 Rs. 36 (NH, cf. *ku-e-is-ki* for *ku-is-ki* ib. II 18), for *ú-i-ya-* "send to"; rel.-int. pro. *ku-e-us* KBo V 1 I 31, 38 (Pre-NH) for *ku-i-us* = /k$^{w}$yus/.



### 1.6.3.8. Variation in OH spellings for front vowels

Most variation is only apparent and instead reflects the regular results of sound change or analogy. Two words that show variation are loanwords and presumably involve the adaption of foreign phonology. The variation in $^{DUG}$*tissummi-*, name of a vessel, is extensive and includes spellings for the sibilant and nasal (*ti-is-su-mi-*, *ti-is-sum-mi-*, *te-es-su-mi-*, *te-es-sum-me-*, *te-es-su-um-mi-*, *te-es-sum-mi-*, all from StBoT 25, 3, 4, and 6 and StBoT 25 138, cf. also $^{DUG}$*di-is-su-um!-ma-na* KUB XXXVI 104 Vs. 6 (MH) with virtually unparalleled use of DI in initial position. Another possible loanword is *pere/i-*, name of a bird (nom. sg. *pe-e-ri-is* StBoT 25, 43 IV 5, *pe-e-re-es* StBoT 25, 12 II 16, acc. sg. *pe-e-ri-in* StBoT 25, 19 Vs. 15).

In a few words variation reflects different ablaut grades: *ut-ne-e* "land, country-side" (e.g. StBoT 25, 109 II 20, III 15, KBo III 22 Vs. 38) beside oblique stem *ut-ni-ya-* (in dat.-loc. pl. *ud-ni-as(-)* StBoT 25, 118 I 6 and in the extended stem *udniyant-*, nom. sg. *ud-ni-ya-an-za* StBoT 25, 140 Rs. 9, 12, acc.! sg. *ud-ni-an-ta-an* StBoT 25, 124 III 16) < **udnéi-*, **udn(i)y-* {4.8.1.}; *e-es-har* "blood" (e.g. StBoT 25, 3 I 27 = 4 I 22), gen. *is-ha-na-a-as* (StBoT 25, 3 IV 8) < **h₁ésh₂-r̥* or **h₁éshₓ-ōr* : **shₓnos* {3.2.1.1., 5.6.}. Other words have /i/ from unaccented **e* beside /ē/ from **é* {2.6.3.}: *pi-is-si-is-kan-zi* StBoT 25, 54 III 8, *pi-is-[* ib. II 24 otherwise *pe-es-s°* from **pe-h₁si-ské-*; *-sepa-* "spirit, genius" (e.g. $^{D}$*ha-an-ta-se-pa-*, a god's name, in StBoT 25, 3 I 28 etc.) beside *-zipa-* in *ta-ga-a-an-zi-pa-as* "(deified) ground" StBoT 25 30 III 5.{4.4.1.4.}. The variation in *hi-in-ga* "bows" (e.g. StBoT 25, 41 Vs! I 13), 3 pl. pres. *hi-in-kan-ta* (e.g. StBoT 25, 49 Rs. 3) beside 3 sg. pres. *he-ek-ta* StBoT 25, 59 I 4, 5, 6, 10 < **hₓo-h₁enk-* {4.9.1.} reflects a late monophthongization of OH /ăi/ before [ŋk] with sporadic raising in this environment (cf. Melchert, *SHHP* 113 who posits /ai/ > /ę/ > /i/). Analogy is responsible for the *hi*-conjugation first person singular present ending *-hhi* with /i/ from the *mi*-conjugation beside *-hhe* < **-hₓai* (cf. *da-a-ah-he* "I take" e.g. StBoT 25, 4 III 38, IV 28 beside *da-a-ah-hi* e.g. StBoT 25, 3 III 20) and for *e-es-ha-as-ga-an-ta-an* "bloody" StBoT 25, 147 Vs.? 8, *e-es-h[a-as-ga-an-ta-an* ib. Vs.? 11 with *e-es-h°* = [ēsh-] from nom.-acc. sg. *e-es-har* "blood" beside *is-ha-as-kan-ta* StBoT 25, 3 I 24 = *[is-h]a-as-kan-ta* StBoT 25, 4 I 19, *is-ha-as-kan-tu-us* StBoT 24, 4 II 7). The variation in spellings for nominative-accusative singulars of enclitic possessive pronouns (3 sg. *-se-et* e.g. StBoT 25, 3 I 15, 16, 33, *-si-it* e.g. StBoT 25, 4 I 26, 3 pl. *-Vs-me-et* e.g. StBoT 25, 3 I 24, III 11 = 4 III 11, *-Vs-mi-it* e.g. StBoT 25, 4 III 44, *-sa-me-et* e.g. 3 II 16, 28, III 11 = 4 III 11, IV 21 = 4 IV 17, *-se-me-et* StBoT 25, 6 II 14) and for ablative-instrumentals (e.g. *-Vs-mi-it* StBoT 25, 3 I 18 = 4 I 13, 4 IV 30, *-V-mi-id-* 4 I 14, beside *-Vs-me-et* 3 IV 34) is probably ultimately due to the fact that they were unstressed, cf. with independent stress *si-e-et* in KBo XXII 1 L. 29 (OH), pointing to original *e*-vocalism (Melchert 126 w. refs). Melchert (122–6) explains *-sit* after adverbs (e.g. *[pe-]-e-ra-as-si-it* StBoT 25, 4 I 25) as reflecting an earlier state of affairs in which the dative was added to adverbs (i.e. **pēra(n)-ssi*) with later addition of the dental stop after constructions with neuter nominative-accusative singulars (e.g. *ker-sit* "his/her heart"). He derives the genuine personal pronouns, which should have been *-tet*, *-set*, *-smet* etc.) from forms with *e*-vocalisim **-me-d*, **-sme-d* etc.) and explains the OH spellings with °E° as showing blocking of raising of unaccented **e* before a dental stop. The conditioning for blocking seems unlikely, however, and it may be possible

that the *e*-vocalism is analogical after non-enclitic forms. Nominative singular animate forms of the possessive pronouns uniformly have *i*-vocalism in OH, while the animate accusative singular usually has *a*-vocalism, except in $^{D}$*Si-ú-sum-mi-in* KBo III 22 Vs. 39.

Craig Melchert suggests (personal communication) that the lack of nominative or accusative singular forms with *e*-vocalism could indicate that the corresponding non-enclitic forms did not have *e*-vocalism and could not, therefore, have provided models for *e*-vocalism in the enclitics.

If we exclude variation that may be explained by sound change, analogy, borrowing or other factors, we are left with perhaps three words that show unexplained I for /ē/ or /ĕ/, and one may have an explanation. One is *ha-an-ti-iz-zi-an* "first" in StBoT 25 123 L. 8 for *ha-an-te-ez-zi-ya-an* = [hantētṣyan-] < **h₂n̥téityo-* {4.3.2.2.}; note that this text also has *ú-i-it*° in line 4. The spelling *i-es-zi* for *e-es-zi* "is" (= [ēstṣi] < IE **h₁ésti*) occurs in StBoT 25, 153 III 5 (= KUB XXXIV 115, published in StBoT 26, pp. 371–20) and this would be an example of free standing I for /ē/ comparable to those attested sporadically in Post-OH texts. Neu describes the tablet as showing ductus type II, which is somewhat later than his ductus type I. The text shows no other significant linguistic or orthographic deviations from other OH ritual texts, but it is a fairly small fragment. Variation between CI-IC and CE-EC with unambiguous signs also shows up in $^{DUG}$*hanessa-*, *hanissa-*, name of a vessel: nom. *ha-ni-is-sa-a-as* StBoT 25, 13 I 30, *ḫa-ni-is-sa-an* StBoT 25, 68 I 5, *ḫa-ni-is-sa-an* StBoT 25, 33 I 22, *ha-ni-iṣ-* StBoT 25, 136 L. col. 8, but acc. *ḫa-ḫa-ne-es-sa-an* StBoT 25, 58 II 3. The word looks like it should be related to *hān-* "draw water". It is possible that it is to be read as [hānissā-], a thematization of *hanessar* (also attested as a vessel name) with suffix accent, i.e. **hānes-ós* (cf. Puhvel, *HED* 4, 770, and see {8.8.1}).

### 1.6.3.9. Conclusions

The evidence is consistent with a phonemic distinction between /ē/ and /ī/ in the earliest language that was lost through merger by the NH period. Compelling evidence for merger comes in uses of the free-standing signs E and I that are difficult to explain as spellings produced by scribes who had a phonemic distinction. Mixed plene or hyperplene spellings are especially convincing. Some may admit alternative explanations. It is possible, for example, that the animate nominative plural *ku-i-es* (OH etc.) = [k$^{w}$yēs] {9.5.1.1.} provided an inspiration for spellings such as *ku-i-e-l(a-as)* and *ku-i-e-da-ni* (though it is unlikely that the scribe was trying to represent a pronunciation [k$^{w}$yē] in these words), but most do not. Spellings with signs in the wrong etymological value are not in and of themselves solid evidence, since the ambiguous signs in the syllabary may have encouraged this practice, but the frequency of these spellings in NH may have been encouraged by a merger. The evidence for /ĕ/ and /ĭ/ is less clear, but merger is likely. For some words, traditional spellings may maintain the appearance of a distinction, but in Post-OH texts there is enough variation, much of it occurring in environments where sound change or analogy is unlikely or the nature of the writing system does not provide an explanation, to be plausible. In a few words /ĕ/ and /ĭ/ are kept apart graphically by traditional spellings, and there are apparent minimal pairs, e.g. *e-ed* "eat!" = [ēd] but *i-id* "go!" = [īd]; *ke-e* dem. pro. nom. pl. c. (?) = [kē] but nom.-acc. sg. and pl. n. *ki-i* (OH) = [kī]; *ki-i-iz*, dem. pro. nom.-acc. sg. n. *ki-i* + reflexive particle *-z(a)-* (StBoT 25) = [kītṣ] but adv. *ke-e-ez* = [kētṣ] (not in OH); note, however, *ge-(e)-nu* "knee" [gēnu-] beside *ki-i-nu-*, *ke-e-nu-* "open a vessel" = [gīnu-]. Even the limited variation in OH texts may indicate the beginning of merger; or it may point to the existence of a scribal tradition predating the OH texts of Boğazköy, suggesting that Hittite was first committed to writing at a time somewhat before the date of the earliest texts that have been recovered when the language did distinguish high and mid front vowels, but that even by the time the Boğazköy texts in typical old ductus were written that distinction was on its way to oblivion.



## 1.7. U and Ú

Eichner, *Lautgesch. u. Etym.* 156–7; Friedrich, *IF* 43 (1926) 258 n. 5, *HE* 24; Hart, *TPS* 1983 124–32; Hrozný, *SH* 194–9; *Kimball*, Sprache 36 (1994) 6–8; Kronasser, *EHS* 19; Melchert, *AHP* 26; Rosenkranz, *Vgl. Unters.* 36–7; Sturtevant, *Language* 18 (1942) 186–92; Weidner, *Studien* 2–13.

The version of the cuneiform syllabary used by the Hittites had two signs used in isolation in the values /ū/, /u/, U (  "U-one") and Ú (  "U-two"). A third sign Ù (  "U-three") was used only in writing Akkadian *u* "and" and Sumerian U "dream". U and Ú also had the value /w/ before vowels.

It has been argued that the two signs were used somewhat systematically to indicate a phonetic or phonemic distinction. Hart, *TPS* 1983, 124–130, using data from a corpus of OH and MH texts, concludes that although there is considerable evidence that Ú was used for the reflex of IE **u* (e.g. in *i-ú-kan*, *i-ú-ga-an* "yoke" < **yugóm*), U is not as easy to connect with IE **u* and may instead have been favored by some scribes for writing the reflexes of monophthongized diphthongs and **uH*, a sound somewhat different from and perhaps more open than /u/ from IE **u* (e.g. *u-un-na-*, with preverb *ū-* "to" beside CLuv. *au-*, *u-uh-hi* "I see" beside *auszi* "(s)he sees", and nom.-acc. pl. n. *as-su-u* "goods" with suffix from IE **-uh₂*). Weidner, Marstrander, and Eichner argue that Ú could be used to spell a phoneme /o/ from IE **o* or **ō* or from a secondary source. Use of U as /o/ would not be without parallel in other cuneiform traditions (cf. most recently Westenholz, *ZA* 81 (1991) 10–19 w. refs., for U as /o/ in Old Babylonian documents from Nippur). The examples that have been cited for Hittite, however, are not convincing, and the early readings of Weidner and Marstrander, some of which (e.g. the 1 pl. pres. and pret. endings *-u-e-ni*, *-u-(e)-en* and the verbal nouns suffix *-u-wa-ar*, *-u-ar*) are to be read with [w], were successfully refuted by Hrozný, Friedrich, Sturtevant, and Kronasser. More recently, Eichner, *Lautgesch. u. Etym.* 156, suggests that U, read as /o/ represents the reflex of **au* in *u-un-na-i-* "drive" = [ōnna-], with preverb *ū-* "to" derived from **au-* beside *ú-na-ta-al-la-* "merchant" with [u] from zero-grade **u-* and in *u-uh-hi*, *u-uh-hu-un*, first person singular present and preterite of *au(s)-* "look, see" = [ōhhi], [ōhhun] with [o] from full-grade **au-* beside zero-grade [u(w)-], spelled with Ú in *ú-wa-an-zi* etc.

Although there was a tendency to standardize spellings with one sign or the other on a word-by-word or morpheme-by-morpheme basis (see especially Hart), and some words which are widely attested appear to be spelled only with one sign or the other (e.g. *hu-u-ma-an-t°* "all"), impressions of consistency may be based on considering data from a limited corpus or a relatively small number of forms. The evidence suggests instead that the two signs were equivalent and interchangable (Hrozný, Sturtevant, *CGr²*, *Language* 18, Kronasser, Rosenkranz, Kimball). Both were used to spell /ŭ/: e.g. *i-ú-kan, i-ú-ga-an* "yoke" = [yugan], [yugān](?) < **yugóm* {6.4.2.3.}; *kappūē-* "count" (e.g. 2 sg. pres. *ka-pu-u-e-si*, OH+, 3 sg. pres. *kap-pu-u-ez-zi* KBo XXI 22 I 31, MH, *kap-pu-u-e-ez-zi*, MH+, 3 pl. *kap-pu-u-en-zi*, OH, *kap-pu-u-an-zi*, MH, 3 sg. pret. *kap-pu-u-e-et*, MH, 3 pl. *kap-pu-u-e-er*, OH+) = [kapuwē-] from **kapuyé-* with stem in [-uwē-], [-uwa-] < **-u-yé-* {5.5., 9.3.1.1.}, but *sarūē-* "loot" = [săruwē-] or [sāruwē-] from denominative **soru-yé-*: *sāru* "booty" with both Ú and U (3 pl. pret. *sa-ru-ú-e-er* KUB XVII 21+ II 5, MH, *sa-ru-u-e-er* KUB XXXI 124 II 14, MH) {9.3.1.1.}. Both were also used to spell /ū/ from **ú*, **uH*, and monophthongized diphthongs: e.g. *isnūri-, isnūra-* "dough bowl" (nom. sg. *is-nu-u-ri-is* 1112/c + III 26, MH+, acc. *is-nu-u-ra-an* KBo VI 34 I 42, MH+) = [isnūri/a-] < **yesnúro/i-* {2.4.4.2.}; *kūrka-* "foal" (nom. sg. *ku-u-ur-ka-as* StBoT 25, 27 Rs.! 9) = [kūrka-] < **kúrko-* {2.4.4.2.}. In *mīū-* "mild" = [miyū-] < **mih₁-ú-* {2.4.4.2.} both Ú and U were used to spell the suffix vowel [-ū] < IE **-ú* (e.g. nom. sg. *mi-u-us*, MH, *mi-i-ú-us*, OH+, acc. sg. *mi-i-ú-un*, OH+). Although [ū] from PA **ú* is usually spelled with U in animate accusative singular and plural forms of the demonstrative pronouns *apā-* and *kā-* (acc. sg. *a-pu-u-un, ku-u-un*, acc. pl. *a-pu-u-us, ku-u-us*) rare spellings with Ú are not unknown (e.g. *a-pu-ú-us(-ma)* KUB XIV 14 I 21, Pre-NH). The preverb *ū-, u-* from **óu-* is spelled with U in e.g. *u-u-na-i-, u-un-ni-ya-* "drive" but with Ú in *ūssiya-* "draw curtains" (3 pl. pres. *ú-us-si-a[n-zi* StBoT 25, 25 I 31, *ú-us-si-an-z[i* StBoT 25, 59 I 2) and in *uda-* "take" = [ūdă-] (e.g. 3 sg. pres. *ú-da-i*, 1 pl. *ú-tu-me-(e)-an-zi*). Although PA **au* is spelled with U in *u-uh-hi, u-uh-hu-un*, the iterative *ūsk-*, which may have had [ū] by analogy to the first person singular present and preterit, was also spelled with Ú (3 sg. pres. *ú-us-ke-ez-zi* KBo VIII 42 Vs.? 2 (OH), beside *u-us-kan-zi* KUB XXIII 103 Vs. 14 (NH)).

There was a similar tendency to standardize spellings with U and Ú in the value /w/, especially in initial position, although even here some variation is encountered {1.13.1.}. The ligature HU-U- is always spelled with U. {1.5.1.}.

## 1.8. Spellings for diphthongs

Kimball, *PW* 567–71; Kronasser, *EHS* 29; Melchert, *SHHP* 66–7, 75–6; Sturtevant, *CGr¹* 60–1; Zinko, *Vertretung* 27–8.

The first or second element of diphthongs may be repeated, and the spellings CA-I(C-), CA-A-I(C-), CA-I-I(C-), and CA-A-I-I(C-) may be regarded as equivalent. Similarly, CA-U(C-), CA-A-U(C-), CA-U-U(C-), CA- U-U(C-), and CA-A-U-(UC-), CA-A-U-U(C-) are equivalent. There is no evidence to suggest that spellings of the first elements of diphthongs with or without plene writing were intended to indicate a linguistic constrast. The tendency to use plene writing in writing diphthongs suggests



that the first elements of diphthongs in originally accented syllables were phonetically long. The spellings A-I-IC and A-U-UC or A-Ú-UC often occur in initial syllables where A-A-IC- and A-A-UC- with hyperplene A would be strongly disfavored, e.g. *a-i-is* "mouth" (OH etc.) beside *a-is; a-u-um-me-ni* "we see", *a-ú-us-ta* "(s)he saw" (KBo III 60 I 8 (OH+)), beside *a-um-(e)-n°, a-us-zi, a-us-ta*. There is no independent reason for reading -CA-(A)-I-IC as [Cayi] (e.g. in *a-i-is* "mouth" = [ayis] or *a-i-in* "pain") with Puhvel, *HED* 1, 13–14, 15–17. Oettinger, *Stammbildung* 357–60, considers the spelling -CA-(A)-E(C)- an indication of disyllabic [Cae] from *[Coye] in *mi*-verbs in *-ā(i)-*. Zinko, *Vertretung* 27–8, analyzes the spelling *-aen* in the accusative singular of some animate nouns in *-āi-* as reflecting **-ōi̯-m̥* > **-aiyan* with later *-e-* for *-ya-*. But this spelling is not confined to the *mi*-verbs or to contexts where loss of intervocalic **y* is likely. Athough it is relatively infrequent, it occurs from OH on beside *Ca-(a)-i(-)* outside of the *mi*-verbs in *-ā(i)-* for the reflexes of IE long and short diphthongs. Variation can occur in the same forms of paradigms and within a single text (e.g. *t]a-ma-a-e* "other" StBoT 25, 65 Rs.? 4, beside *ta-ma-i* StBoT 25 137 II 20, *ta-ma-i-in* KBo XXII 2 Vs. 16 (OH), *ta-ma-i-in* StBoT 25, 65 Rs.? 3. *li-in-ga-en* KUB XXXVI 108 Vs. 10 (OH), *tar-ma-e-mi* StBoT 25 3 III 9 = 4 III 9, *tar-ma-a-ę-[mi* StBoT 25, 7 IV 3; *sa-ga-e* "omen(s)" KBo XXIII 55 I 13 (MH), *s[a]-ga-a-e* KBo XVI 46 Vs. 8, *sa-ga-ę* ib. Vs.10 (MH), beside nom. sg. *sa-ga-i-is* (OH), *sa-ga-a-is* KBo XVI (MH?), *sa-ga-in* (OH+), *sa-ga-a-in* (MH+).

## 1.9. Spellings for stops

### 1.9.1. Hittite spellings and Old Babylonian values

Crossland, *TPS* 1951, 125–8; Eichner, *Lautgesch. u. Etym.* 147–7; Friedrich, *HE* 28–9; Goetze, *AM* 267–74; Hart, *TPS* 1983, 107–123; Melchert, *SHHP* 68 w.n. 128, 103 n. 58, 131 n. 101, *AHP* 13–21; Oettinger, *Stammbildung* 551–4; Pedersen, *Hitt.* 9–10; Riemschneider, *Fs Otten¹* 273–81; Sommer, *HuH* 73–7; Sturtevant, *CGr¹* 35, *CGr²* 3, 26.

The conventional transcription of signs for stops with P, T, K or B, D, G is based on values for the Old Babylonian version of the cuneiform syllabary, even though the extent to which the Hittite scribes may have known or observed these values is unknown. Sumerian seems not to have had a phonemic voicing distinction among stops (*CGr²* 3), and the Akkadian-speaking scribes who adapted the syllabary for writing their own language, which did have such a distinction, only gradually specialized the use of signs to mark voicing. The Old Babylonian syllabary marks voicing distinctions for the initials of CV signs (e.g. PA : BA, TA : DA, TE : DI/E, TI : DI/E, TU : DU, KA : GA, KU : GI, KU : GU) and for the initials of some CVC signs (e.g. KAL : GAL, KUR : GUR, PAR : BAR). The final stops of VC and CVC signs, however, are ambiguous with respect to voicing (i.e. AP/B, EP/B, UP/B, AT/D, ET/D = IT/D, AK/G, EK/G = IK/G, UK/G). The initials of some CVC signs are also ambiguous (e.g. TUH = TAH = DUH = DAH). Reflexes of IE labials are normally spelled with °P°, but the texts reveal many examples of spellings for velars and dentals in which Old Babylonian values do not correlate with etymologicaly expected values or in which variation between voiced and voiceless signs is common.

## 1.9.2. Spellings for labial stops

In spelling labial stops, the scribes virtually always used the Old Babylonian voiceless CV and CVC signs both initially and in medial syllables:

### 1.9.2.1. IE *p

Initial: *pappars-* "sprinkle" (*pa-ap-par-s°, pa-ap-par-as-*) : **pr̥s-*, **pers-* : Skt. *pr̥ṣant-* "spotted"; *palhi-* "wide" (*pal-hi, pal-ha-(ya)-*) < **pl̥h₂-* {5.3.2, 6.3.1.1.}, *pās-* "take a swallow" (3 sg. pres. *pa-as-zi, pa-a-si,* $^{UZU}$*pa-ap-pa-(as)-sa-(a)-la-* "esophagus") : **peh₃s-* {6.3.1.1.,10.5.3}; *pahhur* "fire" (*pa-(a)-ah-hu-ur, pa-ah-hur*) < **péh₂wr̥* {2.9.1.2.,10.4.2.1.}; *padā-* "foot" (gen. pl. *pa-da-a-an*) < **pod-óm* or **pod-ōm* {6.4.2.2.}; *pēda-* "place, location" (*pe-e-da-*) < **péd-o-* {6.3.1.1.}; medial: *āppa, āppan* "after, following" (*a-ap-pa, a-ap-pa-an*) < **h₁ópō, *h₁ópom* {6.4.1.1.}; *happar* "price, deal" (*ha-(a)-ap-par*) < **h₃ópr̥* {6.4.1.1.}; *ūpp-* "arise, ascend" (vbl. noun gen. sg. *u-up-pu-u-wa-as*) < **(h₁)eup-* {6.4.1.1.}; *terepp-* "plow" (*te-re-ep-pa-an-zi*, inf. *te-re-ep-pu-u-wa-an-zi, te-re-ep-pa-an*) < **trep-* {6.4.1.1.}.

### 1.9.2.2. IE *b

Initial: *palsa-* "way, time" (*pal-sa-*) : **bel-so-* {6.3.1.2.,11.6.2.}; medial: *dapi-* "all" (acc. sg. c. *da-pi-n°*, gen. sg. *da-pi-as* KUB XXXI 136 II 1, NH, *da-pe-za* KBo II 9 I 7, abl. *da-pe-da-az*, NH, nom.-acc. pl. n. *da-pe-da*) < **dobi-, doboi-* {6.4.2.1.}.

### 1.9.2.3. IE *bh

Initial: *parku-* "high" (*par-ku-, par-ga-u-(wa)-*), *parkiya-* "ascend" (*par-ki-ya-*) : **bh(e)rĝh-* {5.3.1., 6.3.1.3., 6.6.3.}; *parkuī-* "clean, pure, bright" (*par-ku-i-, par-ku-wa-(i)-*) : **bh(e)rĝ(H)-* {2.9.3.2., 6.3.1.3.}; *panku-* "all", noun "majority, assembly" (*pa-(a)-an-ku(-), pa-an-ga-u-, pa-an-ka-wa-*), *pangar* "mass" (inst. *pa-an-ga-ri-it*) < **bh(ó)nĝh-(u)-* {5.3.1., 6.3.1.3.}; in medial syllables: *nēpis* "heaven" (nom.-acc. sg. *ne-(e)-pi-is*, gen. *ne-(e)-pi-sa-as*, dat. *ne-(e)-pi-si*, dir. *ne-(e)-pi-sa*) < **nébhes-* {2.6.3.,6.4.3.1.}; *tēpu-* "little" (nom. sg. c. *te-(e)-pu-us*, acc. sg. c. *te-pu-un*, nom.-acc. sg. n. *te-(e)-pu*) < **dhébhu-* {6.4.3.1.}; dem. pro. *apā-, apē-* (nom. sg. c. *a-pa-(a)-as*, acc. sg. c. *a-pu-u-un*, nom.-acc. sg. n. *a-pa-a-at*, oblique stem *a-pe-e-eC-*) < **h₁obhó-, *h₁obhói-* {2.2.1., 2.8.2.1., 4.3.2.1., 4.4.1.1., 6.4.3.1.}; *kuwāpi* "where, where to" (*ku-wa-a-pi*) < **kʷóbhi-* {6.4.3.1.}.

### 1.9.2.4. Spellings with B°

Very rarely, spellings with B°, perhaps reflecting personal idioscyncracies of a scribe or his desire to experiment, occur, e.g. 3 sg. pret. *ba-i-it* "went" KBo XVIII 151 Rs 19 (OH?/MH?), dem. pro. *apā-*, nom. *a-ba-as* KBo VIII 41 L. 6 (OH). Only in *La-ba-ar-na-* (OH etc.), *La-bar-na-* (OH+), *Ta-ba-ar-na-* (OH etc.), *Ta-bar-na-* (NH), royal title and personal name, is a spelling with B° standard.



## 1.9.3. Spellings for dental stops

The signs TE and TI were used for writing sequences of dental stop plus front vowel, virtually without exception in initial position, and are far more common than DI medially. Sequences of initial dental stop plus *a* or *u*, however, are spelled TA, DA and TU, DU. Where OH scribes tended to use TU, scribes in the MH and NH periods increasingly favored DU (see e.g. Hart 113). Hart also observes a similar, though later and less consistent, preference for DA (113–14).

### 1.9.3.1. IE *t

Initial with consistent T°: *tuēkk(a)-* : *tukk-* "body, self" (*tu-e-ek-k°, tu-(e)-eg-g°, tu-(e)-eq-q°, tu-uk-ka-az*) < **tuek-* : **tuk-* {2.4.3}; *terepp-* "plow", *tereppi-* "plowed field" (*te-re-ep-p°*) < **trep-* {6.4.1.1.}; *tīlha-* "thunder" (OH *ti-it-ha-*, MH *te-(e)-et-ha-*) < **té-tl̥₂-o-* {2.4.4.1.}; *tiye/a-* "step, take one's place" (*ti-(i)-ya-, ti-a-, ti-(i)-e-*) < **tl̥₂-yé/ó-* {10.5.5.}; with T°/D°: *duskaratt-* "joy", *duskariya-* "rejoice" (*tu-us-kar-at-t°, du-us-ga-ra-*) < **tus-sk-* {11.6.4}; *tāye/a-* "steal" (*ta-a-i-e-, ta-a-ya-, da-a-ya-, ta-a-i-e-, da-a-i-e-*) < **téh₂iye/o-* or **toh₂i-éye/o-* {9.3.1.3}; *tukkā-* "be visible, important, of consequence" (*tu-uk-k°, tu-ug-g°, tu-uq-q°, du-uk-k°, du-ug-g°, du-uq-q°*) < **tuk-ó-*, ultimately from the same root as *tuēkk(a)-* "body, self" {6.4.1.3.}; with TAR: *tarma-* "nail, stake", *tarmā(i)-* "nail down, fix, delimit" (*tar-ma-, tar-ma-(a-), tar-ma-(a)-i°*) < **torh₁mo-* {10.1.1.2}; *tarsant-* "dry" (*tar-sa-an-t°/d°*) < **ters-, *tors-* or **tr̥s-* {3.11.1.2.}; *tarh-, tarhu-* "overcome, prevail over" (*tar-ah°, tar-hV-, tar-hu-, tar-uh-*) < **t(e)rh₂-, *t(e)rh₂-u-* {2.8.4.1.}; *tarna-* "let, let loose" (*tar-na(-)* < **tr̥-n-h₂-* {5.3.1.}; with TAK: *taks-, takkis-* "put together", *taksul* "treaty", *taksan* "friendship" (*tak-sV-, tak-is-C°*) < **toks-* {3.9.3.}; *takku* "if" (*tak-ku*) < **to-kʷe* {3.8.2., 6.9.1.}; medial syllables: *witt-, wett-* "year" (dat.loc. sg. *ú-i-it-ti*, OH, *ú-E/IT-ti*, OH, gen. pl. *ú-i-[it-ta-an-na]*, OH = *ú-E/IT-ta-an-na*, OH+) < **wet-* {6.4.1.2.}.

### 1.9.3.2. IE *d

With T°: *tekkussiya-* "point out, show" (*te-ek-ku-us-s°*) < **dekʷs-* {6.5.1.}; with T°/D°: *dā-* "take" (*da-a-ah-he, da-(a-)ah-hi*, 3 sg. pres. usually *da-a-i, da-at-te-ni, da-an-zi, da-a-as, da-a-er*, it. *da-as-k°*, but 1 pl. pres. *tu-me-e-ni* (OH etc.), *du-u-me-e-ni* (MH), it. 2 pl. pret. *ta-as-kat-ten* KUB XIII 3 III 12 (MH+), cf. *da-a-as-ga-te-en* ib. III 5) < **deh₃- ,*dh₃-* {2.9.1.3., 10.6.1.3., 10.6.1.3., 10.9.2.2.}; *dākk-, takk-* "resemble, correspond to" (3 sg. pres. *da-(a)-ak-ki*, OH+, NH, 3 pl. *tak-kan-zi*, OH, OH+) < **doḱ-* {2.4.1}; *dān* "second(ly)" (*da-a-an, ta-a-an*) < **dwoyóm* {9.3.1.1.,9.5.2.1.}; *tāyuga-* "two-year-old" (*ta-a-i-u-ga-, ta-a-i-u-ga-*) < **dwo-* {9.5.2.1.}; *tuwān ... tuwān* "here ... there" (*tu-wa-a-an*, OH, OH+, *du-wa-a-an*, MH, OH+), *tūwa* "at a distance" (*tu-u-wa*, OH, MH) : **dwehₓ-, *du[h₂]-* {2.5.2.,1.13.2.3.}; *dāssu-* "strong" (*da-(a)-as-su-, ta-as-su-*) < **dónsu-* {7.8.2.}; medial syllables: *ēd-/ad-* "eat" (*e-du-un, e-te-er, a-ta-an-zi, a-da-an-zi*) < **h₁ed-, *h₁d-* {2.8.1.1., 6.4.2.2.}; *nāta-* "reed, arrow" (*na-(a)-ta-an, na-ti-i-da*) < **nódo-* {6.4.2.2.}; *padā-* "foot" (gen. pl. *pa-ta-a-na*, dat.-loc. pl. *pa-ta-a-as-s*) : IE **pōd-, pod-* {6.4.2.2.}; *idālu-* "evil" (*i-da-(a)-lu-*, dat. sg. *i-ta-a-la-ú-i*, OH) < **h₁edwōl-* {2.8.1.1., 6.4.2.2.}; *wātar* "water" (*wa-a-tar*, obl. stem *ú-i-te-(e)-n°, ú-e-te-en°*, inst. *ú-i-ta-an-ta*, nom.-acc. pl. *ú-i-da-a-ar, ú-i-ta-a-ar*) < **wódr̥, *wedén-, wedn̥T-, *wedōr* {2.4.1., 2.6.3. 5.3.4., 6.4.2.2.}; *pēda-* "place" (*pe-e-da-an*, dat.-loc. sg. *pe-e-di, pe-e-ti*, MH, OH+, abl. *pe-e-ta-az*, dat.-loc. pl. *pe-e-da-as*) < **pédo-* {2.4.3., 6.4.2.2.}.

### 1.9.3.3. IE *dh

Initial syllables with T°: *tē-* "speak, say" (*te-(e)-mi, te-(e)-si, te-ez-zi, te-(e)-et*) : **dheh₁-* "put" {2.9.1.1.}; *tēpu-* "small, little" (*te-(e)-pu, te-(e)-pa-u-*) < **dhébh-u-* {6.4.3.1.}; *tuhhui-, tuhhwāi-* "smoke, mist" (*tu-uh-hu-wa-a-i, tuh-hu-i*), *tuhhā(i)-* "pant, gasp" (*tu-uh-hu-wa-a-i-, tuh-ha-iC-*) < **dhuh₂-* {10.4.2.1.}; with TE-/TI- beside DA-/TA-: *tēhhi, dāi* "put(s)" (1 sg. pres. *te-e-eh-he, te-(e)-eh-hi*, pret. *te-(e)-eh-hu-un*, 1 pl. pres. *ti-i-ya-u-e-ni*, NH, 3 pl. *ti-(ya)-an-zi*, but 3 sg. pres. *da-a-i*, pret. *da-(a)-is*, 1 pl. pret. *da-a-i-u-en*, MH, 3 pl. *da-i-er* (OH etc., NH also *ti-i-e-er*), 2 sg. pres. *da-it-ti*, NH, *ta-it-ti*, OH+) < **dhoh₁-i-*: **dhh₁y-* {4.9.1., 10.5.5.}; *tēkan* "earth" (nom.-acc. sg. *te-(e)-kan*, oblique stem *tak-n°*, loc. *ta-ga-(a)-an*, OH etc., *da-ga-(a)-an*, MH etc.) : IE nom. sg. **dhéĝh-ōm*, oblique stem **dhĝh-m-*, locative < PA **dagén* {3.2.2.2.}; medial syllables: *pēhute-* "take" (*pe-e-hu-te-mi, pe-(e)-hu-te-(ez)-zi*, 2 pl. *pe-e-hu-te-et-te-ni*, 3 pl. *pe-e-hu-da-an-zi*, OH etc., *pe-hu-ta-an-zi*, MH) : IE **dheh₁-*; *uwate-* "bring" (*ú-wa-te-ez-zi*, 3 pl. *ú-wa-ta-an-zi, u-wa-te-et, ú-wa-te-er* : IE **dheh₁-* ; *wete-* "build" (3 sg. pres. *ú-e-te-ez-zi, ú-i-te-ez-zi*, MH, *ú-e-da-an-zi*, MH, *ú-e-te-nu-un, ú-e-te-et*, OH) : IE **dheh₁-* {2.9.1.1.}; *atessa-* "axe, hatchet" (*a-te-es*, inst. *a-te-es-se-et*, nom.-acc. pl. n. *a-ti-is-sa*) < **adhes-* {11.4.1.1.}.

## 1.9.4. Spellings for velar stops

In initial position, there was some tendency to standardize spellings with either K° or G° for individual words, but spellings do not correlate well with etymology. Both Goetze and Hart (114) note a tendency for KA to be preferred medially and GA internally. Medially °K° and °G° seem more or less interchangable in some words. The sign QA, which represented an emphatic consonant in Akkadian, could be used for KA or GA medially. In initial position it is rare, and no word is spelled with QA only. No graphic distinction is made between reflexes of IE palatalized velars (**k̂*, **ĝ*, **ĝh*) and plain velars (**k*, **g*, **gh*).

### 1.9.4.1. IE *k and *k̂

Initial: with K°: *kiss-, kisā(i)-* "comb" (*ki-is-s°, ki-sa-a-*) : **kes-* {11.4.1.1.,11.4.2.}; *kalles-* "call upon" (*kal-le-es-s°*) : **kalh₁-* {10.8.1.}; dem. pro. *kā-* (*ka-a-as, ku-u-un, ki-i, ke-e*) etc. < **k̂o-*, **k̂u-*, **k̂(e)i-*, **k̂oi-* {6.1.2.}; *ki-* "lie" (3 sg. pres. *ki-it-ta, ki-it-ta-ri*, pl. *ki-(ya)-an-ta/da)* : **k̂ei-* {4.3.1.1.}; with G°: *kagā-* "tooth" (*ga-ga-a*) < **kogó-* {6.4.2.3.}; with K°/G°: *kēr, kard-(iya-)* "heart" (nom.-acc. sg. *ke-er, ge-er*, oblique stem *kar-d°*, loc. *ke-er-di*) < **k̂ér*, **k̂erd-l̥*, **k̂r̥d-* {5.3.1.}; *karāwar* "horn" (*ka-ra-a-u-wa-ar*, dat.-loc. sg. *ga-ra-u-ni*, OH) < PA **k̂r-ah₂* or **k̂r̥-ah₂* plus **-wér*, **-un-* {4.9.2.}; *gānk-* "hang" (1 sg. pres. *ga-a-an-ga-ah-he*, OH, 3 sg. *ka-a-an-ki, ga-a-an-ki*, 3 pl. *kan-kan-zi*) < **k̂onk-* : **k̂n̥k-* {2.4.1., 5.3.4.}; with QA beside K/GA: *qa-a-sa* "behold" KBo XV 10 I 30, 31, II 8, 19, 32, 42, *qJa-a-sa* ib. I 22 (MH), usually *ka-a-sa* < **k̂ós* (note also *qa-lu-lu-pu-us* "fingers" ib. I 6 beside OH *ka-lu-(u)-lu-p°* in StBoT 25, etymology unclear); medial: *wēk-, wēkk-* "ask" (*ú-e-ek-mi, ú-(e)-ek-zi, ú-e-ek-kan-zi*) < **wēk̂-*, **wek̂-* {6.4.1.3., 6.4.4.1.}; *dākk-* "correspond to" (*da-a-ak-ki, tak-kan-zi)* < **dok̂-* {2.4.1.,6.4.1.3.}; *sakkar* "excrement" (*sa-ak-kar, za-ak-kar*, inst. *sa-kan-da* (= *sa-<ak>-kan-da* ?) KBo XXII 2 Vs. 2, OH) < **sókr̥*, **s(o)kn̥-* {6.4.1.3.}; with KA/GA/QA: *tuēkka-* "body, self" (*tu-e-ek-k°, tu-e-eq-q°, tu-e-eg-g°)* < **twek-* {6.4.1.3.}; *tukkā-* "be visible, important" (3 sg. pres. *du-ug-ga-(a)-ri*, MH etc., *du-uq-qa-(a)-ri*, OH+, *tu-ug-ga-(a)-ri*, MH etc., *tu-uq-qa-(a)-ri*, MH+, NH) < **tukó-* {6.4.1.3.}; 3 sg. pres. *is-qa-a-ri*, KBo XV 10 I 38, MH (cf. *[i]s-ga-a-ri* ib. III 28), 3 sg. pret. *is-qa-ar-ri-et* "stick, stab" KBo III 16 +II 12 (OH+) beside *is-ka-a-ri*, OH, *is-ga-ra-an-zi*, OH etc., ptcp. *is-g/ka-ra-an-t°/d°*, OH etc.) < **skor-*, **skr̥-* {11.3.2.3.}.

### 1.9.4.2. IE *g and *ĝ

Initial: with K°/G°: *galank-* "appease" (*ga-la-an-k°*), *galaktar, galattar* "appeasement" (*ga-la-ak-tar, ga-la-at-tar*, MH), *kalank-* "appease, pacify, mollify" (3 sg. imp. *kJa-la-an-kad-du*, ptcp. nom. pl. c. *ka-la-an-kan-te-es*) : **gleng-*, **gleg-* {5.3.2.}; *gēnu-* "knee" (nom.-acc. sg. *ge-(e)-nu*, dat.-loc. pl. *ge-nu-wa-as*, OH etc., *ke-nu-wa-as* KUB X 52 I 16, VI 7, U, *ka-nu-wa-as* KBo XIV 93 III 17, NH, inst. *ga-nu-ut*, MH) < **ĝén-u-*, **ĝn-(e)u-* {7.3.1.1.}; *ganess-* "recognize": *ga-ne-es-s°, ga-ni-es-s°, ka-ne-es-s°, ka-ni-is-s°* < **ĝnēh₂-s-* {10.5.3.}; *karaitt-* "flood" (nom. sg. *ka-ra-i-iz, ge-re-e-ez-za, ka-re-ez*, dat.-loc. sg. *ka-ra-it-ti*, nom. pl. *ka-ri-it-ti-is, ga-ri-it-te-es*) < **ĝróit-s*, **ĝri-t-*, **ĝrói-ti* {4.8.2.}; medial: *sāgāi-* "omen" (*sa-(a)-ga-(a)-i(-)* : **s(e)h₂g-* or **sāg-* {10.9.1.2.}; *wāk-* "bite" (*wa-a-ki*, ptcp. nom.-acc. pl. n. *wa-ga-an-da*, inf. *wa-ga-(a)-an-na*) < **woh₂g-* {10.5.2.3.}; *eka-* "ice" (*e-ga-as*, acc. sg. *e-ka-an, e-ka-as*, dat.-loc. *e-ki* {6.4.2.3.}); *iukan* "yoke" (*i-ú-kan, i-ú-ga-an*, dat.-loc. *i-ú-ki*) < **yugo-* {6.4.2.3.}; with QA beside KA and GA: abl. sg. *me-eq-qa-ya-az* KUB V 7 Vs 25, NH, acc. pl. c. *me-eq-qa-a-uſs* KUB IX 6 IV 10, NH, *me-eq-qa-a-us-s°* ib. IV 23, *me-eq-qa-ya* e.g. KUB XXIII 38 Rs 4 (U) beside *me-ek-ki-* e.g. KUB XXI 47 II 15 (OH etc.), nom. pl. c. *me-eg-ga-e-es*, OH+, NH, nom.-acc. pl. n. *me-eg-ga-ya*, NH, *me-eg-ga-us* (Supp.I) < **méĝh₂i-*, **méĝh₂oy-* {10.7.1.}; *sālīg-* "approach, molest, accost (*sa-a-li-qa* KUB XIII 4 III 65, 80, MH?+, *sa-li-qa-a-ri* KBo XIII 119 II 16, OH+, beside *sa-li-(i)-ga*, OH, MH, *sa-li-ki-an-ta*, MH, *sa-li-ik-tu-ma-ri* KBo XXII 2 Vs. 19, OH, *sa-li-ka-ru*, NH, *sa-li-ik-mi*, NH, *sa-li-ka-as*, MH : **sleig-* {4.3.1.2.}.

### 1.9.4.3. IE *ĝh

Initial: with K°: *kissar* "hand" (*ke-es-sar, ke-es-si-ra-an* (OH+), oblique stem *ki-is-sa-ar-, ki-is-sar-, ki-is-r°, ke-es-sa-r°, ke-es-sa-ar-*) < **ĝhes-ōr*, **ĝhes-ér-*, **ĝhes-r-* {11.5.2.1.}; *kammars-* "defecate" (*kam-mar-s°, ka-mar-s°*) : **ĝhed-* {6.10.1.2.}; with K°/G°: *gem-* "winter" (dat.-loc sg. *gi-e-mi, gi-im-mi*), acc. sg. *gJi-ma-an* id., *gimmant-* id. (*gi-im-ma-an-t°/d°*, MH etc., acc. sg. with Luv. ending *ki-im-ma-an-ti-in* KUB IV 4 Vs. 3, NH) : **ĝheim-*, loc. **ĝhyém(i)*, **ĝhéimn̥* or **ĝhéimōn*, and **ĝhimn-ónt-* {4.3.1.1., 7.3.1.2., 7.3.2., 7.3.3.2.}; *kīnu-* "open a vessel" (*gi-i-nu-, ge-e-nu-, ke-e-nu-*) < **ĝhih₁-n(e)u-* {10.1.2.}; medial: *tēkan* "earth" (*te-e-kan*, gen. *tak-na-(a)-as*, loc. *ta-ga-(a)-an, da-ga-(a)-an*) < IE nom. **dhéĝhōm*, oblique stem **dhĝhm-*, PA loc. **dagén* {2.7.1., 6.4.3.3., 3.2.2.2.}; *lāk-* "knock out, incline" (*la-a-ki*, ptcp. nom.-acc. sg. n. *la-ga-(a)-an*, 3 sg. pres. midd. *la-ga-a-ri, la-qa-a-ri*, imp. *la-ga-a-ru*) < **loĝh-* {2.4.1.}; *dalūki-* "long" (abl. *da-lu-ga-ya-az*, NH, nom. pl. *ta-lu-ga-e-es*, OH, *da-lu-ga-es*, NH, acc. pl. *ta-lu-ga-ú-us*, OH, *da-lu-ga-us*, NH, *ta-lu-ga-us*, MH etc., nom.-acc. pl. n. *ta-lu-u-ga*, OH+, gen. pl. *ta-lu-ga-as*, dat.-loc. pl. *ta-lu-ga-as*, OH) < **dl̥h₁gh-* {5.3.2.}; with QA beside KA and GA: *li-in-qa-in* "oath" KBo XXIV 47 III 22, 24, U, *li-in-qa-en* KUB XLIII 79 L. 2, NH, *le-en-qa-i* KBo IV 3 Vs. 10, NH, *le-en-qa-a-i* KUB XLIII 72 II 7, NH, beside *li-in-ga-en*, OH, *li-in-ga-in*, MH, *li-in-ga-i* (MH+), *li-in-ga-e*, MH, *li-in-ki-(y)a-* : **h₁lengh-* {3.2.1.2.}.

## 1.9.5. Labiovelars

In initial position only KU and KU-WA- are normally used for reflexes of prevocalic voiceless, voiced, and voiced aspirate labiovelars: with **k$^{w}$*: rel.-int. pro. nom. sg. c. *ku-is*, acc. *ku-in*, neut. *ku-it* etc. = [k$^{w}$i-]; indef.adv. *ku-wa-a-pi* "wherever" = [k$^{w}$ābi] < IE **k$^{w}$i-*, **k$^{w}$o-* {6.3.4.1., 6.4.3.1.}; *kuēr-* "cut": *ku-(e)-er-zi, ku-e-er-ta, ku-e-re-er* (NH) = [k$^{w}$ērtsi], [k$^{w}$ērta], [k$^{w}$ērer] < **k$^{w}$er-*, 3 pl. pres. *ku-ra-an-zi*, inf. *ku-ra-(a)-an-na* = [k$^{w}$rantsi], [k$^{w}$rānna] < **k$^{w}$r-* {6.3.4.1.}. IE **g$^{w}$* is perhaps also spelled KU in *kwel-wana-* "basin" (?) (gen. sg. *ku-e-lu-wa-na-as* KUB IX 1 III 21, MH+) from **g$^{w}$el-* "drip, drop" ? {6.3.4.2.}; for *ku-in-na* "woman" ? < **g$^{w}$én-(eh$_2$-)* see {6.3.4.2.}.

The sequences [kur] and [gur] from **k$^{w}$r̥* or **g$^{w}$r̥* can be spelled KUR, GUR, or KU-UR in $^{GIŠ}$*kurta-* "wooden writing tablet": *kur-ta-, gur-ta-* {5.4.2.} = [kurta-] < **k$^{w}$r̥to-*; **ku-ur-ta-, gur-ta-* (NH) "citadel, acropolis" = [gurta-] < **g$^{w}$r̥to-* "high": [kul] from **k$^{w}$l̥* is spelled with GUL in *gulss-* "write, engrave, incise": *gul-as-mi, gul-as-zi, gul-(as)-su-un* = [gulss-] < **k$^{w}$l̥-s-* {5.4.2., 6.3.4.2.}.

## 1.9.6. Phonetic interpretations of spellings for stops

A common view is that the Old Babylonian values are not reliable in determining etymology or synchronic pronunciation (Sturtevant, Sommer, Kronasser, Friedrich, Goetze), although few researchers, with the exception of Goetze, who reported a tendency to favor KA initially but GA internally, Riemschneider, and Hart have made systematic studies. Other researchers (Pedersen, Crossland, Hart) have suggested that the Hittites were at one point acquainted with Old Babylonian values, but either lost a voicing distinction and no longer understood them (Pedersen) or failed to apply them systematically (Hart). Crossland suggested that it is not clear whether an aquaintance with the Old Babylonian values should be considered an archaism or an innovation.

Several scholars, however, have attempted to describe more consistent patterns of synchronic use, to chronicle changes in the use of signs and, in some cases, to establish correlations between Old Babylonian values and etymology or pronunciation resulting from sound change.

### 1.9.6.1. Riemschneider's views

Riemschneider investigates spellings with velars. He notes that GU is basically confined to Akkadian words and (with one exception, *pḫa-an*-GU-*us-sa* KBo XVI 71 Vs. 9 = StBoT 25, 13 II 9 : *panku-* "all") was not used in writing Hittite and that KA and GA tend to be interchangable (274) although there are some words (e.g. dem. pro. *kā-*) in which only KA seems to have been used. He notes too that medial QA spread at the expense of KA and GA starting in MH and suggests that its greater simplicity favored its use. Although Riemschneider finds no phonological conditioning behind the scribe's preference for KU over GU and no rationale for the distribution of and variation between KA, GA and QA, he does claim that the choice of KE/I and GE/I is phonologically significant, though not to indicate voicing, but rather to indicate vowel color {1.6.2.3}.



### 1.9.6.2. Eichner's views

Eichner, *MSS* 31 (1973) 97 n. 69, 70, *Lautgesch. u. Etym.* 149 n. 73, assumes that the Old Babylonian values are phonologically meaningful in formulating rules for devoicing of **d* and **g* before /i/ (e.g. **d[ḫ]i* > *ti* in *ti-(y)-an-zi* "they place" : IE root **dheh$_1$-*, **ǧ[ḫ]i* > *ki* in *ki-is-sar* "hand" < IE **ǧhesōr* and *ki-i-sa* "becomes" : IE root **geis-*). In *Lautgesch. u. Etym.* 147–7 and 155–61 he presents the rationale behind this assumption, noting that some common words show regular and consistent spellings in accord with Old Babylonian values. Variation within paradigms and deviations from expected etymological values, Eichner maintains, can result from conditioned sound change. He notes that although the Old Babylonian values do not always correspond to expected etymological values, the distribution of voiced and voiceless signs in some paradigms is regular and appears rule governed. In the paradigm of *dāi-* "put", for example, voiceless signs occur before front vowels (e.g. 1 sg. pres. *te-(e)-eḫ-ḫi-e*, pret. *te-(e)-eḫ-ḫu-un*, 3 pl. pres. *ti-(y)-an-zi*). The voiced stop is usual before /a/ in 3 sg. pres. *da-a-i*. Apparent exceptions can be explained as analogical.

### 1.9.6.3. Oettinger's views

Oettinger, *Stammbildung* 551–4, presents examples of words with initial dental or velar stops that he concludes provide evidence for a rough correlation between Old Babylonian values and expected etymological ones, which would indicate that Hittite maintained an initial voicing distinction. He finds (544) that words with etymological voiceless stops are almost always written with signs with initial voiceless stop and words with etymological voiced stops are usually written with signs with initial voiced stop.

Oettinger does not, however, provide reliable statistics to back up his claims, and some statements are inaccurate. For example, the spelling of *dankuī-* "dark" is described as "stets DA" (but note nom.-acc. pl. n. *ta-an-ku-wa* KUB XXXI 1 + KBo III 16 III 6, OH+, nom. pl. c. *ta-an-ku-wa-e-es* HT 1 III 8, MH?/NH?). The noun *ga-la-ak-tar* "appeasement" (IE root **gleǧ-* {1.9.4.2., 5.3.2}), it is claimed, never has KA, but note that KA does occur in the related verb *kalank-* "appease, pacify, mollify" (3 sg. imp. *kḫa-la-an-kad-du* KUB XXXIII 68 III 15, MH, ptcp. nom. pl. c. *ka-la-an-kan-te-es* KUB XXXIII 11 II 23, MH+, beside *ga-la-an-k°* {5.3.2.}). The verb *tar-* "speak", which Oettinger derives from **dher-* "be firm, fast", is described as "fast nur mit DA", but while DA does occur (e.g. 3 pl. pres. *da-ra-an-zi* KBo XV 28 Rs 12, NH, KUB X 21 I 9, OH+), in OH, anyway, TA predominates (1 pl. pres. *ta-ru-e-ni* StBoT 25, 3 I 27, IV 9, 3 pl. *ta-ra-an-zi* StBoT 25, 3 IV 11, 12), and the spelling TAR also occurs (e.g. 2 pl. pres. *tar-te-ni* KUB XXVI 19 II 32, MH); the verb is also more likely to be from **ter-* "speak loudly" as in Lith. *tarti* "to say". It is not clear either, even on the basis of the limited number of forms cited, how the evidence of the texts supports the claim that voiceless stops are almost always represented by signs with voiceless stops. For example, *kānk-* "hang" (IE root **ḱenk-*) is noted as being spelled with KA and GA in OH, but later texts are said to have "meist" GA. Other examples are not supported by the wider samples provided elsewhere in the book. For example, Oettinger claims that *tami(n)k-* "stick together" (IE **temk-*) is spelled "ausschließlich" with TA in the older language and with TA overwhelmingly in the later language. On page 144,

however, the only form cited from the "older language" is 3 pl. pret. *da-me-in-ker* in VBoT 58 I 40, a NH copy of a MH or OH exemplar (note also *da-me-en-kan-te-es* KUB IV 1 III 19, MH?). In the NH column, the existence of at least eight examples of spellings with DA or DAM is indicated. Similarly, Oettinger claims that *tāye/a-* "steal" is spelled only with TA in OH and that the noun *tāyazzil* "theft" is almost always spelled with TA. On pages 395–6, however, Oettinger cites *da-a-i-ez-zi* in KBo VI 2 III 23 (OH) and indicates at least nine spellings with DA in the MH and NH columns. Given the extent of variation that Oettinger concedes for reflexes of voiced stops and voiced aspirates, it is hard to see how there can be any meaningful correlation between etymologies and Old Babylonian values. For example, the word for hand, *kissar* (IE **ĝhesōr*), is described as spelled *gi-es*° and *ki-is*° (in fact, *ki-is-s*° and *ke-es-s*° are the usual spellings); *tuwarniya-* "break" (IE root **dhwer(H)-*) is described as being spelled with TU in OH but usually with DU in MH and NH. The adjective *dalūki-* "long" (**dhl̥gh-*) is said to be spelled both with TA and with DA.

### 1.9.6.4. Hart's views

In a study based on a corpus of OH and MH texts and texts in NH ductus that are copies of OH and MH texts (KUB XXIX 1 (OH+), KBo VI 34 (MH+), KUB VII 53 + (MH+)) Hart finds that, in general, the Old Babylonian values do not correlate well with expected etymological values, especially in initial position (114–5, 122–4), but that sign choice was probably not entirely random. She finds that within a single text the degree of consistency in sign choice may be rather high, but between different texts, especially when they are from different chronological periods, there is more variation. This suggests that some apparently random examples of variation reflect change in scribal custom. Hart finds that OH texts favor the use of TU over DU, but that DU predominates from MH on; some words, however, (e.g. *tu-(e)-ek-ka-*, *tu-(e)-eg-ga-*, *tu-(e)-eq-qa-* "body, self", *tu-uk* , *tu-(e)-el*, second person singular personal pronoun acc.-dat. and gen.) tend to retain TU against the prevailing trend and may reflect cannonized or traditional spellings. Hart's texts show a similar but less pronounced tendency to favor TA over DA in OH but DA over TA later, and the switch to DA is later and less consistent that the switch from TU to DU. She also notes that some words are spelled more or less consistently with TA or DA from OH on (e.g. *kat-ta-(an)* "under(neath)", *da-a-i* "takes", *da-a-i* "puts", *ha-an-da-(a)-i-* "prepare" and pronominal stems in *d*, e.g. *ku-e-da-ni* "to which"; two other words Hart cites, the sentence particle *ta* and the negative *na-at-ta*, are primily confined to OH texts and copies). She does not, by contrast, find any marked change in fashion in the use of KA and GA, but notes that the large number of CVC signs with initial K° restrict the data (114). She comments too that her sample supports Goetze's observation that KA is more frequent initially and GA more frequent medially and that the tendency to favor this distribution increased over time. She observes too that after nasals DA preominates over TA in OH and in the copies in her sample, but MH texts also have TA fairly frequently in this environment (129).

Hart also examined the distribution of double and single spellings of internal voiced and voiceless signs. She notes that voiced signs may occur singly in intervocalic postion to represent etymologicaly voiced stops (115); single intervocalic GA is usually etymologically justified while single KA is rare (114) (note, however, that if GA were favored internally for some other reason, the values would correlate, but accidentally). But she also notes that the voiced signs GA, DA, and DU occur apparently freely as second signs in double spellings for etymologically voiceless stops (e.g. *lu-ug-ga-at-ta-ma* "but when it dawns" (OH) : IE **leuk-*, 3 sg. imp. ending *°d-du* (from MH on) : IE **-tu*.



Hart argues (111) that the Hittite written at Boğazköy, the Akkadian written at Boğazköy, and the Hurrian of the Mitanni Letter (14th c.) show a common tendency to decrease the total number of signs in use by favoring one member of a voiced/voiceless pair over the other, though they differ in the specific signs eliminated or favored: e.g. in Hittite DU was eventually preferred over TU, and PA is almost always used instead of BA, but in Bogazköy Akkadian, PA was preferred to BA and TA to DA. Mitanni Hurrian carries this tendency closest to completion by dropping all redundant signs except KU/GU (cf. Bogazköy Hittite, which did not regularly use GU).

Hart concludes (122–4) that the Hittites may at some point after they adopted writing have become acquainted with the Old Babylonian values but never fully integrated them into their system. The use of single and double stops to represent voiced and voiceless stops medially meant that the scribes may have felt no need to adopt the Old Babylonian values for spelling medial stops. Although she suggests that there may have been a tendency to use single DA, which would have been etymologically appropriate, for the reflexes of intervocalic **d* and **dh*, there are enough instances of single TA and double DA to indicate that single DA was not used with total consistency and that TU and DU do not show such a tendency. She notes that the Old Babylonian values would have been most useful for indicating a voicing distinction in initial position, but that there is too much variation, some of which is synchronic and occurs within single texts, to make it likely that Old Babylonan values were applied systematically. She adds that if Hittite had lost initial voicing distinctions, then that might explain why the Hittites failed to adopt Old Babylonian values for initial position while spelling habits in medial position would sugest some familiarity with them.

### 1.9.6.5. Conclusions

It is unlikely that the Old Babylonian values are reliable etymologically, and conclusions about the devoicing of stops based on evidence from usual spellings for a small sample of words alone, such as those of Eichner, Oettinger, or Sheveroshkin, *Gds Kerns* 283–9, are not supported by the evidence of the texts. There is simply too much variation in sign use, and there are too many words normally spelled with the "wrong" signs. Even if the use of signs is regular, or at least non-random, and correlates partially with etymology, there is no hard evidence that sign use indicates a synchronic voicing distinction, cf. e.g. the NE use of *ee* and *ea*, which correlates well with ME /ē/ vs. /ę̄/ but which preserves a distinction that has not been present in Standard English for about 200 years. A rule-governed distribution also need not express a phonemic or conciously perceived allophonic distinction (cf. the 18th century use of ſ and *s* in English). Factors other than phonology may have influenced

sign choice. Hart, for example, suggests that sign choice could have been a matter of fashion, and Riemschneider suggests that the simplicity of QA favored its spread at the expense of the more complicated KA and GA medially. Further, if the difference between GI and KI, TI and DI, or TU and DU was meaningful, then the difference between other pairs of voiced and voiceless signs should have been too. The assumption that sign choice did indicate a voicing distinction also does not explain why the scribes avoided °B° in spelling labials and GU in spelling reflexes of velar plus *u or voiced labiovelar. Nor is consistency of use in some words an argument that the Old Babylonian values were applied meaningfully. Hart notes (108) that consistency in spelling of common words is not surprising, since these are usually the first words learned. She goes on to point out that if lack of variation is confined to the most common words and variation is found in uncommon words where the forces of tradition are weak, this indicates that there was probably no reliable spelling rule based on a phonemic opposition. Hart also notes that voiced signs can occur in contexts where a voiced stop is unlikely, e.g. after /s/ in *is-ga-a-ri* "cuts" (OH 3 pl. pres. *is-ga-ra-an-zi* StBoT 25, 56 I 6, ptcp. *is-ga-ra-an-t°/d°* e.g. StBoT 25, 3 III 28 = 4 II 28 = 6 III 20, StBoT 25, 31 II 10); since the etymon is IE **sker-*, reading GA with /g/ would imply that inherited **k* was voiced after **s*.

For lack of contrastive use of the Akkadian voiced and voiceless signs see also Melchert, *AHP* 13–4.

## 1.10. Sturtevant's Law

Sturtevant's student, C. L. Mudge, originally noticed that reflexes of IE **p* tended to be spelled with double °P° while reflexes of **bh* tended to be written single, but Sturtevant (*JAOS* 52 (1932) 1–12, *CGr*[1] 73–84, *CGr*[2] 26–8) developed this idea, claiming that intervocalic double dental and velar stops as well as labial stops could be correlated with IE voiceless stops, while stops regularly written single could in general be derived from voiced stops or voiced aspirates. Mudge and Sturtevant's observations are borne out by the spellings of many words, e.g., with IE **p*: *āppa, āppan* "after, following" (*a-ap-pa, a-ap-pa-an*) < **h*$_1$*ópō, *h*$_1$*ópom*; *hāppar* "price, deal" (nom.-acc. sg. *ha-(a)-ap-par*, dat. sg. *ha-ap-pa-ri*) < **h*$_3$*ópr̥* {6.4.1.1.}; with **b*: *dapi-* "all" (acc. sg. c. *da-pi-na*, abl. *da-pe-za, da-pe-da-az*, nom.-acc. pl. n. *da-pe-da*) < **dobi-*, **doboi-* {6.4.2.1.}; with **bh*: *nēpis* "heaven" (nom.-acc. sg. *ne-(e)-pi-is*, gen. *ne-(e)-pi-sa-as*) < **nébhes-*; *kuwāpi* "where, where to" (*ku-wa-(a)-pi*) < **k*$^w$*óbhi* {6.4.3.1.}; similarly, with IE **t*: *wītt- (wētt-)* "year" (dat.-loc. sg. *ú-i-it-ti, ú-*E/IT-*ti*) < **wét-ei* {6.4.1.2.}; with **d*: *ēd-/ad-* "eat" (3 pl. pres. *a-da-an-zi, a-ta-an-zi*, 1 sg. pret. *e-du-un*, 3 pl. pret. *e-te-er*) < **h*$_1$*ed-*, **h*$_1$*d-*; *wātar* "water" (nom.-acc. sg. *wa-a-tar*) < **wódr̥*; *pēda-* "place" (nom.-acc. sg. *pe-e-da-an*, dat.-loc. sg. *pe-e-di, pe-e-ti*, abl. *pe-e-ta-az*) < **pédo-* {6.4.2.2.}; with **dh*: *pēhute-* "take" (1 sg. pres. *pe-e-hu-te-mi*, 3 sg. *pe-(e)-hu-te-ez-zi*, 3 pl. *pe-e-hu-da-an-zi, pe-hu-ta-an-zi*) < **dheh*$_1$- {6.4.3.2.}; with **k* or **k̂*: *wē(k)k-* "ask for" (3 pl. pres. *ú-e-ek-kan-zi*) < **wéḱ-n̥ti, tuēkka-* "body, self" (*tu-e-ek-k°, tu-e-eq-q°, tu-e-eg-g°*) < **twék-* {6.4.1.3.}; with **g* or **ĝ*: *eka-* "ice" (nom. sg. *e-ga-as*, acc. sg. *e-ka-an*, gen. *e-ka-as*, dat.-loc. *e-ki*) < **yégo-*; *iukan* "yoke" (nom.-acc. sg. *i-ú-kan, i-ú-ga-an*, dat.-loc. *i-ú-ki*) < **yugóm* {6.4.2.3.}; with **gh* or **ĝh*: *tēkan* "earth" (nom.-acc. sg. *te-e-kan*) < **dhéĝhōm*; *lāk-* "knock out, make incline" (3 sg. pres. act. *la-a-ki*) < **lóĝh-e(i); dalūki-* "long" (abl. sg. *da-lu-ga-ya-az*, nom. pl. c. *ta-lu-ga-e-es, da-lu-ga-es*) < **dl̥h*$_1$*gh-* {6.4.3.3.}. Examples of intervocalic reflexes of labio-velars are difficult to find: with **g*$^w$*h* there is *eku-* "drink" (1 pl. pres. *a-ku-e-ni*, 3 pl. *a-ku-(wa)-an-zi*, 1 sg. pret. *e-ku-un*, 3 pl. *e-ku-er*) < **h*$_1$*eg*$^w$*h-* {6.4.3.4.}. There do not seem to be certain examples of intervocalic **k*$^w$ or **g*$^w$.

Despite the skepticism of Friedrich, Kronasser, Kammenhuber, and Sommer, and despite lack of agreement on the phonetic basis of single and double writing, the principle that double stops are reflexes of IE voiceless stops and single stops reflexes of voiced stops and voiced aspirates has been widely accepted. Statistical and etymological studies such as those of Čop and Jucquois have supported it and the work of Eichner, Oettinger, Morpurgo Davies, and Catsanicos on PA voicing has explained a number of apparent exceptions in which the reflex of an IE voiceless stop appears as a single, or voiced, stop. Other apparent exceptions with double stops as the reflex of an IE voiced stop or voiced aspirate continue stop plus laryngeal {10.7.}.

### 1.10.1. Pre- and postconsonantal stops

Doubling as a method of indicating voicelessness is not confined to intervocalic position. Where the writing system permits, pre- and postconsonantal voiceless stops are spelled with doubled stops.

Labiovelars are written with KU and the spelling °K-KU-UC- stands for [k$^w$C] while -KU-UC- indicates voiced /g$^w$/; with /k$^w$/: *te-(e)-ek-ku-us-s* = [dek$^w$s-] : *tekku-siya-* "show" {6.5.1.}; *ak-ku-us-k°*, iterative stem of *eku-* "drink" = [ak$^w$sk-] for /ag$^w$sk-/ with devoicing {6.11.1.}; with /g$^w$/: *e-ku-(uz)-zi, e-ku-ut-ta* = [ēg$^w$tṣi], [ēg$^w$ta], third person singular present and preterit of *eku-* "drink" {6.5.1.}; *ne-ku-uz* = [neg$^w$ts], "night" {6.5.1.}, *ne-ku-ma-an-t°, ne-gu-ma-an-t°* = [neg$^w$mant-] "naked" {6.5.1.}.

OH *te-e-ku-us-si-ez-zi* in KBo XXV 1 b 2 is probably a defective spelling for *te-e-<ek>-ku-us-si-ez-zi*.

Before the glides /y/ and /w/, which may be spelled CI-V-, CI-YA- and CU-V-, CU-WA-, voiceless stops are doubled and a graphic opposition single stop = voiced stop as opposed to double stop = voiceless stop is maintained.

The spellings VC$_1$-C$_1$I-YA and VC$_1$-C$_1$I-AC may be used to indicate a sequence of voiceless stop plus [ya], and these contrast with -VC-YA- and (C$_1$)V-C$_2$I-AC- used to indicate voiced stop plus [ya]: *i*-stem nouns, e.g. gen. $^{A.ŠA}$*te-re-ep-pi-ya-as*, abl. *te-re-epi-i-ya-az* = [t(e)rēpya-] : $^{A.ŠA}$*tereppi-* "plowed field" {6.4.1.1.}, *la-ap-pi-as* "fever" = [lāpyas] (probably < **lap-* : *lāpp-* "glow") {6.10.3.}; verbal forms in [ya], e.g. *kat-kat-ti-ya-* (OH+ etc.) "faint" = [katkatya-]; *a-ap-pi-ya-an-zi, ap-pi-ya-an-zi* = [āpyantṣi], 3 pl. pres. of *āppai-* "be finished"; for [bya] cf. e.g. *da-pi-ya* = [dapya] "all" {6.4.2.1.} or *a-pi-ya* = [abya] "there" : dem. pro. *apā-* {6.4.3.1.}.

Similarly, the spellings -VC$_1$-C$_1$U-WA-, -VC$_1$-C$_1$U-AC$_2$- and -VC$_1$-C$_1$U-(U)-V- should be read as voiceless stop plus /w/ plus vowel in some contexts, while -CU-WA-, -CU-AC- and CU-(U)-V- should be read as voiced stop plus /w/ plus vowel in

others: oblique stems of *u*-stem nouns, e.g. *wappu-* "river bank": gen. *wa-ap-pu-as, wa-ap-pu-wa-as, wa-ap-pu-u-wa-as, wa-ap-pu-u-wa-as* = [wāpwas]; first person plural present in *-weni*, e.g. *e-ep-pu-u-e-ni* KUB XXII 57 Vs. 13 (NH), *ep-pu-u-e-ni* KUB XXXI 44 II 10 (MH+) = [ēpwēni], *ap-pu-u-e-ni* KUB XXV 18 I 7 (OH+) = [apwēni]; 1 pl. pret. in -wēn, e.g. *ap-pu-en* KUB XXXIV 77 I 2 = [apwēn] : *ēpp-* "take"; infinitive in *-wanzi*, e.g. *e-ep-pu-u-wa-an-zi* KBo III 3 III 30 (NH) = [ēpwantṣi] : *ēpp-* "take", *te-re-ep-pu-u-wa-an-zi* (OH+, NH) = [t(e)rēpwantṣi] : *terepp-* "plow"; verbal noun in *-war*, e.g. *u-up-pu-wa-as* (NH) = [ūpwas] : *ūpp-* "rise".

It was not always convenient to indicate postconsonantal voiceless stops, but after a labiovelar (written -KU-) the ending of the third person singular preterit is doubled in *e-ku-ut-ta* (OH+ etc.) = [eg$^{w}$ta] : *eku-* "drink" and *wa-at-ku-ut-ta* (OH etc.) = [watk$^{w}$ta] : *watku-* "jump" {6.5.1.}. Voiceless /t/ is spelled with double dental stop after -KU- = /k$^{w}$/ in $^{LÚ}$*akkuttara-* "drinker" (a cult functionary): nom. sg. $^{LÚ}$*a-ku-ut-tar-ra-[as]* KBo V 11 I 14 (OH+), $^{LÚ}$*a-ku-ut-tar-as, a-ku-tar-as*, nom. pl. $^{LÚ.MEŠ}$*a-ku-ut-ta-ru-us, a-ku-da-ru-us* (*HED* 2, 266 from unpublished texts), nom. pl. ? $^{LÚ.MEŠ}$*a-ku-ud-da[-* StBoT 25, 16 Rs? 16 = [ag$^{w}$tara-] {6.5.1.}.

Occasionally voiceless stops following consonants other than labiovelars are doubled with the aid of a dead vowel, *kar-ap-pa-an-zi* (OH+), *kar-ap-pu-un* (NH), *kar-ap-pa-an-t°* (beside *kar-pa-an-zi* etc.) = [karp-] : *karp-* "lift"; *kar-ap-pi-ez-zi* (OH+), *kar-ap-pi-an-zi* (OH+), 2 sg. imp. *kar-ap-pi-ya* (OH+), 2 pl. *kar-ap-pi-ya-at-ten* (OH+) (beside *kar-pi-ya-*) = [karpya-] : *karpiya-* id.

## 1.10.2. Apparent exceptions to Sturtevant's Law

### 1.10.2.1. Single stop from etymologically voiceless stop

Many examples have a voiced stop by PA voicing: e.g. *wēk(k)-* "ask for" (1 sg. pret. *ú-e-ku-un*, U, 3 pl. *ú-e-ke-er*, OH+, Pre-NH, vbl. noun *ú-e-ku-wa-ar*, NH) with [wēg-] < **wéḱ-* {6.4.4.1.}; *sākuwa* "eyes" (neut. pl. nom.-acc. sg. *sa-(a)-ku-wa*, OH etc.) = [sāg$^{w}$a], either from **s* + **h$_3$ók$^{w}$-eh$_2$* with *s* mobile or from **sók$^{w}$-eh$_2$* with lengthened *o*-grade : **sek$^{w}$-* "see, notice" {6.4.4.1.}; *itar* "way" (*i-tar* KUB XLI 8 I 20, MH) = [īdar] < **(h$_1$)éi-t$_r$* {6.4.4.2.}; abstract suffix *-ātar* = [-ādar] < PA **-ā-dər* < **-ā-tər*, in IE terms **-éh$_2$-t$_r$* {6.4.4.3.}; *sallakartātar* "pride, arrogance" (nom.-acc. sg. n. *"sal-la-kar-ta-tar*, NH) with stem **[sallagard-] (lit. "big-hearted") < PA **sáll-o-gard-* < **sáll-o-kard-* : **k̂$_r$d-* "heart" {6.4.4.4.}.

If the stop was part of a consonant cluster its voicelessness was often only sporadically indicated, e.g. $^{(LÚ)}$*hartaka-* "bear-(man)": nom. sg. *har-ta-ga-as* KBo XVII 100 I 9 (Pre-NH), $^{LÚ}$*har-ta-ga-as* KBo VII 35 + KBo XVII 44 + 99 I 25 (MH), $^{LÚ}$*har-ta-ka-as* KUB LVIII 14 Rs 7 (OH+), beside *har-ta-ga-aš-sa* StBoT 25, 43 I 16, *har-tag-ga-as* KUB XXIX 1 I 29 (OH+) = [hartka-] < **h$_2$rtk̂o-* or **h$_2$ertk̂o-* : **h$_2$r̥pk̂o-* in e.g. Ved. *ṛkṣa-*, Gk. ἄρκτος, Lat. *ursus* {6.1.3.}. Some examples of spelling of the enclitic second person singular personal and possessive pronouns with a single dental may also indicate consonant clusters, e.g. *[ka]-a-sa-ta-as-ma-as-kan* StBoT 25, 3 I 11 = *ka-a-sa-ta-as-ma-as-kan* 4 I 6 = [kās-ta-smas-kan], cf. *ka-a-sa-at-ta* = [kās-ta] (MH+ etc.).

Some examples are defective spellings and can be considered either mistakes or, in places where the scribe seems to have run out of room, abbreviatory spellings: e.g. *sa-kan-da* KBo XXII 2 Vs.2 (OH) beside nom.-acc. *sa-ak-kar* "excrement"; middle endings from stems ending in vowels 3 sg. pres. in -TA or -TA-RI: for -AT-TA, -AD-DA or -AT-TA-RI, -AD-DA-RI: e.g. *i-ya-ta* KBo II 8 I 34 (NH), *i-ya-ta-ri* KUB XXI III 53 (NH, cf. dup. KUB XXI 5 III 70 with *i-ya-at-ta-ri*), KUB XVII 35 I 25 (NH, at line end), KUB XX 10 IV 14 (OH+, at edge); *mar-ri-ya-ta-ri* KBo IV 14 I 48 (NH), *šḫa-ak-ku-ri-ya-ta-ri* KUB VIII 24 Vs. 6 (OH+), *sa-ak-ku-ri-ya-ta-ri* ib. Rs 7, *sa-a[k-ku-ri-ya-ta-ri* KUB VIII 25 I 6 (OH+); *kar-tim-mi-ya-ta-ri* KUB XXIX 9 I 21 (MH+, at line end, cf. *k[ar-tim-mi-ya-at-ta-r[i]* ib. I 3); 3 sg. imp. -TA-RU for -AT-TA-RU, -AD-DA-RU: e.g. *pa-iš-ga-ta-ru* VBoT 58 Vs. 11 (MH+), *[sa]-am-ni-ya-ta-ru* VAT 7481 V 3 (StBoT 5,151).

Sometimes it is not clear why a voiceless stop is not doubled. For example, in spelling [sik] from the iterative suffix *-sk-* via anaptyxis {3.9.3.}, the velar is sometimes doubled and sometimes left single, e.g. *az-zi-k°* beside *az-zi-ik°* = [atsik-] : *ēd-* "eat", or *tar-si-k°* beside *tar-si-ik°* : *tar-* (*tē-*) "speak, say".

See Melchert, *AHP* 14–5 for a discussion of simplified spellings such as *nu-kan* for the longer, more complex *nu-uk-kan*.

### 1.10.2.2. Double stop from voiced stop or voiced aspirate

Some examples show gemination before a laryngeal, e.g. *mekki-* "numerous" < **meǵh$_2$-i-* {10.7.1.}. Sporadic instances of doubling of a root-final voiced stop before the iterative suffix *-sk-* or the *hi*-conjugation third person singular preterit ending *-s* indicate devoicing, e.g. *wa-ak-ki-is-k°*: /wag-sk-/ → [wakisk-] and *wa-ak-ki-is*: /wāg-s/ → [wākis] : *wāk-* [wāg-] "bite" (for the anaptyxis see {3.9.3.}), but devoicing is not consistently indicated except in *ak-ku-us-k°* = [ak$^{w}$sk-] : *eku-* = [ēg$^{w}$-] "drink".

More difficult to evaluate are instances where the reflex of a voiced aspirate appear as doubled stops in phonetic environments not likely to have caused devoicing. Čop, *Linguistica* 5 (1964) 44–46, cites several putative examples in support of his claim that the IE voiced aspirates became voiced spirants in Anatolian and were later lenited to voiced stops in some environments. Although some of his examples are doubtful etymologically (e.g. suffix *-ppa-* from **-bho-/*-bhā-* in *kalu-ppa-* "underclothes" : Gk. καλύωπτω) and others have different explanations (e.g. *hukkisk-* : *huēk-* "strike, slaughter" : **h$_2$weǵ(h)-* with devoicing of the velar before the /s/ of the suffix, or *padda-* "dig" < **bhedh-*, which is perhaps better derived from **bhedH-* with gemination of the stop before the laryngeal), there seem to be a handful of cogent examples for which other explanations are difficult to find: *dudduwarant-* "lame, stiff" (*du-ud-du-wa-ar-an-t°* Bo 10200 III 14 , HW 231) and *dudduwarēss-* "make lame" (NH), reduplicated stem from IE **dhwerH-* "damage" (Neumann, *KZ* 75 (1958) 225) and *duddumi-* "deaf", which is perhaps related to NNorw. *daana* "lame, stiff", OIcl. *doði* "numbness", *doðna* "become numb", *dán* "faint", *dáligr* "evil, damaging", and perhaps OHG *tawalōn* "die off" (IE **dheu-*). *sakkuriya-* "conquer, overcome", which seems to be a denominative from a **soghw$_r$* and related to e.g. Gk. ἔχυρος "secure, strong" and Skt. *sahati* "vanquishes", has °K° in *sa-ku-ri-ya-ta-ri* 1140/c II 7 (StBoT 5, 145), but °K-K° in *sa-ak-ku-ri-ya-ta-ri* ib. II 2, *šḫa-ak-ku-ri-ya-ta-ri* KUB VIII 24 Vs. 6 (OH+), *sa-ak-ku-ri-ya-ta-ri* ib. Rs 7, *sa-a[k-ku-ri-ya-ta-ri* KUB VIII 25 I 6 (OH+).

### 1.10.3. Phonetic interpretation

Crossland, *TSP* 1951 125–8; Eichner, *MSS* 31 (1973) 79–83; Einarsson, *Language* 8 (1932) 177–82; Gamkrelidze, *Ar. Or.* 29 (1961) 418, *Pratidānam* 94, *Fs Diakonoff* 76–80; Jucquois, *Heth.* 1 (1972) 86–90; Kronasser, *VLFH* 58, 60; Kuryłowicz, *PICL* 8, 219–22; Melchert, *AHP* 16–8; Milewski, *Ar. Or.* 17 (1949) 190; Pedersen, *Lyc. u. Hitt.* 43; Petersen, *Language* 9 (1933) 22–3; Rosenkranz, *Vgl. Unters.* 30–1; Sommer, *HuH* 73–7; Sturtevant, *JAOS* 52 (1932) 1–12, *CGr*$^{1}$ 74, *CGr*$^{2}$ 26–8.

In his 1932 article Sturtevant himself did not make definitive claims about the phonetic basis of single and double writing, but he was persuaded by Einarsson's response in *Language* 8 that the spellings indicate a length distinction and that voiceless stops were preceptually longer than their voiced counterparts (cf. *CGr*$^{1}$ 74; note, however, that in *GCr*$^{2}$ 26–8 Sturtevant's Law is described in terms of a voicing distinction). The idea that double and single writing indicates a fortis : lenis distinction goes back to Pedersen, who suggested in response to Sturtevant (*JAOS* 52) and Einarsson that doubled stops might be fortis and single stops lenis (Weidner had earlier suggested that Hittite possessed a single series of voiceless lenes, but did not correlate single and double writing with IE voicing). A major reason for assigning Hittite a fortis : lenis distinction is the idea that single and double writing of stops and continuants must reflect the same or closely related phonetic phenomena, and double and single writing of liquids and nasals is unlikely to reflect a voicing distinction. This idea was accepted with various modifications by Milewski, Kronasser, Kuryłowicz (who suggested that doubling may be merely graphic) and by Rosenkranz (who treats fortis : lenis and length distinctions as equivalent). It informs the thinking of Eichner and Oettinger on PA voicing and the relationship of accent and vowel quantitiy to the distribution of single and double consonants. Gamkrelidze, however, describes double and single stops as representing a distinction between tense aspirates, characterized by a more intense and prolonged articulation than unaspirated stops and written with double stop, and lax unaspirated stops, written with single stop. His argument for assigning these values to the spellings is that sequences of stop plus laryngeal, which became voiceless aspirates in Indic, are spelled with double stop like the reflexes of voiceless stops. Milewski, while working with a fortis : lenis distinction, suggested too that the fortis stops were accompanied by aspiration.

Melchert, *AHP* 16–9, argues that the inherited contrast between voiced and voiceless was replaced most likely by a long : short contrast. It seems more likely, however, that the double and single writing of stops indicates a basic voicing distinction, though one perhaps accompanied by allophonic differences in aspiration and length. Double writing is not confined to intervocalic position; it is quite regular before the glides /y/ and /w/ and indicated sporadically for postconsonantal stops. A fortis : lenis distinction, however, would have been neutralized in pre- and postconsonantal position. Doubling of velar stops that are otherwise written single in a paradigm is found before the suffix [-skē/a-] of iteratives and the *hi*-conjugation third person singular present ending [-s], e.g. *akkusk-*, iterative of *eku-* "drink" (2 sg. pres. *ak-ku-us-ke-(e)-si*, OH, 3 sg. *ak-ku-us-ke-(ez)-zi*, OH etc., 1 pl. *ak-ku-us-ke-e-wa-ni*, OH) = [aᵏʷskē-] : [ēgʷ-] in 3 sg. pres. *e-ku-zi* and [agʷ-] in 3 pl. *a-ku-(wa)-an-zi*; *hukkisk-*, iterative of *huēk-* "strike" (1 sg. pres. *hu-uk-ki-is-ke-mi*, U, 3 sg. *hu-uk-ki-is-ke-ez-zi*, MH+, 2 sg. imp. *hu-uk-ki-is-ki*, Pre-NH); = [hukisk-] (from /hug-sk-/ with epenthesis); *a-ak-ki-is* "died" (OH etc.) = [ākis] (from /āg-s/) beside 3 sg. pres. *a-ki* = [āgi]; *wa-ak-ki-is* "bit" (NH), it. *wa-ak-ki-iš-ke-ez-zi* (OH+) = [wākis], [wākkisk-] (from /wāg-s/, /wāgsk-/). These are environments in which devoicing of a voiced stop is to be expected but lenition is hardly likely.

For devoicing see {6.11.1.}.



Single and double writing of stops need not have anything to do with single and double writing of continuants. The script was a borrowed one, and the convention of single and double writing of stops may not have been established for a language with a voicing distinction. If the Hittites originally learned a Hurrian syllabary or a Hurrian-influenced one, then they would presumably have had to make do with Hurrian conventions for indicating that language's consonantal length distinctions in representing their own language's voicing distinction. It seems clear too that double writing of stops indicated at least two different types of sounds, reflexes of IE voiceless stops, before which IE short accented vowels were lengthened (cf. e.g. *āppa* "after, following" < **h₁ópō*, *wītti* "year" (dat.) < **wét-ei*, and *tuēka-* "body, self" < **tuék-o-*) and reflexes of stop plus laryngeal before which short accented vowels failed to lengthen (cf. e.g. *me-ek-ki* "numerous" < **méǵh₂i-* {10.7.1.}; *tittiya-* "establish, appoint", probably from **tith₂-yo-*).

The relation between the Hittite consonant system and the Proto-Luvian one is not entirely clear, and it is possible that single and double writing in Cuneiform Luvian do not indicate a fundamental voicing distinction. In Cuneiform Luvian, single and double writing is more directly tied into accent and vowel quality than it is in Hittite. Cuneiform Luvian clearly merged all three orders of IE stops after **V*, where each appears as a sound written with double stop {6.2.2.2.}, and liquids, nasals, and **s* are also doubled in this environment (see Čop, *IF* 75 (1970) 85–6). The distribution of voiced and voiceless stops in Lycian also suggests neutralization of voicing in initial position (cf. e.g. Lyc. *tukedr(i)-* "statue", compound with first element from IE **tuék-* or **tuk-*, *tupñme* "two(fold), pair" : IE **d(u)wō* "two", and *tadi* "places" : IE **dheh₁-* "put, make") and a re-distribution of IE voicing distinctions in medial intervocalic position, caused by PA voicing {6.2.3.}.

## 1.11. Double and single writing of continuants

Bernabé Pajares, *REL* 3/2 (1973) 415–56 (passim); Čop, *Linguistica* 6 (1964) 37–76; Eichner, *MSS* 31 (1973) 100 n.88, *Heth. u. Idg.* 59 n. 58, 78–9, *Lautgesch. u. Etym.* 147 n. 71, 161–4, *Laryngaltheorie* 145; *Kimball*, PW 168, 341, 868–71, 385–6, *Gds Cowgill* 176–7 w.n. 41; Kuryłowicz, *PICL* 8, 220–1; Melchert, *SHHP* 31–2 n. 64, 90 w.n. 24, *AHP* 24, 74–5, 79–80, 81–2, 150, 152–3, 153–4; Oettinger, *Stammbildung* 90–1 n. 16, 118, 123, 528 n.22, *KZ* 94 (1980) 52 n. 27, *Fs Neumann* 238 w.n. 35, *Gds Kronasser* 166–7; Watkins, *Fl. u. Wb.* 376.

The most vexing problem is determining all of the sources of double continuants. It is important to distinguish between geminates resulting from assimilation (e.g. **tn* > *nn*, **ln* > *ll*, **mn* > *mm*, **nm* > *mm*, **rs* > *rr*, **RH* > *RR*, **sH* > *ss*, **Hs* > *ss*, **ns* > *ss*),

hypercoristic geminates (e.g. *an-na-* "mother", *at-ta-* "father", *ha-an-na-* "grandmother", *hu-uh-ha-* "grandfather"), and double continuants resulting from other causes such as the effects of accent and vowel length.

Geminates were not confined to intervocalic position. The scribes sometimes indicated postconsonantal geminates using dummy vowels, e.g. *sa-an-an-ah-hu-un* : *sanh-* "seek", *kar-as-sa-an-zi* : *kars-* "cut". One important distinction that may be obscured by the writing system and by conventional transcriptions is that between intervocalic and preconsonantal geminates. For example sequences of geminate plus /y/ or /w/ are frequently indicated with -VC-CI-(YA)-, -VC-CU-(WA)-, e.g. *tal-li-ya-* "call on the gods" = [tallya-]; *pe-es-si-ez-zi, pe-es-si-ya-an-zi* "throw(s)" = [pēssyetṣi], [pēssyantṣi]; *i-is-su-u-wa-an,* supine of *īssa-* "do" = [īsswan]. Within PA, continuants (except **h₂*) were apparently geminated before a following resonant and the resulting consonant cluster is sometimes indicated with dummy vowels, e.g. *ki-is-sa-ri* beside *ki-is-ri-(i)* = [gissrī], dative singular of *kissar* "hand" {11.2.2.2., 11.5.2.1.}; *gi-im-ma-ra-* beside *gi-im-ra-* "field, steppe" = [gimmra-] {7.6.2.}; *sa-am-ma-ni-ya-, sa-am-ni-ya-* = [sammniya-] : *sammniya-* "create" {7.5.3.3.}.

The assumption, repeated in several of the handbooks (Kronasser, Sturtevant, Friedrich, Rosenkranz), that double and single writings are not linguistically significant or are merely the result of the whim of the scribe, is open to question. Numerous well-attested words show consistent (or nearly consistent) spellings with double or single resonant, especially in early texts: e.g. *hāras, hāran-* "eagle", *āra-* "right", *pēran* "in front of", *ār-* "arrive", *hāli-* "pen, enclosure", *mālā(i)-* "approve of", *wemiya-;* with double resonant: *ārr-* "wash", *ārra-* "arse", *sarra-* "divide", *salli-* "big", *malla-* "grind", *sunna-* "fill", *sanna-* "hide". Watkins, Bernabé, and Eichner cite minimal pairs or near minimal pairs with single and double continuants. In some of these cases, a consideration of plene writing, or of the length or color of a preceding vowel shows that these may not be true minimal pairs (e.g. *a-sa-an-zi* "they are" = [ăsantṣi] : *a-as-sa-an-zi* "they remain" = [āssantṣi]; *ma-a-la-an-t°, ma-la-a-an-t°* "approved" = [mālānt-] : *ma-al-la-an* "ground" = [măllant-] or [măllānt-]; *ze-e-na-an-t°* "autumn" = [tsēnant-] or [tsēnānt-]? : *zi-in-na-an-t°* "finished" = [tsĭnnant-] or [tsĭnnānt-])?; but other examples seem valid, e.g. *a-ri* "arrives" = [āri] : *a-ar-ri* "washes" = [ārri]; *a-a-ra-* "right" = [āra-] : *a-ar-ra-* "arse" = [ārra-]; *ta-ra-a-an-t°* "speaking" = [tarānt-] : *tar-ra-an-t°* "able" = [tarrānt-]; *sa-ku-ni-* "spring" = [saguni-] : *sa-ku-un-ni-* "priest" = [sagunni-] (cf. Eichner 153).

Alternating single and double spellings within paradigms or among derivationally related words suggest accent and/or vowel length and perhaps orginal vowel quality as phonological conditioning, and they are paralleled by paradigmatic alternations between single (= voiced) and double (= voiceless) stops: e.g. *nah(h)-* "fear" (3 sg. pres. *na-a-hi*, 2 sg. imp. *na-a-hi*, beside ptcp. *na-ah-ha-an-t°*); *zah(h)-* "fight" (3 sg. pres. *za-a-hi*, 3 pl. *za-a-ha-an-zi* but 3 pl. pret. *za-ah-hi-ir* and nominal **zahhur* in *zah-huriya-* "fight") {10.4.2.1.}; *hās-, hass-* "give birth" (3 sg. pres. *ha-a-si* : 3 pl. *ha-as-as-an-zi*); *hās-, hass-, hēs-* "open" (3 sg. pres. *ha-a-si*, 3 pl. pret. *he-e-se-er*, deverbative *hi-su-wa-a-(i)-* "lie open", but 3 pl. pres. *ha-as-sa-an-zi*) {11.4.3.}; *a-pe-e-ni-is-sa-an* "thus", *e-ni-is-sa-an* id., *ke-e-ni-is-sa-an* id., but *an-ni-sa-an* "formerly"; dem. pro. *an-na-, an-na-(al)-la-, an-na-(al)-li-* "former" but *a-ni-si-wa-at* "on the previous day" {7.3.3.1.}.



# 1.12. Spellings for nasals

## 1.12.1. Graphic omission

In spelling preconsonantal clusters of nasal plus velar the nasal is often dropped. Such spellings are found from OH on and seem to be purely graphic rather than indicative of true loss, since they occur beside spellings with dummy vowels or echo vowels in which the nasal is retained, and the nasal is usually not omitted in forms of the paradigm in which the nasal plus velar cluster precedes the consonant /w/.

*link-* "swear an oath", stem [liŋg-] < **h₁lengh-* {3.2.1.2.}: with *li-ik-C°* = [liŋC°], e.g.: 3 sg. pres. *li-ik-zi* (OH etc.), pret. *li-ik-ta* (OH etc.), imp. *li-ik-du* KBo IV 4 IV 54 (NH), 2 pl. imp. *le-e-ek-te-en* 942/z Rs.? 2 (OH+, CHD), *li-ik-te-en* KBo XVI 27 II 5 (MH); compare *li-in*-K/GV = [liŋg] with dummy vowel in e.g. 3 sg. pres. *li-in-ga?-zi* KBo VI 3 III 75 (MH, = *li-ik-zi* in OH dup. KBo VI 2 IV) and with echo vowel, e.g. 3 sg. pret. *li-in-ik-ta* (NH), prevocalic [ŋg] spelled *li-in*-K/GV in e.g. 3 pl. pres. *li-in-kan-zi* (MH), pret. *li-in-ker* (MH) and [iŋgw] spelled -IN-KU in 1 pl. pres. *li-in-ku-e-ni* (MH+). Spellings for the second person singular imperative [liŋk] show similar variation: *li-i-ik* KBo IV 14 I 41 (NH) beside *li-in-ki* KUB XIV 3 II 6 (NH).

Examples *CHD* 3, 62–4.

*hink-* "distribute", stem *hi-ik-C°* = [hiŋk-] in 1 sg. pres. *hi-ik-mi* KUB XXXIII 27 L. 12 (MH), 3 sg. pres. *hi-ik-zi* e.g. IBoT I 36 II 25 (MH, cf. *hi-in-ga-ri* ib. II 25); compare with dead vowel 1 sg. pres. *hi-in-ga-mi* (NH), 3 sg. pres. *hi-in-ga-zi* (Pre-NH); with echo vowel 1 sg. pres. *hi-in-ik-mi* (NH), 3 sg. pret. *hi-en-ik-ta* (NH), *hi-ni-ik-ta* (OH+), = [hiŋkmi], [hiŋktṣi], [hiŋkta] and with [ŋkw] 1 pl. pret. *hi-in-ku-u-e-en* KUB XXXVI 82 L. 6 (U) = [hIŋkwen]; similarly *hi(n)k-, (haik-)* midd. "bow" (< **"offer oneself"*): 3 sg. pres. *he-ek-ta* StBoT 25, 59 I 4, 5, 6 = [heŋkta], *ha-i[k-ta-ri]* KUB XXXVI 100 + KBo VII 14 Vs. 19 (OH) = [haiŋktari] {4.9.1.}.

Examples *HED* 3, 289–96.

## 1.12.2. NH °M-M° for earlier NH °M°

OH and MH single °M° is sometimes rendered as °M-M° in texts written down or copied during the NH period (OH+, MH+ and NH+ texts, cf. Oettinger, *Gds Kronasser* 166–7 and Melchert, *AHP* 24). Actually, the earliest example of this spelling may be OH (*u-um?-me-e-ni* StBoT 25, 139 Rs. 6?, first person plural present of *au(s)-* "see"), but the reading of the first sign is uncertain (StBoT 25 n. 76). The spellings with °M-M° seem to reflect a change in spelling habits rather than sound change, since there is no plausible phonological conditioning factor that would explain all of the examples. The doubling affects inherited **m* both following a stressed vowel (e.g. *mēmal* "ground meal": nom.-acc. sg. *me-em-ma-al* KUB VI 46 I 51 (NH), KBo II 8 I 35 (NH), KBo XXV 171 V 18 (U), gen. *me-em-ma-la-as* KUB XLII 89 Vs. 17 (U), beside OH etc. *me-(e)-ma-al* = [mēmal], [mēmal-V-] < **mémol-* : **melh₂-* "grind" {8.4.4.1.}) and preceding a stressed vowel (e.g. *sum(m)ānza* "cord": nom. sg. *su-um-ma-an-za-a-as* KBo X 45 II 29 (MH+) but. OH gen. sg. *su-ma-a-an-za-[na-as]*, dat.-loc. sg. *su-ma-an-*

*za-ni*, with stem [sūmānts-] from nom. **sumānts* < **suh₁-mén* plus PA animate nominative singular ending **-s* {7.3.3.2.}). Doubling is also found for /m/ in [am] from **m̥* in e.g. *hammink-* "bind" (3 pl. pres. *ha-am-ma-an-kan-zi* KUB XXXVIII 26 L. 21 (NH), 3 sg. pret. *ha-ma-an-kat-ta* KUB XXXVIII 32 Vs. 7 (U), *ha-am-mi-in-ga-as* (sic) Bo 3463 II? 10, ptcp. *ha-am-me-en-kan-za* KBo VI 5 III 5 (OH+ = *ha-me-en-kan-za* in MH dup. KBo VI 3 II 11, cf. OH ptcp. nom. sg. c. *ha-mi-in-kan-<za>* StBoT 25, 27 Rs 12) with stem [hamiŋg-] < **hm̥-né-ĝh-* {5.3.3.}) and *tamink, da(m)mink-* "stick together" (3 sg. pres. midd. *dam-me-ik-ta-ri* KUB XXI 29 IV 9 (NH), 3 pl. imp. *da-me-en-kan-du* KUB XXIV 7 III 70 (NH), vbl. noun nom.-acc. sg. *dam-me-en-ku-u-wa-ar* KBo XVIII 24 I 6 (NH), cf. 3 sg. midd. pres. *ta-me-ek-ta-ri* KUB VIII 41 Vs 26 (MH)), with stem [tamiŋk-] < **tm̥-né-k-* {5.3.3.}). Similarly, /m/ from **sm* is doubled in *tamē-, da(m)mē-* "other" (gen. sg. *dam-me-el* KBo VI 4 I 11, OH+) beside MH dat.-loc. sg. *ta-me-e-da-ni* KBo VI 3 II 8, and OH *ta-ma-i-i°, ta-ma-a-us*, with stem [damē-] < **dos-mói-* {11.5.2.4.}).

The sequence [um] from **uw* {9.7.1.} is also doubled: e.g. in *-nu-* verbs: 1 pl. pres. *ar-nu-um-me-ni* KUB IV 1 II 6 (MH?), KUB XXXIII 106 II 16 (NH), *ar-nu-um-me-[ni* KUB XIX 30 IV 5 (NH), 1 pl. pret. *a]r-nu-um-me-en* KUB XX 96 V 10 (OH+), *ar-nu-um-mi-en* KBo XIII 62 Vs. 18 (U), vbl. noun nom.-acc. sg. *ar-nu-um-mar* KUB XLIII 55 II 19 (Pre-NH), gen. sg. *ar-nu-um-ma-as* e.g. KBo V 9 II 34 (NH) : *arnu-* "bring": 1 pl. pres. *te-ek-ku-us-nu-um-me-e-ni* KUB XXXI 44 II 5 (MH+), *te-ek-ku-us-nu-ma-ni* KUB XXXI 42 II 8 (MH+) : *tekusnu-* "point out": 1 pl. pres. *wa-ah-hu-um-me-e-ni* KUB XIII 35 IV 1, 7 (NH), cf. OH *wa-ah-nu-me-ni* StBoT 25, 3 II 21 : *wahnu-* "make turn, swing". Similarly, first person plural present forms of *dā-* "take" and derivatives may have doubling: e.g. *du-um-me-e-ni* KUB XIII 35 IV 6 (NH), *tum-um-me-e-ni* KUB XVII 8 IV 17 (Pre-NH), cf. *tum-me-ni* ib. IV 22), *tum-um-me-ni* KUB XVII 28 I 10 (OH+); *pe-e-tum-me-ni* KUB IX 27 Vs. 17 (NH), *pe-tum-m[e-ni* KUB XII 19 III 21 (MH+); *ú-du-um-me-e-ni* KUB XIII 35 IV 4 (NH), *ú-tum-me-e-ni* KBo VI 29 II 27 (NH), beside OH *tu-me-e-ni*, MH *du-me-e-ni* = [dumēni] < Pre-Hitt. **duwéni*; doubling is also found in NH for the first person plural present of *au(s)-* "see": e.g. *a-ú-um-me-ni* KUB XXI 27 II 4 (NH), *a-ú-um-mi-e-ni* KUB XXXIIII 88 Rs. 16.(NH) beside *umēni* < **u-wéni*. In the second person plural personal pronoun doubling is found in gen. *su-um!-me!-en-za-an* KBo I 42 I 26 (NH, vocab.) beside OH nom. *su-me-es* = [sumēs] < **suwés*.

A few examples involve new spellings with CVC signs, e.g. DAM, which was not used as a syllabic sign in OH, in *dam-mi-ni-in-k°* and TUM in *tum-me-e-ni* (see Otten, *StBoT* 17, 51–3 on spellings for *da(m)mass-, da(m)mess-* "press, oppress" and the dating of the syllabic use of DAM). Not all examples, however, have CVC signs (e.g. *ha(m)mesha(nt)-* "spring", dat. *ha-am-me-is-hi* VAT 7458 (*HED* 3), gen. sg. *ha-am-me-es-ha-an-ta-as* KBo XIX 128 VI 33 (OH+), *ha-am-mi-is-ha-an-ta-as* KBo XXIV 118 VI 7 (NH) beside OH *ha-m[e-es-hi* StBoT 25, 18 Rs.? 1; *ha-am-me-in-k°* "bind", and *me-em-ma-l°* "meal"). If the doubling is graphic and does not indicate sound change, then it is possible that some spellings are analogical. For example, the introduction of the sign DAM in *dam-mi-in-k°* "attach" may have encouraged the introduction of the spelling with double nasal in *ha-am-me-in-k°* "bind", a word that is parallel morphologically and similar in meaning.



## 1.13. Spellings for glides

Melchert, *SHHP* 13, 20–21, 48–51, 54–7, *AHP* 24–5; Sturtevant-Trager, *Language* 19 (1943) 209–20.

The cuneiform syllabary did not offer a complete set of CV signs for spelling glides. Although [wa], [wā] and [ya], [yā] were spelled WA and YA in texts from all periods, and [wī], [wi], [wē], or [we] could be spelled with WI = GEŠTIN in NH, sequences of glide plus front vowel had to be spelled with the signs I, Ú and U (although the latter is rare), i.e. I-E-, Ú-E-, Ú-I-, U-E-, and [yu] was spelled I-U- or I-Ú-. The scribes normally used CI and CU signs in spelling postconsonantal /y/ and /w/. In the version of the cuneiform syllabary used by the Hittites the sign WA could represent [pe], [be] and [pi], [pi] as well as [wā] and [wă], but in writing Hittite, the scribes never used it in these values. There is considerable evidence suggesting that Ú and U can be regarded as equivalent {1.7.}, although Hart, TPS 1983 124–32, notes both a tendency to prefer Ú before front vowels and a tendency to standardize spellings with Ú or U on a word-by-word basis. Both in initial and in medial position, there was a tendency to introduce redundant spellings in Ú-WA-, U-WA- and I-YA- to spell [wā], [wă] and [yā], [yă].

### 1.13.1. Initial

#### 1.13.1.1. Standard spellings for initial /w/

The most common spelling for [wā] and [wă] is with WA, e.g. *wa-a-tar* "water" = [wādar]; *wa-a-ki* "bites" = [wāgi]; *wa-ah-nu-* "make turn, swing" = [wāhnu-]; *wa-al-h°*, *wa-al-ah-h°* "strike" = [wālh-]; *wa-ra-(a)-ni* "burns" = [wārāni]. Before front vowels, /w/ was normally spelled with Ú, e.g.: *ú-e-mi-(ya)-* = [wēmya-] "finds"; *ú-e-ek-zi* = [wēktsi] "asks"; *ú-i-ta-a-ar, ú-i-da-a-ar, ú-i-te-(e)-n°*, plural and oblique stem of *wātar* "water" = [widār], [widēn-]. Initial WI, which is equivalent to the Sumerograph GEŠ-TIN "wine", occurs only in texts written down in the NH period, e.g. "*wi-ú-i-da-a-i* KBo V 4 Rs. 29 (NH), cf. "*ú-i-wi-ta-[i]* ib. Rs. 36; *ú-wi-te-ni-it* KUB XIII 3 II 26 (MH+), *ú-wi-ta-ar*, instrumental singular of *wātar*, ib. III 23. The spelling Ú-WI- for /wi/, /we/ etc. is an example of a redundant spelling.

#### 1.13.1.2. Ú-WA- and U-WA-

The spelling Ú-WA- is less frequent than WA, and U-WA- is very rare. It is clear that the scribes regarded all three spellings as potentially equivalent, since they are sometimes found in the same words (Sturtevant-Trager 266, 268–9, Melchert, *SHHP* 13). Normally Ú-WA- and U-WA- are redundant spellings for [wā] and [wă] from **wV*. (Melchert, *SHHP* 13 and *AHP* 25).

Melchert and Pedersen, *Hitt.* 6–7, also note that Ú-WA- would have disambiguated WA = [wa] from [pe] or [pi], but as both also note, WA was not used in these values in writing Hittite.

The spelling Ú-WA- is standard in *uwate-* "bring" (3 sg. pres. *ú-wa-te-ez-zi*, OH etc., 1 sg. pret. *ú-wa-te-nu-un*, OH, 3 sg. *ú-wa-te-et*, OH etc., 3 pl. *ú-wa-te-er*, OH etc., 2 pl. imp. *ú-wa-at-te-en*, OH etc.), which is probably a compound of a preverb **wo-*, identical to the preverb of *watku-* "leap", plus **dheh₁-* "put", i.e. [wādĕ-] < Pre-Hitt. **wó-dē-* (in IE terms **wó-dheh₁-*) {2.9.1.1.}.

In several other words Ú-WA- is a variant spelling for WA: *ú-wa-as-ta-i* "sins" KBo III 28 II 10 (OH+), beside *wa-as-ta-i* (OH), *wa-as-da-a-i* (MH), *wa-as-ta-i* (MH+); *(aīn) ú-wa-a-i-in* "woe and pain" StBoT 25, 7 IV 5, beside *wa-a-in* ib. IV 9 and *wa-a-i-in* in duplicates StBoT 25, 3 IV 14, 40, StBoT 25, 4 IV 35, 37; *ú-wa-ah-nu-wa-ar* "turn, lap", vbl. noun of *wahnu-* "make turn", e.g. KBo III 2 I 9, 62 (MH+, and elsewhere in the horse training texts) beside *wa-ah-nu-u-wa-ar* in the horse training texts and elsewhere; *ú-wa-an-ti-wa-an-ta-az* "lightning" KUB XVII 10 II 33 (MH), beside *wa-an-te-wa-an-te-ma* (NH), and verb *wa-an-ta-a-i°;* (NH); acc. pl. *ú-wa-al-lu-us* "legs(?)" KUB XXIX 1 IV 9 (OH+), but nom. pl. *wa-al-li-e-es* ib. IV 10; *ú-wa-ar-ka[n-ta-an* "fat" KBo III 60 II 3 (OH+) for *wa-ar-kan-t°; ú-wa-ar-sa-ma-an* "straw" KUB XXXII 129 Rs. 3 (NH) but *wa-ar-sa-ma-an* ib. Rs. 4; *ú-wa-a-tar* "water" KBo III 34 II 35 (OH+) for *wa-a-tar* (OH etc.). In *uwansik-*, iterative of of *wen(t)-* "rape", only Ú-WA- is found (3 pl. pres. *ú-wa-an-si-kan-zi* KUB XXXI 64 I 7, OH+, 1 pl. pret. *ú-wa-an-si-ke-u-en* KBo III 60 III 13, OH+), but it continues inherited **wV-* {3.2.2.2.}.

It is possible that the spread of Ú-WA- in *uwansik-* "rape" or *ú-wa-a-tar* "water" was favored by the use of Ú in other forms of the paradigm (cf. 3 sg. pres. *ú-e-en-ta* "raped, attacked" and *ú-i-te-(e)-n°*, oblique stem of *wātar*), since it would have brought some measure of graphic unity to the paradigm. The spread of Ú-WA- at the expense of WA also parallels the spread of initial I-YA- for YA = /yā/, /yă/, though I-YA was far more popular, and the spread of medial -CU-Ú-WA- and -CU-U-WA- {1.13.2.1.}. All of these spellings may be attributed to the scribes' tendency to favor redundant spellings.

Ú-WA- and U-WA- can also represent [uwa] from **ua* with glide insertion {9.5.1.2.}. One example is *ú-wa-(a)-* "come": 1 sg. pres. *ú-wa-a-mi* KUB XXIX 1 I 20 (OH+), *ú-wa-mi* e.g. KBo III 4 III 15, 59 (NH), 2 sg. *ú-wa-a-si* KUB VII 54 III 24 (NH), *ú-wa-si* e.g. KBo VII 14 I 5 (OH), KUB XXIX 1 I 19, 1 pl. *ú-wa-ú-e-ni* StBoT 25, 3 IV 7, StBoT 25, 4 III 16, KBo XII 42 Rs. 4 (OH+) = *ú-wa-u-e-ni* ABoT 49 L. 7 (OH)+, 2 pl. *ú-wa-at-te-ni* KBo VII 28 Rs. 40 (NH), *ú-wa-at-te-e-ni* KUB XIV 12 Rs. 10 (NH), 3 pl. *ú-wa-an-zi* KBo VIII 42 Vs. 5 (OH), StBoT 25, 54 III 7 beside *ú-an-zi* StBoT 25, 19 Vs. 16. Here [uw] was original in forms like the third person plural preterit and the participle (3 pl. pret. **(o)u-$h_1$y-enti* > **uantṣi* > [uwantṣi], and **(o)u-$h_1$y-ént-* > **(o)uyant-* > **uant-* > [uwant-] and was extended analogically elsewhere in the paradigm.

Cf. Melchert, *SHHP* 28.

Another example is provided by weak stem forms of of *au(s)-, u-, uwa-* "see": act. 3 pl. pres. *ú-wa-an-zi* e.g. KBo III 60 II 4 (OH+), 1 sg. imp. *ú-wa-al-lu* KUB XIV 8 Rs. 42 (pre-NH), *ú-wa-an-du* KBo XI 1 Vs. 28 (NH), KUB XVII 28 II 45 (OH+), midd. 3 pl. pres. *ú-wa-an-ta* (MH), 3 pl. pret. *ú-wa-an-ta-a[t* KUB VIII 80 L. 10 (Supp. I), ptcp. nom. sg. c. *ú-wa-an-za* KUB XIII 3 III 28 (MH+), acc. sg. c. *ú-wa-an-da-an* KUB IX 34 I 23 (MH+, also NH), nom.-acc. pl. n. *ú-wa-an-da* KBo XII 62 Rs. 15 (MH), vbl. noun *ú-wa-a-tar* KUB XXVII 67 II 65 (NH), KBo IV 4 III 28, 59 (NH), *ú-wa-tar* e.g. KUB V 1 I 76, II 51 (NH), *ú-wa-tal-la-* "seer, looker", gen. *ú-wa-an-na-aṣ* KUB XXIX 4 I 42 (NH); but midd. 1 pl. pres. *u-wa-u-wa-as-ta-ri* KBo XVI 59 Vs. 7 (NH), 3 sg. pres. *u-wa-it-ta-ri* KUB XIII 4 II 64, 66 (MH(?)+), 1 sg. pret. *u-wa-ah-ha-a[t* KUB XVII 31 I 18 (NH), 1 sg. imp. *u-wa-ah-ha-ru* KUB XIV 14 Rs. 15 (NH; cf. *ú-wa-ah-ha-ri* ib. Rs. 30), 3 sg. imp. *u-wa-ru* KUB XXXVI 44 IV 4 (MH), 3 pl. *u-wa-an-da-ru* KUB XXI 19 IV 28 (NH) = [uwa-] < [u-a] with zero-grade **u-* (cf. Oettinger, *Stammbildung* 38, 131–4).

Paradigm, examples *Stammbildung* 82, 405–8, *EHS* 466, *StBoT* 5 21–2.



### 1.13.1.3. Spellings for initial /y/

Initial [yā] and [yă] are normally spelled I-YA-(A)- in texts of all periods, e.g. *i-ya-mi* "I make" = [yami]; *i-ya-at-ta-ri* "goes" = [yatari]. Sporadically in OH, and much more rarely in later texts and copies, initial [yā] and [ya] could be spelled YA- (e.g. *ya-an-zi* "they make" KUB XXXVI 106 I 6, OH, *ya-at-ta* "goes" ib. Vs. 2; *ya-an-ni-is* "marched" KBo XXII 2 Rs. 7, OH). The normal spelling in I-YA- can be understood as redundant (Melchert, *SHHP* 15, 25, 20–1 and *AHP* 25). Before front vowels and /u/ or /ū/ the sign I is used (e.g. *i-e-mi* "I make" StBoT 15, 3 III 21, *i-ú-ga-an* "yoke", OH+, etc.).

## 1.13.2. Postconsonantal glides

Both /CyV/, /CwV/ and /CiyV/, /CuwV/ would be expected, the latter two sequences having arisen as Sievers or Lindeman variants and after the loss of intervocalic **$h_1$*, **$h_3$*, or **y*. However, evidence for systematic contrasts in OH between CU-V-, CU-WA- = [CwV], [Cwa] and CU-Ú/U-V-, CU-Ú/U-WA = [CuwV], [Cuwa] and between CI-V-, CI-YA- = [Cy-V], [Cya] and CI-I-V-, CI-I-YA- = [CiyV], [Ciya] is slight. By the Empire period, spellings in CU-Ú/U-V-, CU-Ú/U-WA- and CI-I-V-, CI-I-YA- seem to have been used merely as variant redundant spellings for CU-V- = [CwV], CU-WA- = [CwV], CI-V- = [CyV] and CI-YA- = [CyV].

### 1.13.2.1. Spellings for [CwV]

Where the vowel following /w/ is /ā/ or /ă/, spellings are: °C-WA-, °CU-WA-, °CU-A(C) and °C-Ú-WA-, °CU-U-WA (Melchert 48–51, Sturtevant-Trager, *Language* 18 (1942) 259–70.

The spelling °C-WA has the most restricted distribution. It occurs after /r/ and /l/, especially when these are spelled with CVC signs, e.g. from OH: gen. sg. *[wa-at]-tar-wa-as* "spring" StBoT 25, 112 II 8; *har-wa-ni* "we have" StBoT 25, 3 I 22 = 4 I 17; *pal-wa-a-iz-zi* "(s)he cries out" (?) StBoT 25, 82 Rs. 12, 3 pl. *pal-wa-an-zi* StBoT 25, 63 L. col. 3, 4, 5, StBoT 25, 86 Vs. 12, $^{LÚ}$*pal-wa-at-tal-le-es* StBoT 25, 31 II 5, $^{SAL}$*pal-wa-a[t-tal-]a-as* StBoT 25, 31 IV 9. These spellings are also found in Post-OH texts: e.g. gen. *ú-e-el-wa-as* "meadow" (sic) KBo XXV 109 III 10 (MH); otherwise *ú-(e)-el-lu-wa(-)*, as in *ú-e-el-lu-wa-as* ib. III 20; $^{GIŠ}$*za-al-wa-ni-in* "wooden plate"? StBoT 25, 35 III 7, *za-al-wa-ni-in* KUB II 13 II 46 (OH+). The spelling °C-WA also occurs sporadically after °Š in Post-OH texts, e.g. *hu-is-wa-it* KBo III 64 I 4 (OH+), *hu-u-is-wa-an-za* KBo VI 26 III 50 (OH+). °C-WA is also sometimes used to spell the quotative particle *-wa(r)* after consonants, e.g. *u-nu-ut-wa-za* StBoT 25, 110 II 23, *u-nu-ut-wa-az* StBoT 25, 119 L 13, *ú-uš-wa* KBo XXII 2 Rs. 4, *ú-uk-wa* ib. Rs. 15 (OH). Here °C-WA may have been favored over -CU-WA- or -CU-AR- to make the boundary between *-wa(r)* and the preceding word clear.

The spelling -CU-AC- is fairly frequent in OH texts, and the so-called "non-indication" of the glide has been considered an archaism in the literature on text-dating. It also occurs, though less frequently, in Post-OH texts. Melchert (50) notes that it does not occur for initial syllables even in OH: e.g. nom.-acc. sg. *mar-nu-an*, e.g. StBoT 25, 3 II 10, III 15 : *marnuwant-* "a drink"; 1 sg. pres. midd. *e-su-as-ta* "we sit" KBo XVI 25 I 71 (MH); oblique case forms of *u*-stem nouns: gen. sg. *ha-at-ta-lu-as*, e.g. StBoT 25, 25 IV 31, gen. sg. *wa-at-ta-ru-as*, e.g. StBoT 25, 105 L. 4, abl. *wa-at-ru-as* StBoT 25, 109 II 14, abl. sg. *t/da-]a-ru-az* KUB XXIX 1 I 2, dat.-loc. pl. *ge-nu-a* KUB XLIII 53 I 14 (OH+); from verbs in *-nu-*: *ga-ri-nu-an-zi* "they stop playing (a musical instrument)" StBoT 25, 31 III 7, *ka-ri-nu-[a]n-zi* StBoT 25, 33 I 14, *pit-ti-nu-an-zi* "they make run" StBoT 25, 54 IV 2 = 56 IV 11, ptcp. *pi-ti-nu-an* KUB XXXVI 100 I 11, *sa-mi-nu-an-zi* "they make disappear" StBoT 25, 19 Vs. 15 (2x), 11, *sa-as-nu-an-zi* "they make sleep" e.g. StBoT 25, 54 II 2, *u-nu-an-za* "decorated" StBoT 25, 61 Rs.? 7 = StBoT 25, L. 11, *za-nu-an-zi* "they cook" StBoT 25, 24 Vs.? 9, StBoT 25, 46 Rs. 6.

The spelling CU-WA- is found from OH on: e.g. *mar-nu-wa-an* StBoT 25, 4 III 15; midd. 1 pl. pres. *e-su-wa-as-ta* StBoT 25, 110 II 36; in oblique case forms of *u*-stem nouns such as gen. sg. *ha-at-ta-lu-wa-as* StBoT 25, 46 I 10, dat.-loc. pl. *ge-nu-wa-as*, e.g. StBoT 25, 25 I 10; in *nu-* verbs: e.g. *ar-nu-wa-an-da-an* KBo VI 2 IV 6, 7, 19. Melchert shows (48–51) that CU-WA- is merely a variant for CU-A(C) and represents /Cwa/ rather than /Cuwa/. As he notes, if -CU-E- and CU-I- are to be read as /Cwe/ (/Cwē/) and /Cwi/ (/Cwī/), then consistency demands that CU-WA- be read as /Cwa/. He suggests that the existence of the sign WA lead to the favoring of CU-WA- over other variants.

The spellings -CU-U-WA- and CU-Ú-WA- seem to have been extended as redundant variant spellings for [Cwā] and [Cwa], since they occur in contexts in which a reading /Cuwa/ is not justified on historical grounds, and they always alternate with -CU-WA- (though it should be noted that -CU-WA- was occasionally used to spell [Cuwa] in early texts): e.g. infinitive in *-wanzi*: *se-e-su-u-an-zi* KUB XIII 4 III 2 (MH(?)+), inf. *te-re-ep-pu-u-wa-an-zi* KUB XXXI 57 I 14 (OH+), *te-[re]-ep-pu-u-wa-an-zi* KBo VI 28 Rs. 23 (NH); verbal noun in *-war, -was*: *u-up-pu-u-wa-as* KUB VIII 21 L. 8 (OH+); *u*-stem nouns, nom. pl. c. *hal-lu-u-wa-as* KBo III 8 III 22 (Pre-NH), gen. sg. *wa-ap-pu-u-wa-as* KBo IV 2 I 48 (OH+), KUB XII 58 I 2 (MH+), *wa-ap-pu-ú-wa-as* KUB VIII 75 I 64 (NH).

Postconsonantal /w/ followed by a front vowel is spelled -CU-E- and -CU-I- in texts of all periods: with -CU-E- = /Cwē/: 1 pl. pres. *a-du-e-ni*, e.g. StBoT 25, 4 II 8 (and Post-OH), *ha-as-su-e-ni* StBoT 25, 137 II 9, *sa-su-e-ni* StBoT 25, 3 II 29, *se-e-su-e-ni* KUB XXXVI 56 II 5 (NH), *ta-ru-e-ni* StBoT 25, 3 I 27, IV 9; 1 pl. pret. *e-ep-pu-en* KBo III 60 III 6 (OH+); *pa-ah-hu-e-ni* KBo VI 2 II 33 (OH, also MH+, OH+); *tu-e-ek-ku-us* KUB XIV 1 Vs. 82 (MH). The spelling -CU-IC occurs for [Cwi] from OH on: e.g. *hal-ma-su-it-ta-as* KBo III 22 Rs. 57 (OH), *hal-ma-as-su-it-ta-az* StBoT 25, 3 II 25, *hal-ma-su-it-ta-az* StBoT 25, 52 II 8. The spelling °C-WI occurs in NH, OH+ and MH+, but it is rare and seems to occur mainly after CAR and CAL: *tar-wi-is-kan-zi* KUB XXV 37 II 18 (NH), *pal-wi-is-kan-zi* KUB XI 25 III 22 (OH+), *pal-wi-ęs-kąn-zi* KUB XI 29 II 7 (OH+).



The spellings -Ú-(E)-E(C), -U-(E)-E(C), -Ú-(I)-I(C) and -U-(I)-I(C) occur after CVC signs in texts of all periods: e.g. *har-u-e-ni* "they have" KUB XIV 16 III 33 (NH), *har-ú-ę-ni*, e.g. KBo VI 34 II 45 (MH+); *pal-ú-is-kan-zi* "they keep reciting" (?) KBo IV 9 I 50 (OH+), *pal-ú-e-es-kan-zi* KUB XXV 1 V 16, VI 30 (OH+), *pal-u-e[s-k°* StBoT 25, 67 Rs. 17, *pal-u-i[s-ke-ez-zi* StBoT 25, 69 Vs.? II 6.

In Post-OH texts, the spellings CU-Ú-E(C) and CU-U-E(C) occur sporadically as redundant variants for CU-E(C) = [Cwē], [Cwe]; their spread seems to have been parallel to the spread of -CU-Ú/U-WA- for -CU-WA-: e.g. 1 sg. pres. and pret. *e-ep-pu-u-e-ni* KUB XXXI 44 II 10 (MH+); *e-su-u-en* KUB XIV 3 IV 9 (NH); *tu-ú-i-ig-ga-as* KUB VII 1 I 31 (Pre-NH); *hu-is-ú-e-te-en* KUB XIV 1 I 12 (MH). Similarly, CU-Ú-I(C) and CU-U-I(C) may occur for [Cwī] and [Cwi], e.g. *w[a-a]p-pu-u-i* KBo II 3 II 11 (MH+), *wa-ap-pu-ú-i* Tunn. III 56.

### 1.13.2.2. Spellings for [CyV]

The spelling CI-YA, which can in theory be read [Ciya], occurs from OH on in non-Sievers-Lindeman environments where it is to be read [Cya] and considered the equivalent of CI-A(°): e.g. *a-ni-ya-at-ta(-)* "ritual equipment, vestments" StBoT 25, 65 Rs.? 2, StBoT 25, 92 R. col. 4, *ma-an-ni-ya-ah-hi* "distributes" StBoT 25, 25 IV 3, *ú-e-mi-ya-a[n-zi* "they find" StBoT 25, 124 III 11. The spelling CI-E- is found for [Cye] and [Cyē] from OH on, e.g. dem. pro. *sie-* = [syē]: abl. *si-e-ez* (MH+), dat.-loc. *si-e-da-ni* (OH), *si-e-ta-ni* (MH); *ú-e-mi-ez-zi* "finds" (OH) = [wemyetsi].

### 1.13.2.3. Spellings for [CiyV] and [CuwV]

As Melchert, *SHHP* 28, notes, the sequence *[CuwV] in Sievers-Lindeman variants became [CumV], and synchronic [CuwV] should, therefore, continue only **CuyV* or **CuH$_1$ $_3$V*. The PA loss of intervocalic **h$_1$* and **h$_3$*, which were accompanied by automatic glide insertion after **i* or **u*, e.g. **CuHa* > **Cua* > *Cuwa*, created sequences of [CiyV] after light syllables and new sequences of [CuwV], phonemicizing contrasts between [CyV] and [CiyV] and between [CwV] and [CuwV].

Melchert investigates the spellings CI-I-E-, CI-I-YA- and CU-Ú/U-E-, CU-Ú/U-WA- and suggests that they could represent /Ciye/, /Ciya/, /Cuwe/ and /Cuwa/, contrasting in OH with /Cye/, /Cya/, /Cwe/, /Cwa/ spelled CI-E, CI-A-, CI-YA and CU-E-, CU-A-, CU-WA, but he notes that limited data make a definite conclusion impossible.

Within OH CI-I-V- alternates with CI-V-, regardless of source. Some examples have glide insertion: *pi-i-e-er* StBoT 25, 68 I 12 (= [piyēr] "they gave" < **p(e)-i-ēr* {4.5.1.2.} or [piyēr] "they sent" < Pre-Hitt. **pe-iyēr* {9.2.1.2.}); *ti-i-e-ez-zi* "steps" StBoT 25, 27 Rs.? 18, StBoT 25, 31 II 7, StBoT 25, 47 III 8, StBoT 25, 127 Vs.? II 8, KUB XXIX 30 Vs. 7, 16, 19, 3 sg. pret. *ti-i-e-et* KBo VIII 42 Rs. 8 = [tiyē-] < **th$_2$yé-* (beside *ti-(e)-ez-zi*, *ti-(e)-en-zi*, and *ti-ya-an-zi*) {10.5.5.}.

Few examples occur in Sievers-Lindeman environments. In dat.-loc. pl. *ut-ni-i-as* "in the lands" StBoT 25, 118 I 6 it is possible to read [udniyas] from **udniy-* beside nom.-acc. sg. *udnē* < **udnēi* {9.6.} (Melchert); cf. also *ar-ki-i-ú-az* StBoT 25, 26 Vs.? I 9 "passageway of the gatehouse" (beside *ar-ki-ú-az* ib. I 7, *ar-ki-úl-* StBoT 25, 28 Rs.? III 70), a word with no etymology. Other possible examples of CI-I-V- in a

Sievers-Lindeman environment are *si-i-us* "god" KBo III 22 Rs. 47, if this represents [siyūs] < **diyḗus* or **diyéus*, but this interpretation is not at all certain {4.8.3., 9.6.}.

The spelling CI-I-V also occurs in OH in non-Sievers-Lindeman environments in *su-li-i-as* StBoT 25, 4 IV 32 = *su-l]i-i-as* 3 IV 37, genitive singular of *sulāi-* "lead", and after /s/ plus obstruent, which did not condition Sievers-Lindeman in IE in: *ha-as-ti-i-as* StBoT 25, 26 Rs.? IV 7, genitive singular of *hastāi-* "bone"; *t]u-us-ka-ri-i-as* StBoT 25, 112 II 20, genitive singular of **tuskarāi-* "joy", and occasionally in verbs in *-iya-*: *kar-pi-i-ez-zi* KBo VI 2 II 39, 40, 49, *kar-pi-i?-ez-zi* ib. II 45 (beside *kar-pi-ez-zi*) : *karpiya-* "lift, undertake", *kar-as-si-i-ez-zi* ib. I 8 : *kars(iya)-* "cut"; *pe-es-si-i-e-ez-zi* StBoT 25, 43 I 16 (beside *pe-es-si-e(C°)* : *pēssiya-* "throw". Some of these spellings may point to analogical extension of [iy] from an original locus of Sievers variants. Melchert notes, for example, that OH *su-li-i-as*, *ha-as-ti-i-as* and *tu-us-ka-ri-i-as* might have [iya] from other nouns in *-āi* which would have provided contexts for Sievers' Law, e.g. [hugmiya-] : *hukāi-* "spell", or [sāgliya-] : *saklāi-* "rite, custom", though spellings in -CI-I-AC' are not otherwise common among nouns of this type. Similarly, some verbs in **-ye/o-* would have provided contexts for Sievers variants, and these could have provided a locus for the generalization of [-iyē/a-] to other paradigms.

CU-Ú/U-V- and CU-Ú/U-WA occur in OH where glide insertion would be expected in *kap-pu-u-en-zi* "they count" KBo VI 2 IV 20 = [kapuwentsi] with [-uwe/a-] < **-u-ye/o-* {9.7.5.2.} and *su-ú-ez-zi* "pushes" KBo VI 2 IV 48 = [suwetsi] < **suh₁yéti* {9.5.1.2., 9.7.5.2.}. The spelling *tu-u-wa-* in *tu-u-wa-an* "(from) here" StBoT 25, 53 r. col. 6 for *tu-wa-an* < **dwām* is unexpected, but it could be based on *tu-u-az* "from afar" StBoT 25, 46 I 8 = [duwats]?, if this has analogical [uw] as suggested by Melchert (30).

Any contrast breaks down, at least graphically, after the OH period. For example, the spelling CI-I-E(C) occurs fairly frequently in Post-OH texts in verbs in *-iya-* in non-Sievers-Lindeman contexts (e.g. 3 sg. pret. *a-ri-i-e-ez-zi* KUB XVII 24 II 10 (NH), 3 pl. pret. *a-ri-i-e-er* KUB V 6 III 19 (NH) = [aryē-] : *ariya-* "inquire by oracle"; 3 pl. pret. *ú-e-mi-i-e-er* KBo IV 4 III 22 (NH) = [wēmyēr] : *wemiya-* "find"; 3 sg. pres. *ú-e-ri-i-e-ez-zi* KBo III 67 IV 4 (OH+), 3 pl. pret. *ú-e-ri-i-[er]* KBo IV 4 II 2 = [wēryē-] : *weriya-* "call on, invoke". The scribes' tendency to favor redundant spellings may have lead them to use CI-I-V, CI-I-YA- and CU-Ú/U-V, CU-Ú/U-WA- as variants for CI-V-, CI-YA- etc. in spelling [CyV] and [CwV]; or these spellings may indicate analogical generalization of [CiyV] and [CuwV] throughout paradigms, though this is impossible to establish with certainty.

### 1.13.3. Intervocalic /w/

The sequences /Vwā/ and /Vwă/ can be spelled -V-WA-(A)-, and this spelling is frequent in all periods, e.g. from OH: *si-wa-e-e[s* "sour" (?), StBoT 25, 4 II 17, nom. *si-i-wa-az* "day" StBoT 25, 27 Rs.! 19, loc. *si-i-wa-at* StBoT 25, 17 I 1, *si-wa-a[t-ti* StBoT 25, 15 II 13; Post-OH, e.g. *e-wa-an* "barley" KBo IV 2 I 10 (OH+), *ne-e-wa-an* "new" KBo XXI 22 Vs. 26 (MH); vbl. noun gen. sg. *par-as-na-wa-as* "squatting" KUB II 5 II 1 (OH+), KUB X 89 I 36 (OH+).



After the OH period, the spellings -V-U-WA-(A)- and V-Ú-WA-(A), which Melchert describes as conflations of -U-A(C)- or -Ú-A(C)- and WA, began to enroach on the other two spellings. The redundant use of U/Ú here has parallels in the use of Ú-WA- (U-WA-) initially and in the use of (-)I-YA- initially and medially for /yā/, /yă/: e.g. *e-u-wa-an-na* KUB XXIX 1 III 9 (OH+); *ne-e-u-wa-an* KBo XX 54 + KBo XIII 122 I 6, 7 (OH+); supine *me-mi-is-ke-u-wa-an* e.g. KUB XVII 1 II 17, 19 (NH), *par-as-na-a-u-wa-as* KUB I 17 II 16, III 46 etc. (OH+), *ti-is-ke-u-wa-an* KUB I 1 I 34 (NH); *u*-stem adjectives, oblique stem forms and nom.-acc. pl. n. in /-wa/: *par-ga-u-wa* KBo XX 28 Vs. 20 (MH), *i-da-la-a-la-u-wa* KBo II 3 III 43 (MH+), *a-as-sa-u-wa* KBo XI 1 Rs. 12 (NH), *tar-ra-a-u-wa* KUB XXXVI 89 Rs. 43 (OH+), gen. sg. *he-e-u-wa-as* KUB XXV 23 IV 47, 62 (NH), *he-e-ya-u-wa-as* ib. IV 52, *pa-an-ga-u-wa-a[s* KBo XXIII 108 Vs. 11 (U), gen. sg. *te-pa-ú-wa-as* KUB II 1 II 40 (OH+).

Intervocalic /w/ followed by a front vowel can be spelled -V-Ú-E/I-, V-U-E/I and, in NH, OH+ and MH+ texts, V-WI-E/I, and V-Ú-WI, V-U-WI, and CU-Ú/U-I: e.g. with -U-E- = OH /wē/: *tar-as-ke-u-en* "we were speaking" KBo III 16 II 15 (OH+), *a-as-sa-u-e-es* "good" KUB IX 6 II 6 (NH), VBoT 24 III 2, IV 30 (MH+), *hu-et-ti-ya-an-ni-es-ke-u-e-ni* "we are drawing" KUB XV 34 III 36 (MH?); with -Ú-E- = OH /wē/: *hal-zi-ú-en* "we called" KBo V 3 I 40 (Supp. I+), *zi-ḳe-ḳ-ú-e-ni* "we are putting" KBo III 40 L. 5 (OH+); with -U-I = OH /wī/, /wi/: *pa-an-ga-u-i(°)* "all" KBo II 2 I 50 (U), KUB I 16 III 62 (OH+), with -Ú-I- = OH /wī/, /wi/: *na-a-ú-i* "not yet" StBoT 25, 3 II 30, StBoT 25, 81 II 2, *na-ú-i* StBoT 25, 41 Vs.? I 12; with -U-WI- = OH /wī/, /wi/: *pa-an-ga-u-wi* KUB X 1 I 24 (OH+); with redundant -CU-Ú-I- = [wi]: dat. sg. *sa-a-ru-ú-i* "booty" KBo IV 4 IV 13 (NH), *a-ru-ú-is-ke-ez-zi* "(s)he makes obeisance" KUB XX 46 III 16 (OH+).

## 1.14. Spellings for *h*

The spellings °H-H° and °H° have long been viewed as reflecting a difference in voicing comparable to that seen in the writing of stops (Sturtevant's Law), with °H-H° representing a voiceless sound and °H° a voiced sound. Since **h₁* and **h₃* °H-H° representing a voiceless sound and °H° a voiced sound. Since were lost between vowels, the only source for intervocalic °H-H° or °H° in inherited words is **h₂*, and previous attempts to explain single °H° as a reflex of **h₁*, **h₃* or some other laryngeal have to be discarded. Eichner, *MSS* 34 (1973) 55–73, established that intervocalic **h₂* became a sound spelled °H-H° or °H° depending on the accent and quality of the preceding vowel. There is no basis either for viewing °H° as a hiatus-breaker in e.g. *ehu* "come", *mēhur* "time", or *sēhur* "urine", since inherited **eu* and **ēu* were most likely monophthongized to PA **ū* {4.6.,4.8.3.} and secondary sequences of *eu (ēu)* are tolerated in *hēū-* "rain" and *mēu-* "four" {4.9.3.}.

For a summary of views on °H° and °H-H° see Lindeman, *ILTh.* 108–111.

In initial position, there is considerable evidence that **h₂* and **h₃* remained distinct into PA and its daughter languages {10.2.3.}. Unfortunately, there seems to be no way of determining whether that distinction was maintained into Pre-Hittite, since reflexes of the two sounds are both spelled with H.

# 1.15. Spellings for sibilants

Benveniste, *HIE* 8–9; Čop, *Linguistica* 9 (1969) 45–7; Eichner, *Lautgesch. u. Etym.* 138 n.37; Gamkrelidze, *Ar. Or.* 29 (1961) 409 w.n. 13; Friedrich, *HE* 32, 36–7; Hrozný, *SH* 79 w.n. 4, 190; Ivanov, *Xettitskij Jazyk* 62–3; Kuryłowicz, *PICL* 8, 223; Jucquois, *Hethitica* 1 (1972) 120–5; Kronasser, *EHS* 49; Melchert, *AHP* 22–4; Neu, *Heth. u. Idg.* 186 w.n. 25; Oettinger, *StBoT* 22, 23–4; Pedersen, *Hitt.* 175; Puhvel, *JAOS* 94 (1975) 294–5 = *AnIE* 265–6; Sturtevant, *CGr*$^1$ 49, 84, *CGr*$^2$ 25, 26–8; van Brock, *BSL* 61 (1966) 209–16.

The cuneiform syllabary as adapted for Akkadian was rich in signs for sibilants, though the use of specific series in particular values varied regionally and chronologically. In the version used to write Hittite, signs of the Š-series represented reflexes of IE **s*, *[z] and **di/dy*, and signs of the Z-series represented reflexes of **ti/ty*, **s* and *[t$^s$t] from dental stop plus dental stop.

## 1.15.1. Phonetic values for °Š°

### 1.15.1.1. °Š° for /s/, /ss/

Evidence for an alveolar or dental pronunciation comes from Egyptian, where the writing system can show a distinction between /s/ and /š/ and where Hittite proper names with /s/ are transcribed with S rather than Š, e.g. *Mrsr* = *Mur*-ŠI-*li-is*, *Htsr* = *Ha-at-tu*-ŠI-*li-is* (Hrozný, Friedrich 32, Sturtevant, *CGr*$^2$ 25, Kronasser, Ivanov). The phonetic values of single and double writing of medial °Š° are not clear, though single °Š° is regular after reflexes of accented long and short vowels and double °Š-Š° occurs before reflexes of accented vowels and preceding and following resonants {11.4., 11.6.2.}. Although there are parallels with spellings for /h/ and /ḫ/ and stops, there is no firm evidence for reading single °Š° as a voiced sound as opposed to a voiceless sound in °Š-Š°, and it should be remembered that signs of the Š-series were used to write both the reflexes of IE **s* and its voiced allophone *[z] (e.g. in *ha-as-du-(e)-er* "branches" < *[h$_2$ozdwēr] {11.5.1.2.}).

### 1.15.1.2. °Š° for /z/, [ž]

Because the reflex of **di/dy* is spelled with ŠI in *sīus*, *siun-* "god" (IE **dyḗus* or **dyéus* {6.7.3.}), it has been suggested that °Š° could be used to represent an affricate. Pedersen argued for a development of **dy* to [ž], and Kuryłowicz also posited the development of **dy* to a voiced sound as opposed to the voiceless reflex of **ty*. Puhvel posits **dy* > [z], [dz], or [ž], claiming that the single °Š° of *āsiwant-* "poor", with a sibilant that he derives from **dy*, shows that the reflex of **dy* was a voiced sound. Benveniste, who suggests that *sīus* points to **dy* > [ž] or [z], cites spellings in °Z° from the Hurro-Hittite syllabary of Alalah of Indo-Iranian proper names with I.-Ir. **z*, e.g. *Za-an-tar-mi-ya-as-ta* < I-Ir. **Candra-myazda* "who offers a brilliant meal (to the gods)" or *Zi-ir-tam-ya-as-da* < **citra-myazda*, with a similar meaning. Benveniste notes that *-mi-as-ta* looks more Iranian than Indic (cf. Ved. *miyédha-* "sacrificial oblation") and should probably reflect an intermediate stage in the development of I.-Ir. **zdh*.



## 1.15.2. Phonetic values for °Z°

### 1.15.2.1. °Z° for /s/ or /z/

Reflexes of IE */s/ are written with signs of the Z-series after dental stops (e.g. *ne-ku-uz* "night" = [neg$^w$ts] < **nég$^w$ts* {6.5.1.}; *hu-ur-za-k°* iterative stem of *hu(wa)rt-* "curse" = [hurtsk-] < **h$_2$wr̥t-sḱ-* {11.6.1.1.}), in spellings for [nts] from secondary **ns* (e.g. *an-za-(a)-as* "our" (dat.-loc.) = [antsās] < **n̥s-ó-* {5.3.4., 7.8.3.}) and perhaps in variant spellings for the cluster [sk] (e.g. *za-as-ga-ra-is* "anus" = [skārāis]? with [skār] < **skór* {11.8.2.1.}). In these contexts, °Z° undoubtedly represents voiceless /s/. In other contexts, it is possible that °Z° represents a voiced pre- or postconsonantal [z] resulting from voicing assimilation (e.g. *za-ma-an-kur* "beard" = [zmã(n)kur] (?) < IE **smóḱwr̥* "beard" {11.8.2.1.} and in Cuneiform Luvian spellings for **s* after liquids and nasals: e.g. *gul-za-(at)-tar* "wooden writing tablet, rough draft" < **k$^w$l̥s-* beside Hitt. *gul-(as)-s°* with [lss] {11.8.2.3.}).

### 1.15.2.2. /ts/, /tṣ/, /t$^s$t/

While /tṣ/ from **ty/i* is written with signs of the Z-series like [ts] from **t* plus *s* and [t$^s$t] from dental plus dental, there is clear evidence from morphophonemic alternations that these sounds were phonemically distinct. When followed by geminating *-(y)a-* "and" the nominative singular animate of *nt*-stems is written as *-an-za-as-sa* = [-antss-a] with gemination of the ending *-s*, e.g. *ku-na-an-za-as-sa* "and the killed" = [g$^w$nāntss-a], *ap-pa-an-za-as-sa* "and the captured" = [apāntss-a] (both KBo IV 4 II 75, NH). The ablative singular ending, by contrast, which is from **-ti* {6.7.2.2.}, shows up as *-az-zi-ya* = [-atṣi-ya] with preserved stem-final *-i* and the copulative particle in its post-vocalic form *-ya*, e.g. *kitkarza ... pa-du-ma-az-zi-ya* "at the head and at the feet" KUB XXIV 10 II 5 = 11 II 6 (MH+) = [padumatsi-ya], ZAG-*na-az* GUB-*la-az-zi-ya* "from the left and from the right" KUB XXIV 11 I 7 with [kūnnatṣi-ya] : *kūnna* "right" (Friedrich, 36–7, Čop, Oettinger, Neu).

### 1.15.2.3. °Z-Z° and °Z°

The spellings -VZ-ZV-, -VZ-V- and -V-ZV- for the reflex of **ti/y* have been explained in various ways. Sturtevant (*CGr*$^1$ 49, 84) suggested that frequent doubling indicated that the sibilant component of the affricate was long, but in *CGR*$^2$ (25, 26–8) Sturtevant-Hahn viewed the doubling as an indication of voicelessness. Van Brock suggests that °Z-Z° and °Z° were spellings for allophones: °Z° represented a palatal affricate [tš] from **ti* after front vowels and from **ty* after all vowels, while °Z° represented less palatal or non-palatal [ts] from **ti* after non-front vowels. Jucquois follows van Brock in viewing the two spellings as representing the results of conditioned sound change, but suggests they represent [t$^s$] and [d$^z$]. Eichner regards these spellings in *mi*-conjugation third person singular presents as reflecting a fortis : lenis distinction. In Eichner's view, fortis *-zz(i)* was the regular reflex of **-ti* after short accented vowels (e.g. in *-skezzi* < **-sḱ-é-ti*) while lenis *-z(i)* was regular after unaccented vowels and perhaps after long accented vowels. According to Eichner, *-zzi* tended to spread at the expense of *-zi*, phonologizing the opposition *zz* : *z*.

The evidence from OH originals suggests only that °Z-Z° was the more popular spelling regardless of the original quality or quantity of the preceding vowel. For example °Z-Z° is by far the more common spelling for all *mi*-conjugation third person singular presents from stems in final vowel. Out of 75 forms, 66 have °Z-ZI and nine have -ZI; spellings are: -CA-(A)-IZ-ZI for **-āy-é-ti, *-o-yé-ti, *-o-ye-ti* and in *pāizzi* "goes" < **po-hɪéi-ti* (11 ex., no examples of -CA-(A)-ZI); -NU-UZ-ZI for **-n(e)u-ti* (9 ex, 2 ex. of *-nu-zi*); -YA-AZ-ZI (1 ex., no examples of -YA-ZI); -CE-(E)-EZ-ZI, -CI-(I)-(E)-EZ-ZI for **-sḱé-ti, *-ehɪ-ti, *-éye-ti* and **-yé-ti, *-ye-ti* (46 ex., 6 ex. of -CE-ZI). See also Melchert, *AHP* 23, who points out that while E/IZ is a fairly simple sign, and this would favor the spelling -E/IZ-Z°, since AZ and UZ are more complicated, the spellings -AZ-Z° and -UZ-Z° would tend to be disfavored.

## 1.15.3. Spellings for initial clusters of **s* plus stop

Eichner, *Fl. u. Wb.* 98; Friedrich, *HE* 30–1; Ivanov, *Xettitskij Xazyk* 65; Kammenhuber, *IF* 65 (1960) 280; Kronasser, *VLFH* 29–30, *EHS* 48, 49, 524–5; Melchert, *SHHP* 109–11 w.n. 67, 150, *AHP* 31; Oettinger, *KZ* 92 (1978) 74, *Stammbildung* 416–7 w.n. 44–46; Rosenkranz, *Vgl. Unters.* 41; Sturtevant, *CGr*[1] 47, 138–40; *CGr*[2] 14–15.

The reflex of initial **s* plus stop is usually written IŠ-P°, IŠ-T°, IŠ-K°, and these spellings occur too in texts from the Old Assyrian Merchant colonies of Cappodocia, e.g. PN [M]*Istalkiyan*, cf. Hitt. *istalkiya-* "spread, flatten" (Oettinger, *KZ* 92, *Stammbildung* 417 n. 44). Variant spellings with SV-P°, however, are found for **sp-* in *si-pa-(a)-an-t°/d°* "make a libation" (OH etc.), *si-ip-pa-an-t°/d°* (OH+, MH+, NH), and *sa-pa-an-ta-al-la-* "pertaining to a libation" (?) < **spond-, *spn̥d-* (beside OH *is-pa-(a)-an-t°*), for *se-pi-(ik)-ku-us-ta-/sa-pi-(ik)-ku-us-ta-* "pin, stylus" < **sp(e)ik-*? and perhaps for **sk* in *zasgarais* "anus", if this can be interpreted as [skār-āis] < coll. **skṓr*.

### 1.15.3.1. Regular spellings

Words with **sp* include: *ispant-, sip(p)and-* "make a libation" (*is-pa-a-an-t°*, OH, weak stem *is-pa-an-t°*, OH; with *sip-* (*si-pa-a-an-ti*, OH, MH, OH+, *si-pa-an-ti*, OH etc., *si-pa-an-ta-an-zi*, OH etc., *si-pa-an-da-an-zi*, OH etc., 3 pl. pret. *si-pa-an-te-er*, MH) : **spond-, *spn̥d-* {11.3.2.1.}; *ispai-, ispiya-* "be satiated" (3 sg. pres. *is-pa-a-i*, MH+, weak stem *is-pi-i-e-*, MH etc., *is-pi-ya-*, MH etc., *is-pi-iC-*, MH etc.) < perf. **spóhɪye, *sphɪ-y-* : "be prosperous, fat" {11.3.2.1.}; *ispān* neut. "satiation" (nom.-acc. *is-pa-a-an*, OH) < **spóhɪy-n̥* or **spohɪy-om* {10.5.5.}; *ispāta(r)* "spit, skewer" (nom.-acc. sg. *is-pa-a-tar*, Pre-NH), sg./pl.? *is-pa-a-ta*, OH+, *is-pa-an-n°* < **spéh₂dh-r̥* : **sph₂dh-n-* {10.9.1.2., 11.3.2.1.}; *ispart-* "escape" (*is-par-t°/d°*, MH etc., *is-par-z°*, OH etc.) : **sperdh-, *spr̥dh-* {11.3.2.1.}.

With **st*: *istantā(i)-* "delay, linger, procrastinate" (3 sg. pres. *is-ta-an-ta-a-iz-zi*, OH etc.) : **steh₂-* "stand" {11.3.2.2.}; *istanāna-* "altar table" (gen. sg. *is-ta-na-na-as*, OH, dat.-loc. sg. *is-ta-na-a-ni*, MH etc., loc. pl. *is-ta-na-na-as*, OH etc.) : **steh₂-* "stand": {11.3.2.2.}; *istarkk(iya)-* "become sick, ail" (3 sg. pres. *is-tar-ak-ki-ya-zi*, NH, 3 sg. pret. *is-tar-ak-ki-at*, MH), nasal verb *istarni(n)k-* "make sick" 2 sg. pres. *is-tar-ni-ik-si*, OH+, 3 sg. *is-tar-ni-ik-zi*, OH) < **ster-k-* {11.3.2.2.}; *isduwā-* "become known" (3 sg. pres. *is-du-wa-(a)-ri*, MH etc., *is-tu-wa-(a)-ri*, MH? etc.) : **steu-* "praise, promise, threaten" {11.3.2.2.}; *istarna, istarni* "in the middle" (*is-tar-n°*, OH etc.) < **st(e)rno-* {11.3.2.2.}.



With **sk*: *iskallā-* "cut, slit, slice" (3 sg. pres. midd. *is-kal-la-a-ri*, MH, OH+) : **skelH-* {11.3.2.3.}; *iskār-* "stab, stick, pierce, adhere" (3 sg. pres. *is-ka-a-ri*, OH etc., *is-ga-a-ri*, MH etc., *is-qa-a-ri*, MH etc.) : **sker-* "cut" {11.3.2.3.}.

### 1.15.3.2. Alternative spellings

*sapantalla-* "having to do with libations" (describing tablets) nom.-acc. pl. *sa-pa-an-ta-al-la* KUB XXX 42 I 7 (NH) should be from **spond-* or **spn̥d-* beside *is-pa-(a)-an-t°* and *si-pa-(a)-an-t°/d°*.

For this word, see van Brock, *RHA* 71 (1962) 128.

For *sepi(k)kusta-, sapi(k)kusta-* "pin, stylus" spellings with ŠA-P° and with ŠE-P° are attested from MH on: ŠA-P° e.g. nom. sg. *sa-[pi-k]u-us-ta-sa* KBo XVII 16 Vs. 10 (MH), *sa!-a-pi-ku-us-ta-as* Bo 2967 II 1 (Beckman, *StBoT* 29), *[s]a-pi-ku-us-ta-as* KUB XLII 45 L. 4 (U), acc. sg. *sa-pi-ku-us-ta-an* KBo XVII 60 Vs. 7 (MH), acc. pl. *sa-pi-ik-ku-us-du-us* KUB XLII 97 L. 9 (U); ŠE-P°, ŠI-P° e.g. nom. sg. *si-pi-i[k-k]u-us-ta-as* KUB XLV 47 I 13 (MH?), acc. sg. *se-pi-ku-us-ta-a[n]* KUB XXIX 27 L. 8 (OH+), *si-pi-[ik-ku-u]s-ta-an* KUB XLV 47 I 20, gen. *se-pi-ik-ku-us-ta-as* KUB XXIV 4 I 13 (MH), KBo XXII 78 L. 6 (NH), dat.-loc. *se-pi-ku-us-ti* KBo XII 112 Vs. 6 (MH+). The word is analysed by Poetto, *Sprache* 32 (1986) 52–3, as [spikusta-] < **spik-us-to-* from an *s*-stem **spikus-* to **spe(i)k-, *sp(e)ig-* in Lat. *spica*, ON *spikr*, Arm. *p'k'in*, Lith. *speigl̃ỹys, spyglỹs*.

For examples and discussion see Beckman, *StBoT* 29, 63–5; for CE-CE/I- = [CCi] here see {1.16.6.1.}.

It is likely that **sk* is spelled ZA-AŠ-G° in *zasgarais* "anus" (lit. "excrement mouth"). The word occurs only in KBo XVII 61 Rs. 14 (MH) in nom. sg. *za-as-ga-ra-is* and dat.-loc. sg. *za-as-ga-ri-is-si*. It can probably be analysed as [skārāis] with [skār] < coll. **skṓr* = Gk. σκῶρ "excrement" plus *āis* "mouth". A spelling with IŠ occurs in *is-ga-su!-u-wa-an-ta-za* KUB XXVI 32 I 8 (NH) abl. sg. "dung-filled" = [skaswantats] < obl. stem **skan-* < **skn̥-* (cf. inst. *sa-kan-da* OH) plus *sūwant-*, ptcp. of *sūwa-* "fill".

Oettinger, *Fs Otten*[2] 286 w. refs., analyzes *isgasuwantaza* as **skas* "excrement" plus **-went-*, but there is no independent evidence for a **skas*.

### 1.15.3.3. Phonetic interpretations of IŠ-T°

There are two schools of thought on the interpretation of IŠ-P°, IŠ-T°, and IŠ-K°. It has been argued by Kronasser (VLFH), Eichner, and Oettinger, that the initial IŠ- represents a genuine prothetic vowel. Sturtevant, Friedrich, Ivanov, Kronasser (EHS), Kammenhuber, Rosenkranz, and Melchert have seen the initial IŠ- as having a dead vowel used for writing clusters [st], [st], [sk].

### 1.15.3.4. Arguments for reading IŠ-T° as [isT]

Epenthesis of a high vowel before initial clusters of /s/ plus stop is a typologically well attested sound change (Kronasser, *VLFH*); cf. e.g. from Romance, Lat. *spatha* > Span. *espada*, Fr. *épée* or Lat. *schola* > Span. *escuela*, Fr. *école*. Epenthesis

of this type may have been an areal feature in Asia Minor for a long time. Kronasser cites the Lycian place name Ἰσπαδα beside its Persian counterpart Σπαδα and notes examples of prothetic *i* in the Ionic Greek of Asia Minor.

The variant spellings ǏS-P° and ŠI-P° in *ispānt-*, *sipānt/d-* and *si-ip-p°* (NH, OH+, MH+) could be explained as resulting from metathesis, although the conditioning is obscure. Eichner considers ŠI-(IP)-P° without prothetic vowel the regular reflex of **sp* in trisyllabic and longer words, deriving *si(p)pand-* from a causative **spond-éye-*. Another example of this treatment would be *se-pi-(ik)-ku-us-ta-*, *si-pi-(ik)-ku-us-ta-* "pin" < **sp(e)ik-us-to-*, but there would be no regular phonological explanation or obvious analogical source for *sa-pi-(ik)-ku-us-ta-*, which occurs as early as MH. The alternative spellings for clusters could represent sequences of /s/ plus stop reintroduced through borrowing or derivation after an epenthesis rule had ceased being productive. None of the words with these spellings, however, looks like a loanword, and there is no concrete evidence for an Anatolian dialect in which clusters of initial **s* plus stop were regularly broken up by an epenthetic vowel.

### 1.15.3.5. Arguments for reading IŠ-T° as [st]

There is no discernible or verifiable conditioning to explain the spellings IŠ-P° and ŠI-(IP)-P° in *ispānd/t-*, *sipand/t-* as the results of sound change or morphophonemic alternation. Š-P° and ŠI-(IP)-P° are contemporaneous, both occuring in OH texts in the same forms of the paradigm (e.g. 3 sg. pret. *is-pa-a-n-t[i* StBoT 26, 44 L. 2, *is-pa-an-ti* StBoT 25, 21 Vs.? I 6 (2x), *si-pa-a-an-ti* StBoT 25, 25 IV 23, *si-pa-a[n-ti* StBoT 25, 29 Rs.? III 6). ŠI-IP-P° seems to be confined to texts written in the NH period, but it occurs in forms of the paradigm which are spelled with IŠ-P° in OH. The spelling ŠI-(IP)-P° is not found for other words with IE **sp-*, including derivatives of *sipant/d-*. Since the variant spellings do not seem readily explainable as regular sound change, they are likely to reflect variant graphic solutions to the problem of writing initial clusters (Sturtevant, Melchert). For [spand-] the spellings with ŠI-(IP)-P° were eventually standardized for reasons that remain unknown, but for most words, IŠ-T° prevailed. Kronasser (*EHS*) and Kammenhuber suggest that *si-ip-pa-(a)-an-t° d°* = [spānd-], [spănd-] "make a libation" was generalized to avoid confusion with *ispant-* "night", but there are few grammatical and semantic contexts in which the two words would have overlapped.

The arguments of Melchert (*SHHP* 101–11) are very convincing. Melchert derives *ishaskant-* "bloodshot, bloodstained" (OH acc. sg. c. *Jes-ha-as-ga-an-ta-an* StBoT 25, 147 Vs.? 8, *(-)-es-h]a-as-ga-an-ta-an* ib. Vs.? 11, nom.-acc. pl. n. *is-ha-as-kan-ta* StBoT 25, 3 I 24, *is-h]-as-kan-ta* 4 I 19, acc. pl. *is-ha-as-kan-tu-us* StBoT 25, 4 II 70) from **ishan-skant-*, a compound of *ishan-*, oblique stem of *ēshar* "blood" plus **skant-*, participle of *iskē/a-* "annoint, smear". He notes that if *iskē/a-*, which he derives from **ps-ské/ó-*, iterative of *pess-* "rub in" with zero-grade root and reduction of the initial consonant cluster {6.12.2.}, were [iskē/a-] with a prothetic vowel, then the compound should be ***ishan-iskant-* (****is-ha-ni-is-kan-t°*). Not only should the initial /i/ of the second element have been retained, but it is also difficult to explain the loss of the stem-final /n/ of *ishan-* unless it had been in contact with the /s/ of **skant-* (for **nsC* > *sC* {7.8.1.}). Therefore, *iskē/a-* "smear, annoint" should be read as [skē/a-] and the compound as [ishaskant-].



For [shān-] < **(h₁)sh₂-n̥-* see {5.6.}. A hypothetical **ēshar-skant-*, as reconstructed by Kronasser, *EHS* 456, should have become ***isharskant-* with retained *rs.* {8.6.5.}. Eichner, *MSS* 28 (1970) 12, reconstructs **eshaniskant-* (iterative participle of a denominative **eshaniya-* "be/make bloody") > *eshanskant-* with syncope > *eshaskant-*, but no independent evidence exists for this verb. Oettinger's derivation (*Stammbildung* 327) of *iskē a-* from **is-ké ó-* : **eish₁-* in e.g. Skt. *iṣirá-* "streaming, vigorous" and Gk. ἰερός "holy" implies an original **(e)shan-iskant-* and syncope. For semantic problems with this etymology see Melchert, *loc. cit.*

NH spellings provide additional evidence in favor of reading [sp], [st], [sk] (Melchert, *SHHP* 150). A spelling IŠ-T° can, in addition to representing [sT], represent IŠ-T° from inherited **isT* (e.g. *iskunā(i)-* "mutilate, disgrace" < **izghun-* {4.5.1.3.}, or *iskīs-* "back" : Gk. ἰσχίον "hip(s)" {2.4.4.1.}), or it can represent [isT] from **esT* with /i/ from unaccented **ĕ* {2.6.3.}. Presumably [isT] < **sT* with real /i/ would be subject to the effects of the Post-OH merger of /e/ and /i/, and at least some examples of Post-OH spellings with EŠ-T° would be expected. In words in which IŠ-T° unequivocally does represent the reflex of **s* plus stop (e.g. *iskār-*, *ispart-*) however, variant spellings with EŠ-T° do not occur.

The only possible exception would be *e-es-ha-ah-ru* "tear(s)" KUB VII 41 Vs. 19 (MH) and *ēshahruwas* 254/d L. 11 (*HED*) for *ishahru-* "tear", if from **s* plus **h₂eḱru-* : Ved. *aśru* {CR}. The unusual spelling with *-es-h* may, however, be due to the influence of *ēshar* "blood" which precedes *ēshahru* in the same sentence in KUB VII 41 Vs. 18 (Puhvel, *HED* 391).

It is conceivable that the variant spellings go back to a time just after the Hittites had learned how to write and earlier than the earliest surviving texts when conventions for spelling initial clusters had not yet been standardized and when there was considerable variation and experimentation. While IŠ-T° eventually prevailed as the conventional spelling, alternatives were retained in a few words for reasons that are now obscure, though only *si-ip°* in *si-pa-(a)-an-t° d°* was used frequently. ŠI-IP-P° might be a later attempt to indicate the voicelessness of the stop.

It has also been claimed that the spellings IŠ-P° and ŠI-IP-(P°) represent different pronunciation of an initial cluster. Kronasser (*EHS*) suggests that IŠ-P° can represent [šp] with palatalization, while ŠI-(IP)-P° represents [sp]. Rosenkranz reads *si-pa-(a)-an-t°* as [zbant-] but *si-ip-pa-an-t°/d°* as [spant-], considering ŠI-P° an abbreviatory spelling for the latter. There is no way to confirm either view, however. Oettinger (*Stammbildung* 417) views NH *si-ip-pa-an-t°/d°* as a borrowing from a dialect with retained [sp] and anaptyxis to [sep], but there is little concrete evidence for dialect divisions within Hittite or for an Antolian dialect in which anaptyxis in initial clusters of *s* plus stop was regular.

## 1.16. Spellings for consonant clusters, epenthesis

Friedrich, *Heth.* 20–2, *HE* 29–30; Kammenhuber, *HdO* 173; Kempinski-Košak, *WO* 5 (1970) 205; Kronasser, *EHS* 15–16, 398; Kurylowicz, *PICL* 8 231; Laroche, *RHA* 63 (1958) 96; Melchert, *AHP* 29–30; Oettinger, *MSS* 35 (1976), 98, 101 n. 14, *Stammbildung* 59 n.46, 104 w. n. 35, 275, n. 30, 317, *Gds Kronasser* 162–3 w. n. 2; Neu, *StBoT* 18, 88 n. 174, 91 n. 182; Pedersen, *Hitt.* 4–5; Rosenkranz, *Vgl. Unters.* 31; Sommer, *AU* 446; Sturtevant, *CGr*[1] 47–9, *CGr*[2] 14–16.

In a syllabary that offers no way of spelling a consonant without a preceding or following vowel there are several ways to spell clusters of three or more consonants. One vowel, used as a "dead" or "dummy" vowel, may be designated the default zero. Signs with this vowel would be ambiguous: i.e. CV = [CV] or [C], VC = [VC] or [C], CV-VC = [CVC] or [CC], and CVC = [CVC] or [CC]. Alternatively, the scribe might choose to use an "echo" vowel, repeating a preceding spoken vowel or anticipating a following one as for example in the Cypriot syllabary, i.e. CE-CE-C° = [CeCC], [CCeC], or [CeCeC], CA-CA-C° = [CaCC], [CCaC], or [CaCaC], CU-CU-C° = [CuCC], [CCuC], or [CuCu]. The evidence suggests that the Hittite scribes used both options. Spellings with °A° as dummy, or dead vowel are recognzied by most scholars, and we may conclude that °A° functioned as designated zero. By contrast, spellings with echo vowels were never very common, and they are hard to distinguish from anaptyxis. The spellings with dead vowels described as "unnecessary" by Sturtevant (15), Kronasser, and Friedrich (e.g. *kar-ap-pa-an-zi* "they lift", ptcp. *kar-ap-pa-an* beside the more usual *kar-pa-an-zi* = [karpantsi] and *kar-pa-an* = [karpān], *sa-an-ah-hu-un* "I seek" beside *sa-an-hu-un* = [sanhun], or *wa-al-ah-hi-ir* "they struck" beside *wa-al-hi-ir* = [walhir]) are attempts to represent the voicelessness of root-final consonants. In spelling words with consonant clusters, the scribes had to strike a balance between conflicting principles. For example, in spelling words from stems or roots ending in consonant clusters with final voiceless consonants, scribes had to choose between phonetically accurate transcriptions and morphologically clear ones. A scribe could choose to indicate the consonant's voicelessness by doubling (as in *kar-ap-pa-an-zi*), or he could choose not to obscure the boundary between stem and ending (as in *kar-pa-an-zi*). Similarly, the scribe could elect to indicate a preconsonantal geminate (e.g. *e-es-sa-ri*, *is-sa-na-as*), or he could keep the transition between root and suffix clear (e.g. *e-es-ri*, *is-na-as*).

It is best to take a conservative approach to the question of epenthesis by assuming that a vowel where an inherited consonant cluster is to be expected is a dead vowel or echo vowel unless there is compelling evidence to indicate otherwise. For example, the assumptions of Adrados, *RHA* 28 (1970) 7–17, Carruba, *StBoT* 2, 35–6, and Bernabé, *Au. Or.* 2 (1984) 191, that spellings such as *tar-ah-zi*, *tar-ah-hu-un*, *wa-al-ah-zi*, *sa-an-ah-zi*, *sa-an-ha-an-zi*, *sa-an-ah-hu-un* indicate the sporadic insertion of an epenthetic vowel between resonant and laryngeal (i.e. [tarahtsi], [sanahun] etc.), have no independent justification. In fact, sporadic loss of the nasal before *(h)h* in *sanh-* "seek" and *sanh-* "rinse, flush, wet" provides counter evidence, since it depends upon contact between the nasal and the laryngeal (7.9.2.2.).

Vowels that do not have to be written to spell a consonant cluster but are written consistently are likely to be epenthetic. One example would be *tu-u-hu-us-si-ya-* "rests, is at rest" = [tūḫusya-] < **téuh₂sye/o-* : Skt. *tūṣṇím* "quietly, silently", which could be spelled ***tu-u-uh-si-ya-* but never is (4.6.1., 3.9.4.). Similarly, the oblique stem of *uttar* "word, thing" is spelled *ud-da-(a)-n°*, never ***ud-na-*, although the latter spelling is possible (cf. nom.-acc. sg. *ud-ne-e* "land, countryside" = [udnē]), and this strongly suggests that it is to be read [uttān-].

Plene writing that is used consistently, or at least widely, in more than one text should also indicate a genuine vowel, and plene writing can provide clues both to the linguistic reality of the vowel and to a shift of accent onto the epenthetic vowel, e.g.



*pu-(u)-nu-us-s°* "ask" (1 sg. pres. *pu-nu-us-mi* (MH+, NH), 3 sg. *pu-nu-us-zi*, 1 sg. pret. *pu-u-nu-us-su-un* (NH), 2 sg. imp. *pu-nu-us* (NH), 3 sg. *pu-u-nu-us-du* (MH), 2 pl. *pu-nu-us-ten* KBo IV 8 II 17 (NH), vbl. noun nom.-acc. sg. *pu-nu-us-su-u-wa-ar* (NH, vocab.), it. 3 sg. pres. *pu-nu-us-ke-ez-zi* (OH)) = [pūnuss-] < Pre-Hitt. **púnus-*, ultimately : **pneu-* "be intelligent" in Gk. πέπνυμαι "am intelligent, prudent", πεπνυμένος "intelligent, prudent" etc. (3.9.4.) (Oettinger, *Stammbildung* 214–5).

A phonological environment that is plausible, or one that favors an epethetic vowel of a particular quality should also point to epenthesis (e.g. *u*-epenthesis in the vicinity of labials as in *pu-u-nu-us-s°* = [pūnuss-] or epenthetic /i/ between velar, laryngeal or labial and /s/ plus consonant or word boundary). Epenthesis posited for a particular word or morphological category should ideally be supported by parallel examples with epenthesis in the same phonological environment. For example, positing an epenthetic /i/ between velar or laryngeal followed by *s* plus consonant or word boundary will explain *hi*-conjugation third person singular preterits in *-is* such as *wa-a-ki-is* = [wākis] or *ma-a-ni-ya-ah-hi-is* = [mānyaḫis], iteratives in *-kkisk-* or *-hhisk-* such as *hu-uk-ki-is-ke-ez-zi* "slaughters, strikes" = [hukisketsi], *sa-an-hi-is-ke-ez-zi* "seeks" = [sanhisketsi], and the spelling *tak-ki-is-C°* = [takis-C] beside *tak-sV-* = [taks-V-] in *takkis-*, *taks-* "put together" (3.9.3.). Similarly, if *tu-u-hu-us-si-ya-* is to be read [tūhusya-], then an epenthetic vowel can probably be posited in *tuh-hu-us-ta*, *tu-uh-hu-us-ta* "ends, is at an end" = [duhusta] < **duh₂sto*, even though the cluster [hst] cannot be spelled without a graphic vowel (3.9.4). The vowel of the second syllable of *par-si-na-*, *par-se-(e)-na-* "thigh" = [parsēna-] < **pr̥sneh₂-* points to epenthesis in clusters of /sn/, suggesting that *pi-se-(e)-na-* "man", *ka-mi-se-(e)-na-*, *kal-li-si-na-* etc. also have an epenthetic front vowel (3.9.3).

Epenthesis is often a seemingly sporadic phenomenon, the realization of epenthetic vowels depending on speech style, tempo and sociolinguistic context (cf. e.g. colloquial English *"athalete"* [aθəlit] beside *athlete* [aθlit]). It may, therefore, appear variably in writing. The medium of writing may itself favor variation. Although writing cannot be considered phonetic transcription, especially in a language written with a borrowed system, it seems unavoidable that variable features of pronunciation would occasionally surface in spelling, especially in a writing tradition where standardization was not extensive.

## 1.16.1. CA = [CC]

The most common strategy for spelling consonant clusters was to use °A° as a dead vowel, or designated zero (Friedrich, Oettinger, Rosenkranz, Sturtevant, Oettinger).

This strategy was used for indicating preconsonantal geminates, e.g. nom.-acc. sg. n. *e-es-sa-ri(-)* "shape, fleece" (OH+) = [ēssri-] < PA **és-ri-* (3.2.1.1., 11.5.2.1.); *i-e-es-a-na-as* (NH) gen. sg. of *ēshar* "blood" = [ēssna]- < **h₁ésn-* < **h₁éshₓn-* (10.1.1.1.,11.5.2.3.); *is-sa-na-as* (MH+, Pre-NH), *es-sa-na-as* (MH), gen. sg. of *is(sa)na-* "dough" = [issnā-] < **yesnó-* (2.4.4.2.,11.5.2.3.); 3 sg. pret. *us-sa-ni-ya-at* (NH), 1 pl. *us-sa-ni-ya-ú-en* (NH), 3 sg. imp. *us-sa-ni-ya-ad-du* : *us(sa)niya-* "sell, exchange" stem [ussnyē-] < denom. **usne-yé-* (3.11.1.2., 1.5.2.3.); nom. sg. *gi-im-ma-ra-as* (MH) :

*gim(ma)ra-* "open field, steppe" = [gimmrā-] < PA **gemmró-* {7.6.2.}; dat. *ki-is-sa-ri-(i)* (OH), abl. *kis-is-sa-ra-az* (OH) : *kissar* "hand" = [gissr-] < oblique stem **ĝhes-r-* {11.5.2.1.}.

Spellings in °C-CA-NU- are standard in causatives in *-nu-* formed from stems in final consonant clusters, e.g. *li-in-ga-nu-* = [liŋgnu-] : *link-* "swear an oath"; *ni-in-ga-nu-* = [niŋknu-] : *nink-* "satisfy oneself with drink"; *kar-sa-nu-, kar-as-sa-nu-* = [karssnu-] : *kar(as)s-* "cut"; *par-ha-nu-* = [parhnu-] : *parh-* "chase". Causatives in *-nu-* from stems in final voiceless stops or final geminates are sometimes spelled -VC-CA-NU-, e.g. *ha-as-si-ik-ka-nu-* beside *ha-as-si-ik-nu-* = [hassiknu-] : *hassik-* "satiate oneself"; *pu-uk-ka-nu-* : *pukk-* "be hated". Stem final geminates are also sometimes indicated in e.g. *as-sa-nu-* beside *a-as-nu-* = [āssnu-] : *āss-* "be favored"; *kar-as-sa-nu-* beside *kar-as-nu-* = [karssnu-] : *kar(as)s-* "cut"; *sa-as-sa-nu-* beside *sa-as-nu-* = [sassnu-] : *sēs-* "sleep"; *ti-it-ta-nu-* (common) beside *ti-it-nu-* (MH, one text) = [tittnu-] : *tittiya-* "establish, appoint". By contrast, causatives made from stems in voiced stops or non-geminate consonants do not have the spelling -CA-NU, e.g. *te-ep-nu-* "diminish" = [dēbnu-] : *tēpu-* "little"; *la-ak-nu-* "make incline" = [lagnu-] : *lāg-* "incline, knock out"; *ar-nu-* "bring" = [arnu-]; *wa-ah-nu-* = [wahnu-] : *wēh-* "turn". The fact that the spelling -VC-CA-NU- is shared by causatives from roots in final voiceless stops in which consonant doubling is merely graphic suggests that Oettinger's positing of [-anu-] < *-n̥n(e)u- via Sievers Law in causatives from roots in final consonant clusters is without support.

CA may also be used in the value [C] to write the last consonant of a word-final consonant cluster as in *-(a)-an-za*, the standard spelling for [-nts] in the animate nominative-accusative singular of *nt*-stems (e.g. *hu-u-ma-an-za* " all" = [hūmants], *ap-pa-(a)-an-za* "captured" = [apānts]). Final [sts] is spelled *-Vs-za* in e.g. nom. sg. *ka-a-as-za* "hunger" = [Kāsts] and *sa-as-za* "bed" = [sāsts] {11.6.1.1.}. The ablative ending [-tṣ] is spelled -ZA in consonant stems, e.g. É-*er-za* = [pērtṣ] : **pēr* "house", *ta-pu-us-za* "beside, from the side" = [dābustṣ] : *tapus-* "side". CA in the value [C] is also occasionally used to spell second person singular imperatives of *mi*-verbs with stems ending in two consonants, e.g. *sa-an-ha* "seek" = [sanh] beside *sa-a-ah* with **anh* > [āh] {7.9.2.2.}.

The affricate [t$^s$t] from dental stop plus dental stop can be spelled -ZA-TV- or -ZA-A(°), e.g. 2 pl. imp. *e-ez-za-ten* (MH etc.) = [ēt$^s$ten], 3 sg. pres. *e-ez-za-za-(a)-i* = [ēt$^s$tṣi] : *ēd-* "eat". The sequence [ts] is usually spelled -ZA- in iteratives in *-skē-* from stems in final dentals, e.g. *ma-al-za-k°* (MH etc.) = [maltsk-] : *māld-* "recite", *is-pa-an-za-ak°* (OH+), *si-pa-an-za-k°* (OH etc.) = [spantsk-] : *ispānt-, sipānt-* "make a libation".

Use of CA as [C] is an uncommon strategy for spelling forms with endings in initial consonants of *mi*-verbs with roots ending in consonant clusters, e.g. 1 sg. pres. *sal-ga-mi* KUB XXIV 14 I 10 (NH) = [salgmi] or [salkmi] beside 3 sg. pres. *sa-al-ak-zi* (OH) and 3 pl. pres. *sal-kan-zi* (MH+) : salk- "knead, blend"; 1 sg. pres. *ša-an-ha-mi* KUB XXI 10 L. 7 (NH) = [sanhmi], 2 sg. *sa-an-ha-si* KUB XXVI 22 II 10 (U) = [sanhsi], *sa-an-ha-ti* e.g. KBo V 4 II 41 (NH) = [sanhti], 2 pl. *sa-an-ha-te-ni* KUB XXVI 34 L. 7 (Supp. I) = [sanhteni] : *sanh-* "seek"; *li-n-ga?-zi* KBo VI 3 III 75 (Supp.I) = [liŋgtṣi], *hi-in-ga-zi* KBo V 1 I 40 (Pre-NH) = [hiŋktṣi].



## 1.16.2. CA-AC = [CC]

The spelling -CA-AC- = [CC] was sometimes used to indicate clusters of three consonants, postconsonantal geminates, or postconsonantal voiceless stops.

In the first person singular present and preterit of *hi*-verbs with roots in final consonant clusters, the reading of -VC-CA-AH-HI/E and -VC-CA-AH-HU-UN as athematic [CChi] and [CChun] is assured by third person singular present forms with the ending *-i* rather than thematic *-ai* or by other athematic forms of the paradigm, e.g. *ga-a-an-ga-ah-he* (OH), *ga-a-an-ga-ah-hi* (OH) = [kānkhi] beside 3 sg. pres. *ka-a-an-ki* (OH) = [kānki] : *kānk-* "hang", *ar-ra-ah-hi* (Pre-NH), *a-ar-ra-ah-hu-un* VBoT 120 III 7 (MH+) = [ārrhi], [ārrhun] beside 3 sg. pres. *a-ar-ri* (OH etc.) = [ārri] : *ārr-* "wash"; *sa-a-ag-ga-a-h-hi* (MH) beside *sa-a-ak-hi* (MH) = [sākkhi] beside 3 sg. pres. *sa-a-ak-ki* (MH etc.) = [sākki], 2 pl. pret. *sa-ak-te-e-ni* = [saktēni] (OH) : *sākk-, sekk-* "know". The spellings *ma-al-da-ah-hi* (NH), *ma-al-ta-ah-hi* (MH), probably point to [māldhi] beside 3 sg. pres. *ma-(a)-al-di, ma-(a)-al-ti* = [māldi], but sporadic examples of *ma-al-ta-i* in NH texts point to thematization in the NH period, and a reading [māltahi] cannot, therefore, be excluded for NH.

For the spelling of an athematic verb with root in final non-geminate consonant, cf. e.g. *is-ka-ar-hi* = [skārhi] (OH) : 3 sg. pres. *is-ka-a-ri* = [skāri] : *iskār-* "cut".

°C-CA-AC is used rarely in spelling *mi*-conjugation verbs, e.g. 2 sg. pres. *wa-la!-ah-si* KUB XXXIV 80 I 3 (U), beside *wa-al-ah-zi* = [walhsi], [waltṣi] : *walh-* "strike"; 2 sg. pres. *sa-na-ah-ti* KBo IV 14 I 31, II 61, 65 (NH), 2 pl. imp. *sa-an-ha-a[t-te-en]* KBo XVI 27 II 13 (MH), beside *sa-an-ah-ti* KBo XI 1 Vs. 39 (NH) = [sanhti-], [sanhten] : *sanh-* "seek"; 3g. pres. midd. *par-ha-at-ta-[ri* KUB XIV 1 Rs 92 (MH) beside *par-ah-ta* ib. Vs. 1 : *parh-* "drive".

The spellings -ZA-AŠ-T° and -ZA-AT- may be used to indicate [t$^s$t] from dental stop plus dental stop, e.g. 2 pl. imp. *e-ez-za-aš-te-en* (MH etc.) = [ēt$^s$ten] : *ēd-* "eat"; 3 sg. pret. *ha-az-za-as-ta* (NH) = [hāt$^s$ta] : *hāt-* "dry up" (cf. MH etc. *ha-(a)-az-ta*). -ZA-AŠ-K° occurs occasionally as a spelling for [tsk] in iteratives from stems in final dentals, e.g. *iš-pa-an-za-as-ke-e[-zi* (OH) = [spantsketṣi] : *ispānt-* "make a libation", *[m]a-al-za-as-ke-nu-u[n* KUB XIV 10 I 25 (Pre-NH) = *ma-a[l-za-as-ke-nu-un* KUB XIV 11 I 18 (Pre-NH) = [maltskēnun].

## 1.16.3. AC = [C]

### 1.16.3.1. Incorrect syllabification

In spellings with "incorrect syllabification" (Sturtevant, Friedrich) a sign AC is read as [C] and a phonological syllable is divided in writing, i.e. CVC-AC-C° = [CVC$_1$C$_2$C$_3$] (e.g. *kar-ap-zi* "lifts" = [karp#tṣi]) or CV-VC-AC-C° = [CVC$_1$C$_2$C$_3$] (e.g. *wa-al-ah-zi* = [walh#tṣi]). This is the usual strategy for spelling forms with endings beginning in consonants of *mi*-verbs with roots of the shape CVC such as *karp-* and *walh-*. This strategy is also used with athematic hi-conjugation presents, e.g. 2 pl. pres. *mar-ak-te-ni*, 3 sg. pret. *mar-ak-ta* = [mark#tēni], [mārk#ta] : *mārk-* "divide up". Such spellings may have been favored because they delineate clearly the boundary between root and ending and reveal the athematic nature of the verb; a spelling ****kar-pa-mi***, for example, could be interpreted as ****[karpāmi]** from a stem ****karpā(i)-***.

### 1.16.4. CAC as [CC]

Occasionally, a CVC sign is to be read [CC]. Most clear examples involve signs in which the final consonant is a stop.

Nom. *sg. har-tag-ga-as* "bear" (OH+), acc. sg. *har-tak-kan* KBo VII 14 Vs. 15 (OH) = [hartka-] < **h₂r̥tḱo-* or **h₂ertḱo-* {1.10.2.1., 6.1.3.}; 1 sg. pret. *ma-al-tah-hu-un* KBo III 22 Rs. 59 (OH) = [māldhun] beside 3 sg. pret. *ma-(a)-al-di, ma-(a)-al-ti* and 1 sg. pres. *ma-al-da-ah-hi* (NH) = [māldhi] with dead vowel; similarly 1 sg. pres. *is-pa-an-tah-hi* (OH) = [spāndhi] beside *is-pa-(a)-an-ti* (OH), *si-pa-(a)-an-t/di* (OH) = [spāndi]. Oettinger, *Stammbidung* 275 n.30, *KZ* 99 (1986) 43–47, reads KAT as [Kt] in e.g. NH *hi-in-kat-ta* KBo III 34 II 3 (OH+) = [hiŋkta], *li-in-kat-ta* KUB VI 41 IIII 52 (NH), *le-en-kat-ta* KUB XXI 37 Vs. 25 (NH) = [liŋgta].

For the intensifying particle "PAT" as [pt] see {1.1.2.2.}.

### 1.16.5. Echo vowels

Spellings with echo vowels were never very popular, but they occur from OH on. They are easiest to distinguish from possible cases of anaptyxis in spellings for the enclitic personal pronouns 2 pl. *-smet -smit* and 3 pl. *-smet/smit* and in spellings for forms with endings in initial consonant of athematic verbs with stems in final consonant.

Use of echo vowels was a fairly common strategy in OH for spelling the first and second person plural enclitic posessive pronouns *-smet/-smit* when these were attached to words ending in consonant, e.g. *se-e-er-se-me-et* "over them" StBoT 25, 6 II 14, *se-er-se-me-ta* StBoT 25, 3 I 31 = [sēr-smet] beside *se-e-er-sa-me-et* 3 II 16 , 4 III 34; $^{TÚG}$*is-hi-al-se-me-[et-ta]* "and their clothing" KUB XXXVI 104 Vs. 18, *a-as-su-us-se-me[-et* "their goods" KBo VI 2 II 4, *a-as-su-us-se-me-et* ib. II 8, cf. also *ku-us-sa-ni-es-si-it* (?) KBo VI 26 I 2 (OH+) = *kussan-sit* (?) with third person singular personal pronoun *-(s)sit*.

Spellings with echo vowels are found for the *mi*-verbs with radical nasal *link-* "swear an oath" and *hink-* "divide, distribute": e.g. 3 sg. pret. *li-in-ik-ta* KBo IV 3 II 28 (NH), 2 pl. imp. *le-en-ik-ten* KUB XXVI 1 III 54 (NH) = [liŋgta], [liŋgten] beside e.g. 3 sg. pret. *li-ik-ta* with graphic omission of the nasal and 3 sg. pres. *li-in-ga-zi* = [liŋgtsi] with dead vowel -GA-ZI = [gtsi] and 3 sg. pret. *li-in-kat-ta* with KAT = [gt]. Similarly, 1 sg. pres. *hi-in-ik-mi* KUB XXXIII 112 + XXXVI 2c III 10 (NH), 3 sg. *hi-in-ik-zi* e.g. KUB VII 5 I 20 (MH+), 3 sg. pret. *hi-ni-ik-ta* KBo III 7 II 23 (OH+) = [hiŋkta] beside *hi-in-kat-ta* (OH+) with KAT = [kt], *hi-ik-zi* (MH) with graphic omission of the nasal and *hi-in-ga-mi* KBo XXIX 2 II 8 (NH), and *hi-in-ga-zi* KBo V 1 I 40 (Pre-NH) with dead vowel.

Very occasionally, spellings with echo vowels occur in athematic *mi*-conjugation forms from stems in final consonant, e.g. *is-pa-ar-zi-zi* KUB IV 72 Rs. 5 (OH?/MH?) = [spartˢtsi] beside *is-par-za-zi, is-par-za-az-zi; tak-ki-is-ez-zi* KUB XLIV 4 + Rs. 30 (NH) "puts together" = [takistsi] for *tak-ki-is-zi; ka-ni-es-ez-zi* KUB XXXIII 70 II 15 (MH+) = [gnēstsi], cf. *ka-ni-es-zi* ib. II 14, *da-mi-ni-ik-zi* "attaches" KBo XVII 105 IV 3 (NH) = [tamIŋktsi].



Spellings with °U° as echo vowel are very rare, but they do occur: e.g. *se-ku-nu-us-me-et* KBo III 44 I 21 (OH+), beside *se-(e)-ek-nu-* "cloak", $^{LÚ}$*tu-hu-kan-ti* "heir to the throne": *tu-u-hu-kan-ti-is* KBo V 7 III 50 (MH), *tu-hu-kan-ti-is* KUB XXVI 66 III 17 (NH), beside *tuh-kan-ti*.

### 1.16.6. Spellings for initial consonant clusters

Clusters of consonant plus glide can be represented without difficulty in the cuneiform syllabary: [Cw], e.g. *su-wa-is* "bird" = [swāis] {4.4.2., 10.1.1.1.}; [Cy], e.g. dem. pro. *siyē-*: gen. sg. *si-i-e-el* (OH+), dat.-loc. *si-e-da-ni* (OH), *si-e-ta-ni* (MH) = [syē-] < **syé-* {9.5.1.1., 11.3.3.3.}. A sequence of labiovelar plus consonant is spelled KU-C°, e.g. *ku-ra-an-zi* "they cut" = [kʷrantsi], *ku-na-an-zi* "they kill" = [gʷnantsi]; rel.-int. pro. nom. pl. c. *ku-i-(e)-es*, acc. pl. c. *ku-i-us* = [kʷyēs], [kʷyūs] < Pre-Hitt. **kʷy-és, *kʷy-ús* {9.5.1.1.}. The most common spelling for clusters that cannot unambiguously be represented is with °A° as dead vowel, e.g. *ga-nu-ut* "knee" (inst.) = [gnūt] < **ǧnéuT, ga-ne-es-zi, ga-ni-es-zi* "recognizes" = [gnēstsi] < **ǧnēh₃s-* {10.5.3., 11.6.3.3.}; *ka-ru-ú* "previously" = [Krū] < **Kr-ḗu* {4.8.3.} and perhaps *sa-(a)-li-(i)-ya* "accosts" = [slīga] < **sléig-o* {4.3.1.2.}.

#### 1.16.6.1. CA-C° beside CE-C°

In a few words reflexes of IE initial consonant clusters are spelled both CA-C° and CE-C°: *samen-/semen-* "pass in review, disappear, withdraw": 3 sg. pres. *sa-me-en-zi* (OH), *sa-me-in-zi* (NH), 3 sg. imp. *sa-me-en-du* (OH+) beside 3 sg. pres. *se-me-en-zi* (OH, MH, NH) < IE **smen-* {11.3.3.2.}; *ma-li-id-du* "sweet" (MH) beside *mi-li-id-du* (MH), and *mi?-li-id-du* (OH+) {8.7.1.}; *ma-li-is-ku* "soft" (MH etc.) beside *mi-li-is-ku* (NH) {8.7.1.}; *karāp-* "devour": 3 pl. pret. *ka-re-e-pe-er* (MH), 2 pl. imp. *ka-re-ep-te-n* (OH+) beside *ke-re-ep-* < **ghrebh-* {6.4.3.1.}; nom. sg. *ka-ra-i-iz* "overflow", "flood" (OH), *ka-re-ez* (NH), dat.-loc. *ka-ra-it-it* (OH) beside nom. sg. *ge-re-e-ez-za* "flood" (OH+) < IE **ǧrōi-t-s, *ǧrōi-t-* {4.8.2.}; *ta-ri-ya-al-la* "a drink" (from the word for "three", $^{LÚ}$*tarriyanalli-* "third man" (nom. sg. c. *tar-ri-ya-na-al-li-is* IBoT 36 I 38 (MH), dat.-loc. *tar-ri-ya-na-al-li* ib. I 37), beside *teri-* "three" (gen. *te-ri-ya-as*, Bo 2533 I 10 cited in *HW Ergh* 2, 25), *te-ri-ya-as-na-as* KUB XLIII 60 I 10, (MH+), *teriyalla* (*te-ri-ya-al-la* KBo V 1 IV 35 , Pre-NH), *te-ri-ya-an-na* "third" (OH+, MH+) and perhaps OH *[tI]e??-ri-ya-la-as* (meaning unclear, StBoT 24, 4 II 50) < IE **tr(e)i-* "three" (cf. also *ti-e-ra-wa-ar-ta-an-na* "three laps" (Horse training texts) from Indic *tri-vartana-*). In *tereppiya-* "plow" and *tereppi-* "plowed field" < IE **trep-* {6.4.1.1.} only *te-re-ep-p°* is found, although the word may not be widely enought attested to guarantee that the lack of spellings with TA- is significant.

It is hard to find conclusive evidence for or against anaptyxis in these words. Eichner, *Lautgesch. u. Etym.* 146 n. 69, posits a phonologically regular *a*-colored epenthetic vowel that became /e/ or /i/ via assimilation or analogy to related forms with initial [Ce]. Oettinger, *Stammbildung* 230 and *MSS* 35, posits an *e*-colored epenthetic vowel (e.g. *te-ri-* "three" = [teri-]). In *Stammbildung* 104 w.n. 35, he reads *samen-, semen-* as [smen-], taking the spellings with CE in *se-me-en-*, and *ge-re-ep-*: *karāp-* "devour" as "fehlerhaft". Melchert, *SHHP* 130–1, *AHP* 58, and Oettinger, *Gds*

*Kronasser* 171–2, argue that *tarriyanalli-* shows the Luvian Čop's Law treatment of a PA **téri-* "three" < IE **tr-(e)i-* with anaptyxis and shifting of the accent onto the anaptyctic vowel but analyze *se-em-en-* beside *sa-me-en-* as [smen-]. Barton, *KZ* 98 (1985) 13–19, posits anaptyxis in *me-er-ra-(a)-an-t°*, participle of *mer(r)-* "disappear". (i.e. *me-er-ra-an-t°* = [mrant-] < **mr-ént-* or [merant-] < **m,r-ént-*) and notes that the spellings in °R-R° appear in forms of the paradigm where the weak stem would be expected. Here, °E° could not be an echo vowel, since it does not agree the vowel of the following syllable. But the double °R-R° of *tar-ri-ya-na-al-li-* need not reflect a Čop's Law treatment, since postconsonantal /r/ is occasionally spelled double (cf. e.g. *na-ah-sar-ri-ya-* beside *na-ah-sa-ri-ya-, na-ah-sar-ya-* "be(come) afraid" and *na-ah-sar-ra-at-t°* beside *na-ah-sar-at-t°* "fear" = [nahsrya-], [nahsrat-] < **neh₂sryo-* and **neh₂sro-* {8.6.3.}). Note, however, that Lyc. *terihe*, if it is a form of the word for "three", would provide evidence for anaptyxis (Melchert, *AHP* 58).

While it is not possible to exclude anaptyxis with sporadic assimilation of the anaptyctic vowel to the /ē/ or /i/ of a following syllable entirely, it should be remembered that the syllabary offered no way of spelling most initial consonant clusters except with a dead vowel. The use of an echo vowel rather than °A° would also be paralleled internally in e.g. *-se-me-et* beside *-sa-me-et*.

# Chapter Two

# Basic reflexes of IE accented and unaccented vowels

## 2.1. System inherited from IE

Beekes, *Laryngaltheorie* 61; Eichner, *MSS* 31 (1973) 68–72. 92 n. 35. *Lautgesch. u. Etym.* 129 n. 41. *Laryngaltheorie* 132–3 w.n. 31–36; Kimball, *Fs Hoenigswald* 192. *Laryngaltheorie* 245; Mayrhofer, *Idg. Gr.* I/2. 132–3 w.n. 141. 135. 161. 164. 166–72; Melchert, *SHHP* 30. 111–12. *AHP* 46–52; Starke, *StBoT* 31. 106 w.n. 287. 315. 343; Tischler, *Lautgesch. u. Etym.* 501 n. 31.

I am basically following the reconstruction given by Mayrhofer, *Idg. Gr.* I/2, 168–72. According to this, IE had a five-vowel system in which long and short vowels were phonemically opposed.




### 2.1.1. *a and *ā

The phonemic status of **a*, which was rare, is confirmed by the correspondence of Indo-Iranian **a* or Anatolian **a* or **ā* not preceded or followed by a laryngeal to **a* in the other language families, e.g. Hitt. *āra-* "right, due" : Ved. *áram*, Av. *arəm* "fitting(ly)" < IE **áro-*; Hitt. *alpā-* "cloud", Gk. ἀλφός "white leprosy", Lat. *albus* "white" < IE **albhó-*; Skt. *yajate* "worships", Gk. ἅγιος "holy", ἄζομαι "stand in awe of" < IE **h₂yag-* (Tischler, Mayrhofer 169–70, Eichner, *Laryngaltheorie*, Melchert, *AHP* 47).

Similarly, **ā*, which was even rarer, is indicated by a correspondence of Anatolian **a* or **ā* to **ā* or its reflex in the other language families, e.g. Hitt. *tuwān* in *tuwān ... tuwān* "here ... there" : Gk. δήν "for a long time" < PGk. **δϝᾱν*, Arm. *erkar* id. < IE **dwā́m* for earlier **dwéh₂m* via Stang's Law (Melchert SHHP 30, AHP 47, cf. Mayrhofer, 132 n. 141, 133, 164).

### 2.1.2. *i, *u and *ī, *ū

The high vowels **i* and **u* were largely in complementary distribution with the glides **y* and **w*. For a marginal phonemic distinction between **i* and **y* and **u* and **w* see Mayrhofer 161 and 168. For **ī* and **ū* with length not due to loss of a laryngeal see ib. 171.

### 2.1.3. Laryngeal coloring

IE also had three laryngeal phonemes, transcribed in this work as *$h_1$, *$h_2$ and *$h_3$. *$h_2$ colored a preceding or following *$e$ to *$a$ within IE, e.g. Hitt. *hānza* "in front" : Skt. *anti* "before, in front", Lat. *ante* id. (IE */h$_2$énti/ → *[h$_2$ánti]); Hitt. *pah(ha)s-* "protect" : Skt. *pāti* "protects", Lat. *pāscere* "to pasture" (IE */peh$_2$(s)-/ → *[pah$_2$(s)-]) (Mayrhofer 132). *$h_3$ colored a preceding or following *$e$ to *$o$, e.g. Hitt. *hāppar* "price, deal", Lyc. *epirijeti* "sells", Skt. *apas-* "work", Lat. *opus* id. (IE */h$_3$ep-/ → *[h$_3$op-]); Hitt. *lāman* "name", Skt. *nāma* id., Lat. *nōmen* id. (IE */h$_1$néh$_3$mn̥/ → *[h$_1$nóh$_3$mn̥]). (Mayrhofer 141). IE *$o$, however, remained unaffected by a preceding or following *$h_2$, e.g. Hitt. *hāwi-* "sheep", CLuv. *hāwī-* id., Lyc. *χava-*, Skt. *aviḥ*, Hmc. Gk. ὀΐς, Lat. *ovis* < IE *[h$_2$owi-]; Gk. φωνή "voice" < IE *[bhoh$_2$nah$_2$-], but Dor. φᾱμί "I speak" < pres. *[bhah$_2$-mi] (Mayrhofer 135 w. refs., Kimball, *Fs Hoenigswald*, Melchert, *AHP* 47).

IE *$ē$ was not colored by a preceding or following *$h_2$, e.g. Hitt. *hīla-* "(court)yard" < *$h_2$ḗlo-* (with *$h_2$ḗ* > *hī* {2.8.5.2.}) beside *hāli-* "enclosure" < *$h_2$é/óli-* (Melchert 111–12), Hitt. *mēhur* "time" < *$mḗh_2wr̥$* beside *$mēh_2$-* = *[măh$_2$-] in Lat. *māturus* "ripe, mature" (Eichner, *MSS* 31, 68–72; see also Mayrhofer 132–3 w. refs., and Starke). Similarly *$ē$ was not colored by a following *$h_3$, e.g. Hitt. *ganess-* "recognize" = [gnēss-], Toch. A 2 sg. pres. *kñasäṣt* "thou knowest" (PToch. *$knēs$-) < sig. aor. *$ĝnḗh_3s$-* (Mayrhofer 141 w. refs.).

### 2.1.4. *$āC$ vs. *$ah_2$

IE *$a$ participated in ablaut with *$ā$ and *zero* (e.g. Skt. *svādu-* "sweet", Gk. ἡδύ id. < *$swādu$-; Skt. *svádati* "tasts well, is sweet", Gk. aor. ἄδον , Aeol. εὔαδον "pleased" < *$swad$-; Goth. *suts* "sweet", Ved. inf. *saṁsúde* "to enjoy, taste" < *$sud$-). Since *$eh_2$ resulted in Hitt. /ā/ before consonants except *$s$ and *$w$, it is usually impossible to reconstruct IE preconsonantal *$eh_2$ on the basis of a correspondence Hitt. $āC$ : *$āC$ in the other IE languages alone. Occasionally, however, internal reconstruction provides a guide. One positive indication for preconsonantal *$h_2$ is Hitt. $āC$ (from *$éh_2C$ or *$óh_2C$) beside *$ōC$ (from *$oh_2C$) and *$āC$ (from *$eh_2C$) in the other languages, e.g. Hitt. *wāk-* "bite" < *$wegh_2$-* or *$woh_2g$-* : PGk. *$ϝιϝωγᾱ$ in Hmc. ἰωγή "wind-break, shelter" and ἐπιωγαί "wind-breaks" and PGk. *$ϝωγᾱ$ in κυματωγή "wave-break" (< IE *$woh_2g$-) beside *$ϝᾱγ$- < *$wegh_2$-* in aor. ἔᾱξα "broke" (Kimball, *Laryngaltheorie* w. refs.; the *$ᾱ$ of the perfect ἔᾱγα is secondary).

### 2.1.5. *$o$

In addition to *[o] from *$e$ in the vicinitiy of *$h_3$, IE had a vowel *$o$ which was phonemically distinct from *$e$. In a few roots *$o$ appeared as fundamental vowel, e.g. Hitt. *kānki* "hangs", Skt. *śaṅkate* "hesitates", Goth. *hāhan* "hang" < IE full-grade *$ḱonk$- {2.4.1.} (Mayrhofer 170–1).

### 2.1.6. Stang's Law

Beekes, *Laryngaltheorie* 61; Mayrhofer, *Idg. Gr.* I/2, 132 n. 141, 163–4 w. refs.; Eichner *MSS* 31 (1973) 92 n. 35, *Lautgesch. u. Etym.* 129 n. 41, *Laryngaltheorie* 133; Melchert, *SHHP* 30.

The development of *$-eh_2m$ = *[-ah$_2$m̥] to *$-ām$ in final syllables with loss of the laryngeal and compensatory lengthening of the preceding vowel is common IE. In Hittite, the long vowel shared the changes affecting other inherited long vowels. Inherited *$-ā́m$ became [-ān] in monosyllables, e.g. *tuwān ... tuwān* "from here ... from there" (*tu-wa-a-an*, OH etc.) = [dwān] < IE *$dwā́m$ for earlier *$dwéh_2m$ {2.5.2.}. In an unaccented final syllable, *$-ām$ was shortened to *-ān*. The accusative singular *-an* of animate *a*-stems may in part continue the IE accusative singular *$-ām$ < *$-eh_2m$ of $eh_2$-stems.

## 2.2. IE to PA and Pre-Hittite

Eichner, *Laryngaltheorie* 141 n. 60 KZ 99 (1987) 206–210; Joseph, *Ériu* 23 (1982) 32; Kimball, *IF* 99 (1994) 85; Mayrhofer, *Idg. Gr.* I/2, 175–7; Melchert, *SHHP* 159–60, HS 102 (1989) 40–1, *AHP* 76, 100–6, *Rekonstruktion* 41–53; Oettinger, *KZ* 92 (1978) 74–91, *Stammbildung* 98.

### 2.2.1. *$o$ and *$a$

Reflexes of short *$o$ and short *$a$ (and *$Ho$ and *$h_2e$ = *[h$_2$a]) are written with signs with °A°, and it is likely that by the time Hittite was first reduced to writing they had merged in a single low, non-front vowel, perhaps ranging in pronunciation from [ɔ] to [ɑ]. However, since the cuneiform syllabary offered no straightforward way of transcribing /o/ or /ɔ/, technically a merger cannot be proven. Similarly, the reflexes of *$ō$ and *$ā$ are both spelled with signs with °A°, suggesting merger. There is, however, evidence for a phonemic distinction in PA and into Pre-Hittite in the different Hittite treatments of *$dwṓ$, which became [dā] in *idālu-* "evil" < Pre-Hitt. *$edwṓlu$- and *dān* "second(ly) < *$dwoyóm$ {9.5.2.1.} and *$dwā́$, which became [dwā] in *tuwān* "here/there" < *$dwā́m$ {2.1.6., 2.5.2., 9.5.2.1.}. Different treatments of prevocalic *$óh_2$, which became [āḫ] in e.g. *sāhi* "crams, stuffs, clogs" < *$sóh_2$-ei* and *$áh_2$, which became [āh] in e.g. *pahhur* "fire" < *$péh_2wr̥$ {10.4.2.1.}, also provide evidence for a phonemic distinction.

There is no evidence for reading U as /o/ vs. Ú as /u/ {1.7.}.

Melchert (*Rekonstruktion*) finds evidence for preservation of a phonemic distinction between *$o$ and *$a$ and between *$ō$ and *$ā$ into Pre-Lycian. IE *$o$ remained in Pre-Lycian, eventually merging with *$e$ as *e* (e.g. dem. pro. *ebe-* < *$h_1obhó$-, *epñ* "behind" < *$h_1ópom$), while *$a$ remained as *a* (e.g. *arawa-* "free" < IE *$ar$-* "to fit", cf. Hitt. *āra-* "proper, right, due" < *$áro$- {2.4.2.}). Similarly, IE and PA *$ō$ became Lycian *e*, but *$ā$ remained as *a* (e.g. inf. suffix *-ã/ẽne* : Hitt. *-ānna* < PA *$-ā́tno$ {6.10.1.1.}; the first *e* of the Lycian suffix results from assimilation to the second). It is clear too that the distinction was maintained in unaccented syllables, e.g. *e* in Lyc. *pddẽ* "place" < *$pédom$* : Hitt. *pēdan* {2.4.3.,6.4.2.2.}; dem. pro. *ebe-* < *$h_1obhó$-* : Hitt. *apā-*; *i*-stem genitive plural ending *-ẽ* < *$-ōm$* or *$-ŏm$* beside *a* in first person singular preterit ending *-χa/-χã/-ga* < *$-h_2a$*; nominative-accusative plural or collective neuter ending *-a* < PA *$-ā$*. Melchert (*AHP* 130) suggests that the eventual merger of *$a$ and *$ŏ$ in Luwian and in Hittite was a parallel change rather than a shared innovation.

### 2.2.2. Reflexes of front vowels

IE **éh₁* resulted in a Hittite vowel that was not distinguished in the cuneiform syllabary from the reflexes of **ḗ* and **é* (OH /ē/). In Proto-Luvian, however, **eh₁* resulted in **a* (Melchert, *SHHP*, *HS* 102, *AHP* 60, 67–8, 103, 146, 245), e.g. Lyc. *tadi* "puts" : Hitt. *tezzi* "says" < IE **dheh₁-* "put" (Melchert, *HS* 102, cf. also Morpurgo Davies, *Gds Cowgill* 221–7); Lyc. *hadi* "releases, lets go" < PA **sǽdi* < **seh₁ti* : **seh₁-* "let go, release from the hand" (Melchert, *HS* 102); Hitt. *pēssiya-* "throw", HLuv. *pasiya-* "reject" < PA **pe-h₁sye/o-* {11.6.3.1.}. Inherited **ē*, however, resulted in PLuv. **i*, e.g. PLuv. **is-* "sit" < IE **h₁ēs-* in CLuv. *"istardalla-*, adjective applying to a footstool, HLuv. iterative *isa-* "sit, dwell", *isan(a)-* "bed" and *istarta-* "throne" (cf. Starke, *StBoT* 31, 416–18, 238–9) or PLuv. **bih₂-* < **bhēh₂-* "light, lightning, be bright" in CLuv. **piha-* in gen. adj. *pihassa/i-* "luminous", subst. "lightning" and *piha(i)mma/i-* "imbued with splendor or might" and Lyc. *Piges-*, Πιγεσ- in proper names (Starke, ib. 103–6, 314–15, Melchert, *CLuv. Lex.* 176–7). This indicates that the PA reflexes of **eh₁* (here transcribed as **ǣ*) and **ē* remained phonemically distinct in PA and PLuv. In Hittite, since unaccented **ē* and unaccented **eh₁* probably both resulted in OH /ĕ/ {2.9.}, the reflexes of **ē* and **eh₁* probably eventually fell together (cf. Melchert, *Rekonstruktion* and *AHP* 130).

Normier's claim (*IF* 85 (1980) 57–8) that **ē* became /i/ is based on readings of ambiguous signs with *i*-vocalism (e.g. 3 pl. pres. *-ir* as [-īr] < **-ēr*, *ki-ir (ker)* "heart" as [kīr] < **ḱḗr*) or on unsupported reconstructions (e.g. *ishar* "blood" < **ēsh₂u̯r*, cf. {3.2.1.1.}).

Melchert, *SHHP* 155–6, posits three front vowels, a relatively close /ę/ from monophthongized diphthongs and sequences of **Vh₁y*, a more open /e/ from IE **e* (and perhaps **ē* and **eh₁*), and /i/, and suggests that these were likely to have had long counterparts /ę̄/ (from IE **ēi*), /ē/ (from IE **ē* and **eh₁*), and /ī/ (from IE **ī* and **iH*). The claim that there were open and close mid vowels depends upon his claim that while /e/ and /i/ remained distinct into NH, /ę/ had begun to merge with /i/ by late OH, and that is open to question {1.6.2.4., 1.6.3.}. Nevertheless, there may be some evidence that reflexes of diphthongs differed from reflexes of **e*, **ē*, and **eh₁*. While unaccented **e* became OH /i/ {2.6.3.}, the reflex of **oi* is spelled with °E° in the dative singular of the enclitic personal pronoun *-se* < IE **-soi* {4.4.1.1.}, which was presumably unaccented, although this could be interpreted as evidence that monophthongization followed the reduction of unaccented **e* to /i/. The reflex of OH /āi/ is spelled both with °E° and with °I° in iteratives made from verbs with stems in *-ā(i)-* (e.g. *pal-ú-iš-ke-ez-zi*, OH, *paḫḫ-ú-e-es-kan-zi*, OH, *ha-at-re-es-ke-ez-zi*, OH, *a-ru-ú-i-is-ke-ez-zi*, MH?, *a-ru-i-i[s]-ga-zi*, MH, *a-ru-ú-e-es-kan-zi*, MH+, *a-ru-e-es-kan-zi*, MH+), and this could indicate a relatively close /ę̄/ {4.10.1.}.

### 2.2.3. Loss of laryngeals and compensatory lengthening

The non-Anatolian languages show compensatory lengthening following the loss of postvocalic laryngeals, e.g. Skt. aor. *adhāt*, Gk. ἔθηκα, Arm. *ed*, Lat. *fēcī* (IE **dheh₁-* "put, make"); Skt. aor. *asthāt*, Dor. ἔστᾱν (IE **steh₂-* "stand"); Skt. *adāt*, Gk. ἔδωκα, Arm. *et*, Lat. *dōnum* "gift" (IE **deh₃-* "give"). Loss of laryngeals and the resulting compensatory lengthening appear to have been a series of conditioned changes occurring in specific phonological environments and in part happening after the break up of the original IE speech community. There is some evidence for loss of postvocalic laryngeals with compensatory lengthening within PA. Loss of **h₂* before stops seems to have caused lengthening, since the nominative-accusative singular abstract suffix *-ātar* = [-ādar] (in IE terms, **-eh₂-tr̥*) shows voicing of the **t*, which would be regular after a long accented vowel, i.e. PA **-ā́-tər* > **-ā́dər* {6.4.4.3..10.2.4.}. In the neuter nominative-accusative plural *āssū* "goods" (*a-as-su-u*, OH etc. = [āssū] < **h₁ós-uh₂* {10.11.2.}) lengthening of the final **-u* occurred in an unaccented syllable, implying that loss of the laryngeal and compensatory lengthening took place after the shortening of unaccented inherited long vowels {2.3.1.}, and was, therefore, either PA or Pre-Hittite (cf. Eichner, *Laryngaltheorie* 141 n. 60, who, however, suggests that the long final vowel of *āssū* could be analogical). Similarly, *tūriye-* "harness" (*tu-u-ri-e-*, OH etc.), either [tūryē-] < **tu̯r̥H-yé-* or [dūryē-] < **dhu̯r̥H-yé-* {5.4.1.1.}, shows that **u̯r̥H* became [ūr] in an unaccented syllable, a change that must also have followed the shortening of unaccented inherited long vowels. It is possible, however, that loss of final **h₂* after **a* preceded shortening of unaccented long vowels; note e.g. *sākuwa* "eyes" (*sa-a-ku-wa*, OH etc.) = [sāgʷă] < PA **sṓgʷā* < IE **s + (h₂)ṓkʷ-eh₂* or **sṓkʷ-eh₂* {6.4.4.1., 10.11.2.}. Melchert (*AHP* 69, 86), noting that verbs with stems in **eh₂* never have voiced endings in Luvian and Lycian, suggests that the suffix was formed as **-ā́-tr̥* in PA after the change of final **-ah₂* to **-ā*, a development that must have been early, since it preceded shortening of unaccented vowels. If Melchert is right, then loss of preconsonantal **h₁* and **h₂* were two separate developments.



### 2.2.4. Sources of new vowels

Vocalization of intervocalic laryngeals was one source of new vowels, e.g. IE **dhugh₂tḗr-* "daughter" > PLuv. **duətarr-* > in CLuv. **du(wa)ttarr-* (in personal names and place names), HLuv. acc. sg. *tu-wa/i-tara/i-na* (= [duwataran] or [tuwataran]) and Lyc. *kbatra* {10.2.5.}, or **h₁* > /u/ after **l̥* or **l* in e.g. *dalūki-* "long" < **dl̥h₁gh-* {10.9.2.}. Another source of new vowels was the vocalization of syllabic resonants, e.g. *wātar* "water" (< **wódr̥*), *palhi-* "wide" (< **pl̥h₂-í-*), *hamink-* "bind" (< **h₂m̥negh-*), *sanh-* "rinse, flush" (< **sn̥h₂-*), a change that seems to have occurred fairly late in PA, after gemination of postvocalic **RH* to **RR* (cf. *tarra-* "be able" < **térh₂o-*, but *tarhant-*, participle of *tarh-* "prevail over" < **tr̥h₂-* and after IE **ns* had become PA **ss* (cf. *dāssu-* "strong" < **dónsu-*, but *anze/ā-* "us" < **n̥sé/ó-*). It is likely that syllabic resonants vocalized to sequences of short, ə-like vowel plus resonant, [əR], that did not undergo lengthening, even when it came to be accented in PA {5.3.}. After labiovelars and **w*, syllabic resonants vocalized to PA **uR*, e.g. $^{GIŠ}$*kurta-* "wooden (?) writing tablet" (< **kʷr̥to-*), *gulss-* and CLuv. *gulz-* "scratch, engrave, write" < (**kʷl̥s-*), *mēhur* "time" < **méh₂u̯r̥*. Apparently the **u* could be lengthened if accented, e.g. *ūrki-* "trail" = [ūrgi-] < Pre-Hitt. **úrgi-* < **(h₁)wr̥gi-* {5.4.}. New vowels were also produced through anaptyxis, e.g. *zik(k)ē-*, iterative of *dāi-* "put" < PA **dsḱé-* (in IE terms **dhh₁sḱé-*) {3.9.3.}, *tarsikē-*, iterative of *tarna-* "release, let go" < **tr̥nh₂-sḱé-* {3.9.3.},

*appiskē-*, iterative of *ēpp-* "seize" < PA **apsḱé-* {3.9.3.}, consonant stem third person singular preterit ending [-ta] < PA **-tə* < **-t* {3.9.1.}, *tūhusiya-* "keep quiet, keep silent" = [tūḫusiya-] < **téuh₂s-ye-* {3.9.4.}.

### 2.2.4.1. Secondary zero-grade

IE languages occasionally show insertion of an anaptyctic vowel ("schwa secundum") in morphological contexts where a zero-grade would be expected but a phonologically regular zero-grade would be awkward or impossible (cf. e.g. Gk. πίτνημι "spread out", Lat. *patēre* "lie open" < **p,th₂-* beside full-grade **peth₂-*, and see Mayrhofer, Joseph, and Oettinger). In Hittite, the vowel is /ă/.

Clear-cut examples are: *tak-* = [dag] for **dhĝh-* in oblique-stem forms of *tēkan* "earth" (e.g. gen. *tak-na-(a)-as* = [dagnās], dat. *tak-ni-i* = [dagnī], dir. *tak-na-a* = [dagnā], loc. *ta-ga-(a-)an* = [dagān]), cf. the zero-grade in CLuv. *tiyammi-* < **dhĝhém-* {3.2.1.5.}; *mākk-* = [māk-] in *makkēss-* "become numerous" (*ma-ak-ke-e-es-(s°)*, *ma-ak-ki-is-(s)*, *CHD* 3, 120–1), *māknu-* "make abundant" (*ma-ak-nu-*, it. 1 sg. pres. *ma-a-ak-nu-us-ke-mi* KUB XLI 20 Vs. 6 (NH) (examples *CHD* 3, 122), for **mĝh₂-*; cf. **mₑĝh₂-* in Lat. *magnus* "large" and full-grade **meĝh₂-* in *mekki-* "numerous" {10.7.1.}; *sas-* "sleep" = [sas-] (e.g. 1 pl. pres. *sa-su-e-ni*, 3 pl. *sa-sa-an-zi*, ptcp. *sa-sa-an-t°*, caus. *sa-as-nu-*, *sa-as-sa-nu-* = [sassnu-]) for ***ss-* beside full-grade **ses-* in 3 sg. pres. *sēszi* etc.

In some words /a/ in morphological contexts where a zero-grade would be expected can reflect a generalized, but unaccented, *o*-grade: e.g. 3 sg. pres. midd. *la-ga-a-ri*, ptcp. *la-ga-a-an* : *lāk-* "knock out, make incline" with [lăg-] < **lóĝh-* for ***alg-* < **l̥ĝh-* beside full-grade **lóĝh-* > [lāg-] in 3 sg. pres. *la-a-ki* {2.4.1.}; 3 pl. pres. *tak-kan-zi* : *dāk-* "resemble, correspond to" with [dăk-] < **doḱ-* for **dḱ-* beside full-grade **dóḱ-* > [dāk-] in 3 sg. pres. *da-a-ak-ki* {2.4.1.}; gen. *sa-ak-na-a-as* = [saknās] < **soknós* : *sakkar* "excrement" with [săk-] for **sk-* beside full-grade in nom.-acc. sg. *sa-ak-kar* < **sók-r̥* and coll. **skṓr* in *za-as-ga-ar-a-is* = [skārāis](?) "anus" with zero-grade {1.15.3., 11.8.}; dat. sg. *pat-ta-ni-i*, *pad-da-a-ni* = [pattān°] < **pt[h₂]n̥n-* beside full-grade in nom.-acc. sg. *pa-at-tar*, *pat-tar* "basket, tray" < **póth₂-r̥* {10.7.2.}. These examples suggest that the *o*-grade was generalized before accented vowels were lengthened and that the generalization of the full-grade did not necessarily entail accent shift.

## 2.3. Lengthening, shortening, and accent

### 2.3.1. Shortening of unaccented long vowels

Eichner, *MSS* 31 (1973) 79, 86 n. 15, *Lautgesch. u. Etym.* 162, 163, *Laryngaltheorie* 136 n. 45, 138, *KZ* 99 (1987) 206–7 n. 10; Hart, *BSOAS* 43 (1980) 15; Melchert, *SHHP* 107 n. 65, *Gds Kerns* 227–8 n. 1, *AHP* 76.

Shortening of unaccented long vowels occurred in PA or Pre-Hittite. This change is supported by a number of words in which the reflex of an inherited long vowel in a syllable that can be assumed to have been unaccented does not show plene writing,



even in early texts: e.g. *te-e-kan* nom.-acc. sg. "earth" = [dēgăn] < IE nom. **dhéĝhōm* {2.7.1.}; directive in *-a* from **´-ō* in root accented nouns, e.g. *ne-(e)-pi-sa* "to heaven" = [nēbisă] < **nébhesō* {2.6.3.}; infinitive in *-ānna* {6.10.1.1} = [-ănnă] < PA **-ā́tnō* with directive ending **-ō*; nom. sg. *ha-a-ra-as* "eagle" (OH etc.) = [hārăs] < **h₂érō* plus animate nominative singular ending **-s* {2.8.1.3.}.

The shortening and its relative chronology are discussed in detail by Eichner (*Laryngaltheorie*, *KZ* 99). According to Eichner, shortening occurred in PA and preceded PA lenition, or voicing. Eichner also maintains that shortening followed monophthongization of diphthongs and compensatory lengthening of vowels that accompanied the loss of laryngeals and affected long vowels resulting from these processes. In support of ordering shortening after monophthongization, Eichner cites **ĝhéimont-* > **ĝhḗmant-* > **ghēmant-* with shortening > [gĕmmant-] "winter" with fortis [mm], but *gimmant-* ( = [gĭmmant-]?) can equally well continue **ĝhimónt-* or **ĝhimnónt-* with zero-grade {7.3.3.}. Eichner offers no examples of voiceless stops after reflexes of monophthongized diphthongs in support of the claim that shortening preceded lenition. One might be *lukke/a-* "kindle, set afire", if this continues an iterative-causative **loukéye/o-* {4.6.2.}. It should be noted, however, that although IE **s* became /ss/ between a short vowel and an accented vowel (e.g. *sissūra-* "irrigation" < **sesúro-* {11.4.3.}), between the reflex of an unaccented long or short diphthong **s* became /s/ in **wisūra-* "oppression", denom. *wisūriya-* "oppress" < **wēisúro-* or **weisúro-* as it did after long vowels {11.4.2.}. This suggests that the reflexes of monophthongized diphthongs in unaccented syllables were long at the time when pretonic **s* became /ss/.

Loss of laryngeals seems to have been a series of changes, some of which may have followed shortening of accented vowels. Possible examples of long vowels from vowel plus laryngeal in unaccented syllables that conditioned PA voicing are Hitt. and CLuv. *hūta-* "haste, readiness" = [hūdă-] or [hūdă-] < **h₂uh₁tó-* and Hitt. **mūta-* = *[mūdă-] or *[mūdă-] in *mūtā(i)-* "root, dig in the ground" if from **muh₁tó-* {6.4.4.}. The long vowel of neut. nom.-acc. pl. *a-as-su-u* "goods" = [āssū] < **h₁ós-uh₂* also seems to have arisen in an unaccented syllable {10.11.2.}.

Melchert posits shortening of unaccented long vowels in final closed syllables, but the contrast between directive **-ṓ* > [-ā] in forms with accented endings (e.g. *ha-as-sa-a* = [hassă] "to the hearth" < **h₂(e)h₁s-ṓ*, *tak-na-a* = [dagnā] "to earth" < PA **daĝn-ṓ* {2.5.1.}) and **-ō* > [-ă] in root-accented forms such as *ne-e-pi-sa* "to heaven" = [nēbisă] < PA **nébesō* {2.7.1.} suggests that shortening affected all unaccented vowels in final syllables.

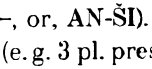
### 2.3.2. Lengthening of accented vowels

Eichner, *Lautgesch. u. Etym.* 154 n. 77; *Gds Kronasser* 24 n. 37, *KZ* 99 (1987) 206–7 n. 10; Hrozný, *SH* 186–7; Kimball, *PW* passim; *IF* 91 (1986) 83–94; Melchert, *Rekonstruktion* 42–3, *AHP* 100, 107, 131–4; Oettinger, *Stammbildung* 447–9; Starke, *StBoT* 31, 97, 567, 572.

Hrozný was the first to suggest that short accented vowels were lengthened, but this view was largely rejected or ignored until the 1970's.

### 2.3.2.1. Oettinger's views

Oettinger presents his views most explicitly in *Stammbildung* 447–9 (cf. also ib. 396 and 566 n. 12). According to Oettinger, initial accented vowels in open syllables preceding syllables with short vowels were lengthened in PA, i.e. *$\acute{}$ $\breve{}$ > $\acute{}$ $\breve{}$ (see also Starke, *StBoT* 31 for this rule as PA). In support of viewing this rule as PA he notes Palaic *mu-u-si* "is satiated" < **músi* beside 3 pl. *mu-sa-(a)-an-ti*. Oettinger gives examples of lengthening of *e and *o in nominal paradigms (448): *te-e-kan* = [dēgăn] "earth" < **dhéĝhōm*; *ne-e-pi-is* = [nébĕs] "heaven" < **nébhes* (for **nébhos*); *ta-a-ru* "tree" = [Tārŭ] < **Tóru* (sic); *te-e-pu* "little, a little" = [dēbŭ] < **dhébhu*; and *wa-a-tar* "water" < **wódr̥*. For lengthening of *í note 2 sg. imp. *i-it* = [īt] "go!" < PA **íd* < **idí* (for IE **idhí*; see ib. 389 n. 261, 348).

Lengthening is not, by contrast, regular for Oettinger in closed syllables or in trisyllabic and longer words. Apparent counterexamples have plene writing and/or long vowels for other reasons. In e.g. *ka-a-an-ki* "hangs" < **ḱonk-éye-* /ā/ is analogical from *hi*-verbs in root-final single consonant (447–8). In 3 sg. pres. *a-a-an-si* "(s)he wipes" (436–7 n. 91) the hyperplene writing disambiguates the reading (cf. DINGIR-LIM "divinity" =  , or, AN-ŠI). Note, however, that plene writing occurs elsewhere in the paradigm (e.g. 3 pl. pres. *a-an-sa-an-zi*, 3 sg. pret. *a-an-as*, imp. *a-an-as-du*, it. *a-an-as-ke-* {7.8.4.}). According to Oettinger, the plene writing of E attested in closed syllables in the singular of many *mi*-verbs either reflects an inherited long vowel (e.g. 1 sg. pres. *e-ed-mi* : *ēd-* "eat" with [ēd-] < **h₁ēd-*, strong stem of an acrostatic present (87–91), or disambiguates vowel color (e.g. *ku-e-en* = [gʷen-] in *ku-e-en-zi* "strikes, kills" (96 n. 22). The long vowel of trisyllabic *i-da-a-lu* "evil" = [idālu], which Oettinger derives from **ēduŏl-* (540), he considers obscure (449 n. 117). In Oettinger's view, the iambic lengthening rule had a profound effect on the shape of *hi*-verbs, which he derives largely from remodeled iterative-causatives in **-éye/o-* (414–30) and perfects (403–13), leaving *hi*-verbs with roots in final single consonant with long vowels in the third person singular present (e.g. *is-ka-a-ri* "cuts" = [skāri] < **skắri*). Since Oettinger claims that the long vowel caused lenition (voicing) of a following voiceless consonant (450–2), *hi*-verbs with roots in final **p*, **k*, **h₂*, **s* or final liquid or nasal should oppose a singular in *CāC-* (regular in 3 sg. *CāC-i* < **CáC-ei*) to a third person plural present in *CaCC-anzi* < **CaC-énti* (e.g. *is-da-a-pi* "covers" : 3 pl. *is-tap-pa-an-zi* (IE **step-*) or *ha-a-si* "gives birth" : 3 pl. *ha-as-sa-an-zi*); but the expected distribution of fortis and lenis consonants is often disrupted by analogy (e.g. *da-a-ak-ki* "corresponds to" with analogical fortis : 3 pl. *tak-kan-zi*; *is-ka-a-ri* "cuts" beside 3 pl. *is-ka-ra-an-zi* with analogical lenis generalized throughout the paradigm).

As Eichner (*KZ* 99) notes, this restriction on lengthening does not account for all of the data; note, e.g., *ka-a-as-za* "hunger" (MH) = [Kāsts] < **Kóst-s* or *ku-u-ur-ka-as* "foal" (OH) = [kūrkas] < **kúrko-* with lengthening in a closed syllable and no likely analogical source for a long vowel. There is also ample evidence for lengthening of accented vowels in trisylabic words: e.g. *ú-i-te-e-ni* (MH+) dative-locative singular of *wātar* "water" = [widēni] < **wed-éni* {2.6.3., 7.3.1.1.} or *is-nu-u-ra-* "dough bowl" (MH+) = [isnūra-] < **yesnúro-* {2.4.4.2.}. Oettinger's chronology also does not work.



Melchert notes that while lenition (PA voicing) was Proto-Anatolian, lengthening of short accented vowels in open syllabes must have been Hittite only (note, e.g. Hitt. *pēran* "in front of" = CLuv. *parran* < **pérom*). In Hitt. *a-ap-pa*, *a-ap-pa-an* "after, following" = [āpa], [āpan] < **h₁ópō*, **h₁ópom* lengthening of **ó* was not accompanied by voicing, or lenition, of **p*, and there is no likely analogical source for voiceless or fortis /p/.

See also Eichner (*KZ* 99) on Oettinger's chronology.

### 2.3.2.2. Eichner's views

In contrast to Oettinger, Eichner holds that lengthening is Hittite and not PA. He posits lengthening of accented initial short vowels, except before full, or "true", geminates; e.g. *ar-ra-* "arse" < **h₁órso-*, *at-ta-* "father", *an-na-* "mother", but *a-ap-pa* = [āpa] < **ápŏ* (sic) with °P-P° = /p/ (*Lautgesch. u. Etym., Gds Kronasser*). In *KZ* 99, Eichner posits lengthening in three distinct stages following PA lenition and the PA shortening of unaccented long vowels. The first stage was a phonemic lengthening of **ă*, **ĕ* and perhaps **ŭ*, but not **ĭ* in medial open syllables before simple, or lenis, consonants. This was followed by lengthening of accented short vowels in absolute final syllables (e.g. **ídhí* > PA **ídhi* > *īt* "go!") and by lengthening of accented short vowels in closed syllables (e.g. **ésti* > *ēszi* "is"), except before true geminates. Note, however, there is evidence for lengthening of medial **í* (e.g. *iskīs-* "back < **isghís-* {2.4.4.1.}) and that lengthening was regular before geminates from some sources, cf. e.g. *ārra-* "arse", abl. sg. *a-ar-ra-az* KUB XXXV 148 + III 3 (OH+) {8.6.5.1.}.

### 2.3.2.3. Kimball's views

Kimball posits lengthening of accented short vowels in a single, solely Hittite, development. According to Kimball, lengthening occurred in closed as well as open syllables , e.g. *ka-a-as-za*, *ka-a-as-t°* "hunger" = [Kāst-] < **Kóst-* (*PW* 140–7). Inherited **é* was lengthened, and plene writing of E has the same value as plene writing of A in indicating long vowels, e.g. **h₁ésti* "is" > *ēszi* = [ēstsi]; **gʷhénti* "strikes, kills" > *kuēnzi* = [gʷēntsi]) (ib. 34–43, 301–3).

### 2.3.2.4. Melchert's views

Melchert posits lengthening of short accented vowels in open syllables as a specifically Hittite change. In *AHP* he claims that while lengthening of accented short vowels in open syllables is found in Luvian and Palaic as well as in Hittite (215, 261), it is a separate, Post-PA innovation in these languages. He posits lengthening of **é* and **ó* in closed syllables as a specifically Hittite change (107), rejects lengthening of other vowels in closed syllables (107, 131–2), and posits lengthening in accented open syllables as an active synchronic rule (106–8).

## 2.3.3. Length not due to accent

Vowel length was eventually phonemicized when long vowels arose in unaccented syllables from a variety of sources. Words which plene writing reveals to have had two or more long vowels provide evidence for long vowels in unaccented syl-

lables, although vowel length is only rarely indicated for more than one syllable in most such words. Instead, the scribes generally chose to indicate one or the other of the long vowels {1.3.3.5.}.

### 2.3.3.1. Long vowels from inherited long vowels

It is possible that inherited long diphthongs retained their length in unaccented syllables. A few nouns in *-āi-* (IE **-ōi-*) that are not productively derivable from verbs seem to have had a long diphthong in the suffix, which was not accented in IE, and a long root vowel from an accented short vowel, e.g. *sāgāi-* < PA **sắgōi-* and *sāklāi-* "rite, custom" = [sāklāi-] < PA **sắklōi-* or **sắklōi-* {4.8.}.

### 2.3.3.2. Long vowels by compensatory lengthening

Compensatory lengthening was another source of long vowels in unaccented syllables, in e.g. nom.-acc. pl. *āssū* "good(s)" (*a-as-su-u*, OH, OH+) = [āssū] < **h₁ós-uh₂* {10.11.2.} and *tūriye/a-* "harness" (*tu-u-ri-e-*, OH etc.), either [tūryē-] < **twr̥H-yé-* or [dūryē-] < **dhwr̥H-yé-* {5.4.1.1.}. A sequence of **uh₁* probably also yielded long vowels in unaccented syllables. The plene writing in the first syllable of *mu-ú-ta-iz-zi* KUB IX 4 III 29, 31 (MH+) suggests that the stem was [mūdā(i)-], denominative from a ***mūda-* "(re)moved" < **mūta-* with PA voicing, ultimately from a *to*-adjective **muh₁-tó-* : Ved. *mūtá-* "moved", cf. also *hūla-* "haste = [hūda-} < **hₔuh₁tó-* {6.4.4.3.}.

### 2.3.3.3. Long vowels by contraction, monophthongization

Some long vowels in unaccented syllables arose though contraction. The animate nominative plural ending may have had its origin in *-ēs* < **-ees* < **-éy-es*, the regular ending of some *i*-stem paradigms, which was gradually extended to nouns and adjectives of other inflectional classes (cf. the Latin ending *-ēs*, also from **-ey-es*, and see Melchert, *SHHP* 121–2, for a discussion with references). In OH [-yēs] with analogical /y/ is found in several *i*-stems; note especially *ma-a-ri-e-es* "spears" StBoT 25, 56 IV 8 (Post-OH also *ma-a-ri-i-e-es*) = [māryēs] or *ha-an-te-ez-zi-e-es* "first" StBoT 25, 61 Vs? II 1 = [hantetṣya-] < **hₔn̥téi-tyo-* {4.3.2.2.} from paradigms in which the endings were not originally accented. Even within OH, *-ēs* had been extended beyond its original locus; note, e.g. *he-e-a-u-e-es*° "rains" StBoT 25, 1 I 8 and *da-as-sa-u-e-[es* "strong" KUB XXXVI 106 Vs. 9, both from paradigms with original root accent {4.9.3. ,7.8.2.}.

The locus from which *-ēs* originated must have been small, since as Neu, *Heth. u. Idg.* 191–2, notes, *i*-stem adjectives usually have an *o*-grade suffix [-a(y)-] < **-oy-* and nouns usually have zero-grade [-y-].

Monophthongization of *āi* in iteratives in *-skē/a-* from verbs in *-ā(i)-* {4.10.1.} may also have produced long vowels in unaccented syllables, since plene writing of the vowel preceding the suffix is fairly frequent in such forms: e.g. *a-ru-ú-i-is-ke-ez-zi* (MH?), *a-ru-i-is-ga-zi* (MH), *a-ru-ú-e-es-kan-zi* (MH+), *a-ru-e-es-kan-zi* (MH+): *aruwā(i)-* "prostrate oneself"; 3 pl. *pal-ú-e-es-kan-zi* (OH) : *palwā(i)-* "recite(?); *sa-ku-e-es-ke-ez-zi* (NH) : *sākuwā(i)-* "look at".



### 2.3.3.4. Long vowels by analogy

An especially common source of long vowels in unaccented syllables is analogy in derived forms. Denominatives verbs with original suffix accent apparently retained the vowel length of the base words from which they were derived, e.g. with suffix *-ā(i)-* from PA **-āyé/ó-*: *sa-a-ku-wa-[iz-zi* KBo XVII 88 II 33 (OH+), *sa-a-ku-is-ke-ez-zi* KBo XIII 122 Rs. 9 (OH+) = [sāgʷā(i)-] "look at" : *sākuwa* "eyes"; *sa-a-ak-ta-a-iz-zi* (OH, MH) = [sāktā(i)-] "take care of a sick person", denominative from **sāktas* "sickness" {2.4.1.}; with suffix *-ēss-* from *-ē-* plus **-ss-* {2.9.1.1.}: *i-da-a-la-u-e-es-zi* KBo VI 4 IV 2 (OH+), *i-da-a-la-a-u-e-es-te-e-ni* KBo V 4 Rs. 21 (NH), *i-da-a-la-u-e-es-sa-an-zi* KBo VI 3 II 18 = [idālāwēss-] : *idālu-* "evil"; *te-e-pa-u-e-es-ta* KBo II 5 I 6 (NH), *te-e-pa-u-e-es-sa-an-za* KBo IV 4 III 23, 24, IV 38 (NH), *te-e-pa-u-e-es-z[i* KUB VIII 18 L. 3 (OH+), cf. *te-pa-u-e-es-z[i* ib. L. 6) = [dēbāwēss-] : *tēpu-* "little". In *pe-e-da-a-i* "takes away" (sporadically from OH?) = [pēdāi] beside *pe-e-da-i* (OH etc.) = [pēdă-] the long [ā] is from the simplex *dā-* "take".

Some forms show analogical extension of a long vowel allomorph of a suffix or ending: e.g. 3 pl. pres. *ne-e-a-an-ta* (OH+), 3 sg. imp. *ne-ya-a-ru* (NH) : *nēa-* "lead" < **néiH₁ ɜ-o-* with [-ā-] from middle paradigms with original zero-grade roots {2.4.1.}, ptcp. nom. sg. c. *ne-e-a-an-za* KBo XVI 97 L. edge 5b (MH?) beside OH *ne-e-an-t°* with [-ānt-] for [-ănt-] from e.g. *appānt-* "taken" with suffix [-ānt-] < **-ónt-* {2.4.1.}; *me-mi-e-er* "they spoke" KUB XIV 20 I 25 (NH, cf. OH *me-e-me-er*), *ú-e-mi-i-e-er* "they found" KBo IV 4 III 22 (NH); *pe-e-es-si-i-e-er* KUB XXIV 3 II 43 (MH+), *ú-e-ri-i-e-[er]* KBo IV 4 II 2 (NH), *a-u-e-er* ib. IV 28 with 3 pl. pret. ending [-ēr] for expected [-ĕr] from unaccented **-ēr* {2.7.2.}.

## 2.4. Reflexes of short accented vowels

### 2.4.1. **ó*

Accented **ó* became /ā/. Spellings with plene writing are relatively frequent in OH and MH texts.

*tāru-* "wood": nom.-acc. sg. *ta-a-ru* StBoT 25, 4 IV 12, abl. sg. *[ta/da]-a-ru-az* KUB XXIX 1 I 2 (OH+) = [dāru] < **dóru* : Skt. *dāru* "log", Gk. δόρυ "spear".

*sāru-* "booty, loot": nom.-acc. sg. *sa-a-ru* KBo V 8 III 37, IV 13 (NH), dat.-loc. sg. *sa-a-ru-(ú)-i* (NH) = [sāru] < **sóru*, cf. W. *herw* "raid" < **ser-w-o-*, OIr. *serb* "theft" < **ser-w-ehₔ-* (Watkins, *Ériu* 27 (1976) 116–9 and Weitenberg, *u*-Stämme 172 w. refs.).

*wātar* "water": nom.-acc. sg. *wa-a-tar* e.g. StBoT 25, 3 I 14 (also MH, NH etc.) *wa-tar* (rare) e.g. StBoT 25, 59 II 8, *w[a]-tar* ib. I 11 = [wādar] < **wód-r̥* (Schindler, *BSL* 70 (1975) 5).

*sāktā(i)-*: "take care of a sick person": 3 sg. pres. *sa-a-ak-ta-a-iz-zi* KBo VI 2 I 17 (OH) = *sa-a-ak-ta-a-iz-zi* KBo VI 3 I 26 (MH) = [sāktā(i)-], denominative from **sāktas* "sickness" < **sóktos* : OIr. *socht* "stupor, (pathological) silence" (Watkins, *Kratylos* 19 (1974) 69–71).

*kāst-* "hunger": nom. sg. *ka-a-as-za* e.g. KUB XVII 10 I 8 (MH, and later), *ka-as-za* (OH+), *ga-as-za* (OH+), dat.-loc. sg. *ka-a-as-ti* KUB XXXIII 121 II 16 (NH), *ka-as-ti*

(NH), acc. sg. *ga-as-ta-an* (pre-NH), gen. sg. *ga-as-ta-as* (MH) = [Kāst-], nom. sg. [Kāsts] < **Kóst-s* : Toch. A *kaṣt*, B *kest* "hunger" beside [Kist-] < **Kest-* in e.g. *kistant-* "hungry", *kisduwānt-* id. and *kistanziya-* "be hungry, starve" {2.6.3.}.

Examples *PW* 141–2 and *HED* 4, 121–123. The initial velar is indeterminate (see Tischler, *HEG* 3, 535–8 for various etymologies). For the ablaut, see Kuryłowicz, *PICL* 8, 230, and Schindler, *KZ* 81 (1967) 297–9.

Reflexes of **ó* are also found in several *hi*-conjugation singulars which may be derived from *o*-grade singular perfects, and perhaps partially from *o*-grade presents.

For the derivation of the *hi*-conjugation from the IE active perfect, see especially Eichner, *Flex. u. Wortb.* 71–103; for the possibility of deriving at least some *hi*-conjugation verbs from presents with *o* : *e* ablaut, see Jasanoff, *Heth. u. Idg.* 79–90 and *Reconstructing Languages and Cultures* 129–55.

*kānk-* "hang": 1 sg. pres. *ga-a-an-ga-ah-he*, *ga-a-an-ga-ah-hi* (both OH), 3 sg. *[k]a-a-an-[ki]* StBoT 25, 2 I? 3, *ga-a-an-k[i]* ib. I 7 *ga-an-k°*, *ka-an-k°* (OH+, MH+) = [kāŋkhe], [kāŋki] < IE **ǩónk-h₂ai*, **ǩónk-ei* : **ǩónk-*, present with *o*-grade singular (Jasanoff, *Heth. u. Idg.* 87), cf. e.g. Skt. *śaṅkate* "doubts, hesitates", Lat. *cunctārī* "delay, hesitate", Gmc. class VII strong verb **hanχan* (in Goth., OHG *hāhan* "to suspend", OE *hōn* id.).

Paradigm *Stammbildung* 45; examples *PW* 202–4 and *HED* 4, 48–51. The spellings *kan-k°*, *ga-an-k°* (= [kānk-]) in 3 pl. pres. *kankanzi* and ptcp. *gankant-* reflect a zero-grade **ǩ̥nǩ-*, since *e*-grade **ǩénk-* would have become **[kiŋk-] with raising of *e* before [ŋk] {3.2.1.2.}.

*māld-* "recite", "make a vow" ("use words magically"): 3 sg. pres. *ma-a-al-di* (OH etc.), *ma-a-al-ti* (OH etc.), *ma-al-di*, *ma-al-ti* (both OH etc.), 1 sg. pret. *ma-a-al-tah-hu-un* KBo III 22 Rs. 59 (OH), *ma-al-da-ah-hu-un* (OH+, NH), 1 sg. pres. *ma-al-ta-ah-hi*, *ma-al-da-ah-hi* (both NH) = [māldhi], [māldi], [māldhun]. The source should be an *o*-grade **móld(h)-* (perhaps perf. **mólḍ(h)-e*) since *e*-grade **méld(h)-* would have become ***mēld-* {3.2.2.}, cf. Arm. *malt'em* "I implore" (< Pre.-Arm. **malt-*), Lith. *meldžiù*, *melsti* "asks for", *maldà* "prayer", OCS *mol'o*, *moliti* "implore", and OSax., OHG *meldōn* "make known" (NHG *melden*), OE *meldian* id. < Gmc. **meldōn*, denominative from Gmc. **meldō-* in OE *meld* "announcement", OHG *melda* "information".

Examples, *CHD* 3, 132–5. For etymological refs. see also *HEG* 6, 109–10. The exact nature of the final dental is difficult to establish; the Germanic and Baltic forms can have IE **dh*, but the Armenian aspirate *t'* should come from a Pre-Armenian voiceless **t*.

*dākk-* "resemble, correspond to": 3 sg. pres. *da-a-ak-ki* KUB XLIII 53 I 2, 3 etc. (OH+), *da-ak-ki* ib. I 5, NH also *ta-ak-ki* = [dāki], perhaps from perfect **dóǩ-e* "resembles" < *"takes to" : **doǩ-* / **deǩ-* in e.g. Gk. δοκεῖ "it seems", Lat. *docēre* "to teach" (< caus. **doǩ-éye-*), Lat. *decet* "it is fitting" (< stative **deǩ-eh₁-*), and Hmc. impf.(?) δέκτο "took" and Ion. δέκομαι "take", perhaps implying a middle present **deǩ-to(i)*, if these can be derived from an original short vowel subjunctive **deǩ-e/o-*.

Examples *Stammbildung* 427; for the Greek forms see Tichy, *Glotta* 54 (1976) 71–84, and for etymological references, see *HEG* 8, 31–2.

*lāk-* (active) "knock out, topple", "make incline": 3 sg. pres. *la-a-ki* (OH etc.), 2 sg. imp. *la-a-ak* (OH etc.) = [lāgi], [lāk], perhaps from perfect **lóǵh-e*, if transitized in opposition to middle *lagāri* "falls"; for the IE perfect, cf. perhaps λελο(γ)χυῖα · λεχὼ γενομένη (Hesych.).



Examples *CHD* 3, 16–18; etymological refs. *HEG* 5, 16–7.

Long /ā/ from **ó* also occurs in the genitive singulars of some athematic nouns from paradigms with original mobile accent, i.e. **-ós* > [-ās], e.g. *ta-ak-na-a-as* = [dagnās] (OH etc.) : *tēkan* "earth" {6.4.3.3.}; *ha-as-sa-a-as* = [hassās] (OH etc.) : *hāssa-*, *hassā-* "hearth" {10.3.2.1}; *is-ha-na-a-as* = [ishanās] (OH) : *ēshar* "blood" {5.6.}; *sa-ak-na-a-as* = [saknās] StBoT 25, 19 Vs. 7, StBoT 25, 20 Vs. 6 : *sakkar* "excrement" {2.2.4.1.} (Hart, *BSOAS* 43 (1980) 10–12).

Several *mi-* and *hi*-verbs with originally ablauting paradigms have participle suffixes in [-ānt-] from (generalized) **-ónt-*: e.g. [apānt-] : *ēpp-* "take": nom.acc. sg. c. *ap-pa-a-an-za* KBo XVI 27 IV 19 (MH), *ap-pa-an-za* ib. IV 25, nom.-acc. sg. n. *ap-pa-a-an* KUB XXX 28 + Vs. 5 (NH), nom. pl. c. *ap-pa-a-[an-t]e-es* KBo VI 2 + XIX 1 II 13 (OH); [adānt-] : *ēd-* "eat": nom.-acc. sg. n. *a-da-a-an* KUB XIII 2 IV 19 (MH(+?)), KUB XXIII 72 Rs. 14 (MH); [hugānt-] : *huēk-* "strike", "slaughter": acc. sg. c. *hu-ga-a-an-ta-an* StBoT 25, 71 II 7; [kʷrānt-] : *kuēr-* "cut": nom.-acc. sg. n. *ku-ra-a-an* KBo XXII 180 I 13 (NH); [lagānt-] : *lāk-* "knock over": nom.-acc. sg. n. *la-ga-a-an* e.g. KUB XXXIII 68 II 4 (MH), *la-ga-an* (OH etc.); [piyānt-] : *pāi-* "give": nom.-acc. sg. n. *pi-ya-a-an* KBo VI 2 II 28, 29 (OH), KUB XXXVI 118 L. 4 (MH); [warānt-] : *ur- (war-)* "burn": nom.-acc. sg. n. *wa-ra-a-an* KBo VI 34 IV 6 (MH+) (Hart, *BSOAS* 43 (1980) 4–6, and Kimball, *PW* 750–2).

Third person plural presents in *-Ca-a-an-zi* (Hart, op. cit. 4, 6) are probably analogical to the participles, however, and not from **-énti* {5.3.4.}.

Long **-ā* from **-ó* would be expected in unextended third person singular middle presents with zero-grade roots (cf. e.g. Skt. *duhé* "milks" < **dhugh-ói*), but Hittite seems to have generalized [-ă] from root accented forms such as [ēsa] "sits" < **h₁ésoi* {3.9.5.1.}, since spellings in *-Ca-a* are not found, cf. e.g. *kar-sa* "cuts" (422/z II 23, III 23 (StBoT 5, 82) < **kr̥s-ói* beside 3 sg. midd. imp. *karsāru* 1/i III 5 (StBoT 5); *tu-uh-sa*, *tuh^ah-sa* "separates, cuts" (OH etc.; examples StBoT 5, 175–7) = [duhusa] < **duh₂s-ói* {3.9.4.}).

Similarly, *[-skā-] from **-skó-* would be expected beside [-skē-] from **-ské-* in iteratives {2.4.3.}, but the spelling *s-ka-a-(aC)-* is extremely rare and does not occur in early texts, suggesting that the thematic vowel [-ă-] was generalized from full-grade root-accented primary deverbatives in *-iya-* = [-yă-] such as *wemiya-* "find" (Pre-Hitt. **(o)u-ém-yo-*); *weriya-* "call" (**wér[h₁]-yo-*), and *hāriya-* "bury" (**hǵér-yo-*) {10.3.3.1.}.

An exception is *is-ga-a-mi*, 1 sg. pres. of *iskā-* "smear, daub, annoint" in KBo III 8 + KUB VII 1 II 20 (Pre-NH), a text with a number of odd spellings and forms (note *is-ga-ah-hi* (sic) KUB VII 1 I 40).

## 2.4.2. *á

Accented **á* became /ā/. A clear example is *āra-* adj. "right, proper", neuter plural substantive *a-a-ra* "right, proper concern", e.g. KUB XXIX 1 I 4 (OH+), *natta āra*, *ŪL āra* "nefas", "abomination", e.g. *na-at-ta a-ra* KUB XXX 10 Vs. 13 (MH), *ŪL a-a-ra* KBo V 3 III 62 (Supp. I+) = [āra-] < **ár-o-* : *I.-Ir.* **ára-* in Ved. adv. *áram* = Av. *arəm* "fittingly".

The etymology goes back to Hrozný, *SH* 41 w. n. 3. See *HEG* 1, 50, *HW*$^2$ 218–21, *HED* 1, 118, 120–1 for examples and discussion; the plene writing need not, however, imply a lengthened grade.

### 2.4.3. **é*

Accented **é* became */ē/*.

*nēwa-* "new": acc. sg. c. *ne-e-wa-an* KBo XXI 22 Vs. 26 (MH), *ne-e-u-wa-an* KBo XX 54 + KBo XIII 122 I 6, 7 (OH+) = [nēwa-] < **néwo-* : Skt. *návaḥ* "new", Gk. νέ(*F*)ος id.

Examples *CHD* 4, 455–8.

*pēda-* "place": nom.-acc. sg. *pe-e-da-an* (OH etc.), *pe-e-ta-an* IBoT I 36 I 9 (MH), dat.-loc. sg. *pe-e-di* (OH etc.), *pe-e-ti* (OH etc.), *pe-di* (OH etc.), dat.-loc. pl. *pe-e-da-as* KBo XIX 128 III 36, 38 (MH+) = [pēda-] < **pédo-* : Gk. πέδον "ground" {6.4.2.2.}.

*tuēkk(a)-* "body, self": acc. sg. *tu-ek-kam-ma-an* = /twēkan-man/ KUB XXX 10 Vs. 14 (MH), dat. *[t]u-e-ek-ki* KUB XXIX 7 II 48 (MH), nom. pl. *[tu]-ẹ-ẹk-ke-e-es* KBo XV 10 I 17 (MH), acc. pl. *tu-e-ek-ku-us* KUB XIV 1 Vs. 82 (MH), *tu-ek-k°* (MH etc.), *tu-(e)-eq-q°* (MH+) = [twēk-] < root noun **twék-*, cf. oblique stem **tuk-* in abl. *tu-ug-ga-az* KUB XVII 10 III 10 (MH), gen. *tu-ug-ga-as* KUB XXXX 10 Vs. 9 (MH) : Skt. *tvac-* "skin".

Examples *PW* 314–6. See Schindler, *BSL* 67 (1972) 36–7, for the ablaut. Alternatively, Joseph, *Gds Kerns* 205–13, compares Alb. *dukem* "I appear, seem", implying [dwēk-] < IE **dwék-* and [dukāri] < **dukóri* in the related verb *tukkāri* "is visible, is important".

*kuēn-* "smite, kill": 3 sg. pres. *ku-e-en-zi* (OH etc.), *ku-en-zi* (MH etc.), 1 sg. pres. *ku-e-mi* (MH), 2 sg. pres. *ku-e-si* (MH), 1 sg. pret. *ku-e-nu-un* (MH), 3 sg. pret. *ku-(e)-en-ta* (OH+), 1 pl. pret. *ku-e-u-(e)-en* (MH) = [g$^{w}$ēn-], [g$^{w}$ē-] {7.5.3.4., 7.7.2.} < **g$^{w}$hén-*, 3 sg. pres. **g$^{w}$hénti* : Skt. *hánti* "strikes, kills".

Paradigm *Stammbildung* 22; for examples see ib. 117, and *PW* 343–5.

*sēs-* "sleep": 1 sg. pres. *se-es-m[i]* KBo III 7 I 25 (OH+), 3 sg. pres. *se-e-es-zi* (MH+ etc.), *se-es-zi* (OH+, MH+ etc.), 1 sg. pres. *se-(e)-su-un* (NH), 3 pl. pret. *se-e-se-er* KUB I 16 III 15 (OH+), it. 2 sg. imp. *se-e-es-ki* (MH+), 3 pl. pres. *[s]e-es-kan-zi* KUB XXIX 35 IV 6 (OH), *se-es-kan-zi* ib. IV 7 = [sēs-], [sēsts̪i], [sēsk-] < **sés-*, **sésti* : Skt. *sásti* "sleeps".

Examples *PW* 364–8; paradigm *Stammbildung* 18.

*weriya-* "call": 3 sg. pres. *ú-e-ri-ez-zi* (OH+), *ú-e-ri-ya-* (NH) = [wēriye/a-] < **wérh$_1$-ye/o-*; cf. Pal. 3 sg. pres. *ú-e-er-ti* < **wḗrh$_1$-ti*.

Examples *PW* 669–70. For the Palaic acrostatic present, see Wallace, *Sprache* 29 (1983) 171.

The iterative suffix *°s-ke-(e)-* = [-skē]- < **-ské-* also shows the reflex of **é*. The most archaic layer of forms has a zero-grade root, and presumably the thematic vowel was accented. Plene writing of the thematic vowel, although fairly rare, does occur in several archaic forms made with zero-grade roots: e.g. *eku-* "drink", it. [ak$^{w}$skē-] {6.5.1.,6.11.}: 2 sg. pres. *ak-ku-us-ke-e-si* StBoT 25 110 II 16, *ak-ku-us-ke-si* ib. I 2, *ak-ku-ʃus-ke-si* ib. I 9, 1 pl. pres. *ak-ku-us-ke-e-wa-ni* StBoT 25, 140 Rs. 7; *dāi-* "put, place", it. [tsikē-] {3.9.3.}: 1 pl. pres. *zi-ke-e-ú-e-nʃi* KBo III 40 L. 5 (OH+), 3 sg. pret. *zi-ke-e-et* KBo XXII 2 Vs. 3 (OH); *dā-* "take", it. [daskē-]: e.g. 1 sg. pres. *da-as-ke-e-mi* StBoT 25, 4 IV 10, 3 pl. pret. *da-<as>-ke-e-er* KBo VI 2 I 14 (OH), *da-as-ke-e-er* ib. I 58.

Scattered spellings with plene writing suggest that the suffix was also [-skē-] in the productive type made with the full verbal stem, e.g. *se-es-ke-e-ed-du* = [sēskētu] KUB XIII 1 I 27 (MH).

### 2.4.4. **í* and **ú* vs. monophthongized diphthongs

The monophthongization of preconsonantal **ei* and **eu* {4.3., 4.6.} and the possibility of analogical generalization of full or zero-grades make it difficult to find clear-cut examples of reflexes of accented **í* and **ú*. What evidence there is, however, suggests that like other accented vowels **í* and **ú* were lengthened.

#### 2.4.4.1. **í*

**í* became */ī/*.

*iskīs-* "back, small of the back, lumbar region, ridge pole of a house": plene writing is found at least twice: nom.-acc. pl. *is-ki-i-sa* KBo I 42 II 24 (NH vocab.), KUB XX 38 Vs. 16 (OH+). Other examples are spelled *is-ki-is*, *is-ki-is°*: nom.-acc. sg. *is-ki-is* e.g. StBoT 25, 140 Rs. 10, *is-ki-se-ta (iskīs-set-a)* KUB XLIII 53 I 6, (OH+), *is-ki-se-ta-as-ta (iskīs-set-asta)* ib. I 23, gen. sg. *is-ki-sa-as* KUB X 27 I 18 (NH), dat.-loc. sg. *is-ki-si* e.g. KBo XXI 22 Rs. 46 (MH), KUB XLIII 53 I 6, 23, dir. *is-ki-sa* e.g. KUB XVII 28 III 27 (OH+), abl. *is-ki-sa-az* e.g. KBo XII 126 I 14 (MH+), nom.-acc.pl. *is-ki-sa* KUB XIII 29 L. 8 (MH+), *is-ki-sa-as*, KBo XVII 65 Rs. 54 (MH) = [iskīs], perhaps from a neuter *i*-stem **isgh-ís-* = *[izghís-] : Gk. ἰσχίον "hip joint, hip(s), haunches", ἴσχι· ὀσφύς (Hesych.); for the accent, cf. perhaps Skt. *rocíṣ-* "light", or *barhíṣ-* "sacrificial (strewn) grass".

Examples, etymological discussion *HEG* 2, 400–2, *HED* 2, 424–5, Melchert, *SHHP* 95, 105 n. 62.

*halīna-* "clay": gen. sg. *ha-li-i-na-as* StBoT 25, 3 I 26, III 31, StBoT 25, 4 III 31, IV 31 = [hlīna-] < **h$_2$lí-no-* : **h$_2$lei-* "smear", nominal "messy or slimy stuff" in Gk. ἀλίνειν· ἀλείφειν (Hesych.), Lat. *līmus* "snot, excrement", Gmc. **līma-* < **h$_2$leimo-* in OE, ON, OHG *līm* "lime, chalk", Gmc. **laima-* < **h$_2$loimo-* in OE *lām* "loam", OHG *leim* "clay".

A pre-form **h$_2$loino-* can be excluded since **oi* became *ai* in $^{LÚ}$*kaina-* "in-law" < **ḱoino-* {4.4.2.} and the laryngeal would have been lost before **Ro* {10.1.1.2.}, and an *e*-grade **h$_2$léino-* would be unlikely on morphological grounds. For etymological refs. see *HEG* 1, 131–2, *HED* 3, 32.

*līla-* "pacification, conciliation": e.g. gen. sg. *le-e-la-as* (with Post-OH °E° for OH */ī/* {1.6.3.2.}) KBo II 8 I 15 (NH), KUB IX 15 II 24 (NH), *li-la-as* (NH), dir. *li-i-la* KUB XLVI 38 II 24 (NH) (also CLuv.). In the denominative *līlā(i)-* "pacify, conciliate" plene writing occurs in 3 sg. imp. *le-e-la-ad-d[u* KUB XLI 19 Vs. 12 (MH+, cf. 3 sg. pret. *li-la-a-it* ib. Vs. 17) = [līla-] < **līloh$_1$-o-*, probably ultimately related to *lā(i)-* "release, loosen". The verb also occurs in Cuneiform Luvian (*CLuv. Lex.* 127, e.g. 3 pl. pres. *li-i-la-an-t[i* KUB XLVI 38 II 24 (NH)), and the Luvian cognates point to **i*-reduplication.

Examples *CHD* 3, 57–8; etymological refs. *HEG* 5, 56–7; cf. stem *lilar-* in it. *li-la-(a)-ri-is-k°* (MH), *li-la-(a)-re-es-k°* (OH+; *CHD* 3, 59).

Melchert, *SHHP* 98–100, suggests that several *hi*-conjugation verbs with OH *i*-reduplication functioned as iteratives to unreduplicated *hi*-verbs. These verbs had zero-grade roots and the vowel of the reduplicating syllable should have been accented. Plene writing of the vowel of the reduplicating syllable is fairly rare in verbs of this class, but it does occur in 3 pl. pres. *le-e-el-hu-an-zi* KUB XXXII 121 II 36 (U, with Post-OH °E° for OH /ī/), cf. *le-el-hu-(u)-wa* (MH+), 3 sg. pres. *li-il-hu-wa-i* VBoT 1 L. 14 (MH), it. sup. *li-il-hu-us-ke-wa-an* KUB XXIX 48 Vs. 18 (MH) = [līlhwa-] < **lí-lh₂w-o-* : *lāhu-* "pour"; *tītha-* "thunder" is attested as *ti-it-h°* in OH 3 sg. pres. *ti-it-ha* StBoT 25, 25 I 25, but as *te-e-et-ha* with Post-OH E for /ī/ in KUB XXXII 135 I 3, 10 (MH), vbl. noun gen. sg. *te-e-et-hu-wa-sa* ib. I 8, *te-et-hu-wa-as* ib. I 5 = [tītha-] < **tí-th₂-*, implying a root **teh₂-* "thunder" beside **(s)ten-* in e.g. Lat. *tonāre* "to thunder" (Melchert, *loc. cit.*; the retained cluster [th] must be analogical). Plene writing of the vowel of the reduplicating syllable does not seem to be found for several other verbs of this type, which may indicate lack of lengthening before geminates or clusters e.g. **pí-pH₁-* in *pi-ip-pa-* "overturn" {2.10.}.

### 2.4.4.2. **ú*

**ú* became /ū/.

*kūrka-* "foal": nom. sg. *ku-u-ur-ka-as* StBoT 25, 27 Rs.! 9, acc. pl. *kur-ku-us* KUB XIII 35 III 12 (NH) = [kūrka-] < **kúrko-* beside **kurno-* in Iran. **kurna-* in e.g. Mod. Pers. *kurra* "foal", Kurd. *kur* "young son", Arm. (< Pers.) *k'ourrak* "foal" (Forssman, *KZ* 94 (1980) 70–4).

$^{DUG}$*isnūra/i-* "dough bowl": nom. sg. *is-nu-ra-as* KBo II 3 II 35 = *is-nu-u-ri-is* 1112/c + III 26 (*HED*) (both MH+), acc. sg. *is-nu-u-ra-an* KBo VI 34 I 32 (MH+), KUB XV 39 + XII 59 II 10 (MH+), dat.-loc. *is-nu-u-ri* KBo VI 34 I 32 = [isnūri-], [isnūra-] < **yesnúri-*, **yesnúro-* beside **yesnó-* in *is(sa)nā-* "dough" : **yes-* "ferment" {2.6.3.}.

For examples and etymology see *HED* 2, 383–5; for the accent cf. e.g. Skt. *aṅgúri-* "finger" : *áṅga-* "limb".

An accented suffix **-ú-* > Hitt. [-ū-] would be expected in the animate nominative and accusative singular and the neuter nominative-accusative singular of *u*-stem adjectives with zero-grade roots (cf. e.g. Skt. *tṛṣ-ú-ḥ* "avid", Gmc. **þurz-u-* "thirsty, dry" in OHG *durri*, ON *þurr* < IE **tṛs-ú-* or Skt. *gur-ú-ḥ* "heavy", Gk. βαρύς id. < IE **gʷṛH-ú-*). One Hittite *u*-stem adjective, *mīū-* "soft, mild, pleasant", seems to continue this type directly. Plene writing of the vowel of its suffix is attested several times: nom. sg. c. *mi-i-ú-us* (OH+), *mi-u-us* (MH), also *mi-i-us* KUB XVII 10 IV 32 (MH), acc. sg. c. *mi-i-ú-un* (OH+), cf. nom.-acc. sg. n. *mi-(i)-u* (MH etc.; a spelling ***mi-(i)-u-u* or ***mi-(i)-ú-ú* is unlikely). These spellings probably represent [miyū-] < **mih₁-ú-*, cf. e.g. Lat. *mītis* "mild, soft" < **mih₁-ti-*, OIr. *mín* "smooth" < **meh₁i-no-*, *moíth*, *moéth* "fat, fertile" < **moh₁i-t-*.

Examples *CHD* 3, 306–8; see also Weitenberg, *u*-Stämme 121–3 w. refs. and *HEG* 6, 221–3.

Plene writing of the zero-grade suffix *-u-* is otherwise rare among *u*-stems (for nom.-acc. pl. n. [-ū] < **ú-h₂*, see {10.11.2.}). It is found sporadically in a few nouns (including proper names; see Weitenberg, *op. cit.* 310–13). Other possible examples of *u*-stem adjectives with zero-grade roots do not show it (e.g. *parku-* "high" < **bhṛĝh-u-* {5.3.1.}, but likely examples are few, and none is well attested. It is also quite likely that the [-ū-] of root-accented forms, a group that includes several very common adjectives (e.g. *āssu-* "good", *idālu-* "bad", *tēpu-* "little", *dāssu-* "strong") was generalized.

## 2.5. Reflexes of long accented vowels

There are no clear-cut examples of **ī́* or **ú́*.

### 2.5.1. **ṓ*

**ṓ* became /ā/.

A clear example is the neuter collective-plural in *-ār* from the holokinetic collective suffix **-ṓr-*, which seems to have been generalized in a number of *r/n*-stems: e.g. *ud-da-a-ar* (OH etc.), *ut-ta-a-ar* (OH) "words" = [uttār]; *hu-i-ta-(a)-ar* (OH etc.) "fauna" = [hwidār]; *har-sa-(a)-ar* (OH etc.) "heads" = [harsār]; *ú-i-da-a-ar* (OH etc.), *ú-i-ta-a-ar* (OH etc.) "water" = [widār] < **wedṓr* {2.6.3.}; *ta-ha-at-tu-ma-a-ar* "perfumes (?)" StBoT 25, 19 Vs. 5. For the long vowel, cf. e.g. Gk. ὕδωρ "water", Umb. *utur* id.

Another example is the directive in *-ā* from **-ṓ* in words from paradigms with original mobile accent, e.g. *sa-ra-a* (OH etc.) "upwards" = [s(a)rā] < **sr̥ṓ* or **sr̥r̥ṓ* : *sēr* "above"; *pa-ra-a* (OH etc.) "before" = [parā] < **pr̥r̥ṓ* : *pēran* "in front of" {5.6.}; *ki-is-ra-a* (OH) = [gissrā] < PA **gess-r-ṓ* : *kissar* "hand"; *ta-ak-na-a* (OH etc.) = [dagnā] < Pre-Hitt. **dagnṓ* : *tēkan* "earth". For the long vowel, cf. the -ω of e.g. Gk. ἔξω "outwards", or κάτω "downwards", and see Laroche, *RHA* 28 (1970) 22–49 and Neu, *Heth. u. Idg.* 194–6 on the origin of the Hittite directive.

### 2.5.2. **ā́*

**ā́* became /ā/.

*tuwān ... tuwān* "here ... there": *tu-wa-a-an* e.g. KUB XXIX 30 III 2 (OH), *du-wa-a-an ... tu-wa-a-an-na* KUB XVII 10 III 8–9 (MH), *tu-wa-a-an ... tu-wa-a-an-na* StBoT 25, 53 Vs. 23–24, *tu-wa-a-an-na* KBo XX 32 III 14 (OH+), *tu-u-wa-an ...* [ StBoT 25, 53 R. col. 6 = [dwān] < IE **dwā́m*, accusative singular of a root noun **dweh₂-* : **duh₂-* (also in Att.-Ion. δήν "for a long time", Dor. δάν id. < *δάν, Arm. *erkar* id.) for earlier **dwéh₂m* via Stang's Law {2.1.6.}.

The etymology is that of Benveniste, *BSL* 33 (1932) 143; for the analysis as root noun see Schindler, *BSL* 67 (1972).37.

### 2.5.3. **ḗ*

**ḗ* became /ē/.

*wēk-* "ask for": 1 sg. pres. *ú-e-ek-mi* (OH+ etc.), 3 sg. *ú-e-ek-zi* (OH etc.), *ú-ek-zi* (OH etc.), 1 sg. pret. *ú-e-ku-un* KUB XXXIV 53 Rs. 2 (U), 3 sg. *ú-e-ek-ta* (OH etc.), *ú-ek-ta*

(OH etc.), 3 pl. *ú-e-ke-er* (OH+ etc.), 2 sg. imp. *ú-e-ek* (OH+ etc.) = [wēg-], [wēgmi], [wēgun], [wēger] etc. < acrostatic present **wéĥ-ti* etc. (3 pl. pret. from PA **wéĝ-ḗr*).

For **wéĥ-* > [wēg-] with PA voicing see {6.4.4.1.}.

## 2.6. Reflexes of short unaccented vowels

Unaccented short vowels remained short, and unaccented **ē* was raised to /i/.

### 2.6.1. **o*

Unaccented **o* became /ă/.

The reflex of unaccented **o* occurs in the suffix of root-accented verbs in **-ye/o-*: e.g. *hāriya-* "bury": 1 sg. pres. *ha-a-ri-ya-mi* KUB VII 58 II 4 (NH), 1 pl. *ha-a-ri-ya-an-zi* KUB XVII 18 III 18 (NH) = [hārya-] < **hₓér-yo-* {10.3.3.1.} (examples *HED* 3, 144–5); *wemiya-* "find": 1 pl. pres. *ú-e-mi-ya-u-e-ni* KUB XIII 7 I 5 (MH), 3 pl. *ú-e-mi-ya-an-zi* KUB XXXVI 127 Rs. 10 (MH), 1 pl. pret. *ú-e-mi-ya-u-en* KBo XXII 2 Vs. 14 (OH) = [wēmya-] < Pre-Hitt. **(o)u-(h₁)ém-yo-*; *weriya-* "call": e.g. 3 pl. pres. *ú-e-ri-ya-an-zi* KUB XXI 29 III 46 (NH), 3 sg. pres. midd. *ú-e-ri-ya-at-ta-ri* ib. III 47 = [wērya-] < **wérh₁-yo-* {2.4.3}; *wesiya-* "graze": 3 sg. pres. midd. *ú-e-se-ya-at-ta* KUB XXIX 1 I 33 (OH+), 3 pl. *ú-e-si-ya-at-ta-ri* KUB XXVI 19 II 33 (MH), *ú-e-si-ya-a[n-d]a-ri* ib. II 18 = [wēsya-] < **wés-yo-*.

Another example of unaccented **o* is the thematic vowel **-o-* > [-ă-] in nouns and adjectives with fixed root accent: e.g. acc. sg. *pe-e-da-an* "place" (OH etc.) = [pēdăn] < **péd-o-m* {2.4.3.,6.4.2.2.}; acc. sg. c. *ne-e-wa-an* "new" (MH) = [nēwăn] < **néw-o-m* {2.4.3.}.

Similarly, the genitive singular *-as* = [-ăs] of root-accented consonant stems continues unaccented **-os*: e.g. *ne-e-pi-sa-as* StBoT 25, 1 I 11, StBoT 25, 5 II 4, *ne-pi-sa-as* (OH) = [nēbisăs] < **nébhes-os* : *nēpis* "heaven" {2.6.3.}; *ga-as-ta-as* e.g. KUB XII 63 I 20 (MH) = [Kāstas] < **Kóst-os* : *kāsza* "hunger" {2.4.1.}; *ha-a-ra-na-as* e.g. KUB XV 34 I 12 (MH?), *ha-ra-na-as* KUB XVII 10 II 35 (MH) = [hāranas] < **hₓéron-os* : *hāras* "eagle" {2.8.1.3., 10.2.3.}.

### 2.6.2. **a*

Unaccented **a* remained /ă/.

A clear example is the first *a* of LÚ.SAL*arā-* "peer, companion": nom. sg. *a-ra-a-as* KUB XXIX 1 I 13, 35 (OH+), acc. sg. *a-ra-a-an* KUB XVIII 5 III 19 (U), *a-ra-am-ma-an (arān=man)* KUB XXIX 1 I 34, dat. sg. *a-re-e(s-si)* KUB XIII 20 I 33 (MH+) = [arā-], [arī] < **aró-* with agent noun accentuation beside *āra* "right, fitting" < **áro-* {2.4.2.}.

Examples, *HW*², 221–4; *HED* 1, 116–7.

Another example is the first *a* of *alpā-* "cloud"; there are two examples with plene writing: nom. sg. *al-pa-a-as* Bo 3092 Vs. 7 (*HW*², *HED*, cf. also OH nom. sg.? *al-pa-a[s?]* StBoT 25, 54 IV 22); acc. pl. *al-pu-u-us* KUB XXVIII 5 III 7 (OH+) = [albā-] < **albhó-* : Gk. ἀλφός "leprosy" (< **"whiteness"), Lat. *albus* (adj.) "white".

Examples, *HW*² 60–1, *HED* 1, 37–8.



### 2.6.3. **e*

Several words with good etymologies establish that unaccented **e* became /ĭ/ (Eichner, *MSS* 31 (1973) 80, Kimball, *PW* 386–407, Melchert, *SHHP* 104–8).

*nēpis-* "heaven": nom.-acc. sg. *ne-e-pi-is* (OH, MH), *ne-pi-is* (OH etc.), gen. sg. *ne-e-pi-sa-as* (OH, MH), *ne-pi-sa-as* (OH etc.), dat.-loc. *ne-e-pi-si* (MH), *ne-pi-si* (OH, MH), abl. sg. *ne-e-pi-is-za* KUB XLIII 23 Rs. 15 (OH?/MH?), *ne-e-pi-sa-az* (MH), *ne-pi-sa-az* (MH etc.), dir. *ne-e-pi-sa* (OH), *ne-pi-sa* (OH+) = [nēbis], stem [nēbis-] < IE neuter *s*-stem **nébhes-* = Skt. *nábhas-* "cloud", gen. *nábhasaḥ*, Gk. νέφος, gen. νέφεος id. < IE **nébhos*, gen. **nébhesos*.

Examples *CHD* 4, 448–53. The nominative-accusative singular *nēpis* = [nēbis] is analogical for **nēpas* = **[nēbas]* < **nébhos*.

OH /i/ from unaccented **e* also occurs in *widār* and *witēn-*, plural-collective and oblique stem of *wātar* "water": nom.-acc. pl. *ú-i-da-a-ar* StBoT 25, 139 Rs. 2, *ú-i-[ta]-a-ar* StBoT 25, 137 II 10, *ú-i-ta-a-ar* ib. II 15 (later texts also *ú-e-da-a-ar*) = [widār] < coll. **wedṓr*, either for **udṓr* with full-grade root **wed-* after the original oblique stem **wed-n-* and accented **-ṓr* (> *-ār*) after other collective-plurals in *-ār*, or for **wédōr* with shifted accent after other collective plurals in *-ār* {2.5.1.}.

The oblique stem [widēn-] continues Pre-Hittite **wed-én-* with **-én-* generalized from the locative (cf. Vedic loc. *udán* < **ud-én*). At least one text has plene writing of the suffix vowel: dat. sg. *ú-i-te-e-ni* KBo V 2 I 20, II 12, 13, 17, (MH+); otherwise the following spellings are found: *ú-i-te-n* in gen. *ú-i-te-na-as* KUB XLIII 23 Rs. 6 (OH?/MH?; also NH), abl. sg. *ú-i-te-na-az* (MH+, NH), *ú-e-te-n°* in gen. sg. *ú-e-te-na-as* (NH), dat. sg. *ú-e-te-ni* (MH etc.), abl. sg. *ú-e-te-na-za* (MH etc.), inst. sg. *ú-e-te-ni-it* (OH+, NH), and from texts written down in the NH period, *ú-wi-te-n°*: e.g. gen. sg. *ú-wi-te-na-as* (MH+); inst. sg. *ú-wi-te-ni-it* (MH+).

Examples *PW* 391–2. For the original inflection, see Schindler, *BSL* 70 (1975) 4, 5, 7. For the shifted accent see Hart, *BSOAS* 43 (1980) 13, Kimball, *PW* 393–4, and Melchert, *SHHP* 107. Hart considers /i/ a secondary zero-grade, but there is no evidence for /i/ in this function elsewhere. Other words showing generalization of the locative stem in Anatolian include *pahhwen-*, oblique stem of *pahhur* "fire" {7.3.1.1.}, and CLuv. *tiyammi-* "earth" < **dhǵhém-* {3.2.1.5.}.

*is(sa)nā-* "dough": acc. sg. *is-sa-na-an* e.g. KUB VII 53 II 3 (MH+), gen. sg. *i]s-na-a-as* (?) StBoT 25, 144 I, 4, *is-na-a-as* e.g. KUB XI 34 III 24 (Pre-NH), KBo XV 10 I 12 (MH), *is-na-as* ib. I 2, 3, 4, 6, II 12, *is-sa-na-as* e.g. VBot 24 I 27, 33 (MH+) *[i]s-sa-na-as* KUB XII 47 Vs. 6 (U), *es-sa-na-as* KUB XLI 3 III 21 (MH) = [issnā-] < PA **es-nó-* < **yes-nó-* : **yes-* "ferment" {2.4.4.2.}; cf. DUG*is-nu-u-ri* (MH+), *is-nu-u-ra-* "dough bowl" (MH) < PA **esnúri-* < **yesnúri-* {2.4.4.2.}.

*kistant-* "hungry" (e.g. inst. *ki-is-ta-an-ti-it* KUB XVII 10 I 18, 30 (MH)) and in *kistanziya-* "starve" (3 sg. pret. *ki-is-ta-an-zi-at-ta-at* KBo III 22 Rs. 46 (OH)) = [Kistānt-] < **Kest-ént-*; *kisduwānt-* "hungry" (dat.-loc. sg. *ki-is-du-wa-an-ti* KBo III 23 Rs. 7 (OH+), acc. pl. *ki-is-du-wa-a-[an-du-]us* KUB XIV 1 Vs. 9 (MH)) = [Kistwānt-] < **Kest-wént-* {3.2.2.2.}.

Other examples of unaccented **e* > OH /i/ include *isharwant-* "bloody" < Pre-Hitt. **eshar-wént-* with suffix *-wént-* {3.2.2.2.}; *huwallis* "pinecone" (OH etc.) < **hₓwélh₁-es*

{10.8.1.}; *hwis(s)want-* "alive" (OH etc.) < **h₂wes-wént-* : **h₂wes-* "be alive" {3.11.1.2.}, *kissar* "hand" = [gissar], oblique stem [gissr-] (OH etc.) < Pre-Hitt. **ĝhes-r-* {11.5.2.1.}.

The /i/ of $^{D}$*Istānu-* "Sungod" (acc. sg. $^{D}$*Is-ta-nu-un* KUB XXV 1 II 42, OH+, $^{D}$*Is-ta-nu* IBoT I 29 Vs. 63, OH+), and place name $^{URU}$*Is-ta-nu* "Sun City, Heliopolis" (e.g. KUB XXX 42 I 2, IV 14, MH+) might continue unaccented **e*. The word is a borrowing from Hattic and occurs in OH in Hattic contexts as *Es-ta-a-an* (StBoT 25, 125 I 15, *Es-taʃ-a-an* ib. I 16). If $^{D}$*As-ta-nu-un* KBo XXI 85 I 12 (MH ) and $^{D}$*As-ta-nu-un* 2641/c Rs. 8 (*HED*) are Luvicized forms, they would also point to **e*, and suggest that the word was borrowed in PA.

Examples and discussion *HED* 1, 465–8; see also Laroche, *Recherches* 25.

### 2.6.4. **i*

Unaccented **i* remained as /ī/. Clear examples include the *mi*-conjugation singular present endings *-mi, -si, -zi* = [-tṣi] (for **[-tṣ]* {3.8.1.}) < **´-mi, *´-si, *´-ti* and the animate nominative and accusative singular *-is* and *-in* and neuter nominative-accusative singular *-i* of originally root-accented *i*-stems, e.g. *sallis, sallin, salli* "big" = [salli-] < **sélh₂-i-* {10.8.2. }; acc. sg. *wesin* "meadow" = [wēsin] < **wésim* or **wéisim* {4.3.2.4. 11.4.1.1.}.

### 2.6.5. **u*

Unaccented **u* remained as /ū/. Clear examples occur in the animate nominative and accusative singular and neuter nominative-accusative singular of root-accented *u*-stems, e.g. *tāru* "tree" = [dāru] < **dóru* {2.4.1.}; *sāru* "booty" = [sāru] < **sóru* {2.4.1.}; *gēnu* "knee" = [gēnu] < **ĝénu* {7.3.1.1.}; *tēpus, tēpun, tēpu* "little, a little" = [dēbu-] < **dhébhu-* {6.4.3.1.}.

The plene writing of the suffix vowel in *du-uq-qa-a-ri* "is important, is visible" (OH+ etc.), *du-uq-qa-a-ri* (MH), *tu-ug-ga-a-ri* (MH?), *tu-uq-qa-a-ri* (OH+, MH) and in *su-up-ta-a-r[i]* "sleeps" KUB IV 47 Vs. 3 (OH+) suggests that their root vowels were unaccented, i.e. [tukāri] < **tuk-ó-ri* {6.4.1.3.} and [sūptāri] < **sup-tó-ri*.

## 2.7. Reflexes of long unaccented vowels

For shortening of inherited long vowels in unaccented syllables see {2.3.1.}. There are no certain examples of unaccented IE **ā*.

### 2.7.1. **ō*

Unaccented **ō* became /ă/. Several clear examples can be cited:

*tēkan* "earth" (*te-e-kan* StBoT 25, 109 II 12, *te-e-kan*, MH etc.) = [dēgan] < **dhéĝhōm* (Schindler, *Sprache* 13 (1967) 202); *hāras* nom. sg. "eagle" (*ha-a-ra-as*, OH etc.) = [hāras] < PA **h₂érōs* {2.8.1.3., 10.2.3.}; directive in *-ă* < **-ō* in root-accented nouns, e.g. *ne-e-pi-sa* "to heaven" (OH etc.) = [nēbisă] < **nébhes-ō* {2.6.3.}.

### 2.7.2. **ē*

Unaccented **ē* became /ĕ/. Eichner, *MSS* 31 (1973) 80, posits unaccented **ē* > /i/ in *ipulli-*, glossed as "grip", reconstructing **ēpulá-*, lengthened-grade derivative of *ēpp-* "seize" > **ipulla-*, but the etymology is problematic semantically (see Puhvel, *HED* 2, 379–80). Several of the examples that Oettinger (*Stammbildung* 36, 113 n. 53) cites to support shortening of unaccented **ē* to /ĕ/ should be reconstructed with **eh₁* > PA **ā*.

Melchert notes (*SHHP* 117–9 w. n. 82) that in OH the third person plural preterit ending (which is from **-ēr*, cf. the Latin perfect endings *-ēre* and *-ērunt*) is spelled with unambiguous *-Ce-er* in several forms with certain or probable root accent: *e-se-er* "they were" StBoT 25, 61 Rs.? 3, 19; *he-e-se-er* "they opened" StBoT 25, 1 I 5; *tak-se-er* "they joined" KUB XXXVI 108 Vs. 3; and *is-se-er* "they did" KBo VI 2 III 15. These spellings imply that unaccented **-ēr* became [-ēr] (e.g. PA **és-ēr* "they were" > [ēsĕr]) and clear up the reading of many ambiguous spellings with -CE/I-E/IR or -CE/IR in root accented verbs: e.g. *a-re-er* "they arrived" KBo XXII 2 I 8 = [ārēr]; *e-ser* "they were" KBo VIII 42 Rs. 6 = [ēsĕr]; *me-e-mi-er* "they said" KBo XXII 2 Vs. 15 = [mēmyĕr]; *me-e-er* "they died" KBo XXII 2 Vs. 13 = [mēĕr]; *pa-a-er* "they went" KBo XXII 2 Vs. 6, 13 = [pāĕr] < Pre-Hitt. **pá-ēr*; *da-i-er* "they put" KBo XXII 2 Vs. 16 = [dāyĕr] < Pre-Hitt. **dó[y]ēr*; and *da-a-er* "they took" ib. Vs. 5 = [dāĕr] < Pre-Hitt. **dó-ēr*.

Melchert notes (117 n.79) that plene writing occurs in OH examples where contraction of a stem vowel and the vowel of the ending is likely: *mar-se-e-er* "they were false" KBo VI 2 II 55 from *eh₁*-stative **mṛs-éh₁-ēr*; *da-as-ke-e-er* "they used to take" KBo VI 2 I 58 (*da-*<*as*>*-ke-e-er* ib. I 14, also *da-as-ke-er* StBoT 25, 47 II 15) < **dh₃-ské-ēr*; cf. without plene writing *pi-is-ke-er* KBo VI 2 IV 16 "they used to give", *pi-is-ker* KBo VI 2 I 10, 13, 40 etc.; *sa-al-la-nu-us-ker* "they made big" KBo XXII 2 Vs. 5, 7, both presumably also with [-skĕr] from **-ské-ēr*; *ku-u-ru-*RE/I-*e-er* "they waged war, were hostile" KUB XXXVI 100 Rs. 4 is either an **eh₁*-stative with **-éh₁-ēr* (i.e. [gūrūrēr]) or a denominative with [°r-yĕr] < **r-yé-ēr*. Scattered spellings with plene writing in Post-OH texts point to a tendency to extend [-ēr] analogically, e.g. *a-u-e-er* "they saw" KBo IV 4 IV 28 = [awēr] for [awĕr] < **áw-ēr*.

Another example of /ĕ/ from unaccented **ē* occurs in *hāpperi(ya)-* "city, settled place" (< **"market place"*): dat. sg. *ha-a-ap-pe-ri* KBo V 6 I 17 (NH), also spelled ideographically (e.g. URU-*pe-ri-as* KUB XXXVI 62 L. 8 (NH)) and in *happeriya-* "give over, sell": *ha-ap-pe-ri-(ya)-* (OH, MH) and *happerā(i)-* "sell": e.g. 2 sg. pres. *ha-ap-pe-ra-a-[si]* KUB XXIII 77 + L. 64 (MH), 2 pl. pres. *ha-ap-pe-ra-at-te-ni* KUB XXIII 72 Rs. 58 (MH). The Lycian cognate, *epiriye-* "sell" (*Lyc. Lex.* 17) shows loss of initial **h₃* {10.2.3.}. The stem, Hitt. *hāpper-* = [hāpĕr-] and Lyc. *epir-* can be from a PA collective **h₃ópēr* "work(s), action, business transaction", reflecting IE **h₃p-ér* with analogical full-grade after **h₃ópr̥* in Hitt. *hāppar* = [hăpar] "price, deal". The correspondence Lyc. *i* < PLuv. **i* : Hitt. /ĕ/ points to PA. **ē* {2.2.2.} and suggests the reading *ha-(a)-ap-pe-er-* with /ĕ/, not **ha-(a)-ap-pi-ir-* with /ī/, and the plene writing in NH *hāpperi* "city" = [hāpēri] suggests a PA root accent.

See Kimball, *Fs Hoenigswald* 185–92 w. refs. for a discussion of these forms (transcribed there as *happiriya-, happirā(i)-* etc.). NH *happerā(i)-* is probably not original but instead reflects contamination of *happarā(i)-* "sell" (from OH: 3 sg. pres. *ha-ap-pa-ra-iz-zi* KBo VI 2 +

XIX 1 II 17; 3 sg. pret. *ha-ap-pa-ɤa-a-it* KBo VI 2 II 52) with *hāpperiya-* (NH also *i*-stem *hāpperi-*) "city". The noun spelled *ha-ap-pe-er* in KBo IV 3 + KBo XII 70 Rs. 14 (NH) and meaning "price, deal" is probably not an archaism directly reflecting PA **hɜópēr* (Kimball, *op. cit.* 187–8).

### 2.7.3. **ī*

Unaccented **ī* probably became /ĭ/, but unambiguous examples are difficult to find. One might be the final *-i* of *asi* "the aforementioned" and *uni* id. from the pronominal stems *as-* (< **os-*) and *un-* plus deictic **-ī* as in e.g. Gk. ὁυτοσ-ί, τουτον-ί "this here" (Melchert, *SHHP* 101–2 w. refs.). As Melchert notes, deictic **-ĭ* is also possible.

## 2.8. Vowels following laryngeals

### 2.8.1. **e*

#### 2.8.1.1. **h₁e*

**h₁é* became /ē/.

*ēd-* "eat": e.g. 1 sg. pres. *e-ed-mi* e.g. KBo III 34 III 9 (OH+), 2 sg. *e-ez-si* KBo XXII 1 Rs. 28 (OH), 3 sg. *e-za-az-zi* e.g. KUB VII 1 II 10 (Pre-NH), *e-ez-za-zi* (MH? etc.), *e-ez-za-az-zi* (MH?+ etc.), *e-ez-za-a-i* (MH? etc.), 1 sg. pret. *e-du-un* KUB XXX 10 Vs. 16 (MH), 2 sg. *e-za-at-ta* e.g. KUB XXXIII 96 IV 20 (NH), 3 sg. *e-ez-ta* e.g. KBo III 60 II 18 (OH+), 3 pl. *e-te-er* e.g. KBo III 60 III 3, 9, KUB XVII 10 I 19 (MH), 2 sg. imp. *e-et* e.g. KUB I 16 III 30 (OH+), 3 sg. *e-ez-du* e.g. KUB XLIII 23 Vs. 3 (OH?/MH?), 2 pl. *e-ez-te-en* e.g. KUB XLIII 23 Vs. 9, *e-ez-za-ten* (OH+), *e-ez-za-as-ten* KUB XXXIII 62 III 10 (MH?), *e-ez-za-at-ten* (MH), *e-za-at-ten* (MH), *e-ez-za-as-ten* (MH etc.) = [ēd-], [ēdmi], [ēt˚ti] etc. < **h₁ed-*, **h₁éd-mi*, **h₁éd-ti* etc. For PA **ĕ* rather than **ē* note CLuv. 3 sg. pret. *a-za-as-da* = *e-es-za-as-ta*, 2 pl. imp. *a-az-za-as-ta-an* = Hitt. *e-ez-za-as-ten* with **ĕ* > Luv. *a* (*CLuv. Lex.* 39).

Paradigm *Stammbildung* 16; examples, discussion *HED* 2, 315–20; for the initial laryngeal see {10.3.1.1.}.

*ēs-* "be": e.g. 1 sg. pres. *e-es-mi* e.g. KBo III 55 Rs. 11 (OH+), 2 sg. *e-es-si* StBoT 25, 111 III 8, *e-es-s[i]* ib. III3, 3 sg. *e-es-zi* e.g. KUB XXXVI 104 Rs. 8 (OH, also later), 1 sg. pret. *e-su-un* e.g. KUB XIX 29 I 10 (NH), *e-sú-un* KUB XXVI 32 I 10 (NH), 3 sg. *e-es-ta* e.g. KBo III 22 Vs. 2, 3, (OH), KBo XXII 2 Rs. 11 (OH , also later), 3 pl. *e-se-er* e.g. StBoT 25, 61 Rs.? 3, 19, *e-ser* e.g. KBo VIII 42 Rs.? 6 (OH, also later), 1 sg. imp. *e-es-lu-ut* e.g. KUB VII 2 II 23 (Pre-NH), *e-es-li-it* e.g. KBo V 3 IV 33 (Supp. I+), 2 sg. *e-es* e.g. KBo V 4 Rs. 7 (NH), KUB XXIV 2 I 13 (Pre-NH), 3 sg. *e-es-tu* e.g. KBo III 22 Vs. 25, 26 (OH), KBo XV 10 II 27 (MH), *e-es-du* e.g. KBo VI 34 I 40 (MH+), 2 pl. *e-es-te-en* e.g. KBo XVI 27 IV 10 (MH), *e-es-t[e-en]* KBo XV 10 I 32, *e-es-ten* e.g. KUB XIV 1 Rs. 40 (MH), KBo V 4 Rs. 9, KUB I 16 III 50 = [ēs-], [ēsmi], [ēstsi] etc. < **h₁és-*, **h₁és-mi*, **h₁és-ti* etc.

Paradigm *Stammbildung* 16; examples, discussion *HED* 1, 285–91; for the initial laryngeal see {10.3.1.1.}.

Unaccented **h₁e* occurs in *idālu-* "evil": (nom.-acc. sg. *i-da-a-lu*, OH etc.) = [idālu] < Pre-Hitt. **edwṓl-u*, remade from PA **édwōl* as a root-accented *u*-stem after *āssu-* "good" for **āsu-* < **h₁ós-u* beside CLuv. *āddwāl(i)-* "evil" < PA **édwōl* : IE **h₁ed-* "bite, eat".

#### 2.8.1.2. **h₂e*

**h₂é* = **[h₂á]* became /hā/.

*hānza* "in front": *ha-a-an-za* KUB IX 28 II 12 (OH+), *ha-an-za* ib. II 24, IV 3, 16 = [hānts] < loc. **h₂énti* : IE **h₂ent-* "front".

*hārs-* "break up earth, harrow": 3 sg. pres. *har-as-zi* (MH+), 3 sg. pret. *ha-a-ra-as-ta* (U) = [hārs-], [hārstsi], [hārsta] etc. < **h₂erh₃-s-*, **h₂érh₃s-ti*, cf. **h₂erh₃-* in e.g. Gk. ἄροτρον "plow", Lat. *arātrum* id.

Examples *Stammbildung* 192, HED 3, 184–5.

#### 2.8.1.3. **h₃e*

Initial **h₃é* = **[h₃ó]* became /hā / {10.2.3. }, while non-initial **h₃e* = **[h₃o]* became /ă/ {10.4.3.}.

*hāras* "eagle": nom. sg. *ha-a-ra-as* e.g. StBoT 25, 3 II 41 = 4 II 49 (and Post-OH), acc. sg. *ha-a-ra-na-an* e.g. StBoT 25, 3 II 5, 16 etc., StBoT 25 6 II 5 (and Post-OH), *ha-ra-na-as* e.g. StBoT 25, 4 II 14 (and Post-OH), gen. *ha-a-ra-na-as* KUB XV 34 II 3 (MH?), nom. pl. *ha-a-ra-ni-is* KUB XXXIII 62 II 3 (MH?), *ha-a-ra-ni-e-eſs* KUB XLI 33 Vs. 12 (MH+) = [hāras] < PA **h₃órō-s* with animate ending **-s* < IE **h₃ór-ō*; [hāran-] < IE **h₃ór-on-* {8.4.1.2., 10.2.3.}.

Examples HED 3, 137–9.

*hāriya-* "bury": 1 sg. pres. *ha-ri-e-mi* StBoT 25, 3 III 9, *ha-a-ri-ya-mi* KUB VII 58 II 4 (MH+), 3 sg. *ha-a-ri-e-ez-zi* IBoT II 125 II 7 (U), *ha-ri-ez-zi* KBo III 8 II 12 (Pre-NH), *ha-ri-ya-az-zi* 112/c + III 19 (HED), KUB IX 7 Vs. 5 (U), 3 pl. *ha-a-ri-ya-an-zi* KUB IX 27 Vs 5 (NH), KUB XVII 18 III 18 (NH), 1 sg. pret. *ha-ri-e-ni-un* StBoT 25, 4 III 12, ptcp. acc. sg. c. *ha-ri-ya-an-da-an* KUB XLV 5 III 10 (U), nom.-acc. sg. n. *ha-a-ri-ya-an* KUB IX 7 Vs. 7, KUB XXIV 10 I 12 (MH+), *ha-ri-ya-an* KBo II 9 IV 14 (NH), KUB IX 7 Vs. 7 = [hārye-], [hārya-] < **h₃ér-ye/o-*, cf. Gk. ὀρύσσω "I dig", Hmc. οὐροί "trenches"; similarly *hāri(ya)-* "valley": nom. sg. *ha-ri-ya-as* KUB XII 62 Rs. 5 (Pre-NH), gen. *ha-ri-ya-as* KBo XIV 86 I 8 (MH+), dir. *ha-a-ri-ya* e.g. KUB XII 62 Rs. 3, abl. *ha-a-ri-ya-az* KUB XXIX 4 III 46 (NH), nom. pl. *ha-ri-e-es* KBo XV 25 Vs. 14 (MH?), *ha-a-ri-i-e-es* KBo III 8 III 22 (Pre-NH), acc. pl. *ha-a-ri-i-us* KUB XVII 10 I 26 (MH), *ha-a-ri-us* StBoT 15, 109 II 16, KBo III 8 III 4 (Pre-NH), KUB XXXIII 24 I 24 (MH+) = [hāri-] < **h₃ór-i-* {10.3.3.1.}.

Examples HED 3, 143–4, 144–5.

*sākuwa* "eyes": nom.-acc. *sa-a-ku-wa* (OH, OH+, MH) inst. *sa-a-ku-it* (MH), dat.-loc. *sa-ku-as* (OH), if [sāgʷa] < **s* + **h₃ók̑ʷ-eh₂* : Gk. du. ὄσσε "eyes" etc. {6.4.4.1.}.

## 2.8.2. **o*

### 2.8.2.1. **h₁o*

**h₁ó* became /ā/.

*ār-* "arrive": 1 sg. pres. *a-ar-hi* e.g. KUB XXXI 130 Rs. 6 (MH), KUB XXXVI 75 + 1226/u III 22 (MH), 2 sg. *a-ar-ti* e.g. KBo V 3 II 28, 31 (Supp.I+), 3 sg. *a-a-ri* e.g. StBoT 25, 71 II 4, III 4, StBoT 25, 112 II 17, 23, KBo XXI 93 I 11 (OH+), *a-ri* e.g. StBoT 25, 12 I 4, StBoT 25, 41 Vs.? I 12 (and Post-OH), 2 pl. *a-ar-te-ni* KUB XXIII 68 Vs. 25, Rs. 25 (MH), *ar-te-ni* KUB XXXI 101 Rs. 31 (U), *ar-te-e-ni* KUB VI 16 + XVIII 64 IV 3, 6 (NH), 1 sg. pret. *a-ar-hu-un* e.g. KUB XIV 1 Vs. 82 (MH), KUB XXIII 11 III 13 (MH+), *ar-hu-un* e.g. ib. III 1, *a-ar-ah-hu-un* e.g. KBo II 5 IV 4 (NH), 3 sg. *a-ar-sa* KBo XXII 2 Rs. 7 (OH), *ar-as* e.g. KUB XXXVI 100 Rs. 6 (OH), *a-ar-as* e.g. KBo III 38 Rs. 23 (OH+, dup. of KBo XXII 2), KUB XXXVI 101 II 2 (OH+), *a-ra-as* KUB VIII 63 I 8 (NH), 3 pl. *a-re-er* e.g. KBo XXII 2 I 8, 3 sg. imp. *a-ru* e.g. KUB XIII 4 III 73 (MH(?)+), 2 pl. *a-ar-ten* KUB XXIII 72 Rs. 28 (MH), *ar-ten* KBo X 37 III 50 (OH+) = [ār-], [ārhun], [āri], [ārs] {11.9.}, [ārer] etc. < perf. **h₁ór-h₂e*, **h₁ór-e* : **h₁er-*, **h₁or-* "set in motion, be in motion". For the initial laryngeal see {10.3.1.1.}.

*āssu-* "good": e.g. nom. sg. c. *a-as-su-us* KBo III 22 Vs. 2, 3 (OH), KBo XXII 2 Rs. 5 (OH), *a-as-su-us* StBoT 25, 124 II 14, nom.-acc. sg. n. *a-as-su* KBo III 22 Rs. 58 = [āssu-] for **āsu* < **h₁ós-u* {11.4.1.4.} : **h₁su-* in Gk. ἐύς "good", εὖ-, Skt. *su-* id., Hitt. *su-* id. etc., ultimately from the root **h₁es-* "be"{10.3.1.}.

Examples Weitenberg, *u*-Stämme 91–100, *HED* 1, 196–8, 199–202.

A clear example of unaccented **h₁o* is the first *a* of the demonstrative pronoun *apā-*: nom. sg. c. *a-pa-a-as*, acc. sg. c. *a-pu-u-un*, nom.-acc. sg. n. *a-pa-a-at*, nom. pl. c. *a-pe-e* (all from OH) = [abā-], [abē] < **h₁obhó-*, **h₁obhói*, [abūn] < Pre-Hitt. **obún*.

Examples *HW²* 130–48, *HED* 1, 86–91; for etymological discussion, see Tischler, HEG 1, 39–41.

### 2.8.2.2. **h₂o*

The expected reflex of **h₂ó* is /hā /, but the merger of **o* and **a* means that an *o*-grade can be established only with evidence from outside Hittite.

A clear example is *hāwi-* "sheep": nom. pl.(?) *ha-a-u-e-es* KBo XXIV 26 III 2 (U), *hḫa-a-u-e-es* ib. III 3 in Hittite contexts, and CLuv. *hāwīs* "sheep" (*CLuv. Lex.* 66) = [hāwis] < **h₂ówis* : Hmc. ὀΐς "sheep", Att. οἶς, Lat. *ovis*. For **h₂*, note χ in Lyc. *χawa-* "sheep" {10.2.3.}.

Examples *HED* 3, 279–80.

Unaccented **h₂o* became /hă/.

*hastāi* "bone(s)": nom.-acc. sg./pl. *ha-as-ta-i* (OH etc.), *ha-as-ta-a-e* KBo XV 25 Rs. 18, 19 (MH?) = [hastāi] < Pre-Hitt. **h₂astói* for coll. **h₂ést(H)-ōi* beside **h₂ost(H)-éi-* in Gk. ὀστέον "bone" and **h₂é ost(H)-i-* in Skt. *asthi* id., and perhaps dual **h₂ést[H]-ih₁* in *dā(n)hasti-* "twin bone" {10.3.2.1.}.

*hasduēr* "twigs, brush": nom.-acc. sg./pl. *ha-as-du-e-er* KUB XVII 28 IV 44 (OH+), KUB XXIV 14 I 7 (NH), *ha-as-du-er* KBo III 63 II 18 (OH+), VBoT 24 III 14, 27, 45 (MH+), KUB LVIII 109 Vs. 13 (NH), abl. *ha-as-du-er-ra-za* KUB XLVI 39 III 9 (NH) = [hasdwēr] < coll. **h₂o-sd-wḗr* = [*h₂o-zd-wḗr] beside **h₂o-sd-os* = [h₂o-zd-os] in Gk. ὄζος "branch", Goth. *asts* id. with preverb **h₂o-*.



Examples HED 3, 239–40. See Melchert, *SHHP* 61 n. 111, 73, 93 n. 34 and 119, and for the preverb as **h₂o-* see Melchert, *HS* 101 (1988) 224 n. 17.

## 2.8.3. **i*

### 2.8.3.1. **h₁i*

A likely example is 2 sg. imp. *i-it* = [īt] "go!": e.g. StBoT 25, 3 III 5 = 4 III 4 (and Post-OH) < IE **h₁idhí* in Skt. *ihí* and Gk. ἴθι. The plene writing implies either a retracted accent and syncope of the final vowel, i.e. **h₁idhí* > **ídi* > **íd* > [īt] or syncope of the final **i* and retraction of the accent, i.e. **h₁idhí* > **íd* > [īt] {3.8.1.}.

### 2.8.3.2. **h₂i*

*himma-* "model": nom. sg. *hi-im-ma-as* KUB XLIV 43 Rs. 3 (NH), acc. sg. *hi-im-ma-an* e.g. VBoT 116 L. 13 (OH+), HT 1 I 40 (MH?/NH?), gen. *hi-im-ma-as* e.g. KBo VI 34 III 37 (MH+), KBo XV 19 I 8 (NH), KBo XXI 1 I 11 (MH), KUB IV 1 III 12 (MH?), nom. pl. *hi-im-mi-e-es* HT 38 Rs. 6 (OH+), acc. pl. *hi-im-mu-us* e.g. KUB XXIV 3 I 24 (MH+) = [himmā-] (?) < **h₂imó-* or **h₂im-mó-*, cf. Lat. *imitārī* "to copy", *imāgō* "copy, image", *aemulus* "rival" {7.3.3.2, 10.2.3.}.

Examples, etymological discussion *HED* 3, 314–15.

### 2.8.3.3 **h₃i*

GIŠ*hissa-* "chariot pole": acc. sg. *hi-is-sa-an* KBo XIII 119 III 10 (OH+), dat.-loc. *hi-is-si* KUB XXXIV 16 II 7 (OH+), KUB XXX 32 I 3 (NH), Bo 4929 IV 18 (*HEG* 2, 252, *HED* 3, 318), *hi-es-si* KBo XII 123 L. 15 (U) = [hissā-]?, [hissī] < **h₃ih₁s-éh₂-* (or **h₃ih₁s-ó-*) : Skt. *īṣā* "chariot pole"; for **h₃* cf. Gk. οἴαξ "tiller" {10.2.3.}. Internal **h₁* is supported by the /ss/ {11.6.3.1.} and by the *ī* of Skt. *īṣā*.

Examples *HED* 3, 318–9.

*hininḱ-* "wet, pour" (3 sg. midd. pres. *hi-ni-ik-ta* KBo III 7 II 23 = KBo XIV 61 L. 7, both OH+, KUB XXXIV 16 III 4, OH+) = [hiniŋk-] < **h₃i-ne-k-* : Skt. *siñcati* "pours" < **s + h₃i-ne-k-* {10.1.1.3.,10.2.3.}.

## 2.8.4. **u*

### 2.8.4.1. **h₂u*

Unaccented **h₂u* occurs in *tarhu-* "prevail over" (3 sg. pres. *tar-hu-uz-zi* KUB XVII 10 I 33 (MH); OH also *ta-ru-uh-zi* with metathesis in KBo VI 2 II 58), 3 sg. imp. *tar-hu-du* (NH) = [tarhu-C-] ([tārhu-C-] ?) < Pre-Hitt. **tárh₂-u-* : IE **terh₂(u)-* "cross over".

## 2.8.5. *ē

### 2.8.5.1. *$h_1ē$

Inherited *$h_1ē$ became /ē/.

*ēs-* "sit": 2 sg. pres. *e-es-ta-[ri]* KUB XIV 1 I 44 (MH), 3 sg. pres. *e-sa* (OH etc.), *e-sa-ri* (OH etc.), 1 pl. *e-su-wa-as-ta* StBoT 25, 110 II 36, 3 pl. *e-sa-an-da, e-sa-an-ta* (both OH etc.), 2 sg. imp. *e-es-hu-ut* KUB XIV 1 Vs. 17, 2 pl. imp. *e-es-du-ma-at* ib. Rs. 40, it. 3 pl. pret. *e-es-kan-ta-ti* KBo VII 14 I 2 (OH) = [ēsa], [ēsanta] etc. < IE *$h_1ḗs$-, *$h_1ḗs$-*o*, *$h_1ḗs$-*n̥to* etc., cf. Skt. *ā́ste* "sits", Gk. ἧμαι "I sit" and HLuv. *isa-* "sit" and *isan(a)-* "bed".

Examples StBoT 5 25–31, *HED* 2, 291–300; cf. also Melchert, *SHHP* 92: *ēs-* cannot be from *$ēh_1s$- or reduplicated *$h_1e$-$h_1s$- (pace Eichner, *MSS* 31 (1973) 54, *Laryngaltheorie* 138 and Oettinger, *MSS* 34 (1976) 112, *Stammbildung* 101, 431, 543), because *$ḗh_1sV$ would have become *$ēssV$ in Hittite and *$as$ in PLuv. (cf. Hitt. *pēssiya-* "throw, reject", HLuv. *pasiya-* id. < PA *$pé$-$h_1s$-$ye/o$- {11.6.3.1.}. The initial *a* of related forms like ptcp. *asand-* (OH etc), vbl. noun *asātar*, and *asās-, asēs-* "settle" (OH etc.) is secondary.

*ērman* "sickness" *((e)-er-ma-an)* = [ērman] < *$h_1ḗrmn̥$ : Arm. *jerm* "daze, stupor" {3.3.1.}.

Beside *erhā-* "border, rim, limit" the *i* of HLuv. *irha-* "border" points to a PA lengthened-grade *$h_1ērh_2ó$- {3.2.2.3.}.

### 2.8.5.2. *$h_2ē$

IE *$ē$ was not colored by a preceding *$h_2$, and Melchert, *SHHP* 111–12, 135, 150, provides convincing arguments that PA *$ē$ was raised to *$i$ after the laryngeal. In Pre-Hittite the *$i$ was lengthened when accented.

Melchert retracts this rule in *AHP* 143.

*hīla-* "courtyard": nom. sg. *hi-i-la-as* (MH etc.), acc. sg. *hi-i-la-an* (MH etc.), gen. *hi-i-la-as* (MH etc.), dat.-loc. *hi-i-li* (OH etc.) = [hīla-] < *$h_2él$-*o*-, vr̥ddhi derivative *"pertaining to the enclosure" : *$h_2el$-* "enclose" beside *$h_2é/ói$- in *hāli-* "corral, fold" {8.4.2.1.} (Melchert 111–2).

Unaccented *$h_2ē$ resulted in *(h)hi* = [hī] in third person plural preterit forms of verbs with roots or stems in final *(h)h* (Pre-Hitt. *$h_2$-$ēr$; for the ending as *$-ēr$ see {2.7.2.}). Unfortunately, no forms occur in OH texts, but those that occur in MH and later texts have *-(h)hir*: e.g. MH (cited by Melchert 135): *za-ah-hi-ir* "they fought" KUB XIV 1 Vs. 63, *pe-e-da-as-sa-ah-hi-ir* "they put in his place" KUB XIV 1 Vs. 65, ÌR-*na-ah-hi-ir* "they enslaved" KUB XVII 21 III 7; OH+ & MH+: *ma-ya-an-da-ah-hi-ir* "they distributed" KUB XXIX 1 II 11, *par-hi-ir* "they chased" KBo III 67 II 7, *sa-an-hi-ir* "they rinsed/flushed" KUB XXXI 71 IV 21, *sa-an-hi-ir* "they sought" KUB XI 1 II 5.

Another example might be $^É$*histā*, a building used in rituals, "mausoleum"(?), but the meaning and etymology of this word are not certain. Plene writing of the vowel of the second syllable is usual in all periods, indicating that the initial syllable was originally unaccented. In OH texts, the initial syllable has consistent /i/ = *hi-is-*: e.g. gen. sg. *hi-is-ta-a-as* StBoT 25, 29 Vs.? II 5, dat.-loc. *hi-is-ti-i* StBoT 25, 17 I 4, dir. *hi-is-ta-a* StBoT 25, 27 Rs.! 23. Spellings with *he-es-* and *hi-es-* occur in NH texts, e.g. nom.-acc. sg. *he-es-ta-a* KUB XXX 32 I 11 (NH), gen. sg. *he-es-ta-a-as* ib. I 14, dat.-loc. sg. *hi-es-ti-i* KBo XXIII 79 II 7 (U; *he-es-ti-i* ib. II 3), *he-is-ti-i* KBo XVI 52 Vs. 6 (U). In texts of all periods the bare stem is also used; e.g. from OH $^{LÚ}$*hi-is-ta-a* StBoT 25, 27 Rs.! 14, $^{LÚ.MEŠ}$*hi-is-ta-a* StBoT 25, 28 Rs.? III 3 (and perhaps the "directive" $^É$*histā* in StBoT 25, 27 Rs.! 23); from later texts *hi-is-da-a* KBo XII 59 IV 6 (NH; Tudh. IV) and $^{LÚ.MEŠ}$*hestā* (above). *histā* was derived by Hoffmann (apud Eichner, *MSS* 31 (1973) 72) from *$h_2ēstoyó$-, vr̥ddhi derivative from the word for "bone", cf. *hastāi* "bone(s)" (see also Oettinger, *Stammbildung* 572 and Melchert, *SHHP* 44 n. 98, 111, 135, 150). The meaning is assumed to be "bone-house", i.e. "mausoleum"; cf. $^É$*ha-as-ti-ya-as* Hatt. L. 38 as "bone-house", "mausoleum"(?) (Goetze, *Hatt.* 104) and É.ŠA *hastiyas* "inner house of bones" Bo 3826 II 6 (Otten, *HTR* 112). Three recent philological studies of $^É$*histā*, however, suggest that while the derivation from the word for "bone" is possible, it is not certain (Kammenhuber, *Or.* 41 (1972) 296–302, Haas and Wafler, *UgrF* 8 (1976) 65–99, *UgrF* 9 (1977) 87–122, Singer, *StBoT* 27, 112–18).

$^{NA_4}$*hekur* "rock sanctuary, acropolis" (*he-ku-ur*, Post-OH) was derived by Eichner, *MSS* 31 (1973) 71, from *$h_2ék$-*ur̥* : obl. stem *$h_2ék$-*un̥*- > *hakkun-* in *hakkunāi-* "oil jar", "architectural ornament" from *$h_2ek$- "be sharp", in e.g. Gk. ἀχμή "point, edge" and ἄχρος "at the top", but the word is more likely to be a loanword from Sum. *é.kur* "rock sanctuary", perhaps by way of Hurrian (Puhvel, *HED* 3, 287–9).

A secondary sequence [hē] occurs in derivatives, e.g. *sa-he-es-sar* "bulwark, fortification" StBoT 25, 140 Rs. 8 (perhaps from *sāh-* "clog, stuff" = [saḫ-] {10.4.2.1.}) and gen. sg. *ti-it-hi-e-es-na-as* "thunder" StBoT 25, 25 IV 36 : *tītha-* "thunder" (cf. *te-et-he-es-na-as* KBo XVII 64 IV 43 (OH+)), which are formed with the synchronically productive nominal suffix *-ēssar, -ēsna-*.

### 2.8.5.3. *$h_2ē$

If *$h_2é$ resulted in OH /hī/ (*hi-i-*) then it is possible that the *e*-vocalism of OH *he-e-se-er* StBoT 25, 1 I 5, third person plural preterit of *hās(s)-, hēs-* "open" points to initial *$h_2$; cf. also *hisuwā(i)-* "be open" in e.g. MH 3 sg. pres. *hi-is-wa-an-da-ri* ABot 60 Vs. 17 with suffix *-wā(i)-* and perhaps with Post-OH I for OH /ē/. The word does not have a good etymology however, and outside cognates are not apparent.

For etymological refs. see Tischler, *HEG* 2, 194, Puhvel, *HED* 3, 220–1, and cf. Melchert, *SHHP* 135).

$^{LÚ}$*hippara-*, member of a stigmatized social group (nom. sg. *hi-ip-par-as* KBo VI 2 II 49, 52 (OH), *hi]-ip-par-as* ib. II 53, dat. sg. *hi-ip-pa-ri* ib. II 49, 51) is connected by Eichner, *MSS* 31 (1973) 72 and Melchert, *SHHP* 111 with *hāppar* "price, deal" and derived from a vr̥ddhi formation *h$_2$*ép(o)ro-*, which Eichner glosses as "Käufling" and Melchert as *"pertaining to business" > "peddler". If the word is connected with *hāppar*, however, the initial laryngeal was *$h_3$ {10.2.3.}. The validity of this etymology depends on the connection with *hāppar*, which is not at all certain. Note that in the Law Code passages in which *hippara-* occurs (§ 48–49), other members of society are forbidden to do business with members of this group. Haase, *Gds Kronasser* 29–37, equates the Hittite *hippara*-people with Akk. *asīru*, suggesting that the meaning

is akin to "captive foreigner used as worker" and notes (36) that if there is any connection with *hāppar*, it would have to be because the *hippara*-people had serf-like status and could be bought and sold along with the land they occupied.

Cf. also Puhvel, *HED* 3, 316–7, who reconstructs zero-grade **H"p(r̥)ro-* = **h₂ pro-* or **h₂pr̥o-*. However, there would be no parallels for the epenthetic /i/ this reconstruction assumes.

## 2.9. Vowels preceding laryngeals

Accented vowels before laryngeals show up as long vowels, although plene writing of the vowel in the sequence *ahh* < **eh₂* is surprisingly rare. There is evidence for PA compensatory lengthening of a preceding vowel with the loss of **h₁* and **h₂* in the lenition of verb endings in Lycian, e.g. Lyc. *tadi* "establishes" < PA **dā́di* < **dhéh₁-t(i)*, *hadi* "releases, lets go" < PA **sā́di* {6.2.3.}, but it is not clear whether compensatory lengthening accompanied the loss of preconsonantal **h₃* {11.4.3}.

The vowel of *lāman* "name" < **h₁néh₃mn̥* would show lengthening under accent even if loss of **h₃* had not been accompanied by compensatory lengthening.

### 2.9.1. **e*

#### 2.9.1.1. **eh₁*

Accented **éh₁* became /ē/ via PA **ā́*. A clear example is provided by *tē-* "say, speak": 1 sg. pres. *te-e-mi* e.g. StBoT 25, 3 IV 30, *te-mi* (OH+), 2 sg. *te-e-si* e.g. KUB XXXIII 60 Rs. 4 (MH, also OH+), *te-si* e.g. KUB XLIII 25 I 4 (OH), 3 sg. *te-ez-zi* e.g. KBo VI 2 IV 47 (OH, also MH, OH+ etc.), 3 sg. pret. *te-e-et* e.g. KUB XVII 10 I 29 (MH; also OH+, NH), *te-et* ib. I 30 (also OH+, NH), 2 pl. pret. = imp. *te-et-te-en* e.g. KBo VII 14 I 3 (OH, also later), 2 sg. imp. *te-e-et* e.g. KUB XXX 10 Vs. 4 (MH, also OH+, MH+ etc.), *te-et* e.g. KUB XII 63 I 24 (MH), 3 sg. *te-e-ed-du* KUB XXX 10 Vs. 26, *te-ed-du* ib. Vs. 28 = [dē-], [dē-mi], [dē-si] etc.; for 3 sg. pres. [dētsi] see {1.3.3.4.}. As Eichner, *MSS* 31 (1973) 54, and *Fl. u. Wb.* 88–9, points out, these forms are derivable from a root aorist **(e)dheh₁-t* "puts", attested also in Skt. *adhāt* "put", Arm. *ed* id. (the semantic development in Hittite was apparently **"put"* → *"*put into words"* → "speak, say"). The series of developments must have been: 1 sg. **dhéh₁-m* > PA **dā́n*, 2 sg. **dhéh₁-s* > PA **dā́s*, 3 sg. **dhéh₁-t* > PA **dā́t*. With the loss of aspect in PA the root could take present (*mi*-conjugation) endings, i.e. **dā́mi*, **dā́si*, **dā́ti*.

For the etymology and PA paradigm see also Oettinger, *Stammbildung* 125 and Morpurgo Davies, *Gds Cowgill* 225–6.

*sēli-* "grain pile, grain storage area": gen. *[se]-e-li-ya-as* KBo VI 3 IV 19 (MH) = *se-e-li-ya-as* in NH dup. KBo VI 7 L. 2, dir. *se-e-li-ya* KBo VI 3 IV 19 = dat. *se-e-li* in KBo VI 7 L. 1 = [sēli-] < **seh₁li-* : **seh₁-* "press, throw, plant, sow", cf. Lith. *pasėlỹs* "seed" (< **séh₁-li-*) and OIr. *síl* "seed", W. *hil* "seed, progeny") < PCelt. **sē-lo-* < IE **séh₁-lo-* (Oettinger, *Stammbildung* 541 w. n. 29, Catsanicos, *BSL* 55 (1986) 123 n. 4).

*ēpp-* "take, seize": 1 sg. pres. *e-ep-mi* e.g. StBoT 25, 3 I 14 = StBoT 25, 4 I 9, KUB XIV 1 Rs. 9 (MH), 2 sg. *e-ep-si* e.g. KUB XXVI 29 + XXXI 55 L. 18 (MH), VBoT 58 I 41 (MH+), 3 sg. *e-ep-zi* (OH and later), 1 sg. pret. *e-ep-pu-un* e.g. KUB XXXVI 108 Vs. 5 (OH), 2 sg. *e-ep-ta* e.g. KUB XIV 1 Rs. 23, 3 sg. *e-ep-ta* e.g. KUB I 1 II 53 (NH), 1 pl. *e-ep-pu-en* KBo III 60 III 6 (OH+), 2 pl. *e-ep-ten* e.g. KUB XII 63 Vs. 10, 19 (MH), 3 pl. *e-ep-pe-er* e.g. KBo III 60 III 9 (OH+), *e-ep-per* KUB XIV 1 Vs. 71, 2 sg. imp. *e-ep* e.g. KUB XIV 1 Vs. 38, 40, 3 sg. *e-ep-tu* e.g. KUB VIII 81 II 12 (NH), *e-ep-du* e.g. VBoT 132 III 11 (NH), 2 pl. *e-ep-ten* KBo III 38 Vs. 28 (OH+), KBo III 67 IV 12 (OH+), KUB XIV 1 Vs. 70 = [ēp-], [ēpmi], [ēptsi], [ēper] etc. : **(h₁)eh₁p-*, perhaps from root aor. **(h₁)éh₁p-t* (Eichner, *Fl. u. Wb.* 82). The long root vowels of Skt. *āpnoti* "obtains", aor. *āpat* (thematized), ptcp. *āptaḥ* indicate a root of the shape **h₁eh₁p-* (see e.g. Beekes, *Development* 111 and *Laryngaltheorie* 83) or **eh₁p-* (see Gamkrelidze, *Pratidānam* 95–6, who posits **eh₁p-* with metathesis to **h₁ep-* in Hittite, and Melchert, *SHHP* 92, 129, 141, with reservations). The voiceless stop of *ēppun* and *ēpper* should be analogical from the weak stem **(h₁)h₁p-*.

Paradigm *Stammbildung* 87–8; examples *HED* 2, 273–82. See also Lindeman, *ELTh* 92–3 w. refs. and Kimball, *PW* 362–4 and *Gds Cowgill* 161 (**(h₁)eh₁p-*). Oettinger, *Stammbildung* 87–91, reconstructs an acrostatic present **h₁é́p-ti* : **h₁ép-n̥ti*, but the Indic cognates suggest that the root formed an aorist in IE, and Lyc. *app-* "take, seize", 3 sg. pret. *appu* (*Lyc. Lex.* 4) and CLuv. **āppal-* (*CLuv. Lex.* 21) in Hitt. *āppanda-* "trap" (OH dat.-loc. *a-ap-pa-li* KUB XXXVI 106 Vs. 8) point to PA **ā́* < **eh₁*. Puhvel (*HED*) objects to the traditional etymology on semantic grounds, but there is no evidence outside of Anatolian for his reconstruction **ep-*. For Lat. **apīre* "join, attach, fit", *aptus* < **h₂ep-* : Hitt. *happ-* "fasten, attach" see Puhvel 282 and *HED* 3, 114 , but *apiscor* "reach, attain" probably belongs with *ēpp-* and Skt. *āpnoti*.



The reflex of **éh₁* is also found in the suffix of denominative *ē*-statives (cf. e.g. Lat. *senēre* "be old", Lith. *senė́ju*, *senė́ti* "grow old", OHG *heilēn* (intr.) "heal", OCS *cělějetŭ*, *cělěti* id.). These verbs were first identified for Hittite by Watkins, *TPS* 1971 51–93. While there are problems distinguishing possible *ē*-statives from other types of verbs (see Melchert, *SHHP* 32–3 and 42–3, and Oettinger, *Stammbildung* 338–42, for discussions of doubtful forms), several clear examples occur in OH, MH and OH+ texts: *marsē-* "be false": 3 pl. pret. *mar-se-e-er* KBo VI 2 II 55 (OH), KUB XI 1 I 20 (OH+); *miyahuntē-* "be old": 3 sg. pres. *mi-ya-hu-un-te-zi* KUB VIII 29 I 2 (OH+), *nakkē-* "be difficult": 3 sg. pres. *na-ak-ke-e-zi* KBo XIII 13 Vs. 14 (MH, cf. *na-ak-ke-es-zi* ib. Rs. 11), 3 sg. pret. *na-ak-ke-e-et* KUB XXXI 4 + KBo III 41 Rs. 16 (OH+); *tannattē-* "be empty, desolate": 3 sg. pres. *tja-an-na-at-te-ez-zi* KBo XIII 13 Vs. 11, (MH) *ta-na-an-te-ez-zi* KBo XIII 34 II 18 (OH+, cf. *ta-na-at-te-es-zi* ib. IV 13). The suffix was presumably accented, and the plene writing in *na-ak-ke-e-zi* and *na-ak-ke-e-et* points to lengthening under accent, i.e. **-éh₁-C-* > **-ā́-C-* > [-ēC-]. For plural and participial forms see {3.11.1.}.

The suffix of fientives in *-ēss-* is historically a conglomerate of the stative suffix **-éh₁-* and a suffix **-s-*. Watkins, *op. cit.* 72–3, 82–3, notes several instances where an archaic denominative stative is replaced by a fientive in *-ēss-* within the historical period (e.g. *tanantezzi* KBo XIII 34 III 18, *tanatteszi* ib. IV 13, *nakkēzi* KBo XIII 13 Vs. 14, *nakkeszi* ib. Rs. 11, *marsēr* KUB XI 1 I 20, but *marsesser* in dup. KBo III 1 + I 21). The geminate *ss* suggests that the suffix was originally formed as **-eh₁s-* before the loss of **h₁*, while plene writing in several forms suggests that the suffix vowel was accented: e.g. 3 sg. pret. *par-ku-e-es-ta* KBo VIII 42 Rs.? 9 (OH) : *par-kuēss-* "become

pure"; 3 pl. pres. *i-da-a-la-u-e-es-sa-an-zi* KBo VI 6 I 13 (OH+) : *idālauwēss-* "become bad"; 3 sg. pret. *ma-ak-ke-e-es-ta* KUB XXX 10 Rs. 17 (MH) : *mākkēss-* "become numerous", 3 sg. pret. *na-ak-ke-es-zi* : *nakkēss-* "become difficult, heavy".

A secondary sequence of **éh₁s* occurs in *pēssiya-* "throw" < **pé-h₁sye/o-*. For the simplex **h₁sye/o-* in *sīya-* "shoot, spurt" see {10.3.1.4.}.

The reflex of unaccented **eh₁* is probably /ĕ/ (Oettinger, *Stammbildung* 36, 125–30, 535), but there are no examples in truly isolated forms. Examples may, however, be provided by several verbs which are compounds of **dheh₁-* "put" plus preverb. The clearest of these is *pēhute-* "take away", which often has plene writing of the vowel of its first syllable, suggesting an originally accented preverb. The verb stem *te-*, by contrast, does not have plene writing, even though the word is well attested in early texts, suggesting that it is [dĕ-]: 1 sg. pres. *pe-e-hu-te-mi* KUB XIII 27 + KUB XXIIII 77a Rs. 9 (MH), 3 sg. *[pe-e]-hu-te-ez-zi* KBo VI 2 I 37 (OH), *pe-e-hu-te-ez-zi* KBo VI 3 I 46 (MH), *pe]-e-hu-te-ez-zi* ib. I 48, *pe-hu-te-ez-zi* KBo VI 2 I 40, StBoT 25, 59 I 10, II 7, *pe-hu-te-zi* ib. I 4, 1 sg. pret. *pe-e-hu-te-nu-un* e. g. KBo III 16 Rs. 1, 4 (*pe]-e-hu-te-nu-un*) (OH+), *pe-hu-te-nu-un* ib. Rs. 2, 3 sg. pret. *pe-e-hu-te-et* KBo III 41 Rs. 10 (OH+), *pe-hu-te-et* KBo III 34 I 19 (OH+), KUB XIV 1 Vs. 68 (MH), 3 pl. *pe-e-hu-te-er* KBo III 34 I 16, II 7, *pe-hu-te-er* KUB XXXVI 104 Vs. 14 (OH), 2 sg. imp. *pe-e-hu-te* (NH), 2 pl. *pe-e-hu-te-et-ten* e. g. KUB XII 63 Vs. 27 (MH) = [pēhudĕ-] < Pre-Hitt. **pé-h₂(a)u-dē-* = preverbs **pe-* "away", **h₂u-* "away" plus PA **dā-* < **dheh₁-* "put, place", cf. *tezzi* "says" and Lyc. *tadi* "puts".

Cf. Oettinger, *Stammbildung* 36–8, 125–6.

The other compound verbs from **dheh₁-* present a similar pattern, although their analysis is less clear. Like *pēhute-*, *uwate-* "bring", *wete-* "build" and *werite-* "fear" have a verb stem consistently spelled *te-(eC)* without plene writing.

*uwate-* "bring": 3 sg. pres. *ú-wa-te-ez-zi* KBo VI 2 I 43, 46, 48 (OH), 1 sg. pret. *ú-wa-te-nu-un* KBo III 22 Rs. 44 (OH), 3 sg. *ú-wa-te-et* KBo III 22 Vs. 37, KBo XXII 2 Rs. 9 (OH), StBoT 25, 146 I 2, 3 pl. *ú-wa-te-er* KBo VIII 42 Vs.? 3 (OH), *[ú]-wa-te-er* KUB XXXVI 104 Vs. 12 (OH), 2 pl. imp. *ú-wa-at-te-en* KUB XXII 2 Vs. 15 = [watĕ-], compound of a preverb **wo-*, perhaps identical to the preverb of *watku-* "leap", plus **dheh₁-* (cf. Oettinger, *op. cit.* 126–7).

Oettinger himself reconstructs **H₁ǰou-oh₁-dheh₁-* with the preverb of *wezzi* "comes" and CLuv. *awīti* id. (here reconstructed as PA **(o)u-*; **h₂ou-* would have become ***hau-* or ***hu-*) plus **oh₁* = Skt. *ā* "to", but it is difficult to explain why a PA **h₁ou-ōh₁-* (= **[h₁ow-oh₁-]*) did not become ***awa-*.

Like the stems of *pēhute-* and *uwate-*, the verb stem of *wete-* "build" lacks plene writing, but the preverb is spelled both *ú-e-* and *ú-i-* even in OH, making the position of the accent difficult to confirm: 3 sg. pres. *[ú-e]-te-e[z]-zi* KBo VI 2 IV 53 (OH), *ú-e-te-ez-zi* KUB XXIX 29 vs 6 (OH), *[ú]-i-te-ez-zi* KUB XXXI 81 Vs. 7 (MH), *ú-e-t[e-ez-zi]* KUB XXXVI 108 Vs. 9 (OH), 1 sg. pret. *ú-e-te-nu-un* KBo III 22 Rs. 55 (OH), 3 sg. *ú-e-te-et* KBo XXII 2 Rs. 10 (OH), ptcp. nom.-acc. sg. n. *ú-e-ta-an* StBoT 25, 140 Rs. 16, acc. pl. c. *ú-i-ta-an-tu-us* KUB XXXVI 108 Vs. 6, 8, vbl. noun nom-acc. sg. *ú-e-tum-mar* KUB XIII 20 I 20 (MH+) = [widĕ-] or [wedĕ-] : [wedă-] or [widă-]. Oettinger, *Stammbildung* 129, reconstructs **H₁ǰwē-dheh₁-* (*"her-setzen/-stellen" → "bauen") with a lengthened grade version of the preverb of *wezzi* "comes" and accented verb stem. Note, however, that a PA unaccented **wē-* should have become /wĕ-/ rather than /wi-/. Dunkel, *Laryngaltheorie* 118, reconstructs **we-dhéh₁-* "put down, establish" → "build" with preverb **we-* "away, down". The variation in spelling of the preverb might point to an originally accented root, i.e. **we-dhéh₁-* > **wi-dē-*, perhaps with later replacement of the verb stem [dē-] by [dĕ-] on the model of *pēhute-*, *uwate-* and *werite-*, but it is difficult to motivate analogical replacement of the phonologically regular preverb *wi-* by *we-*. It is conceivable, however, that *wi-* originated in the participle if this had been remade as PA or Pre-Hitt. **we-d-ónt-* with accent after other athematic verbs. It should be noted too that other examples of °E° / °I° variation in OH occur after /w/, even in accented syllables (cf. OH dat. sg. *ú-i-it-ti* "year" in KUB XXIX 32 L. 2 {1.6.2.4.}) and the variation in OH *ú-i-ta-an-t°*, *ú-e-ta-an* might be a further example of this phenomenon.

Examples Otten, *StBoT* 17, 48–9; examples and etymological discussion Oettinger, *Stammbildung* 129–30, Catsanicos, *BSL* 81 (1986) 133 n. 63.

*werite-* "fear" can be derived from **weri-dheh₁-*, a compound of locative **wéri*, from the root of Lat. *vereor* "I fear" plus **dheh₁-* (Oettinger, *Stammbildung* 126 n. 81 w. refs.). The only OH form with the vowel of the first syllable preserved is *wa-ri-ta-an-zi* StBoT 25, 4 IV 34 (perhaps for *weritanzi* with regressive vowel assimilation {3.6.1.}), but this hardly helps in establishing the position of the accent. As in the other compound verbs from **dheh₁-*, the verb stem does not have plene writing, suggesting that the vowel of the first element was accented (cf. the paradigm offered by Oettinger, ib. 127).

Note that a spelling ***ú-e-e-ri-te-* with hyperplene would be disfavored.

### 2.9.1.2. **eh₂*

IE **éh₂* = [āh₂] became /āh/ before vowels {10.4.2.}, **s* and **w* {10.5.2.2.}, and perhaps before **r*, **l* and **m* {10.5.2.1.} and /ā/ before stops, {10.5.2.3.}. Plene writing of °A° before °H-H° is surprisingly rare in several examples with good etymologies.

*pāhhur* "fire": nom.-acc. sg. *pa-a-ah-hu-ur* KUB XVII 10 III 22 (2 ex., MH), *pa-ah-ah-hu-u-ur* KBo IX 127 + KUB XXXVI 41 I 6 (NH), *[pa-a]h-hu-u-ur* ib. I 20, *pa-ah-hur* StBoT 25, 19 lower edge 42, *pa-ah-h[ur* StBoT 25, 72 II 4, (also OH+ etc.), oblique stem *pa-ah-hu-e-n°*, e. g. dat.-loc. *pa-ah-hu-e-ni* KBo VI 2 II 33 (OH, also MH+, OH+), abl. *pa-ah-hu-e-na-az* KUB XV 34 I 2, III 56 (MH!, also OH+), inst. *pa-ah-hu-e-ni-it* ib. IV 49 = [pāhur], [pahwēn-], cf. CLuv. *pa-a-hu-u-ur* (*CLuv. Lex.* 173). The nominative-accusative singular should be from an earlier **péh₂wr̥*, perhaps singular, beside collective **ph₂wōr* > **puh₂ōr* with metathesis in Toch. B *pūwar*. The atttested oblique stem, however, appears to be secondary. The full-grade suffix can be from a locative **ph₂wén(i)*, but the root [pah-] appears to continue the full-grade **peh₂-*. The *e*-vocalism of the suffix in OH shows that it was accented, and the consistent lack of plene writing for the root syllable in oblique stem forms suggests that the Pre-Hitt. stem **pah₂-wén-* > [pahwēn-] predates the lengthening rules, cf. Pre-Hitt. **wid-én-* > [widēn-] oblique stem of *wātar* "water" {7.3.1.1.}.

For the IE paradigm, see Schindler, *BSL* 70 (1975) 10. The final syllable *-ur* shows the expected development of postconsonantal **-wr̥* {5.4.}, and the suffix of *pa-ah-hu-wa-ar* in KUB VII 60 II 11 (NH, rit. text) is anomalous (though cf. {3.7.4.4.}). The zero-grade suffix of dat. sg. *pa-ah-hu-ni* in KBo II 9 IV 20 (NH rit. text), abl. *pa-ah-hu-na-za* ib. IV 19, *pa-ah-hu-na-az* IV 21 is apparently analogical to the *mēhur* type.

The factitive suffix *-ahh-* continues the IE denominative suffix **-éh₂-* in e.g. *nēwahh-* "renew, make new, recopy" < **néw-eh₂-*. The suffix was accented in IE, but plene writing is rare for the suffix vowel, even in OH and MH (Kimball, *PW* 254).

*pah(ha)s-* "protect": 1 sg. pres. midd. *pa-ah-ha-as-ha* (MH etc.), 2 sg. *pa-ah-ha-as-ta* (OH+), 3 sg. *pa-ah-sa* (MH etc.), *pa-ah-sa-ri* (MH etc.), 1 pl. *pa-ah-su-wa-as-ta* (MH etc.), 2 pl. *pa-ah-ha-as-du-ma* (MH etc.), 3 pl. *pa-a-ah-sa-an-ta* KBo XXI 22 Rs. 38 (MH), 2 pl. imp. *pa-ah-ha-as-du-ma-at* (MH), caus. *pa-ah-sa-nu-* (OH etc.), *pa-ah-ha-as-nu-* (OH etc.) = [pahs-] < **péh₂-s-* : Lat. *pāscere* "to pasture", cf. unextended **peh₂-* in Skt. *pā́ti* "protects" {10.5.2.2.}.

*nahhsar(r)att-* "fear", *nahsar(r)iya-* "be afraid" with stem [nahsr-] < **neh₂s-r-* {10.5.2.2.}.

Abstract suffix *-ātar* = [-ādar] < PA **-ā́-dər*, in IE terms **-eh₂-* plus **-tr̥* {6.4.4.3.}.

Unaccented **-eh₂* occurs too in *mi(ya)huntātar* "old age" (nom.-acc. sg. *mi-hu-un-ta-tar* (OH+), gen. *mi-ya-hu-an-da-na-as* (MH)); *miyahuntē-* "be(come) old" (3 sg. pres. *mi-ya-hu-un-te-zi*, MH) with stem [miyaḫunt-] < PA **mi(y)ah₂-wént-* {3.7.4.1., 10.4.2.3.} and in *sākuwa* "eyes" (*sa-(a)-ku-wa*, OH etc.) = [sāgʷa] < Pre-Hitt. **sóg*-a*, with *-a* < **-eh₂* {6.4.4.1., 10.11.2.}.

### 2.9.1.3. **eh₃*

Since IE **h₃* was lost before consonants {10.4.3.} and in intervocalic position, **éh₃* = **[óh₃]* shows up as */ā/* {10.5.3.}.

*dā-* "take": 1 sg. pres. *da-a-ah-he* (OH), *da-(a)-ah-hi* (OH etc.), 3 sg. *da-a-i* (OH etc.), 1 sg. pret. *da-(a)-ah-hu-un* (OH etc.), 3 sg. *da-a-as* (OH etc.), 1 pl. *da-a-u-en* KBo XV 10 II 60 (MH), 3 pl. *da-a-er* (OH etc.), 2 sg. imp. *da-a* (OH etc.), 2 pl. *da-a-at-te-en* (OH) = [dā-] < **deh₃-*, root aor. **déh₃-t*, cf. Skt. *a-dā́t* "gave", Gk. ἔδωκα "I gave" (weak stem **dh₃-* in 1 pl. pres. *tumēni* {9.7.3.}, 3 pl. *danzi* {10.6.1.3.}).

Examples *PW* 391–4; paradigm *Stammbildung* 64–5. For the reconstruction as root aorist see also Risch, *Fl. u. Wb.* 253, Morpurgo Davies, *Gds Cowgill* 224–6, and Melchert, *Sprache* 33 (1987) 23–5.

*lāman* "name" (nom.-acc. sg. *la-a-ma-an*, MH etc.) = [lāman] < **h₁neh₃mn̥* {10.3.1.3., 10.5.3.}.

*pās-* "take a swallow": 3 sg. pres. *pa-a-si* (MH+), *pa-as-zi* (OH+, NH), 3 sg. pret. *pa-a-as-ta* (OH+), *pa-as-ta* (MH etc.), 3 sg. imp. **pa-a-su* (MH+), *pa-a-su!* (OH+) = [pāsi], [pāsta], [pāsu] < **péh₃s-* < **péh₃-s-* {10.5.3.}.

Unaccented **eh₃* is probably preserved in *pēda-* "take way". Plene writing of the vowel of the preverb, which is fairly frequent, suggests that it was orginally accented: e.g. 1 sg. pres. *pe-e-tah-he* StBoT 25, 4 III 30, *pe]-e-tah-hi* StBoT 25, 6 II 6, *pe-tah-he* StBoT 24, 4 III 41, 3 sg. pres. *pe-e-da-i* StBoT 25, 12 I 2, *pe-e-ta-i* StBoT 25, 3 I 32, 34, *pe-ta-i* e.g. StBoT 25, 59 I 8, 9, II 5, 6 III 5, 3 sg. pret. *pe-e-da-[as]* KBo III 22 Vs. 40 (OH). The consistant lack of plene writing for the root vowel of the verb in the antonym *uda-* "bring" also points to an accented preverb (note that a spelling ***u-u-da-* would have been disfavored), cf. 3 sg. pres. *ú-da-i* e.g. StBoT 25, 25 I 20, StBoT 25, 26 Vs.? I 14, 1 sg. pret. *ú-tah-h[u-un]* KBo III 22 Rs. 58 (OH), 3 pl. *ú-tir* StBoT 25, 122 II 2 (12?) = [pēda-], [ūda-] with [dă-] < **deh₃-*.



The plene spelling in the second syllable of *pe-e-da-a-i* KBo XXV 72 L. 10 (OH?/MH?) can be analogical to the simplex *dā-*, 3 sg. pres. *da-a-i* etc. (note *pe-e-da-i* ib. L. 17, *ú-da-i* ib. L. 24).

## 2.9.2. **o*

### 2.9.2.1. **oh₁*

Preconsonantal **óh₁* resulted in */ā/* in *parās* "air": nom. sg. *pa-ra-a-as* KBo VI 34 III 31 (MH+), *pa-ra-a-as-(ta)* 78/e Vs. 2 (Oettinger, *StBoT* 22) = [prās] < **próh₁-s*, root noun from **preh₁-* "blow, breathe", cf. also **proh₁i-* in *parāi-* "blow".

See Oettinger, *StBoT* 22, 46–7 n. 111 for forms and etymological discussion.

### 2.9.2.2. **oh₂*

**óh₂* became */āḫ/* before vowels {10.4.2.1.} and */ā/* before stops {10.5.2.3.}.

*wāk-* "bite" (3 sg. pres. *wa-a-ki*, OH etc.) = [wāgi] < perf. **wóh₂g-e*, cf. Gk. perf. ἔᾱγε "shatters" (intr.) < CGk. **ϝεϝᾱγε* for ***ϝεϝοᾱγε* < **we-woh₂g-e* (Kimball, *Laryngaltheorie* 245 w.n. 16); *sāḫ-* "cram, clog, stuff" (3 sg. pres. *sa-a-hi*, MH+) = [sāḫi] < **sóh₂-ei*.

## 2.9.3. **i*

### 2.9.3.1. **ih₁*

The reflex of **ih₁* is written with °I° in *ēlzi* "scale(s)" (*e-el-zi*, OH) and ᵁᶻᵁ*dānhasti* "twinbone" (*da-a-an-ha-as-ti*, OH+) with *-i* < dual ending **-ih₁* {10.11.1.}. There is no evidence for the quantity of the *-i*.

### 2.9.3.2. **ih₂*

Inherited **īh₂* became */ī/* in the *i*-stem neuter nominative-accusative plural ending *-i* (°CI-I, °CI) < IE plural-collective **-i-h₂* {10.11.2.}.

Another example is provided by strong case forms of adjectives in *-wī-*. Plene writing in several forms points to */ī/*: e.g. *parkuī-* "clean, pure": nom. sg. c. *par-ku-i-is* (MH?/NH?), *par-ku-is* (MH?/NH?), acc. sg. c. *par-ku-in* (OH, MH), nom.-acc. sg. n. *par-ku-i* (NH); *dankuī-* "dark": nom. sg. c. *da-an-ku-i-is* (OH+), *da-an-ku-is* (OH?/MH?), nom.-acc. sg. n. *da-an-ku-i*; *warhuī-* "rough, shaggy": nom. sg. c. *wa-ar-hu-is* (NH), *wa-ar-hu-u-is* (NH), acc. sg. c. *wa-ar-hu-u-i* (MH(?)+) with [-wīs], [-wīn], [-wī] < **-w-ih₂-s*, **-w-ih₂-m*, **-w-ih₂* {10.5.2.2.}.

## 2.9.4. **u*

### 2.9.4.1. **uh₁*

*su(m)mānza-* "cord": nom. sg. *su-ma-an-za* (Pre-NH), gen. sg. *su-ma-a-an-za-[na-as]* (OH), dat.-loc. sg. *su-ma-an-za-ni* (OH) with stem [sūmānts-] generalized from **sūmḗns* from hysterokinetic nominative **suh₁-mḗn*, as in Gk ὑμήν "membrane", plus animate suffix **-s* {10.5.1.}.

#### 2.9.4.2. **uh₂*

*sūhha-* "roof": *su-(u)-uh-h°* (OH etc.) = [sūha-] (for *[sūḫa-] < **séuh₂-*, [suhā-] < **suh₂-ó-*, and *suhha-* "pour out": *su-uh-ha-* (OH etc.) = [suha-] < **suh₂-o-* {10.4.2.1.}.

#### 2.9.4.3. **uh₃*

*suū-* "full": nom. sg. c. *su-u-us* (OH, OH+), acc. sg. c. *su-u-un* (OH+), *su-u-ú-un* (OH?/MH?), nom.-acc. sg. n. *su-u* (MH+), *su-u-ú* (OH+), acc. pl. c. *su-u-wa-mu-us* = [sū-] or [sūu-], [sūwamus] < **séuh₃ -u-* : **suh₃ -ów-* {10.4.3.}.

### 2.9.5. **ē*

#### 2.9.5.1. **ēh₂*

Inherited **ē* remained without coloring before **h₂*, and PA **ḗh₂V* became [ēḫV] with voicing of the laryngeal. This treatment was established by Eichner, *MSS* 31 (1973) 53–107, (see also Eichner, *Laryngaltheorie* 147–8), and while there is still some disagreement about etymologies, its basic correctness has been confirmed by additional evidence from Luvian and from the other IE languages (see Mayrhofer, *Idg. Gr.* I/2, 132–3 w. refs. and Starke, *StBoT* 31, 243; n. 287).

*mēhur* "time" and adv. "in/at the time": nom.-acc. sg. *me-e-hu-ur* e.g. StBoT 25, 148 Rs.? 3, *me-e-hur* e.g. KUB XXXI 64 IV 10 (OH+), KBo XX1 82 IV 7 (OH+, also NH), *me-hu-ur* e.g. KUB VI 3 L. 21 (NH), *me-hur* e.g. KBo XXIV 45 Vs. 27 (MH, also MH+, NH); oblique stem *me-e-hu-n°* in dat.-loc. sg. *me-e-h[u-ni]* KBo III 22 Vs. 17, *me-ē-h[u-n]i* ib. Vs. 19 (OH), gen. sg. *me-e-hu-na-as* KBo VIII 114 Vs. 10 (NH), *me-hu-n°* in e.g. gen. sg. *me-hu-na-as* KUB XIII 2 II 43 (MH(+?)), dat.-loc. sg. *me-hu-ni* KUB XIII 2 II 44 = [mēḫur], [mēḫun-] < IE nom.-acc. sg. **méh₂uṛ* : obl. **méh₂un-* (> ***māhhun-*) : **meh₂-* "be at the right time, be ripe" in e.g. Lat. *mātūrus* "ripe", *Mātūta* "goddess of early morning", *māne* "early", OLat. *mānus* "good", **mh₂-* in e.g. OIr. *maith* "good" < PCelt. **ma-ti-*. Since **ḗh₂V* became *ahh* = [āh], the oblique stem has lengthened-grade **mēh₂-* from the nominative-accusative singular (Eichner, *loc.cit.*).

Examples *CHD* 3, 239–42. For NH *me-(e)-hu-u-un* with ligature -HU-U- see {1.5.1.}.

*sēhur* "urine": nom.-acc. sg. *se-e-hur* e.g. KBo X 45 IV 37, 52 (MH+), obl. stem *se-e-hu-n°* e.g. in gen. *se-e-[h]u-na-as* IBoT I 36 I 46 (MH), *si-e-hu-na-as* KUB VII 5 I 9 (MH+), dir. *se-e-hu-na* IBoT I 36 I 44, dat.-loc. sg. *se-e-hu-ni* KUB XXXV 132 III 7 (NH), *se-hu-n°* in e.g. dir. *se-hu-na* IBoT I 36 I 45 = [sēḫur], [sēḫun-] < IE nom.-acc. sg. **sḗh₂uṛ*, oblique **sḗh₂un-* to a root **seh₂-* "defile, dirty". The oblique stem has analogical **sēh₂-* as in *mēhur* (Eichner, *loc. cit.*).

#### 2.9.5.2. **ēh₃*

IE **ē* remained without coloring before **h₃* in *ganess-* "recognize": 3 sg. pres. *ga-ne-es-zi* (OH etc.), *ga-ni-es-zi* (OH etc.), 3 pl. pret. *ga-ni-es-ser* (OH) = [gnēss-] < sig. aor. **ĝnéh₃-s-* {10.5.3., 11.6.3.3.} (Mayrhofer, *Idg. Gr.* I/2, 141 w. refs.).

Jasanoff, *Laryngaltheorie* 227–37, however, reconstructs an *s*-present **ĝnéh₃-s-*.



## 2.10. Accented vowels before geminates

In general, reflexes of accented vowels are not spelled with plene writing before geminates from consonant plus laryngeal and before hypercoristic, or expressive, geminates. The relevant examples include several widely attested forms in which lack of plene writing is unlikely to be accidental. The lack of plene writing suggests that lengthening rules failed to operate in these environments. While a few exceptions can be cited, they can be explained as having analogical long vowels from related words. By contrast, plene writing is found for at least some reflexes of accented vowels before geminates from other sources, including geminates from laryngeal plus consonant. Plene writing occurs freely too before graphic double stops from voiceless stops, although here, the double consonant is a voiceless stop rather than a geminate (e.g. *tu-e-e-k-ka-* "body" = [twēka-] < **twék(o)-* {2.4.3., 6.4.1.3.}; *a-ap-pa* "after" = [āpa] < **h₁ópō* {6.4.1.1.}).

### 2.10.1. Before geminates from resonant or stop plus laryngeal

A few words are consistently spelled with CAR-R: *tarra-* "be able" (*tar-r°*, MH etc.) < **térh₂-o-* {10.8.3.}; *harrā-* "crush, pound, spoil" (*har-r*, MH etc. 20+ ex.) < **h₂erh₃-ó-* {10.8.4.}; *sarra-* "divide, transgress an oath" (*sar-r°*, OH etc. 15+ ex.) < **sérh₃-o-* {10.8.4.}; *salli-* "big" is spelled both with SAL (*sal-li(-)*, *sal-la-(ya-)*, OH+, MH+, NH 20+ ex.), and with SA-AL- (*sa-al-la-(ya-)*, OH+, MH+, NH) < **sélh₂-i-*, **sélh₂-oy-* {10.8.2.}, cf. also *sallanu-* "make big" (*sa-al-la-nu-*, OH etc.).

Words that cannot be spelled with CAR include: *malla-* "grind" (*ma-al-l(a)-*, MH?, etc., 20+ ex.) < **mélh₂-* {10.8.2.}; *huwallis, hullis* "pinecone" (*hu-wa-al-li-is, -lis*, OH etc., *hu-ul-li-is*, OH etc.) < **h₂wélh₁-es-* {10.8.1.} (for NH *hu-u-ul-l°*, *hu-u-wa-al-l°* with ligature *hu-u-* see {1.5.1.}); *hanna-* "judge" (*ha-an-na-*, MH etc.; vbl. noun *ha-an-ne-es-sar*, OH etc., 30+ ex.) < **h₂énh₂-* {10.8.2.}.

The long vowel of *ārr-* "wash" < **h₁érH-* (3 sg. pres. *a-ar-ri*, OH etc.) was generalized from forms of the paradigm in which the verb stem occurred before endings in initial consonant, e.g. PA 1 sg. pres. **érH-h₂ai* > [ārhe] {10.8.9.}.

*mekki-* "much, many, numerous" (*i*-stem adj. 30+ ex.; *CHD* 3, 245–9): nom. sg. c. *me-ek-ki-is* (MH etc.), nom-acc. sg. n. *me-ek-ki* (as subst. and adj., OH etc.), abl. *me-eq-qa-ya-az* (NH), nom. pl. c. *me-eg-ga-e-es* (OH+, Supp. I, NH), *me-eq-qa-e-es* KBo V 3 III 26 (Supp. I+, also NH), acc. pl. c. *me-eq-qa-a-[us* KUB IX 6 IV 10 (NH), *me-eq-qa-a-us-sa* ib. IV 23, *me-eg-ga-us* (NH), nom.-acc. pl. n. *me-eg-ga-ya* (NH), *me-eq-qa-ya* (NH), case unclear *me-eq-qa-ya-as* (NH); adv. *me-ek-ki-i* KBo VI 2 II 46 (OH), *me-ek-ki* (OH etc.) = [mēkki-] < **méǵh₂-i-*, [mēkka(y)-] < **méǵh₂-oy-* : Skt. *máhi*, Gk. μέγα {10.7.1.}. The OH *e*-vocalism of the root syllable points to a root-accent. For the consonant stem nom.-acc. sg. n. *[m]e-e-ek* StBoT 25, 23 Rs. 6, nom. pl. c. *me-e-ek-e-es* ib. Rs. 5 see {10.7.1.}.

In *huēttiya-* "pull, draw" < **h₂wédh₂-* {10.7.1.} the normal spelling is *hu-et-ti-(ya-)* in texts from all periods (30+ ex., *HED* 3, 343–52, *StBoT* 5, 56–8; NH texts also have *hu-u-et-t°* with ligature *hu-u-*). A few examples of *hu-e-et-t°* or *hu-(u)-i-it-t°* occur from OH on: e.g. 3 pl. pres. midd. *hu-e-et-ti-an-ta* KUB XXIX 30 III 6 (OH), 3 pl. pres. act.

*hu-u-i-it-ti-ya-an-zi* KUB II 5 I 8 (OH+), 1 sg. pret. act. *hu-u-i-it-ti-ya-nu-un* KBo II 5 II 3 (NH, *hu-it-ti-ya-nu-un* ib. III 50), dur. 3 sg. pres. *hu-u-i-it-ti-ya-an-na-i* KUB XXXII 8 III 8 (OH+), it. 3 sg. imp. act. *hu-u-i-it-ti-ya-an-ni-is-ke-ed-du* KUB XXVIII 29 II 29 (OH+). The long vowel can be analogical from the athematic stem *huēzz-* < **h₂wéd-T-* < **h₂wédh₂-T-* {6.7.1.1.}.

Plene writing does not occcur for the vowel of iterative *hi*-verbs with *i*-reduplication when the root syllable has a geminate stop from (zero-grade) stop plus laryngeal: *pippa-* "overturn, turn up": *pi-ip-p°* (OH, MH etc. 15+ ex., *Stammbildung* 498) < **pí-pH-* {10.7.5.}, *titty-* "establish, settle": *ti-it-ti-(ya)-* (OH etc. 10+ ex., PW 815–6), caus. *ti-it-ta-nu-* (*ti-it-nu-*) (OH etc. 20+ ex.) probably from **tí-th₂y-* {10.7.2.}; for the accent in reduplicated *hi*-conjugation iteratives, cf. MH *te-e-et-ha* "thunders" (OH *ti-it-ha* = [tītha]) < **tí-th₂o-* {2.4.4.1.}.

## 2.10.2. Before geminate from nasal plus nasal

Lengthening of accented vowels appears to have been regular before *mm* from **nm* but not, perhaps, before *mm* from **mn*: *īmmiya-* "mix" (*i-im-mi-(ya)-* , MH etc.) beside *im-mi-ya-* (OH+, MH+, NH) < **én-miyo-* {7.5.2.}; *āmmiyant-* "young, weak, immature" (acc. pl. *a-am-mi-ya-an-tu-us*, OH+, dat.-loc. pl. *a-am-mi-ya-an-da-as*, NH); otherwise *am-mi-ya-*; possibly **n̥-mih₁ónt-* "not grown" with **n̥m* > **ɔmn* > *amm* > [ām] {7.5.2.}; *mimma-* "refuse" (*mi-im-ma-*, OH etc. 30+ ex.) = [mīmma-] < reduplicated **mímn-o-* {7.5.2.}.

*imma* adv. "indeed, moreover" (*im-ma*, OH, MH etc.) without plene writing < **ímmōh₂* {6.10.1.2.}.

## 2.10.3. Before geminate nasal from stop plus nasal

Infinitive suffix *-ānna* < **-ā́tn-ō* {6.10.1.1.}; plene writing is found in a few forms from ablauting verbs: *ap-pa-a-an-na* KUB XII 62 Rs. 5 (Pre-NH), KUB XXXV 43 II 19 (NH) : *ēpp-* "seize"; *a-sa-a-an-na* KUB XIV 1 Vs. 18, 42, Rs. 11, 14 (MH; *as-sa-an-na* ib. Vs. 22) : *ēs-* (trans.) "settle"; *a-da-a-an-na* KUB XIV 1 Rs. 53 : *ēd-* "eat"; *ku-un-na-a-an-na* KBo X 7 II 17 (OH+) : *kuēn-* "kill"; *wa-ya-a-an-na* KUB XXXIV 128 Vs.? 13 (OH+) : *wāk-* "bite"; see Rosenkranz, *Fs Friedrich* 412–26, and Hart, *BSOAS* 42 (1980) 5.

## 2.10.4. Before geminate resonant from resonant plus consonant

*ārra-* "arse" = [ārra-] < **h₁órso-*: abl. *a-ar-ra-az* KUB XLV 26 II 6 (U), *a-ar-ra-az-ma-as-si-kan* (*ārraz-ma-ssi-kan*) KUB XXXV 148 + III 3 (OH+), cf. *ar-ra-az-ma-as-si-kan* ib. III 5; otherwise *ar-r°* {8.6.5.1.}; *wēllu-*: "meadow" (*ú-e-el-l°*, OH etc.) = [wēllu-] < **wélnu-* {8.6.4.}.

## 2.10.5. Before *ss* < **ns*

*dāssu-* "strong": nom.-acc. sg. n. *da-a-as-su* KBo XXII 260 Vs. 18 (U), KUB XXXI 127 + I 19 (MH+) < **dḗ/ónsu-* {7.8.2.}; *āss(iya)-* "be beloved, be favored": *a-as-sa-ri* (MH), *a-as-si-ya-* (MH?, OH+, NH), caus. *a-as-sa-nu-* (MH+), *as-sa-nu-* (MH etc.), *as-nu-* (MH etc.) < **áns-* "favor" {7.8.2.}. The lack of plene writing for the root of *hassu-* "king" (OH+) < **h₂ónsu-* {7.8.2.} and *hassuē-* "be king" (OH+) may be accidental, since the word is not often spelled syllabically.

## 2.10.6. Before *ss* < **h₁s*

*hāss-*, *hassā-* "hearth" (acc. sg. *ha-a-as-sa-an*, OH etc.) = [hāssan] < **h₂éh₁s-m̥* {11.6.3.1.}; *pēssiya-* "throw" (*pe-es-s°*, OH etc., *pi-is°*, OH etc., *pe-e-es-s°*, MH etc.) = [pēssy°] < **pé-h₁sye/o-*; *ūssiya-* "draw curtains" (*ú-us-s°*, OH, *us-s°* OH+) = [ūssy°] < **(o)ú-h₁sye/o-* {11.6.3.1.}; but *ganess-* "recognize" (*ga-ne-es-s°*, OH etc., *ga-ni-es-s°*, OH etc.) = [gnēss-] < **ĝnéh₃s-* {11.6.3.3.} apparently does not have plene writing.

## 2.10.7. Before expressive geminates

*atta-* "father" (*at-t°*, OH etc., 20+ ex. *HED* 1, 224–6; *HW²* 70–2) < **átto-*; *anna-* "mother" (*an-n°*, OH etc. 20+ ex. *HED* 1, 55–7; *HW²* 70–2) < **ánn-eh₂-*; *hanna-* "grandmother" (*ha-an-n°*: e.g. nom. pl. *ha-an-ni-is* KUB XVII 29 II 6 (U), dat.-loc. pl. *ha-an-na-as* e.g. KUB XXXIX 1 III 9 (OH+), KUB XXXIX 4 Vs. 4 (OH+; also NH, 8 ex.) < **h₂ánn-eh₂-*. The ending *-ēs* of nom. pl. *at-ti-i-e-es* = [ăttes] in KUB XVII 29 II 7 (U) can be analogical {2.3.3.3.}; for *ārrirra-* "scrape" plene writing occurs only in 3 pl. imp. *a-ar-ri-ra-an-du* KUB XXXI 87 II 15 (MH+) (*HED* 1, 139–40; *HW²* 298–9).

# Chapter Three

# Conditioned Changes Affecting Vowels

## 3.1. Introduction

In determining whether variation in spelling reflects sound change or genuine synchronic phonological variation, it is essential to establish the relative chronology of forms. Because proposed changes involving front vowels are complicated by the Post-OH mergers of /e/ and /i/ and of /ē/ and /ī/, as a general rule, the evidence from OH originals is the most reliable in evaluating changes affecting front vowels. Unfortunately, the OH text corpus is limited and, therefore, the data it can provide are often inadequate for drawing firm conclusions. In some cases, sound changes or examples of synchronic variation that have been posited are better explained as reflecting inherited ablaut (e.g. *arḫā-* "border" : *ĕrḫā-* id. and HLuv. *irha-* id. < **h₁r̥H₂ₓ-ó-* : **h₁ĕrH₂ₓ-ó-* {3.2.2.3.} or some examples of [CwaR] beside [CuR] {3.7.4.2.}). Some changes that have been regarded as internal developments within Hittite may instead be Luvicisms (e.g. some examples of [CwaR] for expected [CuR] {3.7.4.3.}).

## 3.2. *e

Eichner, *Lautgesch. u. Etym.* 146 n. 69, *Gds Kronasser* 26 n. 53; Melchert, *SHHP* 103–4, 112–13, 133, 147, *AHP* 89, 101, 139, 140–1, 143–5, 183–5; *Gds Cowgill* 189 n. 19, 197 n. 36; Oettinger, *Stammbildung* 38, 499, 533, 535, 540, 541, *Gds Kronasser* 166; Sturtevant, *Language* 3 (1927) 223.

### 3.2.1. Raising

Examining changes involving raising of inherited **e* to /i/ is complicated by the Post-OH merger of /e/ and /i/ {1.6} and by the Pre-Hittite change of unaccented **e* to /i/ {2.6.3.}. Accordingly, the best evidence for raising conditioned by factors other than accent is found in accented syllables in forms attested in OH.

#### 3.2.1.1. Raising of initial *e

Oettinger (*Stammbildung* 499, 533, 535, 540) posits raising of initial **e* to /i/ (spelled I-CV, IC-CV), but this sound change is contradicted by at least four probative examples with initial /ē/ from **é* in OH.



*ēshar* "blood" (nom.-acc. sg. *e-es-har* StBoT 25, 3 I 27, III 19, StBoT 25, 4 I 22) = [ēshar] < **(h₁)ésh₂-r̥* or **h₁ésh₂-ōr*. Short **e* as in Skt. *ásṛk* "blood", Toch. A *ysār*, B *yasar* (< coll. **h₁ésh₂-ōr*) and perhaps Gk. ἔαρ · αἷμα (Hesych., Cyp.) is implied by the *a*-vocalism of CLuv. *āshar* "blood" (*CLuv. Lex.* 35) since IE **ē* became PLuv. **ī*. The °I° = of OH *isharwant-* "bloody" points to Pre-Hitt. **eshar-wént-* with unaccented **e* > OH /i/ {2.6.3.}, since unaccented **ē* became OH /ĕ/ {2.7.2.}. The Hittite and Cuneiform Luvian forms can directly continue the IE collective **h₁ésh₂-ōr*, or they can continue a PA **ésh₂-r̥* with the **ē* of the collective and oblique stems and the suffix **-r̥* of the singular.

Cf. also Pal. *-e-es-hur-*, presumably also < **h₁ésh₂-r̥*. For the IE paradigm see Schindler, *BSL* 70 (1975) 6.

*ēs-* "be": 3 sg. pres. *e-es-zi* (OH etc.), 3 sg. pret. *e-es-ta* (OH etc.), 3 pl. *e-ser*, *e-se-er* (both OH etc.), 3 sg. imp. *e-es-tu* (OH? etc.) = [ēstsi], [ēsta], [ēser], [ēstu] < IE **h₁és-ti* etc. {2.8.1.1.}. For IE and PA **ē*, cf. CLuv. 1 sg. pret. *as-ha*, 3 sg. *a-as-ta*, 3 sg. imp. *a-as-du* (*CLuv. Lex.* 33).

*ēs(sa)ri-* "shape, figure", $^{SIG}$*ēs(sa)ri-* "fleece" (lit. "wool shape, wool skin"): nom. sg. c. *e-es-ri-is* KUB XXXII 133 I 12 (NH), acc. sg. c. $^{SIG}$*e-es-ri-in* KUB XLI 1 I 16 (MH+), nom.-acc. sg. n. *e-es-ri(-)* e.g. KBo XXI 22 Vs. 25 (MH), KUB XVII 10 IV 2 (MH), KUB IX 28 I 11 (OH+), KUB XLIII 63 Vs. 12 (OH+), KUB XXXIII 54 L. 17 (MH+), *e-es-sa-ri(-)* e.g. KUB XVII 28 II 43 (OH+) = [ēssri-] < PA **ēs-ri-* : IE **h₁és-* "be" with suffix *-ri-* as in *ēdri-* "nourishment, food" etc.

Examples *HED* 313–5.

*ēd-* "eat" (2 sg. pres. *e-ez-si*, 3 sg. imp. *e-ez-du*) = [ētsi], [ētˢti], [ētˢtu]; *ēdri-* "food" (*e-ed-ri-*) = [ēdri-] IE < **h₁éd-*, **h₁éd-si*, **h₁éd-ti*, **h₁éd-tu* and PA **éd-ri*. The *a*-vocalism of CLuv. *ād-* in 2 pl. imp. *a-az-za-as-ta-an* = Hitt. *e-ez-za-te-en* (*CLuv. Lex.* 39 ), *ad(a)ri-* "nourish" = Hitt. *edriya-* id. (ib. 39) and *atrahit-* "food, nourishment" = Hitt. *ēdri-* (ib. 40) points to PA and IE **ĕ*, not **ē*.

The examples cited by Oettinger (540) are not probative because they have an ambiguous sign E/IC that can be read /eC/ as well as /iC/, (e.g. *ed-ri-* "food" beside *e-ed-ri-*) or because they show **ĕ* raised to /i/ for reasons other than its position in the word: with unaccented **ĕ* > /i/ {2.6.3.} *idālu-* "evil" < Pre-Hitt. **edwól-u-*, *isharnu-* "make bloody", *ishā-* "master" (if from **h₁eshₓ-ó-*), *issā-*, oblique stem of *aīs* "mouth", and *ilāliya-* "desire, want" : HLuv. *alana-*, *alanza(i)-* "covet" (< **alala-*), probably reflecting a PA base **elál-* or **elól-*; and with raising of **e* before [nn] {2.3.1.3.} *innara-* "strength". The verb *iya-* "make", cited by Oettinger (349), has initial /y/ in OH (Melchert, *SHHP* 14–16), which contradicts Oettinger's reconstruction **h₁ey-e-* {9.2.1.1.}.

#### 3.2.1.2. Raising before nasal plus velar

Melchert (*SHHP* 104, 133, 147 and *AHP* 101, 139) provides clear evidence for raising of Pre-Hittite **e* to /i/ before clusters of nasal plus velar. Although the nasal is written with signs of the N-series, it is likely to have been phonetically a velar nasal, i.e. [ŋk], [ŋkʷ], and [ŋg]. Examples occur from OH on and include clear instances of **é*. Plene writing is very rare, suggesting that the vowel is short even when accented and perhaps phonetically [I]. The second °A° of CLuv. *mannakuna/i-* "short" (*CLuv. Lex.* 136) : Hitt. *manninkuwa-* id. (< **manénkʷo-*) must be from PA **e* and shows that raising was Post-PA.

*ma(n)ninkuwa-* "near" (adj.), perhaps in nom. pl. c. (?) *ma-ni$^{!}$-in-ku-e-es*/ KUB XXIII 55 IV 8 (U) and in various derivatives: e.g. *ma(n)ninkuwān* adv. "near" (*ma-an-ni-ku-an* KBo VI 2 I 48, OH, *ma-ni-eṇ-k*/*u-* KUB XXXVI 104 Rs. 9, OH); *ma(n)ninkuwahh-* "draw near, approach" (MH etc.); (*)*manninkuwahha-* "vicinity"? (MH+); *ma(n)ninkuwānt-* "short, low" (*m*/*a?-ni-ku-wa-an-te-es* or *ma-a*/*n$^{!}$-ni-ku-wa-an-te-es* StBoT 25, 137 II 13; see StBoT 26, 117); *manikuandahh-* "make short" (MH) = [manniŋkʷo-] < **manénkʷo-*, from **man-* "hand" plus locatival suffix **-énkʷo-*. For similar formations, cf. Lat. *propinquus* "near", Skt. *pratyáñc-* "towards".

For the double nasal see {7.3.3.1.}.

*link-* "swear an oath", *lingāi-* "oath"; OH forms are: 3 sg. pres. *li-ik-zi* KBo VI 2 IV 3, 1 sg. pret. *li-in-ku-un* KBo IX 73 Vs. 3, 3 sg. pret. act. *li-ik-ta* ib. Vs. 2, acc. sg. *li-inga-en* KUB XXXVI 108 Vs. 10, erg. *li-in-ki-ya-an-te-es* KUB XXXVI 106 Rs. 6 = [liŋg-], 3 sg. pres. [liŋgtsi] < **h$_1$léngh-ti* : Gk. ἐλέγχω "disgrace, refute, prove".

Post-OH spellings are given by *CHD* 3, 64–9. For etymological refs. see *HEG* 5, 60–3. As Oettinger, *Stammbildung* 138–9, 171 (reading [leng-]) notes, the plural and other weak stem forms (e.g. 3 pl. pres. *linganzi* = [liŋgantsi]) are analogical for **lang-* < **h$_1$lŋgh-*. Plene writing is found in two Post-OH imperative forms: 2 sg. *li-i-ik* KBo IV 14 I 41 (NH), 2 pl. *le-e-ek-te-en* 942/Z Rs.? 2 (CHD OH/NS), beside *li-ik-te-en* KBo XVI 27 II 5 (MH) and *le-en-ik-te-en* KUB XXVI 1 III 54 (NH). It is possible that these have secondary or emphatic lengthening.

### 3.2.1.3. Raising before nasal plus nasal

Inherited **e* was raised to /i/ (perhaps [I]) before nasal plus nasal (Melchert, *SHHP* 103–4).

*innara-* "strength, vital force", adj. "strong": OH *inarahh-* "make strong" (3 sg. pres. *i-na-ra-ah-hi* StBoT 25, 140 Rs. 12; in later texts also *innarahh-*); *innarā* adv. "brusquely" (< *"forcefully"); *innarawant-* "strong" (nom. sg. c. *i-na-ra-u-an-za* StBoT 25, 140 Rs. 9, *in-na-ra-u-wa-an-za* KUB XVII 20 II 3, U, dat. sg. *in-na-ra-u-wa-an-ti* KUB XXX 10 Vs. 8, MH); *innarawār* "strength" (nom.-acc. sg. *in-na-ra-*[*wa*]*-a-ar* KUB XXX 10 Rs. 19, MH); stem [innarā-] < **en-h$_2$nor-ó-* "having strength inside", cf. Gk. ἀνήρ "man", -ηνορ in e.g. ἀντήνωρ "instead of a man".

Examples *HED* 1, 366–73; see Melchert, *SHHP* 103–4 w. refs. for the derivation. PA **e* rather than **i* is implied by the *a* of CLuv. *annari-* "force, virility", *annara*/*i-* "forceful, virile", *annarumm(i)-* id. (*CLuv. Lex.* 14–16).

*immiya-* "mix" (*i-im-mi-(ya)-*, *im-mi-(ya-)*, *i-mi-ya-*) = [immya-] (?), perhaps from a thematic middle < **én-my-o-* with = **en-* "in" plus **mei-* "mix, exchange" {7.5.2.}.

### 3.2.1.4. Raising before *s* plus consonant

Eichner (*Lautgesch. u. Etym.* 146 n. 69, *Gds Kronasser* 26 n. 53) and Oettinger (*Gds Kronasser* 166) propose raising of **e* to /i/ before consonant clusters beginning with **s*, but there are clear examples of [ēsC] from **ésC* (e.g. *ēshar* "blood" (OH *e-es-har*) = [ēshar] < **h$_1$éssh$_2$-r* or **h$_1$éssh$_2$-ōr* {3.2.1.1.}), and the examples cited in support of raising in this environment either come from Post-OH texts in which the representation of /ē/, /e/, /ī/ and /i/ is not completely reliable or they have /i/ for other reasons.



With CI-IŠ for OH [-ēss-] : *mi-li-ti-is-du* KUB XVII 10 II 27 (MH), third person singular imperative of *milit(i)ēss-* "become sweet", *na-ak-ki-is-kan-ta-at* KBo XVIII 15 L. 17 (MH), iterative third person plural preterit of *nakkēss-* "become difficult" (Eichner, *Lautgesch. u. Etym.*, for OH [-ēss-] (cf. *par-ku-e-es-ta* "became pure, proved pure" KBo VIII 42 Rs.? 9); *si-is-du* KBo VII 28 Vs. 15 (MH), KUB XII 49 L. 2 (U), KUB XXIV 2 Rs.18 (Pre-NH), 3 sg. imp. of *sesd-* "increase, thrive, flourish", vbl. noun nom.-acc. sg. *si-is-du-wa-ar* KUB XV 34 II 23 (MH?) (Eichner, *Gds Kronasser*) beside *se-es-zi* KBo III 7 I 7 (OH+), *se-is-du* KUB XXIV 3 III 39 (MH+) for OH *[sēstu] etc.; *ha-mi-is-hi* "in the spring" e.g. KUB XIII 32 Vs. 7 (NH) (Oettinger) beside OH */ha-m*/*e-es-hi* StBoT 25, 18 Rs. 1, and later *ha-me-es-hi*, *ha-mi-es-hi*.

*kistanziya-* "starve" (Eichner, *Gds Kronasser*) is found in OH (midd. 3 sg. pret. *ki-is-ta-an-zi-at-ta-at* KBo III 22 Rs. 46), but owes its /i/ to the suffix accent of the base noun *kistant-* "hunger" = [Kistānt-] < **Kest-ént-* {2.6.3.}, cf. also MH *ki-iṣ-ḏu-wa-a-an*/*du*/*-uṣ*, accusative plural of *kisduwānt-* "hungry" < **Kest-wént-* {3.2.2.2., 3.2.1.5.}. Similarly the *i*-vocalism of OH *pisnā-* "man" (< **pesnó-* {3.9.3.}) and *ki-is-ra-a* "hand" (dir. sg.), *ki-is-ri-i* (dat. sg.) and perhaps the /i/ of $^{D}$*Istānu-* "Sungod" reflects unaccented **e* > /i/ {3.2.2.2.}; for OH $^{É}$*histā-* < **h$_2$ēst-ó-* ? with **ē* > /i/ after **h$_2$* see {2.8.5.2}.

### 3.2.1.5. Raising after velar

The PA raising of **e* to /i/ after velars proposed by Oettinger (*Stammbildung* 535) and Melchert (*Gds Cowgill* 189 n. 19, 197 n. 36) is contradicted by CLuv. *tiyammi-* "earth", which is from a locative stem **dhĝhém-* > PLuv. **digémm-* with **ém* > *amm* via Čop's Law and had PA **e* after **ĝh* (Kimball, *IF* 99 (1994) 78).

In *gēnu-* "knee" plene writing is fairly frequent (the earliest example with plene writing is MH nom.-acc. sg.?/pl.? *ge-*/*e-nu-us-se-et* = [gēnu-sset] KBo XV 10 I 25), and it suggests that the regular development is **ĝénu-* > [gēnu-] {7.3.1.1.}. OH forms lack plene writing, but this is surely accidental, and gen. sg.?/dat.-loc. pl.? *ge-nu-wa-as* (e.g. StBoT 25, 40 L. 3) and inst. *g*/*e-nu-t°* (StBoT 25, 9 I? 12) should be read as [gēnwas] and [gēnut] with *e*-vocalism.

Examples *u*-Stämme 38–40. For IE **ĝénu* (probably originating in the oblique stem, e.g. gen. **ĝén-u-s*) cf. Lat. *genū* "knee" and see Schindler, *BSL* 70 (1975) 7.

Other examples of **e* after velar found in OH can show /i/ from unaccented **e*: *gimra-* "field" (*gi-im-ra-as-sa-as* KBo VI 2 III 8, 9, OH = *gi-im-ma-r*/*a-as-sa-as* KBo VI 3 III 10, MH), probably = [gimmrā-] < **ĝhem-ró-* {7.6.2.}); *kissar* "hand" (dat.-loc. sg. *ki-is-ri-i*, *ki-is-sa-ri*) with stem [gissr-] < **ĝhes-r-V-* {3.2.2.2., 11.5.2.1.}; *kistanziya-* "starve" (3 sg. pres. *ki-is-ta-an-zi-at-ta-at* KBo III 22 Rs. 46), denominative from **kistānt-* "hunger" = [Kistānt-] < **Kest-ént-* {2.6.3., 3.2.2.2.}. *ki-is-s°* "comb" = [kēss-] < **kes-* does not occur in OH {11.4.1.}.

The raising of **e* to /i/ after velars suggested for Luvian by Oettinger, *Stammbildung* 535, probably has other explanations: CLuv. *immara-* "field" : Hitt. *gim(ma)ra-* id. < **ghem-ró-* and CLuv. *issari-* "hand", HLuv. *istri-* id., Lyc. *izri-* id. show palatalization **ĝhe* > PLuv. **ge* > *i* (Kimball, *IF* 99), while CLuv. *kīsā(i)-* "comb" < **kēs-āye*/*o-* shows **ē* > Pluv. **i* {11.4.2.}.

### 3.2.1.6. Raising between *w* and dental obstruent

Melchert, *SHHP* 112–13 and *AHP* 101, 144–5, posits sporadic raising of **e* to /i/ between *w* and a dental obstruent in OH. Although this is one of the few phonological contexts in which variation between E and I is extensively attested in OH, it is likely to indicate the beginnings of the merger of /ē/ and /ī/ that was completed by NH {1.6.2.4}.

### 3.2.1.7. Raising of word-final **e*

Sturtevant (*Language* 3 (1927) 223) and Oettinger (*Stammbildung* 38, 541) propose raising of final **e* to /i/. This change is supported by the OH iterative second person singular imperative *ūskē/a-* "see", *us-ki-i* (StBoT 25, 123 L. 10) with [-skī] < IE **-sḱé*. This is the only example citable from OH texts, but the spelling °Š-KI-I occurs occasionally in MH and later texts and should be considered phonologically regular there: e.g. *ak-ku-us-ki-i* : *ekū-* "drink" KBo VII 28 Vs. 23 (MH); *az-zi-ik-ki-i* : *ēd-* "eat" ib. Vs. 23; KUB XXXIII 64 + KBo XXI 60 Rs. 15 (MH+?). The spelling °Š-KE/I without plene writing (e.g. in *az-zi-ik-ki* Tunn. IV 26, 35 (MH+), *zi-ik-ki* KUB XXIV 1 III 15 (Pre-NH) : *dāi-* "put"; *se-ę-eṣ-ki* "sleep KUB XXXIII 8 III 19 (MH+) : *sēs-* "sleep") should also be interpreted as [-skī]. Since there is no evidence for raising of final **ē*, raising apparently preceded lengthening of short accented vowels, i.e. **-é* > **-í* > [-ī].

The OH *u*-stem vocative singular in *-i* (later *-e*) may provide another example, if this is from the thematic vowel **-e* of thematic nouns (e.g. OH $^{D}$UTU-*i* : StBoT 25 124 II 8, 13, III 17, $^{D}$[UT]U-*i* StBoT 25, 112 II 11= [istānu-i] : *Istānu* "Sungod, majesty"; OH LUGAL-*u-i* StBoT 25, 122 III 13 = ([hāssu-i]) : LUGAL = **hassu* "king"), but in these words the accent would have been on a root or suffix vowel and the final *-i* could also be explained as the reflex of unaccented **ĕ*.

See Oettinger, *loc. cit.* w. refs. and Eichner-Neumann, *KZ* 96 (1983) 233–44, for this interpretation of the origin of the *u*-stem vocative ending. Weitenberg, *u*-Stämme 372, 478 n. 801 gives references and a chronology of forms but is skeptical. Neu, *Heth. u. Idg.* 179 n. 7, is also skeptical, but it seems unlikely that the *-i* is from the dative as he suggests.

Sturtevant cited the *hi*-conjugation third person singular present ending *-i* < IE perfect ending **-e* ending as an example, but the ending was originally *-e* in OH and should be from PA **-ei* (= **-e* plus deictic particle **-i*) {4.3.3.}. The second person singular imperatives *ka-ap-pu-i* and *ú-wa-ti*, *ú-wa-te* (Oettinger 330, 335, 541) have pre-Hittite **ē* from **-éye-* or **ē* from **eḫ₁* and do not occur in OH texts, which suggests that they show Post-OH merger of /ē/ and /ī/. See also Melchert, *AHP* 183–5 for a discussion.

## 3.2.2. Lowering

Čop, *Linguistica* 8 (1966–8) 45; Furlan, *Linguistica* 24/1 (1984) 456; Kronasser, *VLFL* 38, *EHS* 25; Kimball, *MSS* 53 (1992) 75–97; Melchert, *Sprache* 29 (1983) 9 n. 23, *SHHP* 20, 36 42, 103, *AHP* 134–7, 137–9, 140; Oettinger, *StBoT* 22, 56 n. 7, *MSS* 35 (1976) 99 w. n. 33; *Stammbildung* 184, 195, 534–5, *Gds Kronasser* 26 n. 52; Pedersen, *Hitt.* 166, 177; Sturtevant, *CGr*$^{1}$ 90, *CGr*$^{2}$ 30.



Lowering of **e* to /a/ before sequences of resonant plus consonant has often been claimed, although scholars differ on the exact conditioning and scope of the change. Oettinger (*MSS* 35, *Stammbildung*), and Kronasser (*EHS*) posit lowering before all sequences of resonant plus consonant. Pedersen suggested that lowering took place before **rC*, **lC* and **n* plus dental stop, and Kronasser (*VLFH*) posited it before **rC*, perhaps before **lC* and irregularly before **n* plus velar. Sturtevant (*CGr*$^{1}$, *CGr*$^{2}$) posited lowering only before **rC*, and Čop posited it before tautosyllabic **r* but not before nasal plus consonant. Melchert (*Sprache* 29) posits **enC* > [anC], **ens* > [as] and (*SHHP* 103) **en* > [an] word-finally and before dental stop. For **erC* > [arC] see also Melchert, *SHHP* 36, and for lowering before **n* plus dental stop see Oettinger, *StBoT* 22. Kimball finds that lowering was regular before resonant plus laryngeal in PA and before **rC*, probably also a PA change.

The available evidence suggests that lowering was restricted in scope. Inherited **e* was raised to /i/ before velar plus nasal {3.2.1.2.} and remained before **l* plus any consonant except a laryngeal (Furlan, Kimball, Melchert 136): e.g. *wēlku-* "vegetation, hay" = [wēlku-] < **wélḱu-*, cf. **wolḱo-* in Skt. *valśa-* "sprout, twig", and **welḱo-* in OCS *vlasŭ* "hair" (Kimball, *MSS* 53 (1992) 86–8); *wēllu-* "meadow" = [wēllu-] < **wélnu-* (Kimball, cf. Puhvel, *KZ* 83 (1969) 64–9 = *AnIE* 211f.); $^{GIŠ}$*ēlzi-* "scale(s)" perhaps = [ēltsi] < nom.-acc. neut. dual **h₁élt-ih₁* (Kimball) {2.9.3.1., 10.11.1.}; *kuelwanna-* "basin"?: (hap. leg. gen. sg. *ku-e-lu-wa-na-as* KUB IX 1 III 21, MH+) perhaps from **gʷel-* {6.3.4.2.}; *hūēlpi-* "fresh, young, tender, unripe" = [hwēlpi-] < **H₂ǯwélpi-*, perhaps : Lat. *lepōs* "charm", and Lith. *lepùs* "soft" (cf. Furlan, *Linguistica* 24/1 (1984) 455–65).

There is solid evidence for lowering before **rC*, before **n* plus dental stop or word boundary and before resonant plus **H₂₃*. A number of the examples of lowering cited in the literature, however, are not conclusive because they involve morphemes or lexical items from which an *o*-grade (**oRC* > *aRC*) or a zero-grade (**r̥* > [ar] or **n̥* > [an]) cannot be excluded with certainty.

### 3.2.2.1. Lowering before **r* plus consonant

For *tuwarniya-* "break, damage" = [dwarnye/a-] {3.11.1.2.} the earliest examples are from a verb in *-iya-*: 3 sg. pres. *tu-wa-a[r-ni-ez-zi* (?) KBo VI 2 I 20 (OH), implied by *du-wa-a[r-n]i-ez-zi* in MH dup. KBo VI 3 I 29, cf. *du-wa-ar-ni-*<*ez*>*-zi* ib. III 70, 3 pl. *tu-wa-ar-ni-ya-an-zi* KBo XX 34 Vs. 10, 12 (MH), 3 sg. pret. *du-wa-ar-ni-et* KUB XVII 10 I 33 (MH), 3 pl. pret. *tu-wa-ar-ni-er* KUB XXXVI 104 Vs. 7 (OH). *tuwarniya-* is ultimately cognate with Skt. *dhvarati* "damages" (Oettinger, *Stammbildung* 151 w. n. 36). Melchert, *SHHP* 114 n. 71, analyzes *tuwarniya-* as a denominative **dhwerneyé/ó-* from a thematic adjective **dhwerno-*. He points out that only an *e*-grade root is possible for the base adjective, since zero-grade **dhur̥no-* would have become ***durn-* with **ur̥* > [ur] {5.4.1.1.}, and *o*-grade **dhworno-* should have become ***darna-* with loss of **w* between dental stop and PA **o* {9.5.2.1.}.

Examples *Stammbildung* 308–310, *PW* 742–4. The nasal verb **dhur̥nḫ₁-* that Oettinger and Kimball reconstruct, however, should have become ***durn-*. One MH text, KBo XXIV 1, has a *hi*-conjugation third person singular present *tu-wa-ar-na-i* (I 8, 12), and texts written down in the NH period (OH+, MH+ and NH) provide *hi*-conjugation forms beside the expected *mi*-conjugation inflection in *-iya-*, but the *hi*-conjugation inflection can be analogical after that of original nasal infix verbs such as *tarna-* "let loose" or *sunna-* "pour".

An *e*-grade **ers* is found in *pars(i)na-* "upper thigh, back of the thigh, buttock", and its derivative *parsnā(i)-* "squat": dat.-loc. sg. *par-si-ni* KBo XIII 34 IV 7 (OH+), acc. pl. *par-si-nu-us* KUB XXXIII 120 I 25 (NH), *par-se-nu-us* KBo XIII 34 IV 15, *par-se-e-n/u-us* ib. IV 21, dat.-loc. pl. *par-as-na-as* KUB XXXV 148 III 27 (OH+); *parsnā(i)-*: 3 sg. pres. *par-as-na-a-iz-zi* (OH *par-as-na-a-/iz-zi* StBoT 25, 153 III 6 and Post-OH), ptcp. nom.-acc. sg. n. *par-sa-na-a-an* StBoT 25, 27 Rs.! 16, nom. pl. c. *par-as-sa-na-an-te-es* KUB XXV 1 II 8 (OH+). Cognates are Skt. *pārṣṇi-* (f.) "heel", Av. *pāšna-* id. (< **pāršna-*), Gk. πτέρνη id., Lat. *perna* "leg, thigh, ham" and Goth. *fairzna* "heel". Although the Greek, Latin, and Germanic words could continue **pērsneh₂-* with Osthoff's Law shortening, it is more likely that the Indo-Iranian words are vṛddhi derivatives (see Benveniste, *BSL* 50 (1954) 41–2 and Mayrhofer, *KEWA* II 261), and that the basic IE form was **persneh₂-*. Hittite *pars(i)na-* does not continue a lengthened-grade either, since **ērC* remained without lowering. Although *pars(i)na-* could be from an *o*-grade **pors-neh₂-* (or **pors-no-*) or a zero-grade **pr̥s-néh₂-* (**pr̥s-nó-*), the *e*-grade of the Greek, Latin and Germanic cognates is unusual in a feminine in **-neh₂-*. There is no obvious analogical source for it, since no primary verb is reconstructible, and there are no cognates to support viewing the attested nouns as secondary derivatives from an earlier ablauting paradigm. An *e*-grade **persneh₂-* > *parsna-* (> *pars(ē)na-*) with **ers* > [ars] seems, therefore, virtually certain (Kimball, *MSS* 53 (1992) 83).

The lack of plene writing in the noun makes it impossible to determine the original location of the accent, and either **pérsneh₂-* (with root-accent as in πτέρνη) > [pārsna-] (with accidental lack of plene writing!) or **persnéh₂-* (as in Gmc. **ferznō-*) > [parsnā-] is possible. For the etymology see Pedersen, *Hitt.* 158 n. 1, Oettinger, *Stammbildung, loc. cit., III* 23 and Neu, *Gds Kronasser* 118–20 w. refs., and for the epenthetic vowel see {3.9.3.}.

*ārs-* "flow": 1 sg. pres. *a-ar-as-mi* KBo XVII 60 upper edge 3 (MH), 3 sg. pres. *a-ar-as-zi* KUB XLI 8 IV 37 (MH, and later), *ar-as-zi* (MH etc.), *ar-as-zi* (OH+ etc.), 3 sg. pret. *a-ar-sa-as* KUB XXXVI 89 Rs. 12 (OH+), 3 sg. imp. *ar-as-du* KBo XVII 105 II 34 (NH) = [ārs-], [ārsmi], [ār(s)tsi], [ārs], [ārstu] < **h₁ers-*, pres. **h₁érs-mi*, **h₁érs-ti* etc. : Skt. *arṣati* "flows", presumably thematized from the root present preserved in Hittite.

Examples *HW*² 341–3; *HED* 1.170–2. For **h₁ers-* note also Lat. *errāre* "err, wander" (< *"flow", ie. *"move about aimlessly"), Arm. *cram* "am in motion, seethe", both of which are from **h₁ers-eh₂-yé/ó-*. Plene writing is not found in plural and participle forms (3 pl. pres. *ar-sa-an-zi* (NH, U) and ptcp. nom. pl. c. *ar-sa-an-te-es* KUB XXXIII 41 II 9 = *ar-sa/-an-zi* KUB XXXIII 42 II 9, both OH+/MH+), and these can continue the regular weak stem **h₁r̥s-* > [ārs-], but plural and participle forms are not well attested, and examples are found only in fairly late texts, which means that they could also have an analogical full-grade [ārs-] with accidental lack of plene writing.

*warpp-* "rub, scrub, twist": e.g. 1 sg. pres. *wa-ar-ap-mi* KBo XV 25 Vs 8 (MH?), 3 sg. *wa-ar-ap-zi* Tunn. II 65 (MH+), KBo XV 34 II 18 (MH+), *wa-ar-pa-zi* KBo II 8 I 21 (NH), 3 pl. *wa-ar-pa-an-zi* KUB XXIX 7 I 36, 46, 56 (MH), 3 sg. imp. *wa-ar-ap-du* KUB XIII 2 II 14 (MH), *wa-ar-ap-tu₄* KUB XIII 4 III 77 (MH(?)+), ptcp. nom. sg. c. *wa-ar-pa-an-za* KBo XIII 165 II 12 (OH+), nom. pl. c. *wa-ar-pa-an-te-es* KBo XX 51 IV 16 (U) = [warp-]. Since **wr̥* became [ur] {5.4.1.1.}, *warpp-* must continue a full-grade **werp-*; for a cognate, cf. Lith. *vir̃pti* "spin" (Oettinger, *Stammbildung* 234–5 w. refs.).



Synchronic *erC* is rare, and some apparent exceptions can continue lengthened-grade **ēRC* rather than **ĕRC* (Sturtevant). The locative of *ker* "heart" is attested in one OH+ text as *ke-er-ti* (KBo III 21 III 16, 22, 26, *ke-er-ti-it-ta* (= *kerdi-tta* "your heart") ib. III 12), but a locative with *a*-vocalism, *kar-di*, already existed in OH (*kar-di-is-si* "in his heart" StBoT 25, 102 Vs.? II 6, *kar-di-is-mi* "in their (*sic*) heart" StBoT 25, 3 I 12). The most economical explanation for these forms is that OH etc. *kardi* continues the expected full-grade **kérd-i* while *kerdi* has an analogical lengthened-grade from the nominative-accusative singular *ke-er* = [kēr] < **kḗr* (cf. Gk. κῆρ). Oblique stem forms such as abl. *kar-ta-az* StBoT 25, 7 Rs.? IV 6, dir. *kar-ta* VBoT 58 I 13 (MH+), can continue a zero-grade **kr̥d-* as in e.g. Gk. καρδία {5.3.1.}, or they can have a generalized full-grade from the locative.

For the IE paradigm see Szemerényi, *Fs Stang* 515–33 = *Scripta Minora* 172–90, and see *HEG* 3, 556–8 w. refs.. If the Palaic locative *ka-a-ar-ti* can also be derived directly from **kérd-i*, and if, as Wallace, *Sprache* 29 (1983) 159–79, has suggested, the unmarked reflex of IE **ĕ* was /e/ in Palaic, then lowering before **r* plus stop was PA.

*ērman* "sickness" (*(e)-er-ma-an* OH etc.) = [ērman] can be from **h₁ḗrmn̥* beside oblique stem **h₁r̥mn-* in e.g. *armaniya-* "be sick" {3.3.1.}.

The /ē/ of singular forms of *mi*-verbs in *C*er- (e.g. 3 sg. pres. *kuērzi* "cuts", 3 sg. pret. *kuērta*) is explained by Sturtevant and Kronasser (*EHS* 25) as having been retained analogically. It should be noted, however that the only place in the Pre-Hittite paradigm where **e* definitely would have been retained, would have been the third person plural preterit (e.g. *kuērer* = [kʷērer] < Pre-Hitt. **kʷér-ēr*). *sertapila-*, perhaps "cover, lid" (acc. sg. c. *se-er-ta-pi-la-an* KBo XV 2 Rs. 27, NH) can be analyzed as a compound with *sēr* "over, above" as its initial element (see Kümmel, *StBoT* 3, 93), and presumably its /ē/ is analogical.

### 3.2.2.2. Lowering before nasal plus consonant or word boundary

Inherited **e* was lowered to /a/ before **n* plus dental stop and before word-final **n* (Oettinger, *StBoT* 22 56 n. 17, Melchert, *SHHP* 103, *Sprache* 29, 8 n. 21, *AHP* 134–5). Forms such as *ú-en-zi* "they come" (OH) and *ti-en-zi* "they take their place, step" (OH, MH) have analogical /e/ or /ē/ from singular forms.

*uwansikē-*, iterative of *wēn(T)-* "assault, rape": 3 pl. pres. *ú-wa-an-si-kan-zi* KUB XXXI 64 I 7 (OH+), 1 pl. pret. *ú-wa-an-si-ke-u-en* KBo III 60 II 13 (OH+) = [wansikē-] < **wen-ské-*. *uwansikē-* must have been formed from the unextended full-grade stem, since **wenT-ské-* would have become ***wanzikkē-* = **[wantsikē-] with anaptyxis (cf. *azzikē-* : *ēd-* "eat"), and zero-grade **wn̥-ské-* would have become > ***unzkē-* (***unzikē-*?) with **n̥s* > *nz* as in *anze/ā-* "our" < **n̥s-é/ó-* (Melchert, *Sprache* 29 (1983) 6–8). Apparently *uwansikē-* was formed early enough to have undergone anaptyxis and lowering, i.e. **wen-ské-* > **wensiké-* > **wansiké-* (> ***wassiké-*), but the nasal was restored or retained analogically.

*kuwaskē-*, iterative of *kuēn-* "strike, kill": 2 sg. pres. *ku-wa-as-ke-si* KUB XVII 4 L. 5 = *ku-wa-as-ke-s/i* KBo XXII 82 L. 3 (both Pre-NH), 3 sg. *ku-wa-as-ke-ez-zi* KUB XXXIII 66 III 2 (MH?), 1 sg. pret. *kJu-wa-as-ke-nu-un* KBo V 8 II 38 (NH), *ku-wa-as-ke-nu-un* ib. III 31, 3 sg. *ku-wa-as-ke-et* KBo II 5 IV 18 (NH) = [gʷaskē-] < Pre-Hitt. **gʷenské-*. As Melchert, *Sprache* 29 (1983) 8 n. 21, notes, a zero-grade **gʷn̥ské-* would

have become **[guskē-]). *kwaskē-* seems to have belonged to a somewhat later chronological layer than *uwansikē-*. It was apparently formed as **g$^{w}$en-ské-* from the full-grade stem after anaptyxis had ceased being productive, but early enough to have undergone lowering, i.e. **g$^{w}$en-ské-* > **g$^{w}$anské-* > [g$^{w}$askē-].

Adjective suffix *-wānt-* = [-wānt-] from IE **-wént-* : Gk. -(*F*)évτ-, Skt. *-vánt-*, *-vat-* (< **-wn̥t-*). Plene writing of the vowel is not frequent, but it does occur in *kị-iṣ-dụ-wa-a-an-[du]-uṣ* "hungry" KUB XIV 1 Vs. 9 (MH), suggesting that Hittite inherited the full-grade.

*ispant-* "night": nom. sg. *is-pa-an-za* KUB XXV 44 II 25 (U), acc. *is-pa-an-ta-an* KUB X 81 L. 11 (OH+), *is-pa-an-da-an* KUB XXIX 55 I 2 (MH), KBo V 8 III 21 (NH), *i]s-pa-an-da-an* KBo XXIV 6 Vs. 7 (U), dat.-loc. *is-pa-an-di* KBo III 22 Vs. 6, 18, Rs. 47 (OH), *is-pa-an-ti* StBoT 25, 3 III 29 = 4, III 29, 4 III 45, StBoT 25, 6 III 12, StBoT 25, 25 IV 18, *is-pa-an-ti* KUB XX 18 VI 11 (OH+), KUB XXX 10 Rs. 18 (MH), KUB XXX 11 Rs. 15 (MH), abl. *is-pa-an-ta-az* KUB VII 1 II 18 (Pre-NH), *is-pa-an-da-az* KBo XVII 105 II 16 (NH) = [spānt-] < **k$^{w}$spént-* with simplification of the initial cluster {6.12.2.}, cf. Skt. *kṣap-* "night", Av. *xšapar-* id.

Examples and etymological refs. *HEG* 2, 409–11 *HED* 2, 431–5. For initial **k$^{w}$* see Schindler, *Sprache* 15 (1969) 166–7.

*tagān*, locative of *tēkan* "earth": *ta-ga-a-an* e.g. StBoT 25, 61 Vs.? II 16, StBoT 25, 129 Vs.? II 3, KBo XV 10 II 17 (MH), *t]a-ga-a-an* StBoT 25, 25 I 11, *da-ga-a-an* e.g. KBo XVII 75 I 5 (OH+), KUB XII 8 IV 7 (OH+), KUB XXXIII 67 I 14 (MH+), *ta-ga-an* e.g. StBoT 25, 54 II 3, *da-ga-an* e.g. KBo XXIV 1 I 8 (MH) = [dagān] < PA loc. **dag-én* with secondary zero-grade for **dhǵh-én* as in Ved. loc. *kṣámi* and PLuv. loc. **dgémm-* in CLuv. *tiyammi-* "earth" {3.2.1.5.} (cf. Melchert, *SHHP* 108).

Supine suffix *-wan: -u-wa-an, -Cu-wa-an, -Cu-an* (e.g. *i-is-su-wa-an* KBo VIII 42 Rs. 2, OH : *īssa-* "work, do") = [-wan] < **-wen*, endingless locative of a proterokinetic **-uy/-un-*stem (Melchert, *SHHP* 103). The suffix is not usually spelled with plene writing, suggesting that it was generalized from verbal stems in which it was unaccented (e.g. from iteratives, *-skēwan* with [skē] from **-ské-* {2.4.3.}, which was used frequently in the inceptive construction with *dāi-*). Since Pre-Hittite unaccented **e* became /i/ {2.6.3.}, lowering of **e* to /a/ apparently preceded raising of unaccented **e* to /i/.

Cf. also the infinitive in *-wanzi* (*-wa-an-zi, -u-wa-an-zi*) = [-wantsi] from locative **-wan* plus ablative ending **-ti*. The development **-wen* > *-wan* in the supine suggests that the first and second person plural preterit endings *-wen* (*-u-(e)-en* OH etc.) and *-tten* (*(t)-te-(e)-en* OH etc., *(t)-ten* MH etc.) must be analogical after the corresponding present endings *-weni* and *-tteni*. The expected endings **-wen* > **-wan* and **-ten* > **-ttan* may, however, have provided analogical models for the archaic present endings *-wani* and *-ttani*, although **-wan* and **-tan* were apparently universally replaced by *-wen* and *-tten*.

*anda, andan* "into" (*an-da, an-da-an*, OH etc., also *an-ta* sporadically) < **endo(m)* is cited by Oettinger, *StBoT* 22 and Melchert, *SHHP* 103.

At least one commonly cited example, the third person plural present ending *-anzi* < **-énti*, does not normally have plene writing in early texts and could, therefore, continue **-n̥ti*, generalized from acrostatic and reduplicated verbs {5.3.4.}.



The ending *-enzi* in e.g. OH *i-en-zi* "they come" and *ti-en-zi* "they step" has analogical /e/ from the singular. See, however, Melchert, *AHP* 135, who claims the vowel is not lengthened.

*antuwahha-, anduhsas-* "human being", remade from **en-dhwerh$_2$-os* : **en-dhuh$_2$s-es*, lit. "having spirit or breath within" {3.7.4.2.}.

### 3.2.2.3. Lowering before resonant plus laryngeal

Lowering of **e* to **a* occurred within PA before sequences of **r* or **l* plus **h$_2$* or **h$_3$*. Since lowering did not occur before sequences of **l* plus consonant other than laryngeal {3.2.2.}, the lowering may be an effect of the laryngeal, perhaps a laryngeal umlaut (Ringe, *apud* Kimball, *MSS* 53 (1992) 89. See also Melchert, *AHP* 83–4). Sequences of prevocalic resonant plus laryngeal resulted in geminate resonants {10.8.}.

*tarra-* "be able" (midd. *tar-ra-*, MH etc.) < **térh$_2$-o-*, cf. **térh$_2$-o-toi* in Skt. *tárate* "crosses over" (Oettinger, *Stammbildung* 298–9) {10.8.3.}; *marra-* "break up, dissolve, melt" (*mar-ra-*) < **mérH-o-* (Oettinger, *Stammbildung* 281) {10.8.3.}; *sarra-* "divide, transgress an oath" (*sar-ra-*, OH etc.) < **sérh$_3$-o-* {10.8.4.}. An example with retained laryngeal is *warhuī-* "rough, shaggy" (nom. sg. c. *wa-ar-hu-is*, acc. sg. c. *wa-ar-hu-i-in*, nom.-acc. sg. n. *wa-ar-hu-u-i)* = [warhwī-] < **werh$_2$wih$_2$-* {10.5.2.2.} (Melchert, *SHHP* 13 n. 20 w. refs.).

As Melchert notes, a zero-grade can be excluded since **wr̥h$_2$-w-ih$_2$* (cf. Oettinger, *Stammbildung* 549) should result in **urhwī-* {5.4.1.1}. An *o*-grade **worh$_2$-w-ih$_2$* should probably have become **waruī-* with loss of the root-final laryngeal {10.1.1.2.}.

Lowering of **e* also occurred before **lH*. One example is *salli-* "big" (*sal-li-, sa-al-li-, sal-la-(ya-)*) = [salli-], [sallay-] < **sélh$_2$-i-*, **sélh$_2$-oy-* with generalized *e*-grade {10.8.2.}. Another likely example is *huwallis* (n.) "pine cone, fircone" (OH nom.-acc. sg. n. *[h]u-wa-al-li-is* StBoT 25, 137 II 19) = [hwallis-] < **h$_2$wélh$_1$-es-* beside *hu-ul-li-is* (OH and later) probably with syncope {10.8.1, 3.7.4.}.

See Melchert, *SHHP* 105 n. 62; for examples see *HED* 3, 423–4.

*malla-* "grind" has both *mi-* and *hi*-forms: e.g. 3 sg. pres. *m[a-al-l]a-a-i* KBo XV 35 + KBo XV 33 I 11 (MH), *ma-al-li* KUB VII 1 II 1 (Pre-NH), *ma-al-la-i* (NH) and *ma-al-le-ez-zi* (MH+), *ma-al-li-ya-zi* (NH). The stem *malla-* = [mălla-] can continue either **melh$_2$-* (cf. OIr. *melid* "grinds", OCS *mel'ǫ*) or **molh$_2$-*, with analogical restoration of the laryngeal, cf. Goth., OHG. *malan*, Lith. *malù, málti* and Lat. *molere* {10.8.2}.

Examples *CHD* 3, 125–6; for etymological discussions see Oettinger, *Stammbildung* 277–8, Kimball, *PW* 807, and Jasanoff, *Heth. u. Idg.* 86–7 and *Reconstructing Languages and Cultures* 136–7.

*walh-* "strike": 2 sg. pres. *wa-la-ah-si* KUB XXXIV 80 I 3 (U), 3 sg. *wa-al-ah-zi* e.g. StBoT 25, 42 II 14, 14 = 43 I 12, 13 (and Post-OH), 1 pl. *wa-al-hu-wa-ni* KUB XXIII 77a Rs. 15 (MH), *wa-al-ah-hu-e-ni* KUB XXIII 83 L. 6 (U), 2 pl. *wa-al-ah-ta-ni* KUB XXXIV 49 I 3 (U), 3 pl. *wa-al-ha-an-zi* e.g. StBoT 25, 41 Rs.? III 5 (and Post-OH), *wa-al-ah-ha-an-zi* KBo II 2 I 42 (U), 1 sg. pret. *wa-al-hu-u]n* StBoT 25, 122 II 4 (and Post-OH) = [walh-] probably from root aor. **(e)wélh$_3$-t* : **(e)wl̥h$_3$-ént* (cf. Gk. εἶλον "I caught"). See Normier, *KZ* 92 (1978) 132–4, for the etymology, and cf. Lat.

*volnus* "wound", perhaps from a result noun **wolh₃-no-*. Since **wl̥* became [ul] {5.4.1.2.}, *walh-* must have a generalized *e*-grade **welh₃-*. However, the retained laryngeal in forms with endings in initial consonants (e.g. 3 sg. pres. *wa-al-ah-zi*) is analogical from the weak stem (Kimball, *MSS* 53 (1992) 79, 93).

See also {10.6.3}. The connection often made between *walh-* and *hulle/a-* "smash, defeat" (first made by Petersen, *JAOS* 59 (1939) 176; see Tischler, *HEG* 1, 223–6), depends on the loss of initial **h₂* by dissimilation (see e.g. Oettinger, *Stammbildung* 264, and Melchert, *SHHP* 16, who reconstruct **h₂welh₂-* and **h₂wl̥h₂-*) or on a metathesis of **wl̥h₃-* to *hul-* (see Normier, *loc. cit.*, who reconstructs **h₃ul-ye/o-* < **wl̥h₃-*) but neither change is certain {10.10.2.}.

Synchronic **eRH* is rare and need not continue inherited **erH₂₃*. *erhā-* "border, limit, rim" (e.g. nom. sg. *er-ha-a-as* KUB XIX 37 II 23 (NH), *er-ha-as* ib. II 45) beside *arhā-* id. is from **h₁ērh₂ó-*, cf. HLuv. *irha-* "border", which points to a PA lengthened-grade **ērh₂ó-* with **ē* > PLuv. **ī* and unaccented **ē* > Hitt. /ĕ/. An obvious outside cognate is Lat. *ōra* "border, rim, limit", and the root should be **h₁erH₂₃-*; for a primary verb, cf. perhaps Lith. *irti* "to separate" (Kimball, *MSS* 53). *sērha-*, an item used in cleaning or wiping lips (Neu, *StBoT* 26, w. n. 484; *CHD* 3, 308 *sērhas mīūs* "soft cloth"?: nom. sg. *s/e-er-ḥa-as* KBo XXII 200 Rs.? 3 (U), acc. sg. *se-e-er-h[a-an]* StBoT 25, 34 Vs. 12, inst. *se-e-er-hi-it* StBoT 25, 43 I 14, *se-er-hi-it* ib. II 16) may be a loanword from a non-IE source (Kimball, *MSS* 53). $^{GIŠ}$*ērhui(t)-* "basket" (e.g. nom.-acc. sg. *e-er-hu-i* StBoT 25, 13 I 22, inst. *e-er-hu-it* StBoT 25, 27 Rs.? 14) is perhaps also a loanword. Etymological references can be found in *HEG* 1, 109, *HED* 2, 283–4 and *u*-Stämme 156. There is no good evidence for Puhvel's claim that the word is related to *arhā-* and *erhā-* or that an original **a* is weakened to /e/ in this word {3.3.1.}. Although Starke, *StBoT* 31, 198–200, and Melchert, *CLuv. Lex.* 92–3, consider *ērhui(t)-* a loanword from Luvian, a pre-historic borrowing from Luvian should presumably have had OH /i/ < PLuv. **ī* < IE and PA **ē* (Kimball, *MSS* 53).

## 3.3. **a* (PA **a*, **o*, **R̥*)

Bernabé Pajares, *Au. Or.* 2 (1984) 189–95; Laroche, *RPh* 42/2 (1968) 246; Neu *ap.* Lindeman, *ELTh* 36–7; *Lok.* 51 n. 120; Oettinger, *Stammbildung* 196, 307 n. 12; Pedersen, *Hitt.* 165–6; Puhvel, *HED* 1, 134–5, 159, 207, 284; *AJPh* 98 (19–77) 152; Weitenberg, *u*-Stämme 190 w. refs.; Sturtevant, *CGr*[1] 52.

Most changes discussed in the literature involve synchronic /ă/ or /ā/ from IE **a*, **o*, PA **ə* from vocalized laryngeal, and **ə(R)* from vocalized syllabic resonant.

### 3.3.1. Weakening to *e/i*

Several scholars have explained alternations between °A° and °I° or °E° within paradigms or among derivationally related words by invoking sound changes that reduce or weaken an earlier /a/ to /i/ or /e/. The conditioning for this change is ill-defined. Weitenberg suggests it involves unaccented *a*, while Puhvel (*HED* 1, 207) notes that several apparent cases occur before /r/. There are, however, clear examples of unaccented /a/ beside which variants with °E° or °I° are never attested, e.g. *-an* in *pēran* "in front", *āppan* "after, following", *lāman* "name", neuters in *-an*



such as *sahhan* "courvée" etc.. For unaccented IE **a* > /ă/ (e.g. in *arā-* "friend") {2.6.2.}; for unaccented **o* > /ă/ {2.6.1.}, and for unaccented **eh₂* > [aḫ] or [ā] and **eh₃* > /ă/ see {2.9.1.2.}.

Most of the examples cited to support this change have alternative explanations. In some cases, /a/ and /ĕ/ or /ē/ reflect variants with different ablaut grades.

*erhā-* "border, edge, rim, limit" (*er-ha-(a)-*) = [ĕrhā-] and *erhā(i)-* "make a circuit" beside *arhā-* "border" etc. (Laroche, Puhvel 134–5, 284) can be explained as **h₁ĕrH₂₃-ó-* beside **h₁r̥H₂₃-ó-* {3.2.2.3.}; *ērhui-* "basket", which Puhvel (284) relates, can be a loanword from a non-IE source {3.2.2.3.}. *hastāi-* "bone(s)" beside $^{É}$*hištā-*, $^{É}$*hestā-* "mausoleum"(?) (Neu *apud* Lindeman, *ELTh*) may continue **h₂ést[H]-ó-* and vr̥ddhi derivative **h₁ēst[H]-ó-* {2.8.5.2.}. The words *ērman* "sickness" and *ermanant-* id. beside **arman-* in *armaniya-* "be sick", *armaliya-* id. (Puhvel 207) can continue **h₁ĕrmn̥* and oblique stem **h₁ĕrmn-* : Arm. *jerm* "daze, stupor" (Melchert, *SHHP* 87–8 w. refs.).

*innara-* "strength, force" and CLuv. *annara/i-* "forceful, virile" (Weitenberg) imply PA **ennar-o-* < **en-(h₂)nor-ó-* "having strength within" with raising of **e* to Hitt. /i/ before the geminate nasal {3.2.1.3.}, while *idālu-* "evil" and CLuv. *āddu(wā)l(i)-* id. (Weitenberg) are from PA **édwōl-*, which was remade as **ed(w)ólu-* in Pre-Hitt. after *āssu-* "good" (< **h₁ósu-*) and shows unaccented **e* > /i/ {2.6.3.}. The variation between MA and MI in *ma-li-it-tu*, *mi-li-it-tu* "sweet" and *ma-li-is-ku*, *mi-li-is-ku* "soft, weak" (Weitenberg) probably reflects attempts to spell [mli] {1.16.6.1.}.

### 3.3.2. Variation between *a* and *u*

Pedersen (*Hitt.* 165–6) posited a sound change by which **o* was raised to *u* in final syllables before **l*, **m*, and **n* to explain e.g. *taksul* "agreement, treaty", with *-ul* < **-ol*, *apūn*, accusative singular of the demonstrative pronoun *apā-*, with *-un* < **-om*, and the animate accusative plural ending *-us* < **-ons* or **-ōns*. He also suggested that **o* perhaps became *u* medially in *hūmant-* "all" : Lat. *omnis* id. and *hulle/a-* "fight" : Gk. ὄλλυμι "destroy". None of these etymologies, however, is still acceptable.

A few words show variation between °A° and °U°, but causes are difficult to establish, and the variation seems to have had several sources rather than reflecting a single unified change. Some words have °U° for etymological **a*, e.g. NH *hurpusta-* "leaf, peel" for MH etc. *hurpasta-*, OH etc. *muhrāi-*, a body part, for OH *mahrāi-*, if both are from **meh₂-r-*. Others have °A° for expected **u*, e.g. *harniya-* "sprinkle" for *hurna-*, *hurniya-*, unless *harniya-* has mistaken HA-AR for HUR- (see Puhvel, *HED* 3, 403), or CLuv. *tahusiya-* "keep silent, keep quiet" beside *tūhusiya-* in Hittite contexts. Most examples occur in the vicinity of laryngeals; the one exception, NH *hurpusta-* for *hurpasta-* may show /a/ > /u/ after a labial (cf. also *muhrāi-* with /u/ after /m/ or distant assimilation to the /u/ of its first syllable. It has been claimed that specific examples are Luvian or Luvian-influenced, but both Luv. *a* : Hitt. *u* and Luv. *u* : Hitt. *a* have been cited.

*hurpasta(na)-*, *hurpusta-* "leaf, peel": abl. sg. *hu-ur-pa-as-ta-az* KBo XXI 41 + KUB XXIX 7 Rs. 30 (MH), acc. pl. *hur-pa-as-ta-nu-us* KUB XXIX 1 IV 18 (OH+) with *hurpāstānus* in dup. Bo 5621 IV 13 (HED) beside dat.-loc. pl. (")*hur-pu-us-ta-as* KUB

XVII 35 IV 5, 8, 14, 31 (NH), perhaps [hurbasta-] < **h₂urbhos-to-* : Lat. *verbēna* "twig, branch" < **h₂werbhes-neh₂-* with Eichner, *MSS* 31 (1973) 75. Melchert, however (*CLuv. Lex.*76), takes *hurpusta-* as an independent Luvian formation *hurpus-ta-* from an underlying *s*-stem **hurpus-*. He suggests that *huwarpanna-* (ib. 81 w. refs., not glossed) may be related.

For examples and discussion see also *HED* 3, 406.

Hitt. *tūhusiya-* "keep quiet, keep silent" (1 pl. pres. *tu-u-hu-si-ya-u-e-ni*, 3 sg. pret. *du-hu-si-ya-at*, NH, *tu-u-hu-si-ya-it*, NH) beside Luvian *dahusiya-* id. (in Hitt. context), 1 sg. pret. *da-hu-si-ya-ah-ha* Hatt. III 63, 65 (NH) "*ta-hu-si-ya-ah-ha* (*CLuv. Lex.* 201) = [tūḫusiya-] < **téuh₂s-ye/o-* with anaptyxis {3.9.4.} : **tuh₂s-* in Skt. *tūṣnīm* "quietly, silently".

For the full-grade see {4.6.1.}.

UZU*mahrāi-, mūh(ha)rāi-*, body part of animals: acc. sg. *ma-ah-ra-en* StBoT 25, 72 II 2 beside much more numerous examples with the root vowel /u/ (also from OH on): e.g. acc. sg. *mu-uh-ra-in* KUB XXV 48 IV 10 (MH+), *mu-u-uh-ra-*/in- KBo XXIII 34 I 27 (U), *m[u-u]h-ra-an* KBo XXI 47 II 18 (MH), *mu-uh-ha-ra-in* KBo II 14 IV 2 (NH), *mu-uh-ri-i-[* ? StBoT 25, 13 IV 30, acc. pl. *mu-uh-ra-a-us* StBoT 25, 27 Vs! 5, *mu-uh-ha-ra-us* e.g. KUB X 62 V? 7 (MH) = [muhrāi-], [mahrāi-]. Weitenberg, *Heth. u. Idg.* 303, identifies the word as "shin", comparing Gk. μηρός "thigh", and reconstructs nom. sg. **meHr-ōis* > nom. **mahrāis* beside zero-grade **mHr-* > *muhr-* with anaptyxis. According to Weitenberg, the full-grade of the accusative singular *mahraen* should be analogical from the nominative. For anaptyxis in zero-grade **mHr-* cf. also Bernabe. Oettinger, *Stammbildung* 307 n. 102, explains the /u/ as Luvian. The meanings, and hence the etymologies, of the variants are not entirely certain, however. Hoffner-Güterbock, *CHD* 3, 317–9, simply define *muhrāi-* as a body part of animals, noting that it was always cooked in a pot, and although they include *mahrāi-* among their entries, they indicate that there is some doubt about whether it is the same word.

Cf. also Tischler, *HEG* 6, 225–6.

A correspondence Hitt. *a* : Luv. *u* has been suggested for Hitt. *istamin-, istaman-* "ear", *istam(m)ass-* "hear" : CLuv. *tū(m)mant-* "ear". Oettinger, *Stammbildung* 196, reconstructs **stom-n̥* : **stom-en-* : Av. *stamen-* "mouth" (< **stem-n̥-*) or **steh₃-m(e)n-* for the Hittite word, but **sth₃-men-*(?) for the Luvian (see also Melchert, *AHP* 73–4). In *F's Neumann* 235 and *Gds Kronasser* 173 w. n. 45, he reconstructs **sth₃-mn̥* for both with raising and rounding of the reflex of the vocalized laryngeal before the labial **m* in Luvian. He also suggests (*Stammbildung* 307 n. 102) that *har-ni-ya-ad-du* "let him sprinkle" in unpublished 2610 I 8 beside *hurna-* (NH) and *hurniya-* (MH+ etc.) "sprinkle" (with [hur] or [hūr-] < **h₂ur̥(h₁)-* {3.7.4.3.}) and perhaps in *muhrāi-* beside *mahrāi-* reflect a Cuneiform Luvian change of /a/ to /u/. Neither variant, however, shows up in a clearly Luvian context, and *hurna-, hurniya-* does have clear Luvian cognates in CLuv. *hur-* "give water" (ultimately from root aor. **h₂wer(h₁)-t* : **h₂ur̥(h₁)-*) and *huramman-* "watered pasture" (*CLuv. Lex.* 75–6) {3.7.4.3.}.



## 3.4. Lowering of OH /i/ before consonant clusters

Melchert, *SHHP* 153–5 and *AHP* 133, claims that OH /i/ was lowered to /e/ before obstruent clusters followed by heterosyllabic /a/ in texts from the time of Mursilis II and later: e.g. *īssa-* "work, do" > *ēssa-* (OH *i-is-sa-*, NH *e-es-sa-*), *tītha-* "thunder" (verb) > *tetha-* (OH *ti-it-ha-*, NH *te-et-ha-*), *mimma-* "refuse, deny" > *memma-* (OH *mi-im-ma-* > NH *me-em-ma-*), É*histā*, a cult building > *hestā, hesdā* (OH *hi-is-ta-a*, NH *he-es-ta-a, he-es-da-a*), cf. also *tissā(i)-* "mobilize", a borrowing from Luvian and therefore with /i/ not /e/, which is spelled *te-es-sa-(a)-i-* in texts from the reigns of Tudhalia IV and Suppiluliuma II. The spellings with °E°, however, are better viewed as changes in spelling conventions facilitated by mergers of /ē/ and /ī/ and of /ĕ/ and /ĭ/. If evidence from ritual tests in NH script and from NH copies of earlier texts of other genres is taken into consideration, the switch from °I° to °E° in some words appears, at least sporadically, earlier than the time of Mursilis II: e.g. *tītha-* "thunder" (3 sg. pres. midd. *te-e-et-ha* KUB XXXII 135 I 3, 10, MH, vbl. noun gen. sg. *te-e-et-hu-wa-sa* ib. I 8, *te-et-hu-wa-as* ib. I 5); *mimma-* "refuse, deny" (3 pl. pres. *me-em-ma-an-zi* KBo VI 3 III 21, MH, 1 sg. pret. *me-em-ma-ah-hu-un* KUB XXXVI 35 I 11, NH); *īssa-* "do, make" (3 sg. pres. *e-es-sa-an-zi* KUB XIII 2 III 17, MH(?); beside 2 sg. imp. *i-is-sa* ib. III 28); *līlhwa-* reduplicated iterative "pour" (*le-e-el-hu-an-zi* KUB XXXII 121 II 36, U, *le-el-hu-(u)-wa-*, MH+, beside *li-il-hu-wa-*, MH etc.).

The shift from °I° to °E° is also not restricted to the position before obstruent clusters or to words with /a/ in a following syllable; note e.g. *inu-* "make warm" (3 sg. pres. *e-nu-zi* KUB XLIV 61 Rs 20, NH) beside OH etc. *i-nu-*; *līla-* "conciliation": (gen. sg. *le-e-la-as*, NH); *līlā(i)-* "pacify, conciliate" (3 sg. imp. *le-e-la-ad-d[u*, MH+) beside *li-(i)-la-* (MH, OH+, MH+, NH); OH *si-i-na-* "figure" (e.g. acc. sg. *si-i-na-an* StBoT 25, 3 I 3, IV 18), but *se-e-na-*: nom. sg. *se-e-na-as* KBo XV 2 Vs. 16 (NH), acc. *se-e-na-an* ib. Vs. 6, *se-e-ni* Vs. 13; note *n-us se-e-nu-us is-sa-ah-hi* "I make them into figures" KUB XXVII 38 I 19, U); oblique stem of *wātar* "water": *ú-e-te-n°* in gen. sg. *ú-e-te-na-as* (NH), dat. sg. *ú-e-te-ni* (MH etc.), abl. sg. *ú-e-te-na-za* (MH etc.), inst. sg. *ú-e-te-ni-it* (OH+, NH) (beside *ú-e-te-n°* and *ú-wi-te-n°* (only from texts written down in the NH period {2.6.3.}).

## 3.5. **ē*

### 3.5.1. Raising after **h₂*

IE **ē* was raised to Pre-Hitt. */i/* after **h₂*. Accented **h₂ḗ* shows up as [hī], e.g. *hīla-* "courtyard" < **h₂ḗlo-* "of the enclosure", while unaccented **h₂ē* became [hī], e.g. 3 pl. pret. ending [-ir] < **-ēr* after stems in final /h/ {2.8.5.2.}.

### 3.5.2. Lowering before nasal plus consonant or word boundary

Inherited **ē* was lowered to /a/ before **n* plus a consonant or word boundary.

*sumānza-* "cord": nom. sg. *su-ma-an-za* KBo III 8 III 24 (Pre-NH), gen. sg. *su-ma-a-an-za-[na-as]* StBoT 25, 34 Vs 11 (see StBoT 26, 173), dat.-loc. sg. *su-ma-an-za-ni*

StBoT 25, 26 Rs? IV 14; a spelling *su-um-ma-* also occurs in texts written in the NH period: e.g. nom. sg. *su-um-ma-an-za-a-as* KBo X 45 II 29 (MH+), with stem [sūmānts-] based on the original nominative singular [sūmānts] < **sūmḗns* from an IE hysterokinetic nominative **suh₁-mḗn* plus animate nominative singular ending **-s* : Gk. ὑμήν "membrane". For the original inflection see Melchert, *Sprache* 29 (1983) 4, 9. Oettinger, *KZ* 94 (1980) 48–9, reconstructs holokinetic **seuh₁-mṓn* plus **-s*, but this type usually shows up with a nominative in *-ās* (cf. *ishimās* "rein" < PA **shɣimṓ-s* {7.3.1.1.}).

See also Melchert, *AHP* 144. Examples with chronology, Oettinger, *KZ* 94 (1980) 48–9.

*istanza(n)-* "soul, spirit, mind, will": nom. sg. *is-ta-an-za-as* KUB XXX 10 Rs. 15 (MH), KUB XXXIII 5 II 6 (MH), *is-ta-an-za-na-as* KUB XLI 23 II 23, 24 (OH+), *is-ta-za-na-as* ib. II 19, 21, *fi]s-ta-za-na-as* KBo XVIII 151 Rs. 14 (OH?/MH?) with loss of preconsonantal /n/ {7.4.3.1.}, acc. *is-ta-an-za-na-an* ib. KUB XLI 23 II 15, gen. *is-ta-an-za-na-as* KBo XXI 22 Vs. 14 (MH), KUB XXX 10 Vs. 9, inst. *is-ta-an-za-ni-it* KUB XVII 10 II 21 (MH), *is-ta-an-z[a-ni-it* KUB XVII 21 I 6 (MH); the nominative should be [stānts] < **pstḗn* "breast" plus PA animate nominative singular ending **-s*; cf. Eichner, *MSS* 31 (1973) 98 w. refs., and Oettinger, *KZ* 94 (1980) 59.

Examples *HED* 2, 471. For the simplification of the initial cluster see {6.12.2.}.

*pankur* "milk", "clan" (< **"that which sticks together"*): nom.-acc. sg. *pa-an-kur* KUB XXIV 14 I 5 (NH), *pa-an-k[u-ur* KBo III 27 Vs 15 (OH+), gen. *pa-an-ku-na-as-s°* KUB XIII 20 I 33 (MH+), inst. *pa-an-ku-ni-it* KUB VII 55 I 6 (U), perhaps [bāngur] < **bhḗnǵhu̯r* (Melchert, *SHHP* 22, 120, *Sprache* 29 (1983) 9 n. 23).

The oblique stem **bhénǵhu̯n-* that Melchert reconstructs, however, would have become **pinkun-* = **[biŋgun-]* with raising of **e* before the nasal plus velar.

## 3.6. Assimilation, vowel harmony, umlaut

Eichner, *MSS* 31 (1973) 76, 84 n. 5, 97 n. 70, *Lautgesch. u. Etym.* 144–7 w. n. 65, 68, 69; Forrer, *ZDMG* 76 (1922) 213; Georgiev, *Orbis* 27/1 (1978) 45; Hart, *An. St.* 30 (1980) 52; Kimball, *PW* 304–5; Kronasser, *VLFL* 48, *EHS* 389–92; Laroche, *BSL* 58 (1963) 73; Melchert, *Sprache* 29 (1983) 6, *AHP* 140–2; Oettinger, *StBoT* 22 24–5, 80 n. 4, *KZ* 92 (1980) 80 n. 27, *Stammbildung* 80 n. 63, 128, 499 n. 4, 537, 538, *Gram. Kat.* 298–9; Pedersen, *Hitt.* 167; Petersen, *JAOS* 54 (1934) 161–8; Sturtevant, *Language* 11 (1935) 175–84.

Vowel assimilation, vowel harmony or umlaut have been proposed to explain various alternations among vowels. However, most of the examples cited as evidence either reflect differing ablaut grades or have other explanations, and as Sturtevant and Hart have pointed out, the large number of exceptions and analogical replacements that have to be assumed reduce the changes posited to unverifiable hypotheses.

### 3.6.1. Assimilation of **e ... a* to *a ... a*

This change is posited by Forrer, Petersen, Pedersen, Kronasser, Georgiev and by Oettinger (*Stammbildung* 80 n. 63, 128, 499 n. 4). At best, this change is sporadic, and only the examples cited by Oettinger, which are not prehistoric, remain convincing: these are: OH *wa-ri-ta-an-zi* StBoT 25, 4 IV 34 (dup. 4 IV 38 has *wa'-ri-ta-an-zi*), but Post-OH *werite-*, *werida-* < dat.-loc. **weri-* plus **dheh₁-*, lit. "put into fear" (*Stammbildung* 80 n. 66, 128) and 2 pl. imp. *sa-as-ha-at-ten* KUB XXXVI 51 I 9 (OH+) beside NH *se-es-ha-* "order, arrange" (*Stammbildung* 63, 499 n.4). Another possible example is *asara-* "white, bright" beside *esara-* {4.5.1.4.}.

Assimilation was proposed by Petersen to explain the alternation *e* : *a* among *mi*-verbs of the *ēs-*, *as-* "be" type (e.g. 3 pl. pres. *asanzi* < **esanzi*), and it has also been cited to derive a number of words with /ă/ or /ā/ from *e*-grades. Pedersen and Kronasser claimed the change was restricted to open syllables and absolute initial syllables. Most of the words this change was proposed to explain, however, have /a/ or /ā/ from IE **o*, **ō* or **a*, **ā*; e.g. dem. pro. *āpas* < **epas*, *karāwar* "horn" < **kerawar*, *āssu-* "good", obl. *āssaw-* : Gk. ἐύς "good" (Pedersen, Kronasser), *wātar* "water" : *witen-* (Pedersen), *arawa-* "free" < **erawa-* (Kronsser), *sarā* "upwards" : *sēr* "above" (Kronasser); for the initial /a/ of *appanzi* "they take" see {10.2.5.}. Exceptions are fairly common and often occur in synchronically isolated contexts: e.g. *nēwa-* "new", *pēda-* "place", *mēnahhanda* "opposite, against", *mēmal* "ground meal". Laroche derived *samana-* "foundation" from **semana-* with full-grade **se-* (IE **seh₁-*), but the first /a/ of this word resulted from vocalized **h₁* in **sh₁món-*. The full-grade is preserved in *sem(m)nā(i)-* "construct". {10.9.1.1.}



### 3.6.2. *u*-umlaut

Pedersen proposed a change **e ... *u* > *a ... u*, deriving *wahnuzi* "makes turn" : *wehzi* "turns", *zanuzzi* "cooks" : *zēari* "is done" from forms with *e*-grade root. These words, however, can be explained as having a secondary zero-grade {2.2.4.1.}, and exceptions occur freely, e.g. *tēpu-* "little", *wēlku-* "grass, hay", *wēllu-* "meadow", *pēru-* "stone", *pēruna-* id.

### 3.6.3. *i*-umlaut

Petersen (164–5 ), Hoffmann (*apud* Eichner, *Lautgesch. u. Etym.* 145 n. 68), Eichner and Oettinger (*StBoT* 22 24–5; *KZ* 92, *Stammbildung* 537, 538, *Gram. Kat.*) claim that **e* was raised to /i/ before syllables with /i/, i.e. **e* > *i*/ *C(C)i*. Most of the examples that have been cited have other explanations, however (Sturtevant, Kimball, cf. also Melchert, *SHHP* 83–7, 93, *AHP* 140–1).

One example, *ú-i-it-ti*, dat.-loc. sg. "year" (IE **wet-*), cited by Oettinger (*Gram. Kat.*) does occur in OH (KUB XXIX 32 L. 2), but OH also attests gen. pl. *ú-i[-it-ta-an-na]* (StBoT 25, 1 Vs. 2), ambiguous *ú-E/IT-ti* (KBo III 22 L. 10) and *ú-e-et-t[a-an-t/da-an-ni-*, dative-locative of *wēttantātar* "space of a year" (KBo III 22 Rs. 64). It is not at all certain, therefore, that *i*-umlaut is the only possible explanation for its /i/ {1.6.2.4.}.

Some examples have ambiguous signs that can be read with /ē/ as well as /i/. In several examples the reading with /ē/ is supported by plene writing in early texts:

The suffix of iteratives in *-skē/a-* (e.g. *da-as-*KI-*mi*, *-si*, *-zi*), which Petersen read with **-skḗ-* > [-ski-], should be read as [skē-] with KE/I = [kē]. Note e.g. 1 sg. pres. *da-*

*as-ke-e-mi* StBoT 25, 4 IV 10 (see Sturtevant 176). PI-*di* dative-locative singular of *pēda-* "place, spot" (Eichner, *MSS* 31, 84 n. 5, *Lautgesch. u. Etym.*, Oettinger, *StBoT* 22, *Stammbildung* 538, *Gram. Kat.*) should be read as [pēdi] with PE/I = [pe]; note OH *pe-e-di(-)* (10 ex.), *pe-e-ti* (1 ex.) beside *pe-di* (1 ex.) (Kimball, *PW* 304–5). The third person singular present of *uwā-*, *we-* "come", *ú-IZ-zi* (Eichner, *MSS* 31 76), should be read as [wetṣi] or [wētṣi] {4.3.2.3.}; OH has both *ú-e-ez-zi* (e.g. StBoT 25, 3 III 13) and *ú-ez-zi* (e.g. ib. I 40).

One example probably had original *i*-vocalism: dat.-loc. sg. *i-ni-ri(-si-it)* "(his) eyebrow" in MH KBo XVII 61 Rs. 11 (Oettinger, *Gram. Kat.*), since spellings with °I° occur elsewhere in the paradigm (e.g. gen. sg. *i-ni-ra-as* in the same line; examples *HED* 2, 271–2) and in view of OH inst. sg. *i-ne-ri-i-[d]a'-at-kan* (*inerida* plus 3 sg. neut. pers. pro. *-at-* plus *-kan*) 2374/c Rs.? 5 (Neu, *StBoT* 26 p. 368), the word was probably *inera-*, not *enera-*.

Other examples occur only in Post-OH texts in which the representation of /ē/, /ĕ/ and /ī/, /ĭ/ is unreliable {1.6.}: beside *i-ku-ni*, dative-locative singular of *ekuna-* "cold", e.g. KUB XXIX 41 L. 4, 7, 10 (MH) (Oettinger, *Gram. Kat.*), note e.g. *e-ku-ni* KUB VIII 35 Rs. 11 (NH) and spellings with I elsewhere in the paradigm (e.g. acc. sg. c. *i-ku-na-an* KBo IV 9 V 47, OH+, inst. sg. *i-ku-ni-it* KUB XXIX 50 IV 18, MH); for other examples see *HED* 2, 258–9 and {1.6.3.3.}. The word is based on a *u*-stem **yégu-* (Puhvel, *loc. cit.*), probably [ĕguna-] (not [ĕg$^{w}$na-] with Oettinger {3.6.3.}]), and *i*-umlaut before an intervening /u/ is unlikely. Beside *mi-li-it* "honey" (KUB XXX 36 II 1, MH+, KUB XXXVI 89 Rs. 59, NH, KUB XXXIII 76 L. 15, MH(?)+) < **mélit* (Eichner, Oettinger, *Stammbildung* 537), note also gen. sg. *mi-l[i-i]t-ta-as* Bo 3298 + KUB XXV 32 III 37 + KUB XXVII 70 + 1628/u III 37 (OH+?) = *mi-li-it-t[a-as* Bo 3234 Rs. 1, *mi-li-it-ta-as* 617/p II 14 (Starke, *StBoT* 30) and *mi-li-ta-as* KUB XXXIII 76 L. 3. Similarly, the fientive *mili(t)lēss-* (*militiss-*, *meliteṣs-*) "become sweet" occurs only in Post-OH texts.

For examples and chronology see *CHD* 3, 250–2.

The spellings MI-, MA-, ME- (?) in *mi-li-id-du*, *ma-li-id-du*, *me-(?)li-id-du* "sweet" probably point to a "dead vowel" (i.e. [mlitu] < **mlitu* {1.16.6.1.}).

Still other examples probably have /i/ from unaccented **ĕ*: *is-si-i*, dative-locative singular of *āis* "mouth" (Eichner, *MSS* 31 84 n. 5) is perhaps from **h₁h₃-es-éi* with a zero-grade root {10.5.4.}; *ki-is-sa-ri-i*, *ki-is-sa-ri*, dat.-loc. of *kissar* "hand", is cited by Eichner, *MSS* 31 97 n. 70, and Oettinger, *StBoT* 22, *Stammbildung* 538, but *kissar* may have had /i/ from unaccented **e* generalized throughout its paradigm {11.5.2.1.}.

The sequence *e* ... *i* occurs apparently without restriction in OH in the second and third person singular present of *mi*-verbs (e.g. *e-es-zi* : *ēs-* "be", *ú-e-ek-zi* "asks for", *hu-e-ek-zi* "strikes"); in dative-locative singulars (e.g. *e-ki* "ice" KBo XXII 62 III 24, *ha-ap-pe-e-ni-ma-an* "in the flame" StBoT 25, 5 II 7, *pe-e-di*, "place" (see above), URU*Ne-e-si* KBo III 22 Rs. 55); in *i*-stem nouns and adjectives (e.g. nom.-acc. sg. n. *me-ek-ki* "numerous" KBo VI 2 IV 42, adv. "greatly", *me-ek-ki-i* (ib. II 46), *me-e-ni-i(m-me-et* "my face" KBo III 22 Rs. 52, and acc. sg. c. *ú-e-si-in* "pasture" KUB XXIX 29 Vs. 8); and in synchronically isolated words (e.g. *e-ni* "the aforementioned" < **ḗni* {7.3.2.}, *e-di* adv. "there" KBo VI 2 I 50, StBoT 25, 27 Rs.! 16, dative-locative singular of the defective third person pronominal stem *e-/a-*).



### 3.6.4. Assimilation of /a/ .... /i/ to /i/ .... /i/

Melchert attributes the suffix vowel *e/i* of inst. sg. *is-ta-mi-ni-it* KUB XXXIII 120 II 33 (NH) beside other forms of *istaman-* "ear" with *is-ta-ma-n°* to assimilation of the vowel of the suffix to the /i/ of the instrumental ending. Note, however, that MI is also found in nom. sg. *is-ta-mi-na-as* KBo I 51 Vs. 16, 17 (NH). Since the archaic instrumental of this word was *istamanta* (e.g. *is-ta-ma-an-ta* KBo XX 93 L. 4, MH?) with suffix [-an'Ta] < **-n̥T* {5.3.4.}, it is possible that NH *istaminit* = [stamēnit] is simply analogical on the model of *witēnit* "water" etc.

### 3.6.5. Palatal umlaut and replacement of OH [yē] by [ya]

Carruba, *Kratylos* 7 (1962) 157–9, *ZDMG* Suppl. I 226ff., *Sprache* 12 (1966) 83; Melchert, *SIHP* 79, 161, *HS* 103 (1990) 200 n. 8; Neu, *StBoT* 12, 52–3, *StBoT* 18, 42, 111–13; Oettinger, *StBoT* 22, 28, 34, 96, *Stammbildung* 80 n. 63, 343–4, *Gram. Kat.* 396–72, *KZ* 97 (1984) 44–57; Otten-Souček, StBoT 38, 57, 75–6; Watkins, *Idg. Gr.* III/1, 70; Zinko, *Vertretung* 27–8, 35–6, 40–1 46–7 n. 41, 52 n. 2, 57 n. 3, 81 n. 19.

Fronting of /a/ before a syllable with /y/ is proposed by Oettinger (*Stammbildung* 80 n. 63) to explain *ne-in-ni-ya-an-zi* "they drive" in KUB XXX 11 123 II 29 (MH) for *na-an-ni-ya-an-zi*. As Oettinger himself notes, however (ib. 491), analogy to *pennai-* "drive away" is also possible.

Replacement of OH CI-E(C) = [Cyē], [Cye] by CI-YA- = [C'ya] in MH and NH texts in the paradigms of *mi*-verbs in *-iya-* is well known in the literature on text-dating (see Heinhold-Krahmer et. al., *Probleme* 159–61, 194–6 and Melchert, *AHP* 141 for references), e.g. from the Law Code: *pe-es-si-ez-zi* "throws" KBo VI 2 IV 6, 7 (OH) = *pe-es-si-ya-zi* KBo VI 3 III 79, 80 (MH); *da-a-i-ez-zi* "steals" VI 2 III 23 = *ta-ya-az-zi* VI 3 III 26, *da-a-i-ya-zi* KBo VI 6 I 33 (in NH writing); *tu-u-ri-ez-zi* "harnesses" VI 2 IV 12 = *tu-u-ri-ya-zi* VI 3 IV 7; *ú-e-mi-ez-zi* "finds" KBo VI 2 IV 11 = *ú-e-mi-ya-zi* VI 3 IV 4; *ú-e-mi-<ez>-zi* (sic) VI 2 IV 12 = *ú-e-mi-ya-zi* VI 3 IV 6). It is also clear that variation between YA and I-E occurred in the same forms of paradigms even within OH (e.g. *hu-la-a-li-ya-mi* StBoT 25, 6 III 14, *hu-la-a-li-e-mi* StBoT 25, 4 IV 23 or *pe-es-si-e-mi* StBoT 25, 3 IV 22 = 4 IV 8, *pe-es-si-ya-mi* StBoT 25, 4 IV 18). There has been little general agreement, however, on whether the replacement resulted from sound change (e.g. Watkins, Neu) or from the analogical extension of the *o*-grade suffix [-ya-] < **-yo-* at the expense of *e*-grade **-ye-*. A third point of view (e.g. Kronasser, *EHS* 509, Zinko) holds that °E° or °I° and YA were graphic variants for the same sound. Carruba, who first established the relative chronology of spellings, envisioned a change of *e/i* to /ya/, but he originally posited simple thematics in **-e/o-* as the IE starting point for verbs of this class, a view which is not supported by the evidence.

Kronasser considered YA a representation for [ye]. Rosenkranz derived the spellings in CI-E° from abbreviatory spellings for YA (  ) with the first three horizontal wedges omitted (i.e.  = E), but the spellings in CI-E° are clearly earlier. Zinko (27–8, 35–6, 40–1, 46–7 n. 49, 52 n. 2, 57 n. 381–2 n. 9) claims that use of °E°

in the value [ya] began in the *mi*-verbs in *-iya-*. Once the distribution of the suffixes [-ye-] and [-ya-] had been disrupted by analogy to the point where it was no longer motivated morphologically, °CI-E could be interpreted by scribes as a variant spelling for [ya]. In some cases (presumably in paradigms in which [ya] had been generalized) NH spellings with °E° or °I° reflect false archaisms, i.e. the scribe knew that OH °E° or °I° corresponded to [ya] in his speech and felt free to use it in this value.

Oettinger, *Stammbildung* 343–4, considered replacement analogical, noting that since the OH distribution of *e*-grade and *o*-grade thematic vowels was not what would be predicted based on evidence from the other IE languages, the analogical extension began prehistorically, and OH already had, for example, second person singulars in [-yasi] beside [-yesi] < **yé-si*. The MH and NH developments would, then, simply consist of the more widespread expansion of the *o*-grade suffix (he noted too that there are scattered examples from MH and NH of third person plural preterits in [-ya-], e.g. *a-ni-ya-er* KBo XII 3 III 10 (OH+).

Melchert, *SHIP* 161, provides a brief discussion of arguments for sound change or analogy. He notes several examples from outside the verbs in *-iya-* that could point to a phonological change, but also provides alternative analogical explanations for each: e.g. *suppiyasni* beside *suppiesni* : *suppiyassar* "purity" could show [ye] from [ya], but the [ya] could also be analogical from related words such as *suppiyahh-* "purify" and *suppiyant-* "pure"; similarly *huettiyassar* beside *huettiessar* could have [ye] > [ya], or the latter could be analogical to base verb *huēttiya-* "drag, draw"; *i*-stem nominative plurals in *-iyas* = [-yas] could be derived from **-yes*, but nouns other than *i*-stems have nominative plurals in *-as* (IE **-ōs*), and **-yes* is not the only possible source. He remarks that the strongest argument for considering the replacement analogical in the verbs is that it spread throughout paradigms gradually, noting that [ye] is rarest in first person singulars (which suggests early replacement), slightly less rare in second person singulars (although these are not well attested), and most common in third person singulars, a distribution difficult to explain in purely phonological terms.

Oettinger (*Gram. Kat.*, *KZ* 94) posits umlaut of [ya] to [ye] before a syllable with one of the front vowels /i/ or /e/, e.g. *pēssiyami* "I throw" (with suffix [-ya-] < **-yo-*) > *pēssiyemi*. According to Oettinger, this rule interacted with loss of intervocalic **y*, and its conditioning was at times obscured by analogy, producing complex variation in paradigms with inherited **yo*. He sets forth the following relative chronology: umlaut of **ya* to **ye* before syllables with **i* or **e*, analogical extension of **ye* or **ya* within paradigms (which obscured the original conditioning for the umlaut rule), loss of intervocalic **y*, and finally, a widespread morphological undoing of the effects of umlaut by the replacement of [ye] with [ya] in productive paradigms. These changes, he asserts, would explain variants like OH *pe-es-si-e-mi* beside *pe-es-si-ya-mi*, *me-mi-e-ni*, dat. sg. of *memiya(n)-* "word, thing" beside *me-mi-ya-(an)-ni* with analogical [y] and *me-mi-ni* (read as [mem(i)yeni] (*Gram. Kat.* 300–1). Similarly, he explains the variants *zé-e-a-ri*, *zé-i-e-ri* and *zé-e-ya-ri* "is done, is cooked" (from **séih₁-o(ri)*) as reflecting different stages in this series of changes (*Gram. Kat.* 304). The phonologicaly regular reflex of a **zéyori* would have been **zeyeri* (with *i*-umlaut) > *zēri* with later loss of intervocalic **y*. The variant *zi-i-e-ri* (read as [zeyeri] or [tseyeri](?) shows umlaut, and *ze-e-ya-ri* shows analogical restoration of the [y]. This complex interchange of phonological and analogical changes is not, a priori, impossible, but its very complexity makes it difficult to find possible counterexamples that might falsify it. There are, however, at least two words which have original [yē] but do not attest variants with [ya]. Significantly, both occur as members of paradigms in which allomorphs in [ya] were not inherited.



The demonstrative pronoun *sīe-* = [syē-] < **syé-* (9.5.1.1.) does not have variants with *si-ya-*, but it is rare and confined to OH and MH texts (where it looks archaic and unproductive) and to NH copies: gen. sg. *si-i-e-el* KUB I 16 II 47 (OH+), abl. *si-e-ez* KBo XXIV 57 Rs. 6 (MH+), dat.-loc. *si-e-da-ni* StBoT 25, 104 II 7, Bo 3752 Vs.? II 7 (StBoT 26 n. 489), *si-e-ta-ni* KUB XIV 1 Rs. 36 (MH). It is conceivable, then that the lack of variants in [ya] is due to chance. An original post consonantal [yē] which never varies with °I-YA also occurs in the animate nominative plural of the relative-interrogative pronoun (*ku-i-e-es* e.g. StBoT 25, 14 II 13, *ku-i-es* StBoT 25, 13 II 7, StBoT 25, 61 Rs? 3 = 62 L. 10 = [kʷyēs] < Pre-Hitt. **kʷy-és* (9.5.1.1.).

A few of Oettinger's examples probably have glide insertion in sequences of [ēa] > [ēya], e.g. *mē(ya)n°* (a measurement of time) in loc. sg. *me-e-a-ni* (OH, MH), *mi-e-ya-ni* (OH?/MH? ), *me-i-ya-ni* (MH), gen. *me-e-ya-ni-as* (MH), *me-(e)-ya-ni-ya-as* (MH) = [mēan°], [mēyan°] < PA **méh₁-h₂on-*; similarly *ze-e-ya-ri* = [zēayri] or [tsēyari] for [zēa(ri)] ([tsēa(ri)] and *ne-e-ya-ri* = [nēyari] beside OH *nēa*, *nēant-* with [nēa-] probably have [ēa] > [ēya] (9.3.1.3.). Some apparent examples can have other explanations, e.g. *a-ri-es-se-sa* (with loss of final *-r*) (OH+) and dat.-loc. sg. *a-ri-se-es-ni* beside *a-ri-ya-se-es-sar*, *a-ri-ya-se-es-n°* "oracle-site", "divination" have syncope of [ya] (3.7.3.).

In a couple of words, CI-E-C° may be a false archaism or "backspelling" based on the idea that E is equivalent to YA: *me-mi-e-ni* (OH+, NH), dat.-loc. of *memiya(n)-* "word, thing matter" beside *me-mi-ya-ni* (NH), inst. *me-mi-ya-ni-it* in (NH) and *me-mi-ni* (NH) and *me-mi-ni-it* in with syncope (3.7.3.); derivatives of PA **miyah-wént-*: *mi-e-hu-wa-an-da-hu-[ut]* in KUB XXI 5 IV 50 (NH) (perhaps with etymological spelling -HU-WA- beside 3 sg. pres. *mi-ya-hu-un-te-zi* (OH+), *mi-ya-hu-un-te-es-z[i']* (NH ) and *mi-hu-un-ta-tar* (OH+), gen. sg. *mi-ya-hu-un-da-na-as* (MH), *mi-hu-u n-ta-ah-hu-ut* (NH), with syncope (3.7.3.1.).

## 3.7. Syncope

### 3.7.1. Prehistoric syncope

Eichner, *MSS* 31 (1973) 55, *Flexion u. Wortbild*. 81 n.5.

Prehistoric syncope of short **a* (< IE **o*) or **e* is likely in several words. Eichner (*Fl. u. Wb.*) describes syncope after long initial syllables in the vicinity of liquids. There are also a few likely examples after short syllables.

*kekla-* "greens, edible vegetable matter" in acc. sg. *uliliyas-ma ke-ek-la-an* "green k.'s" (hap. leg.) KUB IV 4 Vs. 10–11 (NH, vocab. = Akk. *sa[a]m-mi* "green plants" ib. L. 10a) = [kēkla-] < **kḗkolo-*, cf. Skt. *śāka-* (m.) "potherb, vegetable", Lith. *šḗkas* "fresh

mown grass", Latv. *sēks* id., and perhaps ON *hā-* "aftermath, second crop of hay" (f.), if from Gmc. **hēkōn-* "greens" (Eichner, *loc. cit.* and Tischler, *HEG* 4, 570 w. refs.).

*marlant-* "fool, idiot": nom. sg. *mar-la-an-za* KBo XIII 1 IV 2, 8 (NH, vocab.), KBo XIII 83 L. 3 (NH), acc. *mar-la-an-da-an* KBo XIII 34 IV 18 (OH+); also *marlahh-* "make foolish" (MH?), *marl(a)iskē-*, iterative of a **marlā(i)-*, "become crazed, mad": e.g. *mar-li-is-ke-et-ta* KBo XXVI 136 Vs. 9 (OH), *mar-la-is-ke-et-ta* ib. Vs. 10, *mar-la-is-ke-et-/ta* Vs. 11, *mar-la-is-ke-e/t-ta* Vs. 14; *marlessant-* "foolish" (participle of a **marlēss-* "become foolish"): nom. sg. c. *mar-le-es-sa-an-za* KUB XIV 3 IV 40 (NH), nom.-acc. sg. n. *mar-le-es-sa-an* KUB XVIII 10 IV 32 (NH); *marlātar* "foolishness": *mar-la-tar*, e.g. KBo IV 14 II 10 (NH), KUB XXIV 7 I 52 (NH), *mar-la-/tar* ib. I 55. These words imply a base adjective *[mārla-] or *[marlā-] "foolish" < **mór-o-lo-* or **mōr-o-ló-* (Eichner, *loc. cit.*) or perhaps **mōr-e-lo-*, cf. Gk. μωρός "dull, stupid".

Examples *CHD* 3, 191.

Syncope of **e* after a syllable with a short vowel may have occurred in *kekri-* (*kikri-*) a spread put on bread: nom. sg. *ke-ek-ri-is* (*ki-ik-ri-is*) KBo II 4 II 17 (Pre-NH) and 176/N I 5 (*HEG*), if it belongs as a Middle Eastern culture word with Lat. *cicer* "chickpeas", Macedonian κίκκαροι id., Arm. *siseṙn* id., and OPruss. *keckers* id.

See Tischler, *HEG* 4, 570 w. refs. and Eichner, *loc. cit.* Ernout-Meillet, *Dict. ét.* 119, noting Arm. *siseṙn* (with **k̂*) but OPruss. *keckers* (with **k*), suggest that the word is a non-IE loan word, presumably borrowed independently in the early dialectal period.

In two words, the development of secondary **ns* to *nz* (7.8.3.) may provide evidence for syncope. The word *gēnzu* (*ge-(e)-en-zu*, *ke-e-en-zu*) a body part, possibly "sexual organ" and/or "lap", is derived by Eichner (*MSS* 31) from **génasu* < **ǵénh₁-su* : **ǵenh₁-* "give birth/beget". However, the meaning of *gēnzu* and, therefore, its etymology, are not entirely certain (Weitenberg, *u*-Stämme 164–6 w. refs.). $^{SAL}$*siunz-anna-*, a priestess, lit. "mother of the god": nom. sg. $^{SIAL}$*si-un-za-an-na-as* StBoT 25, 13 IV 22 (OH) and $^{SAL}$*si-wa-an-za-an-na* IBoT I 29 I 58, II 12 (OH+), nom. pl. $^{SAL.MEŠ}$*si-wa-an-za-an-ni-is* KUB XIII 2 II 32 (MH?) = [syuntsanna-], [siwantsanna-] is likely to be from **syunos-anna-* (= gen. **syunos* plus *anna-* "mother") with syncope (7.8.3.).

Syncope also occurred in *sumrā(i)-* "be pregnant", iterative supine *sum-re-es-ke-wa-an* KUB XXIV 8 III 11, Pre-NH from **sūmar-ā(i)-*, a denominative from an unattested **sūmar* < **séuh₃-wr̥*, verbal noun of *sūwa-* "fill".

Cf. Oettinger, *Stammbildung* 159, 298 n. 78, who reconstructs **sū-war* from **séuh₂-wr̥*.

Other examples of prehistoric syncope are less certain.

*ēslit* (*ēslet*), first person singular imperative of *ēs-* "be" (*e-es-li-it* e.g. KUB XXXVI 35 L. 6 (NH), KBo V 3 IV 33, Supp I+), is derived by Eichner, *Fl. u. Wb.* 81, from **ḗs(s²)alidh(i)* = first person singular present subjunctive **h₁esoh₂* plus **-l(i)-* (< *lē* < **leh₁*, imp. "let!") plus imperative particle **dh(i)*. There is no other evidence that Anatolian inherited the IE subjunctive, however, and unaccented **eh₁* became /ĕ/ (2.7.2.).

*tabarna/labarna*, title assumed by Hittite kings, is derived by Eichner, *Fl. u. Wb.* 81 n. 5, from **d/labr̥na* (with secondary vocalization of **r* between non-syllabics) < **d/labrana*, with syncope after heavy syllable, < **dhabhro-no-* : **dhab(h)-* in Lat. *faber* "artisan", Slav. *dobrŭ* adj. "good", MHG *tapfer* "brave", Arm. *darbin* "smith", and within Anatolian, CLuv. *tapar-* "govern" (borrowed into Hittite as *tapariya-*).



See *HEG* 5, 34–41 and 8, 116–119 w. refs. on these words. MHG *tapfer*, however, perhaps belongs with *dapi-* "all" (6.4.2.1.).

One possible source for *aus-*, beside *au-*, *u-* "see", is the extended stem **awis-* in Skt. adv. *āviṣ* "openly", Gk. impf. αὖον "hear, comprehend" < **ἀϝισ-ον* (originally from an aorist), cf. the stem **awiz-dh-* in αἰσθάνομαι "I understand", and Lat. *audire* "to hear". With syncope an original **awis-ti* would have become [austṣi] (cf. Pedersen, *Hitt.* 173).

## 3.7.2. Syncope within the historical period

Syncope is possible in *wilnā-* "clay": gen. sg. *ú-il-na-a-as* StBoT 25, 4 III 8, IV 14, *ú-i-il-na-as* StBoT 25, 3 I 41, III 8, *ú-i-il-n/a-a/s* ib. IV 18, beside inst. *ú-i-la-ni-it* KUB XIII 2 II 15 (MH?), acc. pl. *ú-i-la-nu-us* StBoT 25, 137 II 16 and dat.-loc. sg. *ú-li-ni-i* KBo III 46 III 13 (OH+) = [wīlnās] <**wīlanā-*.

Examples, discussion, Goetze, *Tunn.* 63–4, Oettinger, *KZ* 94 (1980) 52 n. 29.

$^{SAL}$*ḫazha(r)a-* "female musician, percussionist" (or sim.): nom. pl. $^{SAL.MEŠ}$*ḫa-az-qa-ra-(a)-*, *ḫa-az-ga-ra-(a)-i*, *ḫa-az-ka-ra-ya-*, beside $^{SAL.MEŠ}$*ḫa-zi-ka-ra-(a)-* and *ḫa-az-ḫa-<ra>-ya-za* KUB XII 2 I 4 (NH), *ḫa-az-ḫa-ra-ya/* ib. I 7, *ḫa-az-ḫa-ra-a-i* KUB XLII 92 II 7 (NH), */ḫa-az-ḫa-ra-a-i/* ib. IV 6, is ultimately a derivative of *ḫazzikē-*, iterative of *ḫatt-* "strike". As Puhvel, *HED* 3, 280–1, notes, forms with anaptyctic /i/ as in the base [ḫatsikē-] are always spelled with a velar (*ḫa-zi-ik-qa-ra-(a)-* etc.) and never **ḫa-zi-ḫa-ra-(a)-*, and if, as Puhvel suggests, the change of velar to /h/ is the result of a preceding /s/ and not assimilation of *ḫ ... k* to *ḫ ... ḫ* (10.10.3.), then the anaptyctic vowel was lost through syncope, i.e. /ḫatsik-ara/ ‣ [ḫatskara-] ‣ [ḫatshara-].

## 3.7.3. Syncope of *a* in the vicinity of *y*

Catsanicos, *BSL* 81 (1986) 147 w. n. 154; Crossland, *TPS* 1951, 124–5 w. n. 2; Eichner, *MSS* 31 (1973) 58–60, *Heth. u. Idg.* 52 n. 23; Friedrich, *Heth.* 25–6, *HE* 27; Goetze, *Madd.* 139; *JCS* 14 (1960) 71b; Melchert, *SHHP* 90 n. 23, 102, 133, 146, *AHP* 85, 173; Neu, *IF* 76 (1971) 67–8; Oettinger, *Gram. Kat.* 300 w. n. 13, 306 n. 38; Sommer, *AU* 38–9.

### 3.7.3.1. Likely examples

There is ample evidence for syncope of /ya/ to /i/ or /e/, although this change was earlier described as contraction (Friedrich, Goetze, Sommer, Crossland). Several of the most certain examples are derived forms to which secondary suffixes have been added. In some cases, they may reveal details about the synchronic accent. Examples are found in texts of all periods, and it is likely that the spellings °I° (Post-OH also °E°) for -(CI)-YA- record a sporadic syncope that occurred in natural speech and that variants with and without syncope coexisted in speech for some time.

Syncope of the thematic vowel is fairly regular in iteratives from dissyllabic and polysyllabic stems in *-iya-* in OH and MH texts. It may point to an accented suffix

vowel in synchronic terms, i.e. [°Ciyc/a-skḗ/á-] (with [skḗ] < *-sḱé- and [skă] with analogical [ă] {2.4.1.}) > [°Ciskc̄/a-] (Melchert, *SHHP* 102, *AHP*). Syncope occurred both in iteratives derived from originally suffix-accented primary *-yé/ó- verbs and denominatives and in iteratives from verbs in *-iya-* with originally accented roots or preverbs.

From denominatives and primary suffix-accented verbs: *an-ni-is-k°* (OH etc.) : *aniya-* "work, do"; *e-ed-ri-is-k°* (OH, MH) : *ēdriya-* "feed"; *sa-ak-ku-ri-is-k°* (MH etc.) : *sakkuriya-* "overpower"; *za-ah-hi-is-k°* (OH etc.) : *zahhiya-* "fight"; from verbs with unaccented suffix: *pi-is-si-is-k°* (OH), *pe-(e)-es-si-is-k°* (MH etc.) : *pēssiya-* "throw"; *u-e-mi-is-k°* (MH etc.) : *uemiya-* "find". OH and MH texts spell the suffix vowel consistently with °I°.

As Melchert notes, iteratives from monosyllabic stems do not show syncope, e.g. *si-(i)-e-es-k°* (OH etc.) : *sīe-*, *siya-* "shoot, spurt; *mi-(i)-e-es-k°* (OH etc.) : *māi-*, *miya-* "grow, ripen, flourish".

Other examples of syncope of [ya] are more sporadic.

*ariyasessar* "oracle-site", "divination" (*a-ri-ya-se-es-sar*, *a-ri-ya-se-es-n°*) from *ariya-* "use divination" plus *asessar* "establishment, site, encampment", vbl. noun of *asās-*, *asēs-* "settle", shows syncope in nom.-acc. sg. *a-ri-es-se-sa* with loss of final *-r* KBo III 60 I 9 (OH+) {8.8.1.} and in dat.-loc. sg. *a-ri-se-es-ni* KUB XVIII 8 L. 8 (NH); *mi-(e)-hu-un-t°* "old" can be from **miyahuwant-* (Eichner, *MSS* 31 (1973) 59 {3.7.4.1.}).

The agent noun $^{LÚ}$*ispantuzziyala-* "libation-bearer" (*is-pa-an-tu-uz-zi-ya-la-*) has syncope in nom. pl. *is-pa-an-tu-uz-zi-la-as* KUB XIV 8 Rs. 39 (pre-NH), acc. pl. $^{LÚ.MEŠ}$*is-pa-tu-uz-zi-e-la-as* (with archaic nom. pl. ending *-as*) KUB XIV 11 IV 9 (Pre-NH). The related *ispantuzziyassar* "libation vessel" sometimes also has syncope (e.g. *iṣ-pa[-a]n-tu-z[i]-sar* KBo XI 50 I 24, OH+, *is-pa-an-tu-uz-zi-sar* KBo IV 9 II 51, OH+, *is-pa-an-tu-uz-zi-es-sar* KUB XX 87 I 10, OH+). Both words are ultimately from *ispantuzzi-* "libation" : *ispānt-* (*sipānt-*) "make a libation" (*HED* 2, 438–40, see Oettinger 306 n. 38).

A few dative-locative singular forms of *memiya(n)-* "word, thing, matter" show spellings that might indicate syncope: *me-mi-e-ni* (OH+, NH), *me-mi-ni* (NH) beside *me-mi-ya-ni* (NH); similarly, the instrumental singular is spelled *me-mi-ni-it* in KUB XXXIII 86 III 6 (MH+) beside *me-mi-ya-ni-it* in KUB XXI 19 + 1193/u II 8 (NH). Examples *CHD* 3, 268–9; (Goetze, Oettinger 300).

In *mēyani-*, a unit of time of unclear duration, the locative *mēni* and genitive *mēnias* can be derived via syncope from *mē(y)ani*, *mēnias*. The earliest variant is OH [MU.KAM-*za*] *me-e-a-ni* KBo XXV 5 I 4, and forms with secondary glide insertion (*me-(e)ya-ni*, *me-(e)ni-ya-as*) occur from MH on. The syncopated variant mēni also occurs from MH on (e.g. loc. *me-e-ni* KBo XX 53 + KBo XXIV 19 I 9, MH, gen. *me-e-na-as* KUB XXVII 1 I 22, NH). Examples *CHD* 3, 229–34.

Note *me-e-e-ni* KUB XLII 105 III 6 (NH) with unusual hyperplene, and *me-i-e-ni* ABoT 1 I 3 (Pre-NH) with hyperplene and I for OH /ē/. For the etymology see {9.3.1.3.}.

In OH texts, the stem of $^{LÚ}$*ḫalliyari-* "singer", "singer priest" occurs as (nom. pl.) *ḫal-li-ri-es* (examples Neu, *StBoT* 26, 44–5). This spelling occurs in later texts too, but beside *ḫal-li-ya-ri-* without syncope and beside sporadic examples of *ḫal-li-e-ri-* (Oettinger 306 n. 38).



For Post-OH examples see Pecchioli Daddi, *Incunabula Graeca* 79, 222–7 and *HED* 3, 30–1. A spelling *ḫal-li-e-ya-ri* (absolute case) is found in KBo XXV 171 VI 8 (OH+); cf. nom. pl. *ḫal-li-ri-es* ib. IV 5.

Melchert (*SHHP* 90, 133) suggests that *ti-i-in-ti-es* IBoI I 36 II 6 (MH) participle of *tiya-* "step" and 3 pl. pres. *ti-i-in-zi* StBoT 25, 54 II 15 should be read [tintēs] and [tintṣi] from [tiyantēs] and [tiyantṣi] with syncope.

Causative in *-inu-* < *-*ya-nu-*: sporadic examples are found both for *mi*-verbs in *-iya-* and for *ḫi*-verbs in *-ya-*; e.g. from *mi*-verbs in *-iya-*: 3 pl. pres. *ḫa-li-nu-an-zi* KUB XXIX 40 III 27 (MH), KUB XXIX 45 I 14 (MH), KUB XXIX 50 I 28 (MH), cf. *ḫa-li-ya-nu-wa-an-zi* KBo VIII 49 L. 7 (MH) : *ḫāliya-* "kneel"; 3 pl. pres. *ka-ri-nu-wa-an-zi* KUB I 17 VI 31 (OH+), KUB XII 8 II 21 (OH+), beside 3 sg. pret. *ka-ri-ya-nu-ut* KUB XIV 3 I 11 : *kāriya-* "cover"; *kat-kat-ti-nu-an-zi* KBo III 2 Vs. 3, 24, 40, L. edge 3 (MH+), 3 sg. pret. *kat-tat-te-nu-ut* KBo VI 29 II 13 (NH) : *katkattiya-* "tremble"; 1 sg. pret. *gi-im-ma-an-da-ri-nu-un* KBo IV 4 IV 41 (NH), but *gi-ma-an-ta-ri-ya-nu-un* ib. III 56 : *gimandariya-* "spend the winter"; 3 pl. pret. *la-ah-la-ah-hi-nu-e-*<*nu-e*>*-er* KUB IX 34 III 31 (MH+), *la-ah-la-ah-hi-nu-us-ke-er* KUB XXXV 146 II 16 (NH) : *lahlahhiya-* "be agitated, anxious"; from *ḫi*-verbs: 1 sg. pret. *pi-in-nu-nu-un* KUB XIII 35 I 14 (NH), perhaps from *penna-* "drive"; 3 sg. pres. *pit-ti-nu-uz-zi* KBo VI 2 II 10 (OH), *pit-ti-nu-zi* KUB XIII 5 II 29 (MH(?)+) = KUB XIII 6 II 13 (MH(?)+), *pit-te-nu-uz-zi* KBo VI 3 II 29 (MH), *pit-te-nu-zi* KBo X 45 II 52 (MH+), 3 sg. imp. *pit-te-nu-ud-du* ib. II 54 : *piddai-*, *pittiya-* "flee" (Sommer).

*ḫalihla-*, *ḫalihliya-* "kneel" with "broken reduplication": e.g. 2 sg. pres. act. *ḫa-li-ih-la-la-ti* KBo III 34 II 21 (OH+), midd. *ḫa-li-ih-li-is-ta-ri* (sic) KBo VII 28 + KBo VIII 92 L. 4 (MH), 3 sg. pres. act. *ḫa-li-ih-la-i* KUB XIV 1 Rs. 10 (MH), cf. stem *ḫalihliya-* in 3 pl. pres. midd. *ḫa-li-ih-li-ya-an-da-a-ri* KUB XXIX 1 IV 1 (OH+) = [halihla-], [halihlya-] < **ḫalyaḫalya-* beside unreduplicated *ḫāliya-* (Melchert 146).

Examples *HED* 3, 31–2.

Apparent *i*-stem neuter nominative-accusative singulars in *-in* rather than *-i* can be explained as coming from neuter forms of adjectival derivatives of *i*-stems in *-ant-* with syncope [-y-an] > [-in]: e.g. *su-uḫ-mi-li-in* "well fixed" KBo X 37 Vs. II 33 (OH+) < **suḫmiliyan* : *suḫmiliyant-* "well fixed" (Catsanicos); *su-up-pi-in* KBo XII 39 II 13 (NH) < *suppiyan* : *suppiyant-* "pure" (Catsanicos). The adverb SIG$_5$*-in* "well" (e.g. KUB XXXI 105 L. 4, MH, also NH), if it can be read [laṭṣin], can be from a nominative-accusative singular neuter **lazziyan* : *lazziyant-* "good" (Goetze, *JCS* 14, Eichner, *Heth. u. Idg.* 52 n. 23, Melchert 133, 146). Although the OH nom. sg. c. *la-az-zi-is* (adj.) "good" (StBoT 25, 111 III 13) is from an *i*-stem adjective, the adverb should be derived from a neuter, and the expected neuter of the *i*-stem adjective is **la-az-zi*. *i*-stem inflection of *dapiya-* "all, whole", *ḫantezziya-* "first" and *appizziya-* "last", e.g. nom. sg. c. *ḫa-an-te-ez-zi-is* e.g. KUB XXXIII 68 III 8, 10 (MH), *ap-pi-iz-zi-is* e.g. KUB XIII 20 I 3 (MH+), acc. sg. c. *da-pi-in* e.g. KUB V 1 I 14 (MH +?), *ḫa-an-te-ez-zi-in* KBo XVII 43 IV 4 (MH), *ap-pi-iz-zi-in* e.g. KBo V 2 I 2 (Supp. I), can be partially the result of syncope and partially analogical (Goetze, *Madd.* 139, cf. Neu, *StBoT* 18 108–9, and note e.g. *sānezzi-* "excellent", which is always inflected as an *i*-stem).

### 3.7.3.2. Unlikely examples

Some examples that have been cited have other explanations.

*sḫi-i-ni*-III-*ta* KBo VI 10 IV 10 (OH+) : *siuniyahh-* "be stricken with illness by a god" (Friedrich, *HE*) is probably to be read *si-u-ni*-AH-*ta* = [syunyahta]. Instances of *i*-stem inflection for nouns in *-āi*: e.g. nom. sg. *sa-an-ku-is* "fingernail" KUB XXIV 13 II 19 (MH+) beside regular *sa-an-ku-wa-is* appear to have analogical *i*-stem inflection rather than syncope (Weitenberg, *Heth. u. Idg.* 302). As Oettinger (306 n. 38) suggests, *ta-i-iz-zi-la-as-sa* = [tāiṣilass-a] KUB XIII 9 II 8 (MH+) for *tāyazzil* "theft" (*ta-(a)-ya-az-zi-il*) : *tāyc/a-* "steal" might show syncope after a long initial syllable, but this spelling, which is apparently unparalleled, could simply be a mistake with IZ for AZ. *lahla(ḫ)ḫima* "anxiety" (*la-ah-la-(a)-(ah)-ḫi-ma*, NH), derived by Melchert (146) from **lahlaḫḫiya-* via syncope, can have *-ima-* for *-ēma-* with raising of **ē* after the stem-final laryngeal (2.8.5.2.).

## 3.7.4. Syncope of *a* in the vicinity of *w*

Crossland, *TPS* 1951, 106, 124–5; Eichner, *MSS* 31 (1973) 59, 88 n. 22, *Heth. u. Idg.* 52; Friedrich, *HE* 27; *StaatsV* 91; Goetze, *Madd.* 137–8; Jucquois-Le Brun, *Heth. u. Idg.* 137–8; Kronasser, *EHS* 78–81; Melchert, *SIHHP* 52–3, 105 n. 62, *AHP* 173; Neu, *StBoT* 18, 44; Oettinger, *Stammbildung* 231, 441–2; Pedersen, *Hitt.* 172; Sommer, *AU* 134; Sturtevant, *CGr*$^1$ 58–9, *CGr*$^2$ 22; Zinko, *Vertretung* 35.

Variation in spelling between WA and °U° within paradigms and among related derivatives has long been noted. This variation has been described as contraction of [wa] to [u] (Sommer, Crossland 106, Sturtevant, *CGr*$^1$, *CGr*$^2$, Goetze), emphatic lengthening of [u] to [(u)wa] (Oettinger 231), a phonological or orthographic replacement of *u* by *(u)wa* for other reasons (cf. Neu, *StBoT* 18), who claims that WA is more recent than °U°), and as syncope of /a/, i.e. [wa] > [u] (Pedersen, Eichner, Oettinger 441–2, Melchert, Jucquois-Le Brun). Kronasser and Zinko suggest that U and Ú had dual readings, each representing both /u/ and /uwa/. Sturtevant and Melchert point out that the variation probably does not have a single cause and that it is important to separate out possible cases of ablaut (**uwa* : **u* or **ua* : **u*) and possible mistakes.

As Melchert (*SIHHP* 52–3) notes, several of the mostly likely examples of syncope are suffixed forms where the syncope may be associated with extra word length or a shift in synchronic accent caused by the addition of a derivational suffix. Possible examples occur from OH on, but even where syncope is a possible explanation for variation between WA and °U° there are no clear examples of syncope as a regular, conditioned change. Syncope also occured in Luvian, and several forms that have been cited are Luvian or Luvicized.

### 3.7.4.1. Likely examples

The most nearly regular example is **mihunt-*, **miyahunt-* "old" for **mi(ya)huwant-* in derivatives, e.g. *mihuntahh-* "make old": 2 sg. imp. *mi-hu-un-ta-ah-hu-ut* KBo IV 10 Rs. 11 (NH), cf. *mi-e-ḫu-wa-an-da-hu-[ut]* in KUB XXI 5 IV 50 (NH, with "back-spelling" CI-E- for CI-YA-); *mihuntatar* "old age": *mi-hu-un-ta-tar* KUB XXIX 1 II 36



(OH+), gen. sg. *mi-ya-hu-un-da-na-as* KUB XII 63 Vs. 13 (MH); *mihuntē-* "beco old, live long": 3 sg. pres. *mi-ya-hu-un-te-zi* KUB VIII 29 I 2 (OH+); *mihuntēss-* id sg. pres. *mi-ya-hu-un-te-es-zi[]* KUB XIV 12 Vs. 12 (NH). The source for **miyahu* is undoubtedly a possessive adjective in **-went-* attached to a stem **mi(y)ah$_2$-*, p haps from an abstract **miH$_1$3-éh$_2$* "ripeness, growth" from the root of *mīya-*, *m* "grow old, ripen, mature". The base adjective in **-went-* was formed in PA **mi(y)ah$_2$-wént-*. Further derivation, which preceded PA voicing, appare entailed a shift of accent, e.g. stative **mi(y)ah$_2$want-ā-* (with PA **-ā-* < *-*éh$_1$-*) > H [miyaḫwantē-] with PA voicing of the laryngeal in an unaccented syllable (10.4.2 (Eichner, *MSS* 31, 58–60, 88 n. 22, Melchert, *SHHP*).

See Tischler, *HEG* 6, 206–7, for additional refs. It is impossible to tell exactly how reg syncope was in these words, since spellings with the ideogram ŠU.GI predominate in all p ods. The spelling -HU-WA- occurs only in NH *mi-e-hu-wa-an-da-hu[-ut]*, but the "backspelli MI-E- for MI-YA- of its first syllable suggests that -HU-WA- might also be an attempt at mological spelling, reflecting the scribe's notion that [hu] came from [huw].

$^{DUG}$*lelhundāi-*, $^{DUG}$*lelhuntalli-*, names for vessels: acc. sg. *le-el-hu-u-un-da* KUB XX 19 IV 18 (OH+) = *l̥e-el-hu-un-ta-al-li-in* in dup. KUB XXXIX 8 IV 10 (O and denominative *lelhundā(i)-*, "pour from a *lelhundāi-* or *lelhuntalli-* vessel", derivatives of **lilhuwant-*, participle of the reduplicated verb *lilhuwa-* "pour" (M chert, *SHHP*).

Examples *CHD* 3, 60.

*huwarti-* "concoction, decoction" and its derivatives are Luvo-Hittite, a although the derivatives occur as early as OH, it seems impossible to distingu loanwords from Luvian from forms inherited directly in Hittite. The apparent ba the *i*-stem noun *huwarti-*, first occurs in NH (nom. sg. *hu-u-wa-ar-ti-[is]* KUB XLII L. 7, acc. sg. *hu-wa-ar-ti-in* KUB XXVIII 1 Vs. 6) and may be strictly Luvian (Puhv *HED* 3, 437–8 and Melchert, *CLuv. Lex.* 81). Syncope is consistent in derivativ *hurtiya(l)la-* "infusion-vessel, decoction bowl": acc. sg. *hu-ur-ti-ya-al-la-an* StBoT 2 3 I 7, *hu-ur-ti-ya-[(al)-la-an]* ib. I 13, dat.-loc. *hu-ur-ti-ya-li* ib. I 7, dir. *hu-ur-ti-ya-[l ya* ib. I 16, *hu-ur-ti-ya-li-ya* ib. I 17 = *hu-ur-ti-ya-li-ya* 4 I 11, *hu-ur-ti-ya-l[i-ya* ib. I 1 *hurta(l)li-* "concoction, mass, blob", divine name $^{D}$*Hurtaliya-*: e.g. gen. sg. $^{D}$*Hu-u ta-li-as* KBo XXI 49 I 3 (U), $^{D}$*Hu-ur-ta-li-ya-as* ib. III 11, $^{D}$*Hu-ur-ta-li-[y]a-as* KBo X 38 Vs. 5 (MH?), nom. pl. *hu-ur-ta-li-is-s°* KBo XVII 61 Rs. 17 (MH+); denominati verb *hurta(l)liya-* "commingle, concoct, confound, subvert": 3 sg. pres. *hu-ur-ta-li- zi* KUB I 16 III 38 (OH+), 3 pl. pres. *hu-ur-ta-li-an-zi* StBoT 25, 54 I 16, *hu-ur-ta-li-u zi* ib. I 30, *hur-tal-li-ya-an-zi* VBoT 3 Vs. 10 (OH+), 3 pl. pret. *hu-ur-tal-li-e-er* KUB 16 III 43; *hurtalim(m)a-* "subversion": e.g. *hu-ur-ta-li-im-ma-an* KUB XXXI 4 + KB III 41 Vs. 10 (OH+).

Puhvel suggests that these words belong with Lith. *vérdu* "boil, seethe."

Beside *huwanhuessar* "wave, waters" (e.g. nom.-acc. *hu-wa-an-hu-es-sar* KU XVII 10 I 26, MH, *hu-wa-an-hu-e[s-sar* KUB XXXIII 10 Vs. 2, MH, dat.-loc. *hu-wa an-hu-is-ni* KBo III 21 II 8, OH+, abl. *hu-u-wa-an-hu-es-na-az* KUB XXXIII 86 II 8 MH+) a reduplicated stem *hunhu(n)-* appears in NH and MH+ texts: nom.-acc. s *hu-un-hu-ni-es-sar* KUB XXXIII 89 + XXXVI 21 III 16, 20 (NH), *h[u-un-hu-ni-es-sa*

KUB XXXIII 33 L. 6 (MH+), erg. *hu-un-hu-ni-es-na-an-za* KUB XXXIII 89 + XXXVI 21 III 17, gen. *hu-un-hu-es-na-<as>* KUB XXXVI 12 II 7 (NH), *hu-un-hu-es-na-as* ib. II 8; the stem *hunhu-* also occurs in *hunhuwātar* "wave": gen. *hu-un-hu-wa-na-as* (sic) KBo III 7 II 16, 20 (OH+) and in *hunhumazzi-* id.: nom.-acc. sg. n. *hu-un-hu-ma-az-zi* KBo III 8 III 1 (Pre-NH), *hu-un-hu-ma-az-<zi>°* ib. III 20 (only in this text and perhaps a Luvicism, Beckman).

Examples and discussion Beckman *JANES* 14 (1982) 21–3, Puhvel, *HED* 3, 426–8. The dative-locative *hu-un-hu-es-ni* (sic) KUB IV 8 Rs. 3 (OH+) could be a mistake for *hu-un-hu-ni-es-ni*.

Beside *huwalpant-* "humpback" (nom. sg. *hu-wa-al-pa-an-za* KBo XIII 34 IV 4, OH+) derivatives with syncope, *hulpanzana-, hulpanzina-, hulpanzena-* "hump, protuberance, embossment", are found from MH on: e.g. dat.-loc. sg. *h]u-ul-pa-an-za-ni* KBo XIII 31 I 6 (MH), nom. pl. *hu-ul-pa-<an>-zi-e-ni-es* KBo XXX 20 III 6 (OH+), *hu-ul-pa-<an>-ze-ni-es* ib. III 12, *hu-ul-pa-an-za-na-as* KUB XLII 69 Vs. 26 (NH); denom. *hulpanzinā(i)-* "emboss": ptcp. nom.-acc. sg. n. e.g. *hu-ul-pa-an-zi-na-an* KUB XLII 39 L. 10 (NH) and Luvoid *hu-ul-pa-an-zi-na-i-ma-an* KUB XLII 69 Rs. 16, *hu-ul-pa-an-zi-na-i-me-es* KUB XII 1 IV 35 (NH) beside Hitt. *hu-ul-pa-zi-na-an-te-es* ib. IV 35. A stem *huwalpa-* occurs in Luvian texts (cf. *huwalpantiār-, CLuv. Lex.* 80) and in acc. pl. c. *hu-wa-al-pa-zi-nu-us* (KBo XVIII 159 III 6, NH), where it is either analogical to *huwalpant-* or a Luvicism.

Examples *HED* 3, 424–6.

*nekmuntātar* "nakedness" (*ne-ek-mu-un-ta-tar]-ra* KUB XXI 18 IV 10, Supp. I) = [negmuntādar] < **negmuwantādar* for **neg$^{w}$mantādar*, derivative of *nekumant-* = [neg$^{w}$mant-] "naked" (Melchert, *SHHP*, cf. also Tischler, *HEG* 7, 309 w. refs.).

In other words, syncope is likely, but its conditioning is obscure.

*sanhu-* "roast": 3 pl. pres. *sa-an-hu-un-zi* KBo IV 2 I 11 (OH+), ptcp. *sa-an-hu-ta* ib. I 62, *sa-an-hu-un-da* VBoT 24 I 17 (MH+) beside ptcp. nom. sg. c. *sa-a-an-hu-wa-an-za* KBo IV 2 II 29, 3 sg. imp. *sa-an-hu-wa-an-du* KUB XXXIII 68 + Rs. 29 (MH) (Sturtevant, *CGr*$^{1}$, Melchert).

The original inflection was athematic; note 3 sg. pres. *sa-an-hu-uz-zi* KBo XVII 105 III 3 (NH).

*su-un-ta-an* IBoT I 36 II 41 (MH) for *sūwantan*, participle (acc. sg. c.) of *sūwa-* "fill" (cf. *ti-in-te-es* for *tiyantes* with syncope ib. II 6). The spelling SU-UC- is also attested in two middle forms of the verb where it may also indicate syncope (Oettinger 441–2, Melchert): 3 sg. pret. *su-ut-ta-ti* KBo VI 34 III 17 (MH+), 3 sg. imp. *su-ut-ta-ru* ib. III 21 (cf. stem *sūwa-* in e.g. 3 sg. pres. *su-wa-at-ta-ri* KUB XIII 2 III 24 ,MH?, pret. *su-u-wa-at-ta-at* KUB XXX 30 Rs. 10 , OH+ = *su-wa-a]t-ta-at* KBo X 20 IV 27, OH+).

As Melchert (*SHHP* 53) notes, *suttati* and *suttaru* could instead be from an athematic middle (**seuh$_3$-*); cf. the athematic stem in OH it. 2 sg. pres. *su-us-ke-si* StBoT 25, 110 II 22.

For *huwallis, hullis* "pinecone, fircone" both *hu-wa-al-l°* and *hu-ul-l°* occur from OH on: nom.-acc. sg. *h]u-wa-al-li-is* StBoT 25, 137 II 19, *hu-ul-li-is* StBoT 25, 25 I39 = [hwallis] < **h$_2$wélh$_1$es* {10.8.2.}. The related *huwallissar* "pine/fircone collection" has *hu-wa-al-l°* in OH loc.? pl. *hu-wa-al-li-is-na-as* StBoT 25, 138 Vs.? 10, but *hu-ul-l°* in



dat.-loc. sg. *hu-ul-li-es-ni* KUB XLV 5 III 5 (NH) (Melchert, *SHHP* 105 n. 61). It is possible that syncope was regular in the derivative, but OH *huwallissar* shows analogical restoration of [hwall], and *hullis* shows analogical generalization of the syncopated form.

*annauli-* beside *annawali-* "of equal rank, peer": nom. sg. c. *an-na-wa-li-is* KUB XIV 3 IV 56 (NH), but *an-na-ú-li-is* ib. II 14 and *an-na-ú-li-is* KBo XXII 6 I 25 = *an-na-ú-li-i]s* in dup. KBo XII 1 I 5 (both OH+), gen. sg. *an-na-ú-li-ya-[as]* KUB XIV 3 II 14, nom. pl. c. *an-na-ú-li-e-es* KUB XXI 5 III 25 (NH), perhaps from demonstrative pronoun *anna-* plus *-wal(l)-* "strong" (Sturtevant, *CGr*$^{1}$).

Examples, etymology Puhvel, *HED* 1, 64–5.

Eichner, *Heth. u. Idg.* 52, explains acc. sg. *ke-nu-un* "knee" in KUB IX 34 III 34 (MH+) and nom. sg. c. *ge-nu-us* ib. III 37 as reflecting **genuwan*, nominative-accusative singular of an extended form **genuwant-* via syncope. The animate nominative indicates that the copyist misunderstood *ke-nu-un* as an animate *u*-stem.

$^{NA_4}$*ku(wa)nna(n)-* "copper" is a cultural word from the same source as Gk. κύανος "copper" (*HEG* 4, 668–92). The spelling *ku-un-n°* which occurs from MH on, appears to be the earlier and may show sporadic syncope: *ku-un-na-an* KUB XXXIII 96 I 10 (NH ), gen. sg. *ku-un-na-na-as* KUB XVII 21 III 2, 23 (MH), KUB XXIX 4 I 9 (NH), *ku-un-na-as* KUB IX 28, I 18 (MH+), inst. *ku]-un-na-ni-it* KUB XXIX 1 III 39 (OH+); with stem *ku-wa-an-n°*: acc. sg. *ku-wa-an-na* KUB XXIV 12 III 12 (NH), *ku-wa-an-na-an* KBo IV 2 III 18 (OH+, cf. *sa-an-hu-un-zi* ib. I 11, *sa-an-hu-ta* ib. II 62 : *sanhu-* "roast" with syncope), gen. *k]u-wa-an-na-na-as* KUB XXIX 12 II 7, abl. *ku-wa-an-na-na-za* KUB VI 24 I 2, 6 (U); perhaps **kuan-á* > [kuwannā-] with doubling of the nasal and glide insertion [ua] > [uwa] {9.7.5.2.}.

Cf. Melchert (53).

### 3.7.4.2. Unlikely and problematic examples

Some examples of spelling variation between WA and °U° may reflect ablaut, although often with considerable analogical distruption of the distribution of full- and zero-grades in the original paradigm (Melchert, *SHHP*).

A likely example of ablaut is *ur-* "be burning" : *war-* (trans.) "burn". The stem *ur-* occurs in the middle in OH and in some later texts, e.g. 3 sg. pres. *ú-ra-a-ni* StBoT 25, 4 III 44, KUB XXXII 8 III 23 (OH+), *ú-r]a-a-ni* KBo IX 127 + KUB XXXVI 41 I 6 (NH), *ú-ra-a-r]ni* ib. I, 20, 29, imp. *ú-ra-a-nu* KUB XII 28 L. 8 (U). The stem *war-* occurs in the hapax 3 sg. act. pres. *wa-a-ra-i* "sets on fire" KUB XVII 27 II 26 (OH+), in the causative *warnu-* and in forms of the middle from MH on (note e.g. 3 sg. imp. *wa-ra-a-r]nu* KUB XVII 10 III 16, MH, *wa-ra-a-ni*, MH+ etc.). According to Melchert, *SHHP* 11 n. 13, *war-* reflects a regular full-grade **wor-* in 3 sg. act. **wór-ei* > **wāri* > them. *wārai*), while *ur-* continues a zero-grade from the middle, e.g. 3 sg. **ur-ó-ri* > *urāni* (with dissimilation {8.9.1.}); the *war-* of the causative should be from the active (note that both are transitive in opposition to the middle, and *warnu-* looks like a simple replacement for archaic *warai* "set on fire").

Examples *StBoT* 5, 188–90.

*ūrr-* : *wārr-* "help, come to the aid of". The verb shows up with a zero-grade root reflecting **wr̥h₁-* in 3 pl. pret. *u-ur-re-er* KBo III 60 II 7, while the noun has a stem *wārr-* : e.g. dir. *ú-wa-a-ar-ra* KBo III 41 + XXXI 4 Vs. 3 (OH+), nom. sg. *wa-ar-re-es* KUB XXXIIII 55 L. 8 (OH+), dat.-loc. *wa-ar-ri* KUB XXI 47 Vs. 19 + KUB XXXVIII 32 Vs.! 24 (MH), gen. *wa-ar-ra-as* KUB XXIII 72 Rs. 20 (MH) = [ūrr-] < **wr̥h₁-* (Melchert, *SHHP* 12 n. 20), beside [wārra-], ultimately from **wōrh₁-* : Gk. ἦρα.

For *ūr* < **wr̥H* (2.2.3., 5.4.). Since **wōrh₁-* would have become **wōr-* with loss of the laryngeal after **ōr* (10.1.1.2.), the geminate [rr] of the noun must be from the verb.

The distribution of -WA-AH-H° and -UH- in *antuwahha-* = [andwaha-] and *antuhsa-* = [anduhsa-] "human being" can reflect ablaut (Melchert, *SHHP* 52–3). The stem *antuwahha-*, which is not common, occurs chiefly where a strong stem would be expected in an ablauting paradigm: nom. sg. *an-tu-wa-ah-ha-as* KBo XI 12 I 1 (MH+), KUB XIII 29 I 3 (MH+). KBo XX 73 IV 5 (NH), *an-tuh-wa-ah-ha-as* KUB XXIV 3 I 41 (MH+), *an-tu-u-wa-ah-ha-as* e.g. KUB XXIX 4 I 1 (NH), nom. pl. *an-tu-wa-ah-hi-es* KBo III 60 II 16 (OH+), *an-tu-wa-a[h-h]i-iș* ib. II 2. In early texts, NH copies from earlier exemplars, and sporadically in later texts, a number of examples of *antuhs-* occur in oblique stem forms where the weak stem would be expected: gen. sg.? (pl.?) *an-du-uh-sa-as* StBoT 25, 3 I 23 = 4 I 18 (see StBoT 26 n. 118), dat.-loc. *an-tu-uh-si* e.g. KBo XVII 54 I 8 (MH), KUB XII 58 I 13 (MH+), *an-tu-u-uh-si* KUB XLIV 64 I 15 (NH); *an-tuh-se* e.g. KUB XLIV 61 Rs. 7, *an-t[u-uh-se* ib. Rs. 9, *an-du-uh-si* e.g. KBo XXIII 23 Rs. 58 (MH), abl. *an-tu-uh-sa-az* KUB XII 57 I 6 (NH), inst. *an-t[u-uh]-si-it* KUB IX 34 I 15 (MH+), dat.-loc. pl. *an-tu-us-sa-as-s°* KBo IV 1 I 43 (OH+), *an-tu-uh-sa-as* KUB XXX 10 Vs. 7 (MH), gen. pl. *an-tu-uh-sa-an* KUB XXXVI 79 II 45 (MH+). The stems [andwaha-] and [anduhsa-] were remade from strong and weak stems of an ablauting *s*-stem paradigm: **en-dhwe̯h₂-os* : **en-dhuh₂s-es*, lit. "having spirit or breath within" = **en-* "in" plus **dhwe̯h₂-* "breath, smoke, spirit", cf. *tuhhuwāi-* "smoke", *tuhhima-* id., Skt. *dhūmaḥ* "smoke", Lat. *fūmus* id. and Gk. θυμός "spirit, breath, soul", ἔνθυμος "inspired" (cf. Puhvel, *HED* 1, 82, after Eichner, *Sprache* 25 (1977) 77, Oettinger, Stammbildung 337.3 and Melchert, *SHHP* 52–3).

The distribution of strong and weak stems was considerably modified by analogy at a fairly early date, and [anduhs-] tended to spread at the expense of [andwahha-]; note: nom. sg. *an-tuh-sa-as* e.g. KUB VII 53 I 7, 8 (MH+), acc. sg. *an-du-uh-sa-an* KUB XXIIII 77 L. 51 (MH), *an-tu-uh-sa-an* KBo XXI 6 + (KUB IX 34) Vs. 12, 13 (MH+), KBo VI 3 I 26, II 48 (MH), *an-tu-uh-sa-[an]* ib. II 55, *a[n-tu-uh]-sa-an* KBo XVII 54 I 7 (MH), *an-tu-uh-sa-an-n* KUB XIV 1 Vs. 38 (MH), nom. pl. *an-du-uh-se-es* e.g. KBo XII 62 Rs. 13 (MH), KBo VIII 35 II 23 (MH), *an-tu-uh-se-es* KUB XIV 1 Vs. 52, acc. pl. *an-du-uh-su-us* KBo III 69 III 12 (OH+), *an-tu-uh-su-us* VBoT 1 L. 25, and conversely, gen. sg. *an-tu-wa-ah-ha-as* KUB XXX 10 Vs. 23 (MH).

The OH genitive singular *us-tu-la-as* "of sin" KUB XXIX 29 I 10 should point to an original **wn̥st-(w[)* beside full-grade **wems-* in *wastul* (< **wems-tw[)* and *wasta-* "sin", *wastāi-* c. "a sin" (Melchert) (7.8.1.).

Variation is recorded for *huwart-*, *hurt-* "curse". Neu considers the stem *huwart-* more recent than *hurt-*. Sturtevant (*CGr*[1]) and Goetze regard *hurt-* as secondary, and Oettinger (441–2) derives *hurt-* from *hwart-* by syncope. Eichner (*MSS* 31, 74) and Melchert (52–3) consider the alternation *hwart-* : *hurt-* ablaut. The earliest examples, which are MH, have *hwart-*: ptcp. nom.-acc. sg. n. *hu-wa-ar-ta-an* KBo XXXII 14 II 21 (MH), *hu-wa-[a]r-ta-an* KBo XXI 41 + KUB XXIX 7 Vs. 61 (MH). Since a zero-grade would be expected in the participle, if this verb did ablaut, the inherited distribution of full- and zero-grades would have had to have been disrupted by analogy fairly early; *hwart-* also occurs in several forms where a full-grade would be expected: 1 sg. pres. *hu-u-wa-ar-tah-hi* KUB XXXIII 117 IV 8 (NH), 1 sg. pret. *hu-u-wa-ar-[da-ah-hu-un* KUB XXVI 71+ I 7 (OH+), 3 sg. pret. *hu-wa-ar-ta-as* KUB XXII 70 Vs. 86 (NH), but *hur-ta-as* ib. Vs. 8; the variant *hurt-* is found only in texts written in the NH period, but it occurs both in singular forms where the strong stem would be regular and in the plural and participle where the weak stem would be regular: 3 sg. pres. *hur-da-a[n]-i* KUB IX 15 II 15 (NH), 1 sg. pret. *hur-ta-ah-hu-un* KUB XXIII 45 L. 15 (NH), *hur-da-ah-hu-un* KUB XXXVI 47 L. 5 (U), 3 sg. *hur-za-as-ta* KBo X 45 I 4 (MH+), 3 sg. imp. *hur-za-as-du* KUB XVII 27 III 18, 20 (MH+), pl. *hur-ta-an-du* KBo VI 34 IV 12 (MH+), ptcp. nom. sg. c. *hur-ta-an-za* KUB XXII 70 Rs. 14, nom.-acc. sg. n. *hur-ta-an* KUB XXX 44 L. 13 (NH), nom. pl. c. *hur-ta-an-te-es* KUB XIV 17 II 12 (NH); it. *hurzak-* (*huwarzak-* only in vbl. noun *hu-u-wa-ar-za-ke-u-wa-ar* KBo I 45 Rs. 2 (NH, vocab., beside *hur-za-ke-u-wa-ar* ib. Rs. 6) = [hwart-], [hurt-] from **h₂wr̥t-*, **h₂wr̥t-* (?), cf. O.Pruss. *wert-* "swear" (Neu, *Kratylos* 12 (1967) 165).

Examples *HED* 3, 433–7.

*kuwāliu-*, *kūliu-* adj. "dark, blue"? or "light, pure, clear"? (referring to a color or quality of water) and derivatives may show both ablaut and syncope. The adjective paradigm seems to have retained traces of ablaut: nom.-acc. sg. n. *ku-wa-a-li-ú* KUB XVII 10 I 26 (MH), *ku-wa-li-ú* KUB XXXIII 2 I 11 (MH), KUB XXXIII 24 I 25 (MH+), *ku-wa-li-e* (sic!) ib. I 28 beside acc. pl. *ku-li-ya-mu-us* KBo XIII 86 Vs. 18 (OH), nom.-acc. sg. (?) *ku-l[i-ú* KUB XXXIIII 33 I. 4, 6 (MH+), *ku]-li-ú-ma* KBo XV 30 III 4 (MH+?), perhaps with analogical zero-grade. Derived verbs have *ku-(ú)-li-*: fientive *kūliess-*: 3 sg. imp. *ku-ú-li-e-es-du* KBo XV 30 II 6 (OH+), *ku-li-ya-u-e-es-du* ib. II 2; factitive *kuliyawahh-*: 2 sg. pres. *ku-li-e-i[?]-a[?]-wa-a-aḫ-ha-ti* KUB XXXVI 100 Vs. 6 (OH) = *ku-li-e-i-a-wa-ah-ha-ti* in dup. KUB XXXVI 101 III 11 (OH+); form unclear: *ku-li-ya-ah[-* KBo XII 100 Rs. 6 (U) = [kwālyu-], [kulyaw-]. Although Melchert (53) and Weitenberg, *u*-Stämme 117–8, suggest that the derived verbs show syncope, it is possible that they were derived from the weak stem *[kulyau-] of the adjective.

See Weitenberg, *loc. cit.*, for forms and discussion. Weitenberg proposes the meaning "clear, bright, pure" and suggests that *kuwāliu-* belongs with Arm. *šoł* "lightbeam" < **k̂wolo-* and *nšoł* "light" < **ni-k̂wolio-*: **k̂eu-* "be light" (*IEW* 594). See now Puhvel, *HED* 4, 303–5, who convincingly translates "flowing (smoothly), soothing, calm, quiescent" and reconstructs **g[w]-yo-*, comparing Gk. βάλλω "flow", Skt. *galati* "drips" and OHG *quellan* "well up". If this etymology is correct, then *uwa* would be secondary.

The alternation WA : °U° in *hwapp-*, *hupp-* "treat badly" and the adjective *hwappa-* "bad", which Melchert (*SHHP* 52–3) considered ablaut, may be mostly an illusion. There may be as many as three distinct verbs that have traditionally been conflated here: *hwapp-* "treat badly" and adj. *hwappa-* "bad" < **h₂wop-* : Gmc. **ubela-* (< **upelo-*) in e.g. Goth. *ubils*, OE *yfel* "evil" (Watkins, *Idg. Gr.* III/1, 30) or < **h₂wap-* with *a*-vocalism (Eichner, *Laryngaltheorie* 133 w. n. 35), which seems to have generalized a full-grade; a *hi*-verb *hwapp-* "throw" < **h₂wop-* : Skt. *vápiti* "throws" (Melchert, *HS* 101 (1988) 233 n. 31) and a third verb, *huppā(i)-*, meaning something like

"entangle, ensnare, blend" with a zero-grade root (cf. Puhvel, *HED* 3, 384–86). Only in *hu-u-up[-pandu* IBoT III 114 Rs 4 (U) for *hu-wa-ap-pa-an-du* in dup. KUB VII 46 Rs. 12 (U) (from *huapp-* "harm") does any of these verbs show variation, and this may reflect the scribe's confusion with *huppā(i)-* rather than syncope or ablaut.

Puhvel derives *huppā(i)-* from the equivalent of **h₂uebh-* or *h₂uep-* : Skt. *ubhāti* "weaves", Gk. ὑφαίνω "I weave", ὑφή "web", OHG *weban* "to weave", OE *wefan* id. The variant with **p*, however, does not occur elsewhere. Peeters, *Unters.* 71–2, 115, 117f8, 121, 124, finds that while there is no positive evidence for a laryngeal in the Greek, Indic and Germanic words, there are no phonological obstacles to positing loss of the reflex of **h₂* in ὑφαίνω and derivatives.

### 3.7.4.3. *(u)wa* for *u*

It is possible that /u/ became [wa], although the conditioning behind this change is obscure. In several words °U-WA- appears to be more recent than °U° and is unlikely to have an analogical source in a non-syncopated related form or in a related form with full-grade. This phenomenon has been noticed before. Neu (*StBoT* 18), for example, considers *hu-wa-ar-t°/d°*- a neologism in *hwart-*, *hurt-* "curse". Several of these unexpected spellings with °U-WA- are from texts that are Luvian influenced, suggesting that °U-WA- may be a Luvicism in these words, cf. Sommer, *AU* 23 n. 1, who considered WA for °U° an Arzawan feature.

*hwarn* in it. 3 sg. pres. *h[u-u-wa-ar-ni-is-ke-ez-zi* KBo XII 59 I 7 (NH) beside *hu-u[r-ni-es-ke-ez-zi* ib. I 3 and inf. *hu-ur-nu-wa-an-zi* (NH) is clearly secondary, since the verb is from a nasal present **h₂uṛ-né-h₁-* with zero-grade root {5.4.1.1.}.

HU-WA- for HU also shows up in *huwarā(i)-* for *hurā(i)-* "spray" (3 pl. pres. *hu-u-wa-ra-an-zi* KUB VI 24 Vs. 6, U); otherwise the stem is *hurā(i)-*: 3 pl. pres. *hu-u-ra-i-ir* KUB XXIX 1 III 40 (OH+), ptcp. nom. sg. c. *hu-u-ra-an-za* KUB XXXIX 61 III 9, 10 (U). A Luvian participle occurs in abl. *hu-ra-am-ma-ti* KUB XXVI 43 Vs. 12 (NH). These forms, and CLuv. *hur-* "give liquid" in 3 sg. pret. *hurta* (*CLuv. Lex.* 75) should be from a root aorist **h₂uerh₁-t* : **h₂uṛh₁-ént* beside the nasal present **h₂uṛnh₁-* in *hurna-*, *huruiya-* "sprinkle" and Gk. ϝοάνω "I sprinkle" {5.4.1.1.}. Although the participle *hūranza* (with **uṛh₁* > [ūr]) could have the expected weak stem **h₂uṛh₁-ónt-*, it is not clear whether the third person plural present *huwaranzi* is from the analogically extended strong stem **h₂uer(h₁)-* or whether *hu-u-wa-ar* is late and secondary.

Examples, discussion *Stammbildung* 151, 307, *HED* 3, 397–8.

$^{LÚ}$*huldāla-* "officator" (or sim.): the stem *huldāla-* is found from MH on: nom. sg. $^{LÚ}$*hu-ul-da-a-la-s°* KBo XVII 74 I 32 (MH, dup. of StBoT 25 I 33, which is not preserved here), cf. also it. 3 sg. pres. *hu-ul-te-es-ke-ez-zi* "officiates"(?) KUB XXIX 1 II 31 (OH+); *huwadāla-* occurs at least twice in undated but presumably later texts: nom. pl. $^{LÚ.MEŠ}$*hu-u-wa-da-a-la-an-zi* (with Luv. ending) KBo XII 53 + KUB XLVIII 105 Rs. 32 (NH), *hu-wa-an-ta-lu-us* (sic) 299/1986 I 3 (*HED*).

For examples and discussion see Puhvel, *HED* 3, 369–70, who tentatively compares Goth. *waldan* "be in charge."

$^{GIŠ}$*lahhurnuzzi-*, *lahhuwarnuzzi* "foliage": a spelling with WA occurs once (acc. sg.?/pl.? *la-ah-hu-wa-ar-nu-u[z-zi* KBo XXII 216 L. 4, NH); otherwise the word is spelled *la-ah-hu-ur-nu-(uz)-zi*, MH etc.), *la-ah-hur-nu-(uz)-zi*, OH+, MH+, NH), erg. *la-ah-hu-ur-nu-uz-zi-an-t[e-es* StBoT 25, 124 III 12.



The word has no etymology; see *HEG* 5, 16 and *CHD* 3, 15–17.

*uktūri-* "eternal" is perhaps spelled *wa-aḳ²-tu²-u-ri-is* KUB XXXIII 120 I 6 (? otherwise it is spelled as *uk-tu-u-ri-* from OH on (e. g. StBoT 25, 3 II 43, III 2, 4 II

*hu(wa)hhurti/a-* "windpipe, throat"; the earliest attestation is *hu-uh-hu-u* KBo XXI 6 Rs. 9 (MH, case unclear); the stem *huhhurt-* also occurs in: nom. sg./pl. n. *hu-uh-hur-ta* KBo XII 96 I 10 (OH+), acc. sg. *hu-uh-hur-ti-in* KUB VII 15 (Pre-NH); the stem *huhhwart-* is NH and Luvian (*CLuv. Lex.* 71): dat.-loc. sg. *hu-wa-ah-hur-ti* KUB VII 18 L. 1 (U), *hu-u-wa-ah-hu-[* KUB VIII 36 III 1 (NH, unclear); the derivative *hu(wa)hhu(wa)rtalla-* "necklace" has *huhhwart-* in nom.-sg./pl. *hu-wa-ah-hu-wa-ar-ta-al-la* KUB XV 23 Vs. 15 (NH) and Luv. gen. adj. *hu-hur-ta-a[s-sa-an-za* (*CLuv. Lex.* 7), but otherwise it is made from the stem *huhh*

Examples *HED* 3, 418–9.

$^{SAL}$*si-wa-an-za-an-na* "mother of the god (OH+), nom. pl. $^{SAL.MEŠ}$*si-wa-an-za ni-is* (MH(+?)) = [siwantsanna-] for OH $^{SIAL}$*si-un-za-an-na-as* = [syuntsanna-] < *nos-anna* by syncope {7.8.3.}.

In a few words, °U-WA- for earlier °U° is probably not the result of so change. Beside *lāhu-* "pour", forms in *la-(ah)-hu-wa-*, which are not old (see *CHI* 13–15), can be based on resegmentation from the third person plural present *la-(wa)-an-zi*, the third person plural imperative *la-hu-(wa)-an-du* and the participle *hu-(wa)-an-t°*. Similarly *e-ku-wa-te-ni* "you (pl.) drink" KUB I 16 III 34 (OH+) for *e-ut-te-ni* = [ēg$^{w}$teni] can be based on 3 pl. pres. *a-ku-wa-an-zi* etc. (cf. Sturtev *CGr¹*).

### 3.7.4.4. Variation between *(u)wa* and *u* (conditioning obscure)

In some words the conditioning behind an alternation of (°U)-WA- and remains obscure.

*hassunga-* "sieve"?, "sorting"?, "sifting" (vel sim.): gen. sg. *ha-as-su-un-qa-as* K XII 91 I 9 (MH+), *ha-as-su-un-ga-as* KUB XXIX 44 II 16 (MH); the derived v *hassu(w)angāi-* "sift, sort"? has both WA and °U°: 3 sg. pres. *h[a-as-su-wa-an-ga-a* KUB XLIV 63 II 19 (NH), but 1 sg. pres. *ha-as-su-un-ga-am-mi* KBo XI 19 Vs (NH), 3 sg. *ha-as-su-un-ga-a-iz-zi* KUB LIII 11 II 17 (NH), *ha-as-su-<un>-ga-iz-zi* IB III 1 I 37 (OH+). Melchert (53) suggests that the noun shows syncope.

Examples *HED* 3, 246.

*ulkissara-*, *walkissara-* "thoroughly trained": acc. pl. c. *ul-ki-is-sa-ri-us* KI XXIX 1 II 13 (OH+), but nom. sg. c. *wa-al-ki-is-sa-ra-as* KBo I 42 I 2, 4, 5, 6 (N vocab.) and factitive *ulkissarahh-*, *walkissarahh-* "train thoroughly: 3 pl. pret. *ul-es-sa-ra-ah-hi-ir* KBo III 34 II 32 (OH+), but 3 sg. pres. *wa-al-k[i-is-sa-ra-[ah-hi* KI XIII 16 L. 4 (OH+). Sturtevant, *CGr¹*, suggests that these words have WA for °U Melchert, *SHHP* 12 n. 20, suggests these words may show ablaut, but notes that t etymology is unknown.

*tuwāttu* "be merciful!": *tu-wa-a-at-tu* StBoT 25, 5 II 9, 11, 18 etc., *tu-wa-at-* StBoT 25, 3 II 41, StBoT 25, 4 II 4, 49, *tu-wa-ad-du* KUB XXX 10 Rs. 22 (MH), *d wa-du* KBo VII 28 Rs. 38 (MH), from a verb *tuttu-* "be merciful": 3 sg. pret. *tu-ut-tu-* KUB XXXVI 99 Rs. 5 (OH). Oettinger (*Stammbildung* 231) explains °U-WA- for °U

here as emphatic lengthening {1.3.3.7.}. Note however that °U-WA- occurs elsewhere in the paradigm by MH, cf. vbl. noun *du-wa-du-mar* KUB XXX 10 Vs. 10.

An alternation between °U-WA- and °U° also occurs in proper names, e.g. $^{M}$*Du-ud-du-ul-li-is* KBo II 2 I 16 (NH), but $^{M}$*Du-ud-du-wa-al-li-is* ib. IV 20, (Neu, *StBoT* 18, 44).

*auri-* "lookout, watchtower" (nom. sg. *a-ú-ri-is*, NH) beside oblique stem *auri(y)a-* and *awari(y)a-* (both from MH): gen. sg. *a-ú-ri-as* KUB XIII 2 I 18 (MH?), *a-ú-ṛi-as* ib. I 20, *a-ú-ri-ya-as* ib. II 38, III 8, 22, KUB XXIII 77 a Rs. 15 (MH, also OH+, MH+, NH), dat.-loc. *a-ú-ri* KBo XIII 58 III 14 (MH?), dir. *a-ú-ri-ya* KBo XVI 24 + 25 III 10 (MH), *ḫa]-ú-ri-ya* KUB XIII 2 I 4, nom. pl. *a-ú-ri-e-es* e.g. KUB XXXI 85 I 9 (MH+ dup. of KUB XIII 2), acc. pl. *a-ú-ri-us* (MH+, NH), dat.-loc. pl. *a-ú-ri-ya-as* KUB XIII 2 I 13 (also MH+, NH); stem *awari(y)a-*: gen. sg. *a-ú-wa-ri-ya-as* (KUB XIII 2 +) KUB XXXI 84 III 60, *a-ú-wa-ri-ya-as* KUB XIII 2 II 5, 42, IV 22, KUB XXVI 17 II 5 (MH), nom. pl. *a-ú-wa-ri-e-es* KUB XIII 1 I 19 (MH), *a-ú-wḫa-ri-e-es* ib. I 23. The base form is probably **au-ri-* : *au(s)-/u-* "look, see" plus the nominal nominal suffix **-ri-*. Sturtevant (*CGr*$^{1}$) derived *auri-* from *awari-* by syncope, but the variant *awari-* may have arisen through secondary vocalization of **r* to a syllabic **[ṛ]*, i.e. **aurya-* > **awṛya-* > [awarya-] {5.3.6.}.

Melchert, *Gds Kerns* 231–2 n. 21, suggests that *pa-ah-hu-wa-ar* "fire" in KUB VII 60 II 11 (NH) reflects a collective in **-wōr* beside *pāḫḫur* < **péh₂wṛ*.

### 3.7.4.5. Variation between *we* or *wi* and *u*

Eichner, *MSS* 31 (1973) 82; Friedrich, *HE* 27, *StaatsV* 42 n. 2, 91, 92, 167; Goetze, *Madd.* 137–8, *Tunn.* 69; Kimball, *PW* 104–5 n. 33; Melchert, *SHHP* 52–3; Sturtevant, *CGr*$^{1}$ 58–60; Weitenberg, *u*-Stämme 471 n. 737.

An apparent alternation between *we* and *u* or *wi* and *u* has been noted in a number of words. Friedrich, Goetze, and Eichner claim contraction of [we] or [wi] to [u]. Sturtevant suggested that U or Ú can occasionally stand for [wi] or [we]. Kimball and Melchert note that some examples which have been cited as showing syncope or contraction may instead show ablaut **we* : **u* or accidental omission of E or I. Contraction of [wi] to [ū] or of [ui] to [ū] seems unlikely, since in the cases where genuine linguistic variation seems to be indicated, the variant with °U° is not usually spelled with plene writing. There is little hard evidence for syncope of [wi] or [ui] to [u], and several examples that have been cited are likely to be mistakes.

About the only promising set of examples of possible syncope is a handful of *u*-stem dative-locative singulars in *-u* followed by the dative of the third person singular possessive pronoun *-ssi*: *ga-pa-nu-us-si* "its stalk/trunk(?)" KUB XLIII 62 III 6 (U) : *gapanu-* "trunk(?), stalk of a plant(?)" (from Akk. *gapanu* id.; for the syllabic interpretation see Weitenberg *u*-Stämme 256–7 w. refs.); *ge-nu-us-si* "his/her knee" KUB IX 4 III 34 (NH), KUB XIV 15 II 6 (NH) : *gēnu-* "knee"; *se-ek-nu-us-si* "his/her cloak" KBo XXIII 24 L. 1 (MH+, cf. the MH copy KBo XXIII 1 23, which has *se-ek-nu-is-si* Vs. 58), KUB XXXIII 121 II 21 (NH); *se-ek-nu-us-si-ya* KUB XXXVI 39 L. 7 (NH) and *[s]e-ek-nu-si* ib. L. 7 (cf. also OH *se-e-ek-na-u-i-is-mi* StBoT 25, 54 III 5) : *sēknu-* "cloak". Goetze, *Tunn.* 69, derived these forms via syncope from regular dative locatives in *-u-i*, i.e. **gēnui-ssi* > *gēnu-ssi*. However, with the exception of



*sēknui-ssi* in KBo XXIII 23, such dative-locative forms followed by dative-loccative third person singular (or other) possessive pronoun do not occur elsewhere. Other explanations have also been offered. Sturtevant, *CGr*$^{2}$ 88, considered them endingless locatives with *-u* < **-ēu*. *gapanu-*, however, is a loanword from Akkadian (Eichner, *Heth. u. Idg.* 45 n. 8), and does not occur in OH texts or in texts with notably archaic forms. There are also no indisputable examples of dative-locatives in *-u* from synchronically productive *u*-stem paradigms not followed by the possessive pronoun
*-ssi*. Friedrich, *Ergh*$^{2}$ 15, describes them as uninflected forms, and Weitenberg, *u*-Stämme 319–20, noting that at least one example with the dative-locative ending *-i* plus possessive pronoun occurs in a MH text (*seknui-ssi* KBo XXIII 23), understands them as quasi compounds which lack inflection because they are followed by an inflected possessive pronoun and considers them innovations. It is hard to believe that all of these forms are mistakes with US for IS, especially when two or more examples are found for *gēnu-* and *sēknu-*.

There is no evidence for a change of /ū/ or /u/ to [wi], and there are words with /ū/ or /u/ that are well attested but never have variants spelled °(C)U-I°, °(C)U-I(° or °(C)U-WI): e.g. *mūgā(i)-* "invoke, entreat" (50+ ex., *CHD* 3, 319–22); *luk(k)atta* "at dawn/on the next morning", also *luk(k)at(t)i*, *lukat*, *lukta* (50+ ex., *CHD* 3, 76–8); *luttāi-*, *luttant-* "window" (22 ex., *CHD* 3, 88–90).

For *au* > *awi* see {4.10.2.}.

An alternation *we* : *u* is likely to reflect ablaut when it is regular and predictable, when the variant spellings coincide with expected full and zero-grades (and when exceptions can be explained analogically) and when the spelling of the variants with °U° can only reflect an inherited zero-grade and not accidental omission of the sign for the full-grade vowel /e/. In principle, the spelling °(C)U-UC° can continue an inherited zero-grade if it is found beside °(C)U-E-° or °(C)U-(E)-EC° = [CweC] while °(C)U-C° beside °(C)U-E-C° can either reflect ablaut or accidental omission of E (i.e. °(C)U-<E>-C°).

IE **we* : **u* is clearly continued in: *ḫuēk-* : *ḫuk-* "strike, slaughter" (*ḫu-(e)-ek-C°* : *ḫu-(u)-k°/g°*) = [hwēg-] : [hug-] < **h₂weg(h)-* : **h₂ug(h)-*, cf. O.Pers. 1 sg. aor. or impf. *avajam* "I stabbed/put out (the eyes of someone)" {4.3.2.5.}.

*ḫu-uk-zi* KUB XLI 8 I 18 (MH) = *ḫu-u-uk-zi* in dup. KBo X 45 I 35 ( MH+) probably shows analogical extension of the zero-grade of the weak stem *ḫuk-*, and in the NH copy, a spelling with ligature HU-U- {1.5.1.}.

Similarly *tuēkka-* "body, self" (*tu-(e)-ek-k°*, *tu-(e)-eg-g°*, *tu-(e)-eq-q°*) beside *tukk-*, e.g. in MH abl. *tu-uk-ka-az* KUB XVII 10 III 10 and in the etymologically related verb *tukkā-* "be visible, important" continues **tuek-* beside **tuk-* (Kimball, Melchert {2.4.3.}). The OH iterative-durative *ḫuttannai-* "draw a bow" (3 sg. pres. *ḫu-ut-ti-an-na-i* StBoT 25, 42 II 12 and *ḫ]u-uṭ-ṭi-an-n]a-a-i* in dup. StBoT 25, 43 I 3, *ḫu-ut-ti-aṇ-ṇa-a-i* ib. I 11) is from zero-grade **h₂udhₚ-* beside *ḫuētt-*, *ḫuēttiya-* "draw, pull" from full-grade **h₂wedhₚ-*; *ḫu-et-ti-(ya)-an-na-* (OH and later) has an analogical full-grade. The alternation *ḫuwi(s)s-* : *ḫu(s)s-* in *ḫwi(s)suwant-* : *ḫu(s)suwant-* "alive" (both from OH) and in the *nu*-causative *ḫuisnu-* (MH, OH+) : *ḫusnu-* (OH+) probably reflects ablaut **h₂wes-* : **h₂us-* (Melchert); for OH *ḫuwi(s)swant-* < **h₂wes-went-* see {3.11.1.2.}.

A.ŠÀ *ku-ra-as* "field", attested once (KUB VIII 25 I 9, U) beside *ku-e-ra-* can either reflect a zero-grade [kur-] < *$k^{w}$ṛ- beside full-grade [$k^{w}$ēr-] < *$k^{w}$er- "cut" {8.4.1.2.} (Melchert), or it can be a mistake, i.e. *ku-*<*e*>*-ra-as* (Kimball).

Clear cases of accidental omission of E can be found in spellings in U-CV- or Ú-CV in paradigms that should not ablaut: e.g. *ú-*<*e*>*-me-e-er* KBo III 60 I 11 (OH+), third person plural preterit of *ú-e-mi-ya-* "find"; *ú-*<*e*>*-si-et-ta* 113/b Vs. 4 (StBoT 5, 200), third person singular middle present of *ú-e-si-ya-* "graze".

*par-ku-*UŠ*-ta*, third person singular preterit of *parkuēss-* "be(come) pure, prove innocent" in KUB XXXIII 97 I 6 (NH) is probably a mistake with UŠ for IŠ, i.e. *par-ku-is*$^{!}$*-ta* with NH °I° for OH /e/, cf. e.g. *par-ku-is-ta* ABot 47 I 10 (U) and OH *par-ku-e-es-ta* KBo VIII 42 Rs.? 9. (Sturtevant, *CGr*$^{1}$, Kimball, Melchert). Another clear case of a mistake with UŠ for IŠ is *sa-a-ú-i-ti-*US*-za* KBo VI 3 III 33 (MH) "heifer" for *sa-a-ú-i-ti-*IŠ*-za* as in ib. III 29, cf. also *sa-ú-i-ti-is-za* ib. III 26, 30, 38, 42, 47. Other possible examples are given by Weitenberg. Forms with the spelling *ka-ru-ú-li-* "former, previous" (nom. sg. c. *ka-ru-ú-li-is* (HW **104**), nom.-acc. sg. n. *ka-ru-ú-li* KUB XXV 31 L. 14 (U), abl. sg. *ka-ru-ú-li-ya-az* KUB XIII 2 III 2, MH?, nom. pl. c. *ka-ru-ú-li-e-es* KBo II 3 IV 10, MH+), beside the far more common *ka-ru-ú-i-li-* (from OH, = *karū* "previously" plus adjective suffix *-ili-*) are perhaps mistakes with omitted I, i.e. *ka-ru-ú-*<*i*>*-li-* (Kimball, Melchert).

Apparent instances of syncope in iteratives from stems in *-wā(i)-* (e.g. *sa-ku-us-ke-e[z-zi* KBo X 47g III 7 (NH) : *sākuwā(i)-* "look" or *kap-pu-us-ke-ez-zi* KUB XXIII 72 I 27 (MH) : Post-OH *kappuwā(i)-* "count, worry over") might be mistakes. Normally these should be spelled (-CU)-(I)-IŠ-K°, or (-CU)-(E)-EŠ-K° and both can be read [-(Cw)ēsk-] or [-(Cw)īsk-] (for [-(Cw)waisk-] with monophthongization {4.10.1.}), but scattered examples of the spelling (-CU)-UŠ-K° also occur. Since the examples are sporadic and not confined to texts of any particular age or type, it is possible that -UŠ-K° is a mistake for -IŠ-K° .

However, cf. Melchert, *SHHP* 53, who considers these syncope.

Beside *hu-ya-*, *hu-i-* (< *$h_2uh_1y$-), regular weak stem of *huwāi-* "run" (e.g. 3 pl. pres. *hu-(u)-ya-an-zi*, OH etc., ptcp. *hu-ya-an-t°*, OH etc.) a few forms with a stem *hu(wa)-* are attested; e.g. 3 pl. pres. *hu-u-wa-an-zi* KBo IV 2 II 26 (OH+), KBo XIII 131 III 18 (MH+), *hu-u-a[n-zi]* Bo 2599+ II 15 (OH+; see StBoT 25, 84) and *nu*-causative 3 sg. pret. *hu-u-nu-u[t]* KUB XXI 1 II 66 (NH), *hu-nu-ut* ib. II 72). These perhaps do not show syncope, but are instead analogical forms created after reinterpretation of the third person plural preterit *hu-wa-a-ir*, with full-grade stem *huwāi-* (from MH), beside *hu-u-i-e-er* in OH+ texts, as preterit of a *mi*-verb in *-ā(i)*; cf. also the *mi*-conjugation third person singular preterit *hu-wa-it* (e.g. KUB XXIII 72 + Vs. 17, MH), which was produced by the same analogical reinterpretation.



## 3.8. Apocope

Eichner, *Fl. u. Wb.* 80; Jensen, *Act. Or.* 26 (1961) 133–4; Joseph, *Sprache* 30 (1984) 12; Neu, *Heth. u. Idg.* 186 w. refs.; Pedersen, *Hitt.* 99; Oettinger, *Stammbildung* 191 n. 18; chert, *SHHP* 88 n. 18, 97 n. 46, *AHP* 182–3; Watkins, *Fs Knobloch* 496 n. 3.

Several convincing equations show that final *-*i* and *-*e* were lost after at some consonants in Pre-Hittite.

### 3.8.1. Apocope of *-*i*

The details of the conditioning for this change are not entirely clear, and fi seems to have been retained in *kuwāpi* "wherever" = [$k^{w}$ābi] < *$k^{w}$ó*bh-i*. Eichner siders loss of *-*i* in the *mi*-conjugation third person singular present ending *-zi* regular only after vowels. Absolutely certain examples of loss occur only after d stops, and the most likely examples involve vowels of final syllables that were cented. Most attested examples of retained *-i* from IE *-*ī* can be explained as an cal. There are no convincing examples involving loss of final *-*ī* (IE *-*iH*, *-*ī*, and haps *-*éi*).

For the thematic ablative singular ending *-az* = [-ats] and athematic *-z(a)* also in CLuv. abl.-inst. sg. *-āti*, HLuv. *-ati*, *-ari* and Lyc. *-adi*, *-edi* {6.7.2.2.}, the H assibilation points to an original ending *-*ti*, which can perhaps be derived fro IE adverbial ending (Jasanoff, *MSS* 31 (1972) 125, 127 n. 2, Neu, *Heth. u. Idg.* refs., Melchert, *SHHP* 88, Joseph, *Sprache* 30, 7, 11). Evidence for the original *-*i* is also preserved within Hittite itself in the sandhi variant *-(z)ziya* = [-tsiy-a] regular form of the ablative singular ending when it is followed by *-(y)a-* "and" *hu-u-ma-an-ta-az-zi-ya* KUB XXIX 4 I 5 (NH) : *hūmant-* "all", *an-dur-zi-ya* ib. III *andūrza* "outside", from a frozen ablative (Oettinger, *StBoT* 22, 23–4 n. 6, Melc *SHHP* 88 n. 18, Neu, *Heth. u. Idg.* 186 w. refs., Friedrich, *HE* 37 and Kühne *Otten*$^{2}$ 204).

The reflexive particle *-z(a)* = [-ts] is from a homophonous PA particle *-*ti*, cf. *-ti*, CLuv. and HLuv. *-ti*, Lyc. *-ti* (*-di*) (Neu, *StBoT* 6, 145, *Heth. u. Idg.* 186 w. Carruba, *Satz. Part.* 45–6 w. refs., and Houwink Ten Cate, *LPG* 77–8 w. refs., Ja off, *MSS* 31 (1972) 125, 127 n. 2, Joseph, *Sprache* 30, 11, Kühne, *Fs Otten*$^{2}$ 204). IE etymology of PA. *-*ti* is not clear.

The *mi*-conjugation third person singular present ending, which is from IE PA *-*ti*, should have become *za* = [-ts] by regular phonological development. S larly, the third person plural present ending *-*(V)nti* should have become *-(V)n* [-(V)nts]. Relics showing the regular development may be found in a few isol spellings from OH, MH and OH+ texts: *[e-e]s-za* KBo VI 2 IV 54 (OH) = *e-es-zi* "( is", *har-za* KBo IX 73 Vs 12 (OH) = *har-zi* "(s)he holds", *ta-ru-uh-za* KUB XIII 75 I (OH+) = *ta-ru-uh-zi* "(s)he prevails", *sar-ni-in-ka]n-za* KBo VI 2 IV 55 (OH; Eichner, *loc. cit.* w. refs.) = *sar-ni-in-kan-zi* "they make restitution", *sa-ku-wa-a* KUB XIII 2 III 16 (MH?) = *sa-ku-wa-an-zi* "they see". The attested endings *-(z)zi* *-(a)nzi* should have analogical *-i* from other forms of the present paradigm (Eich *Fl. u. Wb.* 80, Oettinger, *Stammbildung* 191 n. 18).

*ha-a-an-za* "in front" KUB IX 28 II 12 (OH+) and *ha-an-za* ib. II 24, IV 3, 16 = [hānts] can regularly continue a locative singular **h₂ént-i* (= Lat. *ante* "before") from a root noun **h₂ent-* "front, forehead" {6.7.2.2.}.

Final **-i* is lost after the reflex of **dh* in the second person singular active imperative in *-t* = [-t] < IE **-dhi*, e.g. *i-it* = [īt] "go!" (OH etc.); *te-e-et* = [dēt] "speak!" (OH etc.) and in *nu*-causatives with *-nu-ut* = [-nut], e.g. *ar-nu-ut* = [arnut] "remove!" KBo III 40a L. 14 (OH+); *pa-ah-ḫa-as-sa-nu-ut* [pahsnut] "protect!" (Melchert, *SHHP* 88 n. 18). The second person singular middle imperative ending *-(h)hut* = [-hut] (e.g. *e-es-hu-ut* = [ēshut] "sit!" KUB XIV 1 Vs. 17, MH, KBo III 21 III 15, 21, 25, OH+; *i-ya-ah-hu-ut* = [yahut] "march!", go!" KBo VIII 42 Vs.? 16, OH, KUB XXXIII 8 III 18, MH+), reflects a compound ending **-h₂u-dhi*. The imperative particle **-dhi* was apparently accented in IE and regularly appears with the zero-grade root (cf. Skt. *ihí* "go!" < **h₁i-dhí* or *viddhí* "know!" < **wid-dhí*). Since the other clear cases of apocope of final short vowels seem to have occurred in unaccented syllables, and the plene writing in *te-e-et* and *i-it* points to a root accent, it is likely that the accent was retracted in Pre-Hittite, perhaps after the model of endingless second person singular imperatives like *ēs* "be!" (cf. Gk. ἴθι "go!" or ἴσθι (< **wid-dhi*) "know!" for a similar shift). The second person singular imperative forms *et-za* KBo IV 6 Vs. 9 (NH), *e-ez-za* KUB XXXIII 87 I 5 (NH), and *e-ez-za-az-za* "eat!" KUB XX 92 VI 8 (OH+) beside endingless *e-et* can represent [ēt$^{s}$t] < **h₁éd-dhi* with dental stop plus dental stop > [t$^{s}$t] {6.7.1.1.}.

Cf. Oettinger, *Stammbildung* 582, and Joseph, *Sprache* 30, 12 n. 25, for alternative explanations. For the probable devoicing of final stops see {6.11.3.}.

If loss of final **-i* occurred after sounds other than dental stops, several forms demand an explanation. The *i*-stem neuter nominative-accusative singular ending *-i* would have been retained on the analogy of nom. sg. c. *-is* and acc. sg. c. *-in*, while the neuter nominative-accusative plural ending *-i* = -[ī] is from **-ih₂* {10.11.2.} and was either protected by its final laryngeal, or, since loss of absolute final **-h₂* is shared by Luvian and is, therefore, probably PA, it was already [-ī] at the time when final unaccented **-ĭ* was lost and as a long vowel did not drop. Similarly, if *ēlzi* "scale(s)" and $^{UZU}$*dā(n)hasti* "twin bone" continue nominative-accusative neuter duals, then they have [-ī] from **-ih₁* {10.11.1.}. The final *-i* of *eni* "the aforementioned" and *asi* id. perhaps continues IE **-ī* {7.3.2.} and it may not, therefore, regularly have been lost. Alternatively, the *-i* of *eni-ssan* "thus" would have been protected, and if the compound had been formed early enough, it would have provided a source for the restoration of a final **-ĭ*. Similarly, *kuwāpi* "wherever" < **k$^{w}$óbhi* may have retained its *-i* on the model of *kuwāpikki* "somewhere, anywhere, whenever", *kuwāpit* "where(ever)" and *kuwāpitta* "anywhere". Melchert, *SHHP* 97 n.46, suggests that final *-i* < **-ĭ* was preserved in the *mi*-conjugation singular endings *-mi, -si, -zi* and in the active plural endings *-weni* (*-meni, -wani*), *-tteni* (*-ttani*), *-anzi* because of its functional importance, or that apocope was regular only after dental stops. The dative-locative ending *-i* can reflect both the IE locative ending **-i* and the dative ending **-ei* {4.3.3.}.

Melchert, *SHHP* 88 n. 18, derives *še-e-er* [sēr] "above" from a PA loc. **séri* : CLuv. *sarri*, which is possible, but since Hitt. clearly inherited the IE endingless locative, not certain.



### 3.8.2. Apocope of **-e*

Loss of final **-e* was not a regular sound change, but it apparently occurred in **-k$^{w}$e* "and" > [-ku]. The reflex of the IE conjunction **-k$^{w}$e* "and" (cf. Skt. *ca* "and", Lat. *-que* id., Gk. τε id.) is clearly continued in the conjunctive particles *-(k)ku* ... *-(k)ku* "either" ... "or and *-aku* ... *-aku* id., and in *takku* "if" < **to-k$^{w}$e*, *appiyakku* "wherever" (= *apiya* adv. "where" + *-kku*), and *nekku* (*niku*) "nor" < **ne(i)-k$^{w}$e*; cf. Lat. *neque* and Goth. *-hun* in e.g. *ni ains-hun* "no one" (Eichner, *MSS* 29 (1971) 27–43 w. refs.). Watkins, *Fs Knobloch* 496 n. 3, suggests that *-kku* resulted from elision or apocope in fast speech, since he doubts that both final **-e* and **-i* would have been lost, and notes that the vocative ending *-i* (< **e*) was retained.

The Palaic cognate *-(k)ku* in *nu-(uk)-ku* "now then" seems to have undergone apocope too, while Cuneiform Luvian shows preservation of the final **-e* (> P.Luv. **-a*) in *-kuwa* "and" < **k$^{w}$e* (Melchert, *Gds Cowgill* 188). See also Carruba, *Satz. Part.* 69–73, on the Palaic forms and ib. 72 on the Luvian. Garrett *apud* Melchert, *AHP* 184, suggests a development of unaccented final **e* to **a*, followed by rounding to *u* after the labiovelar.

The retained final vowel of *kuiski* "anyone" continues **-e* as is shown by its Lycian counterpart *tise*, which must be from **k$^{w}$isĥe* with deictic particle **-ĥi* and assibilation of **ĥ* to Lyc. *s*.

### 3.8.3. Apocope of **-u*

No absolutely certain examples of loss of final **-u* have been cited, but Kuryłowicz, *PICL* 8 235, suggested that the dative plural ending *-as* continues **-āsu* (**-eh₂-su*), cf. Skt. *-su*, OCS *-xŭ* and Lith. *-su* or **-āsi* (**-eh₂-si*) and cf. Hmc. Gk. -σι (see also Neu, *Heth. u. Idg.* 195). If the dative plural ending does continue **-su*, then the final *-u* of the *mi*-conjugation third person singular imperative *-tu* and third person plural *-(V)ntu* (< IE **-tu*, **-(V)ntu*) has to be explained as analogical.

## 3.9. Anaptyxis

### 3.9.1. In final syllables

Crossland, *TPS* 1951, 97; Friedrich, *HE* 31; Kronasser, *VLFH* 169–70; Eichner, *Fl. u. Wb.* 79–80; Melchert, *AHP* 29–30, 84, 175–6; Oettinger, *StBoT* 22, 40, *Stammbildung* 8–9 n. 5, 6, 237, 483, *Gds Kronasser* 174 n. 48; Pedersen, *Hitt.* 97–8; Rosenkranz, *Vgl. Unters.* 81; Sturtevant, *CGr*$^{2}$ 141.

The *mi*-conjugation active third person singular preterit ending, which should continue the IE active secondary ending **-t*, shows up as *-ta* after stems in final consonants: e.g. *e-uk-ta* "drank" (OH), *e-ku-ut-ta* (OH+) = [ēg$^{w}$ta] {6.5.1.}; *e-es-ta* "was" (OH etc.) = [ēsta]; *e-ez-ta* "ate" (OH+) = [ēt$^{s}$ta] {6.7.1.1.}; *li-ik-ta* "swore an oath" (OH), *li-in-ik-ta* (NH), *li-in-kat-ta* (NH), *le-en-kat-ta* (NH) = [liŋgta]; *tar-ah-ta* (MH etc.) = [tarhta]. Cuneiform Luvian has both an active third person singular preterit in *-ta* (e.g. *a-as-ta* "was") and a third person plural preterit ending *-nta, -nda* = [-nta] < **-nt* (e.g. *a-ú-i-en-ta* "they came", *du-ú-wa-an-da, du-wa-an-ta* "they put, placed").

The prevailing traditional view is that the final vowel is merely graphic (Sturtevant, Pedersen, Friedrich, Crossland, Kronasser). There is, however, compelling evidence to suggest genuine anaptyxis here. As Eichner notes, the scribes sometimes went to considerable trouble to use final TA even when spellings in -CV-VT were available, e.g. *li-in-kat-ta* "swore" (never **li-in-kat, -ka-at*), *e-(ez)-za-at-ta* "ate" (***e-(ez)-za-at*), *hi-in-kat-ta, hi-ni-ik-ta* "distributed" (***hi-in-kat, -ka-at*). Note especially the spellings *e-uk-ta* KUB XXXVI 104 Vs. 6 (OH) and *e-ku-ut-ta* e.g. KUB I 16 III 17 (OH+), KBo XII 3 III 16 (OH+) (never ***e-ku-ut*) for [eg$^{w}$ta] "drank" and *wa-at-ku-ut-ta*, e.g. StBoT 25, 122 II 5, KUB XXXVI 51 Rs. 9 (OH+) for [watk$^{w}$ta] "jumped" as compared to *ne-ku-uz* for [neg$^{w}$ts] "night" {6.5.1.} (see also Oettinger, *Stammbildung* 237 and Melchert, *AHP* 175–6).

The evidence of the Luvian languages also supports anaptyxis. The Lycian third person singular and plural preterit endings have a final vowel: 3 sg. *-te* = CLuv. *°t-ta*, *°d-da* (e.g. *pijete* "gave", *prñnawate* "built"), *-de* = CLuv. *-ta*, *-da* with PLuv. **d* by PA voicing {6.2.3. (e.g. *tade* "put", *ade* "did, made"), 3 pl. *-ñte, -ñtẽ* = CLuv. *-ant/da* (e.g. *aite* "they made, did", *pijẽte* "they gave", *prñnawatẽ* "they built"). Since Lycian *e* cannot continue PA **a* in these endings (cf. Melchert, *Reconstructing Languages and Cultures* 46), the anaptyctic vowel was a phoneme distinct from PA **a*, perhaps **ə*, i.e. 3 sg. **-tə*, **-də*, 3 pl. **-ntə*. The evidence from both languages also makes it clear that the final vowel was extended to post-vocalic stems within PLuv., cf. e.g. CLuv. *pi-ya-at-ta* "gave", *hu-u-i-ya-ad-da* "ran", *du-u-wa-at-ta* "put, placed", and *a-ú-i-ta* "came", *tar-mi-ta* "nailed, fixed", *ma-na-a-ta* "saw".

Melchert, *Reconstructing Languages and Cultures* 46–7 n. 14, prefers to derive the preterit endings from the middle endings **-to* and **-nto*. Although he notes that Lycian *-e* does not by itself exclude anaptyxis, he claims that there is independent evidence against it. Melchert argues that PA generalized the voiced (or lenited) allophone of stops in word-final position, that this means that the preterit endings would have had PA word-final **-d*, and that PA **-d* plus anaptyctic vowel should have resulted in CLuv. [-da] and Lyc. *-de* in all verbal paradigms (see also Yoshida, *HS* 106 (1993) 28–9). This argument has several weaknesses, however. There is little evidence that PA generalized final voiced stops; on the contrary, it is possible that inherited final voiced stops were devoiced {6.11.3.}. The example Melchert cites to support the generalization of final voiced stops, nominative-accusative singular neuter enclitic personal pronoun *-at* (CLuv. *-ata*, spelled -A-TV when followed by a vowel, and Lyd. *-ad*) will not work, because the pronoun should have the pronominal ending **-d* (i.e. **-o-d*, cf. **k$^{w}$od* in Hitt. *kuat* and OE *hwæt*). Even if it could be shown that PA eventually had only word-final voiced stops, anaptyxis could have taken place before the series of sound changes and analogies that eliminated word-final voiceless stops.

In PA word-final **t* was lost when preceded by a consonant (cf. e.g. Hitt. nom.-acc. sg. *hu-u-ma-an* vs. nom.-acc. pl. *hu-u-ma-an-ta* {6.12.1.}), and the ending **-t* would have been lost regularly in the third person singular of consonant stems (e.g. PA **ést* "was" > Hitt. ***ēs*, CLuv. ***ās*; similarly, the third person plural preterit would have developed as **-(V)nt* > CLuv. ***-(V)n*). Apparently, however, the ending **-t* was restored on the analogy of vowel stems and anaptyxis took place after this restoration; i.e. 3 sg. pres. **-V-ti* : 3 sg. pret. **-V-t* = **és-ti* : X, = **és-t* (> **és-ta*). Later, in



Luvian, final stops were lost after vowels (cf. e.g CLuv. nom.-acc. sg. *malli* "honey" < **mélit*). This presumably encouraged the extension of [-ta] and [-da] to vowel stems. In Hittite, by contrast, the phonologically regular distribution *V-t* beside *°C-ta* was usually maintained. There are only sporadic and very rare instances of analogical extension in NH texts; cf. *pa-a-i-ta* "went" KBo III 7 III 13 (OH+), *pa-it-ta* KBo XXIII 1 I 21, 22 (2ex), *pid-da-it-ta* "ran" ib. I 20 (MH+) with postconsonantal *-ta* beside regular *pa-a-(i)-it, pid-da-(a)-it*.

NH *wa-at-ku-ut* e.g. KBo II 1 II 31, can be read as [watk$^{w}$t] with analogical ending [-t] and need not imply vocalization of the labiovelar with Oettinger, *Stammbildung* 237.

The consonant stem instrumental ending *-ta* (*-da*) is probably to be read as [-Ta], although there is no evidence from Lycian to confirm this reading. The ending is the original one in *r/n*-stems (e.g. *ú-i-ta-an-ta* StBoT 25, 56 I 5 : *wātar* "water", *sa-kan-da* KBo XXII 2 Vs. 2 (OH) : *sakkar* "excrement", *ti-ya-am-[m]a-an-ta* KBo XIX 132 Rs.? 5 (MH+) : *tiyam(m)ar* "cord", *ud-da-an-ta* KUB XXX 10 Vs. 18 (MH) : *uttar* "word, thing"). It is also found in the *r*-stem *kissar* "hand" (*ki-is-sar-ta* StBoT 25, 105 L. 5, *ke-es-sar-ta* KBo X 45 II 28, MH+) and the *n*-stem *istaman-* "ear" (*is-ta-ma-an-ta* KUB XII 21 L. 11, U, KBo XX 93 L. 4, MH?). Presumably *-ta* is the postconsonantal allomorph of the productive ending *-it* and of *-t*, which appears to be an archaic postvocalic allomorph in *u*-stems (cf. *ga-nu-ut* = [gnūt] : *gēnu-* "knee" and see Weitenberg, *u*-Stämme 373–4). While the etymology of the instrumental ending is obscure (see Neu, *Heth. u. Idg.* 190–1 w. refs.), the anaptyxis seen in the *mi*-conjugation preterit ending *-ta* suggests a similar development for consonant stem *-ta*, i.e. **-C-t* (with **-t* restored or retained on the model of **-it* and **-u-t*) > **-C-tə* (Oettinger, *Gds Kronasser*).

The archaic ending *-ta* was eventually replaced by *-it*, cf. e.g. NH, OH+, MH+ *ú-e-te-ni-it, ú-wi-te-ni-it* : *wātar*.

The first person plural present middle ending *-wasta* (e.g. *ar-wa-as-ta* "we stand" e.g. KUB XVII 21 IV 6, MH, *e-su-wa-as-ta* "we sit" KUB XII 66 IV 10, OH+, StBoT 25, 110 II 36, *e-su-as-ta* KBo XVI 25 I 71, MH), should probably be read [-wasta]. It seems to be from a proto-form *[-wozdh$_2$] with [-w-] from the dual ending; cf. Ved. *bhávāvas*, OCS *berevě*, Goth. *baíros*. Since final **h$_2$* disappeared word-finally after consonants {10.11.2.}, the final *-a* must be anaptytic, i.e. **-wozdh$_2$* > **-wast* > **-wastə*.

Cf. Eichner, *Fl. u. Wb.* 79, who reconstructs **-wosdh$_2$*, and Oettinger, *MSS* 35 (1976) 115 (PA **-wezdhh$_2$rei* > *-wastari* via contamination of PA 1 pl. **-mezdhh$_2$* with the first person dual ending) and *Stammbildung* 521 (**-wozdh$_2$(r(e)i)*).

## 3.9.2. In initial consonant clusters

In several words the reflex of an IE initial consonant cluster is spelled both CA-C$^{o}$ and CE-C$^{o}$ or CI-C$^{o}$ {1.16.6.1.}: 3 sg. pres. *sa-me-en-zi* "passes in review, withdraws" (OH), *sa-me-in-zi* (NH), 3 sg. pres. *se-me-en-zi* (OH, MH, NH) : IE **smen-* {11.3.3.2., 8.7.1.}; *ma-li-id-du* "sweet" (MH), *mi-li-id-du* (MH), and *mi?-li-id-du* (OH+) < IE **mlitu-* {1.16.6.1., 8.7.1.}; *ma-li-is-ku* "soft" (MH etc.), *mi-li-is-ku* (NH) < IE **mliśku* {1.16.6.1.}; *karāp-* "devour": 3 pl. pret. *ka-re-e-pe-er* (MH), 2 pl. imp. *ka-re-ep-te-en* (OH+), *ke-re-ep-* < **ghrebh-* {6.4.3.1.}; nom. sg. *ge-re-e-ez-za* "flood" beside *ka-re-ez* (NH) and *ka-ra-i-iz* (OH) = [grēts] < OH [grāits] < IE **ghrōi-t-s* {4.8.2.}; *ta-ri-ya-al-la* a drink"

(from the word for "three"), $^{LÚ}$*tarriyanalli-* "third man" (nom. sg. c. *tar-ri-ya-na-al-li-is* IBoT 36 I 38 (MH), dat.-loc. *tar-ri-ya-na-al-li* ib. I 37), beside *teri-* "three" (gen. *te-ri-ya-as*, Bo 2533 I 10, cited in *HW Ergh*$^2$ 25), *teriyalla* = *tariyalla* (*te-ri-ya-al-la* KBo V 1 IV 35, Pre-NH), *te-ri-ya-an-na* "third" (OH+, MH+) and perhaps OH */t/e$^{!!}$-ri-ya-la-as* (meaning unclear, StBoT 24, 4 II 50) < IE **tr(e)i-* "three" {3.9.2.}. For *tereppiya-* "plow" and *tereppi-* "plowed field" < IE **trep-* only *te-re-ep-p°* occurs, but the word may not be widely enough attested to guarantee that the lack of spellings with TA-RE- is significant {6.4.1.1.}.

Eichner, *Lautgesch. u. Etym.* 146 n. 69, and Oettinger, *Stammbildung* 230, both consider the vowel that breaks up the initial cluster a genuine epenthetic vowel, although Eichner posits a basic /a/, deriving /e/ or /i/ via assimilation or analogy to related forms with initial [Ce]. Melchert, *SHHP* 130–1 and *AHP* 84, claims that *tarriyanalli-* can show the Luvian Čop's Law treatment of a PA **téri-* "three" < IE **tr(e)i-* with anaptyxis and shifting of the accent onto the anaptyctic vowel (cf. also Oettinger, *Stammbildung* 230 and Zinko, *Vertretung* 108–9), but analyzes *se-em-en-* and *sa-me-en-* as [smen-]. Barton, *KZ* 98 (1985) posits epenthesis in *tariyanalli-*, *teriyana* and in plural and participle forms of *mer(r)-* "disappear, die off", spelled *me-er-r°*. Anaptyxis cannot be excluded in these words, but a graphic "echo" vowel "E° before the front vowel of the initial syllable (i.e. *se-me-en-zi* = [smēnʦi], *te-ri-ya-* = [triya-]) is also possible, except in *mer(r)-*. Note that initial **sm* apparently became [sum] with anaptyctic [u] in *su(m)mittant-* "axe" < **smit-* {11.3.3.2.}, and **sl* may have become [sul] {11.3.3.1.}.

Anaptyxis also occurred in *pittinu-* "cause to flee" (*pit-ti-nu-*, OH) = [pittinu-] < **ptih$_1$-n(e)u-* with anaptyxis < **pth$_1$i-* : **pteh$_1$-* "fly, fall" (Melchert, *SHHP* 101) {10.1.2.}.

### 3.9.3. In consonant clusters with *s*

Melchert, *SHHP* 108–9, 134–5, 147–50, *AHP* 174–5; Oettinger, *Stammbildung* 41, 218, 319, 321–2, 328.

An anaptyctic /i/ developed between a velar or labial stop or /h/ and a following *s* plus consonant or word boundary (Melchert, Oettinger 41, 319). Examples from OH confirm the reading /i/, although Oettinger reads /e/.

Iteratives in *-sk-* from stems in final velar, labial or laryngeal:

With stem-final velar: e.g. *hukkisk-* "strike" (3 sg. pres. *hu-uk-ki-is-ke-ez-zi* KBo XVII 62 I 10, MH+, 2 sg. imp. *hu-uk-ki-is-ki* KUB VII 1 II 30, Pre-NH); with stem in final labial: *appisk-* "take" (e.g. 3 pl. pres. *ap-pi-i[s-kan-zi]* StBoT 25, 104 II 4, *ap-pi-is-kan-zi* ib. II 17); *tereppisk-* "plow" (e.g. 3 pl. imp. *te-re-ep-pi-is-kan-du* KUB XIII 1 IV 24, MH); with stem in final /h/: factitives in *-ahh-* (e.g. 2 pl. imp. *ma-a-ni-ya-ah-hi-is-ke-et-ten* KUB XIII 20 I 31, MH+, 3 pl. *ma-ni-ya-ah-hi-is-kan-du* KUB XXXVI 118 L. 11, MH) : *māniyahh-* "distribute"); athematic presents in root-final /h/ (e.g. 3 sg. pret. *par-hi-is-ke-et* KUB XIV 1 Vs. 2, MH, 3 pl. *par-hi-is-ke-er* KUB XIII 2 III 13, MH?, 3 pl. imp. *par-hi-is-kan-du* ib. III 14 : *parh-* "chase"; 1 pl. pres. *sa-an-hi-is-ke-u-e-ni* KBo XXII 2 Vs. 14, OH, 3 sg. pret. *sa-[an-h]i-is-ke-et* KUB XIV 1 Vs. 2, *sa-an-h[i-is-ke-e]t* ib. Vs. 60, MH, 3 pl. *sa-an-hi-is-kat-te-er* KBo XXII 1 Rs. 25, OH, 3 pl. *sa-an-hi-is-ke-er* KUB XVII 10 I 36, MH : *sanh-* "seek").



Third person singular preterits of *hi*-conj. verbs from stems in final velar stop or final /h/:

With stem-final velar: *a-ak-ki-is* e.g. KBo VI 2 IV 3 (OH) : *āk-* "die"; *wa-ak-ki-is* KUB XXIIII 120 I 25 (NH), *wa-a-ki-is* 963/u. L. 4 (*Stammbildung* 445 NH) : *wāk-* "bite" (the doubling of the velar indicates devoicing before the /s/ of the ending {6.11.1.}); from factitives in *-ahh-*: *i-si-ah-hi-is* KUB XXXVI 104 Vs. 11 (OH) = KBo III 34 I 13 (OH+) : *isi(y)ahh-* "make known"; *is-ku-na-ah-hi-is* KUB I 16 III 42 (OH+) : *iskuna-* "stain, defile"; *ma-ni-ya-ah-hi-is* KBo III 34 II 2, *ma-ni-[-ya-ah-hi-is* ib. III 9 : *māniyahh-* "distribute".

In some forms, the ending [-is] was replaced by analogical *-as* (= [-s]?), e.g. *wa-qa-as* KUB XVIII 11 Rs. 9 (NH) : *wāk-* "bite", *is-tap-pa-as* KBo III 6 III 57 = KUB I 8 IV 12 (NH), KUB XXXIII 106 III 38 (NH) : *istāp-* "cover" (no preterit forms in *-is* attested).

The spelling *tak-ki-is-* in forms of *taks-* "undertake, unify, mingle" (IE **toks-* {6.1.3.}) with endings in initial consonants (e.g. 3 sg. pres. *tak-ki-is-[zi* KUB XXXVI 106 Rs. 4, OH, 3 sg. pret. *tak-ki-is-ta* KBo III 22 Vs. 8, OH, beside 3 pl. pres. *tak-sa-an-zi* KUB XXXVI 106 Rs 11 and 3 pl. pret. *tak-se-er* KUB XXXVI 108 Vs. 3, OH) presumably also points to anaptyxis.

An anaptyctic front vowel /e/ or /i/ occasionally developed between medial /s/ and a following /n/. The conditioning is not clear, and no such anaptyxis is attested for [issnā-] "dough" (*is-n°*, *is-sa-n°* with dead vowel °A°) < **yesnó-* {2.4.4.2.}. Neu – Otten, *IF* 77 (1972) 186–7, take these spellings as merely graphic variation, but the fact that SE/SI neither precedes nor follows a syllable with /e/ or /i/ suggests that the alternation *-sn-* (-ŠA-NV-) : -ŠE-(E)-NV-, -ŠI-NV-) in several other words indicates genuine anaptyxis rather than the use of an echo vowel.

*parse/ina-* "thigh(s), buttock(s)": dat.-loc. sg. *par-si-ni* (OH+), acc. pl. *par-si-nu-us* (NH), *par-se-nu-us*, *par-se-e-n[u-us* (OH+) = [parsēna-], beside *par-as-n°* and *par-sa-n°* in dat.-loc. pl. *par-as-na-as* (OH+) and *parsnā(i)-* "squat" (*par-as-na-a-iz-zi*, *par-sa-na-a-an*, *par-as-sa-na-an-te-es*) < **pérsneh$_2$* or **persnéh$_2$-* {3.2.2.1.}.

*galwes(se)na-* a plant: OH *ga-lu-es-si[-* StBoT 25, 78 R. col. 11, nom. pl. *kal-ú-e-es-se-ni-is* 76/n I 11, 12 (Neu – Otten, *IF* 77), acc. sg. *kal-ú-is-si-na-an* KUB XXXIV 100 L. 2 (U), *gal-wi-sa-ni-ya-an* KBo II 8 IV 14 (NH), *kal-wi-is-na-an* KUB XXIV 14 I 6 (NH), *ga-lu-e-es-si-na-n[(-)* KUB XXVIII 45 VI 6 (OH+) beside [Kalwesna-] in acc. sg. *kal-wi-is-na-an* KUB XXIV 14 I 6, *kal-ú-e-es-ni-es* KBo X 24 III 8 (OH+) and (with dead vowel °A°?) *kal-ú-wi-sa-ni-es* 245/v Rs. 6 (Neu – Otten), *kal-ú-i-is-sa-ni-i[t]* Bo 2933 II 3 (Neu – Otten), *gal-wi-sa-ni-ya-an* KBo II 8 IV 14.

Examples Neu – Otten 186.

$^{(GIŠ)}$*kalmisena-*, *kalmisina-* "log, thunderbolt": nom. sg. *kal-mi-i-se-ni-is* KUB XVII 10 I 6 (MH), beside *kalmisna-*: inst. *kal-mi-is-ni-it* Bo 7051 IV 4 (Neu – Otten), acc. pl. *kal-mi-is-ni-us* ib. ib. IV 5 and (with dead vowel °A°?) acc. sg. *kal-mi-sa-na-an* KBo III 4 II 17 (2x, NH), *kal-mi-is-sa-ni-an* KBo XVII 105 III 20 (NH), inst. *kal-mi-sa-ni-it* 611/f Vs. 6 (Neu – Otten), with stem [kalmisēna-], [kalmisna-] < PA **kol-mi-s-* {10.1.1.2.}.

*pisena-* "man" is a less likely example. Forms with a medial /ē/ occur several times: nom. pl. *pi-se-ni-es* StBoT 25 30 III 11, *[pi-s]e-ne-is* KUB XLI 23 III 9 (MH+), *pi-se-ne-is* ib. III 13, acc. pl. *pi-se-e-nu-[us]* KBo III 41 + XXXI 4. L. 20 (OH+), *pi-se-e-*

*nu-us* KUB XLIII 75 Vs. 11 (OH+?) = [pisēn(ā)-] beside gen. *pi-se-na-as* 942/z Vs. 4 (Carruba). Carruba, *IF* 98 (1993) 92–97, makes a strong case for analysing this word as an original *n*-stem **pes-en-* (presumably analogical for **ps-en-*), gen. **pes-n-e/os* : IE **pes-* rub" also in Hitt. *pess-* "rub" and Lat. *pēnis*.

For the original identification of this word, see Neu – Otten, *IF* 77 (1972) 186–7. Presumably *pars(ē)na-* and *kalmisena-* could also be interpreted as original *n*-stems, but this is a less likely analysis for *galues(se)na-*. The form */p[i-is-na-a-as* of StBoT 25, 3 IV 6 is perhaps to be read as KAS-*is-na-a-as* = **sīesnās* "of beer" with Carruba 93 n. 6.

A pre-Hittite sequence of dental stop plus **sk* became [sik] in a few archaic iteratives formed from stems in final dental stop (Oettinger, *Stammbildung* 321–2, 328, 483). The /k/ of the suffix is spelled double only sporadically: *azi-(ik)-k°* = [atsik-] : *ēd-* "eat" (Pre-Hitt. **ad-sk-*); *ha-az-zi-(ik)-k°* = [hatsik-] : *hatt-* "strike" (Pre-Hitt. *hat-sk-*). The iterative *zi(k)k-* "put" < Pre-Hitt. **d-sk-* : **dheh$_1$-*, **dhh$_1$-* "put" functions synchronically as the iterative of *tēhhi*, *dāi*, but it must have been formed at a time when the unenlarged stem (preserved in *tē-* "speak, say" and the compounds *pēhute-* "bring away", and *wete-* "build") still meant "put" primarily. Anaptyxis was no longer productive in this context by OH, cf. e.g. *is-pa-an-za-(as)-k°*, *si-pa-an-za-(as)-k°*, iterative of *ispānt-*, *sipānt-* "pour a libation".

Anaptyxis occurred between **r* and **sk* in *tarsi(k)k-*, archaic iterative of *tar-* "speak, say", which is attested in OH and in NH copies of OH texts: 3 sg. pres. *tar-si-/e-ez-zi* StBoT 25, 54 IV 16, 3 pl. *tar/si-kan-zi* KBo VI 2 III 7, *tar-si-kan-zi* KBo XXII 2 Vs. 8 (OH), KBo III 18 + 19 Rs. 18 (OH+), *tar-si-ik-kan-zi* KBo III 1 II 33 (OH+), KBo III 16 III 14 (OH+). Anaptyxis was no longer productive synchronically here after the OH period. Note, e.g. *tar-as-kan-zi* = [tarskantsi] in KBo VI 3 III 20, MH copy of KBo VI 2.

For the dating of forms see Otten, *Fs Meriggi* 439, *ZA* 71 (1981) 139, *StBoT* 17, 27, and for the anaptyxis see Oettinger, *Stammbildung* 321.

Iteratives formed from stems in final nasal apparently underwent anaptyxis in Pre-OH. This development followed the loss of a stem-final laryngeal in *hassi(k)k-* : *hanna-* "judge, litigate" = [hassik-] > **hansik-* < **hansk-* < **H$_2$enH-sk-* {7.8.1}. In *uwansik-*, iterative of *wen(T)-* "rape" = [wansik-] {3.2.2.1.,7.8.1.} the nasal was restored analogically after the base verb. *tarsik-* (hap. leg. 3 sg. pret. *tar-si-ke-e/t-ten* KUB XXIII 72 Rs 41, MH) implies PA **tṛn/h$_2$-sk-* > **t(ə)rn-sk-* > **tərnsik-* with anaptytic /i/ > *tarsik-* = [tarsik-] or **tṛn/h$_2$-sk-* > **t(ə)rn-sk-* > **tarsk-* > [tarsik-] with anaptyxis between **r* and **sC* {10.10.1.}.

*kuwask-*, iterative of *kuen-* "kill", was apparently formed somewhat later as **g$^{w}$ensk-*, after the anaptyxis rule had ceased being productive but before lowering of **e* to /a/ before **nC* and before **nsC* became *sC* {3.2.2.2.}.

Iterative suffixes of the shape [-isk-] and [-esk-] were apparently abstracted from iteratives from verbs in *-iya-* (e.g. *an-ni-is-k°* : *anniya-* "work, do" with [-isk-] < **-yask-* {3.7.3.1.}) and from verbs in *-ā(i)-* (e.g. *mu-ki-is-k°*, *mu-ke-es-k°* : *mūgā(i)-* "implore" with /āi/ > /ē/ or /ī/ {4.10.1.}) and extended to verbs which did not have variants in *-iya-* or *-ā(i)-*, e.g. *pa-ap-par-se-es-k°* : *pappars-* "sprinkle" or *sa-an-ni-is-k°* : *sanna-* "hide", *tar-ne-es-k°* (MH) : *tarna-* "release", cf. Melchert, *SHHP* 134–5, who also views [-ēsk-] as largely analogical, on the origin of these suffixes and the *e/i* variation. The gradual extension of [-īsk-] and [-ēsk-] makes a more plausible explanation for the appearence of the vowel preceding the suffix than does the sporadic NH epenthesis posited by Oettinger, *Stammbildung* 318–23.



## 3.9.4. Epenthetic *u*

Melchert, *AHP* 175; Neumann, *Fs Friedrich* 347–9, HS 103 (1990) 219; Oettinger, *MSS* 35 (1976) 95 w. refs.; Zinko, *Vertretung* 105, 108.

An anaptyctic /u/ was sporadically inserted in the vicinity of labial consonants and between **h$_2$* and **s* when this cluster followed **u* or a *u*-diphthong. The details of conditioning behind these phenomena are not entirely clear.

*pūnuss-* "ask, question, interrogate": 1 sg. pres. *pu-nu-us-mi* KBo III 3 IV 10 = KUB XIX 44 L. 9 (both NH), KUB XIII 20 I 28 (MH+), 3 sg. *pu-nu-us-zi* KBo III 17 Vs 17 (OH+), 1 sg. pret. *pu-u-nu-us-su-un* KUB XIV 15 II 12 (NH), 2 sg. *pu-nu-us-ta* KUB XXIII 101 II 5 (NH), 3 sg. *pu-nu-us-ta* KBo III 63 I 4 (OH+), 1 pl. *pu-nu-us-su-u-e-en* KUB V 7 Rs 27 (NH), *pu-nu-us-su-u-en* KUB XXII 70 Vs 37 (NH), 3 pl. *pu-nu-us-ser* KUB XXXVI 101 II 3 = *pu-nu-us[-* KUB XXXVI 102 L. 4 (both OH+), 2 sg. imp. *pu-nu-us* (KUB XIV 3 I 27, NH), 3 sg. *pu-u-nu-us-d/u* KUB XXVI 17 II 10 (MH), 2 pl. *pu-nu-us-ten* KBo IV 8 II 17 (NH), vbl. noun nom.-acc. sg. *pu-nu-us-su-u-wa-ar* KBo I 44 I 11 (NH, vocab.), it. 3 sg. pres. *pu-nu-us-ke-ez-zi* KBo VIII 42 L. 4, 6 (OH), vbl. noun nom.-acc. sg. *pu-nu-us-ke-u-wa-ar* KBo I 44 I 12 = [pūnuss-], ultimately : **pneu-* "be intelligent" in Gk. πέπνυμαι "am intelligent, prudent", πεπνυμένος "intelligent, prudent" etc. (see Oettinger, *Stammbildung* 214–5). It is possible that the stem *pūnuss-* was derived from the iterative stem *punusk-* through backformation, i.e. **punu-* : it. *punusk-* › *punuss-* : *punusk-* on the model of other verbs with stems in *-s*, e.g. *pappars-* "sprinkle" : it. *papparsk-*.

*sumittant-* "axe": acc. sg. *sum-mi-it-ta-an-ta-an* KUB VIII 51 II 4 (NH) = [sumitant-] < **smit-ént-* : **smei-*, **smi-* "cut, hoe, fashion" in e.g. Gk. σμίλη "cutting knife", σμινύνη, σμινός "hoe", Goth. *aizasmiþa* "blacksmith" and OE *smiþ* id. (Neumann, *Fs Friedrich* 347–8, and Oettinger, *MSS* 35 (1976) 95 w. refs.) {11.3.3.2.}.

Perhaps *purusiyala-* "wreath" if this is from **bhreus-* also in OHG *broz* "bud, shoot" (NHG *Broß*) with Neumann, *HS* 103.

An epenthetic vowel apparently developed between **h$_2$* and **s* after **éu* in *tūhusiya-* "keep quiet, keep silent" (1 pl. pres. *tu-u-hu-si-ya-u-e-ni*, NH, 3 sg. pret. *du-hu-si-ya-at*, NH, *tu-u-hu-si-ya-it*, NH) = [tūḫusiya-] < **téuh$_2$s-ye/o-* : **tuh$_2$s-* in Skt. *tūṣṇīm* "quietly, silently", Av. *tūšni-* {3.3.2.}. The fact that a **[tūhsiya-] could be written **tu-u-uh-si-ya-* strongly suggests that the second °U° is real. The anaptyxis in *tūhusiya-* suggests that *tuhhus-* "cut off, separate": (3 sg. pres. act. *tuh-hu-us-zi*, OH, midd. *tu-uh-sa*, OH, *tuh$^{uh}$-sa*, OH, *tu-uh-sa-ri*, OH) is to be read [duhus-], [duḫusa] etc. < **duh$_2$s-o* : **dweh$_2$-* "be distant, be separated" (cf. Oettinger, *MSS* 34 (1976) 133–4). For *suli-* "lead" < **sl(e)i-* (Neumann, *Fs Friedrich*, Oettinger, *MSS* 35) {11.3.3.1.}, and for $^{UZU}$*muh(ha)rāi-*, a body part of animals, = [muhrāi-] < **mh$_2$r-*? see {3.3.2., 10.5.2.1.}.

## 3.10. Nasalization

Hart, *Arch. Ling.* 8/2 [N.S.] (1977) 133–41, explains the alternation of preconsonantal -NI-IK- with prevocalic -NI-IN-KV- in the verbs *hūnink-* "damage", *harnink-* "destroy", *hink-* "pour", *istarnink-* "make sick", *ninink-* "lift" and *sarnink-* "give recompense" as an indication of a tendency for the feature of nasalization in sequences of /NVKV/ to persist throughout the syllable, sometimes showing up in the spelling as a second °N° adjacent to the velar (i.e. /NVKV/ ‣ [NṼKV], 138). Positing such persistent nasalization allows Hart to derive the verbs in *-nin-* from nasal infix presents comparable to the Skt. 7th class *yunakti*-type with generalization of the strong stem in **-nc-*, i.e. **sr̥-nc-k-* > [sarnẽk-]. In support of this hypothesis, Hart notes several other instances of apparent spreading of nasalization in structures of the type /NVKV/.

The consistent *i*-vocalism of OH examples (e.g. *sar-ni-in-kV-*, *sar-ni-ik-C°*), however, suggests that the nasalization actually produced a phonologically real nasal stop that caused raising of Pre-Hitt. **e* before [ŋK], i.e. **ncK* > **nẽK* > [nẽŋK] > [niŋK] (3.2.1.2.). It should be noted too that the alternant [-niŋK-] could occur in preconsonantal position before /w/ in the first person plural present *-ni-in-ku-e-ni* = [-niŋKweni] and preterit *-ni-in-ku-en* = [-niŋKwen] and in the verbal noun and infinitive *-ni-in-ku-wa-ar* = [-niŋKwar] and *-ni-in-ku-wa-an-zi* = [-niŋKwantsi]. Perhaps the spelling -NI-IK-C°, then, represents [-niŋKC-] with graphic omission of the nasal as in *link-* "swear an oath" etc., although the lack of variant spellings in *-ni-in-ik-*, as in the *link*-type would be unexplained.

Evidence for nasalization is also found in several isolated lexical items.

*zamankur*, **samankur* "beard": nom.-acc. sg. *za-ma-an-kur* KUB XXIV 12 II 21, III 7, 34 (NH) KBo XXI 20 I 25 (NH); *samankurwant-* "bearded": nom. pl. c. *sa-ma-an-ku-ur-wa-an-te-es* KBo III 8 III 25 (Pre-NH), acc. pl. *s[a-m]a-an-ku-ur-wa-du-us* (sic) ib. III 7, beside *za-ma-kur* KUB XXXI 127 I 11 (MH+). *zamankur* should be derived from IE **smóḱwr̥* (Laroche, *RHA* 11/52 (1950) 40–1) > [zmãŋkur]. The apparent voicing of the initial **s* in *za-m* = [zm] (1.15.2., 11.8.2.1) points to inherited **sm*, and cognates, e.g. Skt. *śmaśru* "beard" (for **smaśru*), Lith. *smãkras* "beard, chin", Arm. *moruk'* "beard", OIr. *smech* "chin" < **smóḱru-* do not show **n* in front of the velar.

*nanankussi-* "dark", abl. sg. *na]-na-an-ku-us-si-ya-az* 482/e III 14 (HEG); *nana(n)kuss(iya)-* "become dark": 3 sg. pres. *n]a-na-an-ku-us-zi* KUB XII 60 I 6 (OH+), and *na-a]n-an-ku-us-zi* in dup. KUB XXXIII 81 I! 3 (MH?) beside e.g. 3 sg. pres. *na-na-ku-us-]zi* KBo IX 68 r. col. 11 (OH+), ptcp. acc. sg. c. *n]a-na-ku-us-si-ya-an* KBo XIII 101 Rs. 16 (NH), dat. *na]-na-ku-us-si-ya-an-ti* KBo XII 39 Vs. 20 (NH) = [nanaŋgʷss-] < reduplicated **no-nogʷ-s-*, ultimately related to *nekuz* "night" < **négʷts*.

See Watkins, *MSS* 45 (1985) 249–55 for the identification and etymology, and see *CHD* 4, 394–5 and *HEG* 7, 273 w. refs.; the word is cited by Hart as a noun or adjective of unknown meaning.

Other possible examples do not have clear IE etymologies:

*tunna(n)kiszan-* "inner chamber": dir. *]tu]-un-na-an-ki-is-na* KBo XX 28 I 2 (MH) beside OH etc. *tu-un-na-(ak)-ki-is-na*, e.g. dir. *tu-un-na-ak-ki-is-na* StBoT 25, 25 IV 15, 28); $^{NINDA}$*tuni(n)k*, a kind of bread: gen. sg. *tu-n]i-i]n-ga-as* KBo XVII 74 II 35, *tu-ni-in-ga[-as* ib. II 43 (MH), beside nom.-acc. *tu-u-ni-ik* StBoT 25, 54 II 17, *tu-ni-ik* OH etc., e.g. StBoT 25, 16 Rs.? 12, 14.

*nana(n)kalta/i-*, noun specifiying some characteristic of a chariot: gen. sg.(?): *na-na-an-kal-ta-as-sa* KBo X 23 IV 7 (OH+) beside *na-na-gal-t[a-as]* KUB II 3 Vs. III (OH+).

*CHD* 3, 393–4 and *HEG* 7, 273 w. refs.

## 3.11. Vowels in sequence

### 3.11.1. Elision

#### 3.11.1.1. In enclitics

Friedrich, *HE* 36, 63–4; Kronasser, *VLFH* 49, *EHS* 46; Melchert, *SHHP* 31–8.

Elision of the first vowel in a sequence of two unlike vowels is well established in enclitics (Friedrich, Kronasser). The sequence /ua/ became [a], e.g. /nu-as/ (= sentence particle *nu* plus third person personal pronoun nom. sg. c. *as*) ‣ *nas*; similarly with OH sentence particle *su*, /su-as/ ‣ *sas*; /nu-an-san/ (= *nu* plus third person personal pronoun acc. sg. c. *an* plus OH particle *-(s)san*) ‣ *nassan*; /nu-asta/ (= *nu* plus particle *-asta*) ‣ *nasta*; /nu-apa/ (= *nu* plus particle /apa/) ‣ *napa*. The sequence /ue/ shows up as [e], e.g. /nu-e/ (= *nu* plus third person personal pronoun nom. pl. c. *-e-*) ‣ *ne*. Similarly, /au/ became [a], e.g. /ta-us/ (= OH sentence particle *ta* plus third person plural personal pronoun acc. pl. c. *-us*) ‣ *tus*; /ae/ became [a], e.g. /ta-e/ (= *ta* plus third person pronoun nom. pl. c. *-e-*) ‣ *ta*, and /ea/ became [e], e.g. /nu-sse-apa/ (= *nu* plus third person personal pronoun dat. sg. *-(s)se-* plus particle *apa*) ‣ *nussepa*. The product of a sequence of like vowels in enclitics is not normally spelled with plene writing, suggesting that these show elision of the first vowel (Friedrich 36) rather than contraction as assumed by Kronasser, *EHS* 46: e.g. with /aa/, /ta-as/ (= sentence particle *ta* plus third person personal pronoun nom. sg. c. *as*) ‣ *tas*; /ta-asta/ (= *ta* plus particle *-asta-*) ‣ *tasta*; with /uu/, /nu-us/ (= particle *nu* plus third person pronoun nom. pl. c. *us*) ‣ *nus*.

#### 3.11.1.2. Loss of **e* before **o* or **a*

Loss of the first vowel in a sequence **eo* or **ea* is posited by Melchert, *SHHP* 31–8, for the stems *lukka-* "set on fire", *wassa-* "have on" and *lā-* "let go, release" beside *lukke-*, *wasse-*, and *lāi-* from iterative-causatives **louk-éyo-*, **wos-éyo-* and **loh₁-éyo-*, for *tarsant-* "dried" < **tors-éyont-*, participle of an iterative-causative **tors-éye/o-*, for *pāi-* "give" < **pe-ai-*, for the verb *dwarne/a-* "break, damage" < denominative **dhuer-neyo-* and for third person plural present and participle forms of denominative statives in **-eh₁-* in *-anzi* and *-ant-* < **-éh₁-n̥ti* and **-éh₁-n̥t-*. The development **éyo* > **éa* > /a/, if correct, implies that loss of the laryngeal and the subsequent loss of intervocalic **y* in sequences of **eih₁ yo* occurred later than loss of **y* in sequences of **VyV*, since **éiH₁ yo* yielded OH *ēa* (> [ẽya] with glide insertion (9.3.1.3.)). This devel-

opment seems to be correct for forms where **e* was originally accented, though the evidence is sparse. PA **eyó*, however, seems to have become [iya] with reduction of the unaccented **e* to /i/.

Cf. Eichner, *MMS* 31 (1973) 77, *Lautgesch. u. Etym.* 129 n. 41 and *Laryngaltheorie* 140 w. n. 53, and Zinko, *Vertretung* 66, 68–9, 89–90, 95–6 and 122, who posit **eyo* > [iya] as an unconditioned change.

The clearest examples are *lukka-* "set on fire" and *wassa-* "have on, wear", which Melchert derives from old causatives, but which have also been analyzed as primary thematics (Oettinger, *Stammbildung* 299–306, and 271–7 (esp. 273, 277), following Hoffmann, *KZ* 82 (1968) 214–20, Kimball, *PW* 701–4).

*lukka-* "set on fire": 3 pl. pres. *lu-uk-k[an-zi* StBoT 25 68 Rs.? 6, *lu-uk-kan-zi* StBoT 25, 105 L. 7, KBo XX 34 Rs. 10, 11 (MH), ptcp. nom.-acc. sg. n. *lu-uk-kan* KBo XVII 61 Rs. 21 (MH, also MH, OH+, MH+), acc. pl. c. *lu-uk-kan-tu-us* StBoT 25, 105 L.6, nom.-acc. pl. n. *lu-uk-kan-ta* KBo XIX 137 I 6 (NH) = [luka-] < **lukéo-* < IE **louk-éyo-*.

Examples *CHD* 3, 78–9.

*wassa-* "have on, wear": e.g. 3 pl. pres. *wa-as-sa-an-zi* KBo XXI 34 II 12 (MH?, also MH+, NH), 3 pl. imp. *wa-as-sa-an-du* (MH+), ptcp. *wa-as-sa-an-t°/d°* (MH+, NH) = [wassa-] < **wassćo-* < **wos(s)éyo-* < IE **wos-éyo-*; for an IE causative, cf. Gmc. **wasjan*, e.g. in OE *werian* "wear".

Semantically and etymologically, *tarsant-* is likely to continue the participle of an iterative-causative **torséye/o-* seen also in Skt. caus. *tarṣáyati* "dries", Lat. *torrēre* "dry out, dessicate", OIcl. *þerra* "to dry" and OHG *derran* id., but unfortunately, finite forms of the original verb are not attested: e..g. nom.-acc. sg. n. *tar-sa-an* e.g. KUB XXX 43 II 11 (U), (NH), KBo XIII 231 Vs. ? 7, 12, Rs. 9 (NH), KBo XXII 246 III 19 (U), nom.-acc. pl. *tar-sa-an-ta* e.g. KBo XXIII 50 III 20 (NH), *tar-sa-an-t* KBo XX 107 III 12 (U), and from OH on in *tarsanzipa-* "stage, arena" < **tarsant-scba-* *"dry ground"? (gen. sg. *tar-sa-an-zi-p[a-as* StBoT 25, 54 I 3, abl. *tar-sa-an-zi-pa-az* StBoT 25, 30 II 6) = [tarsant-] < **torscont-* < **torséyont-*? The preservation of the cluster *rs* points either to a following accent, as in **torséye/o-* or to **ṛs* as in an adjective **tṛs-ént-* {8.6.5.}.

Examples Oettinger, *Stammbildung* 452–4, who, however, reconstructs **tṛs-ent-*. There is no evidence for the *hi*-verb **tars-* that Oettinger posits.

The evidence is less conclusive for the denominative statives in **-eh₁-*, because the crucial forms are poorly attested for the verbs most likely to be members of this class. Probably the best example is *arsant-* "envious" in *sākuwa ar-sa-na-an-d[a* "envious eyes" (KUB XXXIII 9 III 7, MH+) < **ṛh₁sn-éh₁-nt* beside **ṛh₁sn-éh₁-si* in OH 2 sg. pres. *ar-sa-ne-e-si* StBoT 25, 122 III 2, 4, 6, 8 etc. The verb would be a denominative to an adjective **ṛh₁s-no-*, presumably in the agent noun *arsana(l)tal(l)a-* (*ar-sa-na-at-ta-l°*, pre-NH, NH) from the root **ṛh₁s-* of Skt. *irṣya-* "envy, jealousy", AV. *arəsyant-* "envious" etc. (cf. Watkins, *MSS* 45 (1985) 250–5 and Peters, *Sprache* 32 (1986) 371–2). It is difficult, however, to rule out other analyses. MH and NH forms of the verb have a stem in °NI-E (2 sg. pres. *ar-sa-ni-e-se* ABoT 65 Rs. 6, MH, 1 sg. pret. *ar-sa-ni-e[nu-un* ib. Rs. 4, 3 pl. *ár-sa-ni-er* KUB I 1 I 32, NH, *ar-sa-ni-i-e-er* Hatt. I 32, NH ), while *arsaniya-* occurs in 3 sg. pret. *ar-sa-ni-ya-at* KUB XIX 65 L. 14 (NH). Although *ar-sa-ni-eC-* can be read as [arsanē-] with NI = NE (cf. e.g. OH *ga-ni-es-zi*, *ga-ni-es-ser* "they recognize" = [gnēss-] < **gnēh₂s-* {10.5.3., 11.6.3.3. }), *arsaniyat* suggests that the verb had a stem in *-iya-*, [arsanya-], by NH. It is also possible to take *arsanant-* as a derivative in *-ant-* of the base adjective.



*huisuē-* "be alive, remain alive, escape alive" is undoubtedly a denominative stative (see Watkins, *TPS* 1971 93, *MSS* 45 (1985) 245–9 and Melchert, *SHHP* 42–3). However, the third person plural present of this verb has not been found, and *huswant-*, *hui(s)swant-* "alive" is not necessarily its participle. Melchert, *SHHP* 106–7, understands *hui(s)swant-* either as a possessive in **-wént-* to a root noun **h₂wes-/*h₂us-* "life" or as an extension in *-ant-* of the adjective *huisu-* "raw, alive". Watkins, *MSS* 45, 245–9, reconstructs an ablauting paradigm: strong stem **h₂wés-wn̥t-* : weak stem **h₂us-wént-*.

Stems in *-a-* are not attested for other verbs that are likely to be denominative statives: *lalukkē-* "be luminous" (*la-lu-ke-et*, MH+); no forms in **lalukka-* occur (*CHD* 3, 28); *marsē-* "be false, dishonest" (*mar-se-e-er*, OH, OH+); no **marsa-* occurs (*CHD* 3, 200); *miyahuntē-* "be old, live long" (*mi-ya-hu-un-te-zi*, OH+); no **mi(ya)hunta-* occurs (*CHD* 3, 228); *nakkē-* "be honored, important, difficult" (*na-ak-ke-ez-zi*, MH(?), *na-ak-ke-e-et*, OH+), no **nakka-* occurs, but NH texts have *na-ak-ki-ya-* (*CHD* 4, 368–9). Beside *papre-* "be impure, guilty" (*pa-ap-re-ez-zi*, OH, *pa-ap-re-et-ta*, OH+), which has a stem *pappriya-* in NH, a *paprant-* "impure" is found in NH and MH+ (cf. Oettinger, *Stammbildung* 282 n. 46). This could be from a Pre-Hittite participle **papr-ē-ənt-*, but it could also be an extended form in *-ant* from an adjective **papra-* "impure" (in *paprahh-* "make impure", *paprātar* "impurity", and, unreduplicated, in CLuv. **paratta-* "impurity" (*CLuv. Lex.* 167), a possibility that Melchert himself (33 n. 68) suggests. There is no evidence for reading *paprant-* as *paprānt-* (*pa-p-ra-a-an-t°*) from a **paprā(i)-*.

For *werite-* "be frightened" (OH intrans., later texts also trans.) OH has *we-ri-ta-an-zi* StBoT 25, 4 Rs. IV 35 and *[we?-r]i-ta-an-zi* StBoT 25, 3 IV 39. Oettinger cites a *ú-e-ri-ta-[an-zi* in KUB XXXVI 3 Vs. 2 (NH), but this citation seems to be a misprint. Watkins, *TPS* 1971, considers this a derivative in **-t-* to the root **wer-* seen, e.g., in Lat. *uereor* "I fear". An alternative analysis is possible, however. Eichner, *Fl. u. Wb.* 88, and Oettinger, *Stammbildung* 127–9, suggest the verb was originally a compound of **weri-* or **wori-* "fear" from the root **wer-* plus **dheh₁-* "set, put in fear, make afraid". The alternation *te-/ta-* would then continue **dheh₁-* : **dhh₁-* (cf. *pēhutezzi* : *pēhutanzi* etc. {2.9.1.1.}). Melchert does not cite this verb as a stative and (SHHP 310–11 n. 6) takes no position on the stem.

Clear examples of *mi*-conjugation stems in *-a-* do not occur for two denominatives in **-e-yé/ó-*. Both also attest stems in [-ya-].

According to Melchert, a stem **usne-yé-* is implied by the iterative stem *us-ne-es-k°* "sell, redeem" in 3 sg. pres. midd. *us-ne-es-kat-ta* KUB XXIX 29 Vs. 12, 15 (OH), 1 sg. pres. act. *us-ne-es-ke-mi* KBo XXI 22 Vs. 19, 20 (MH), cf. also 1 sg. pret. *us-ni-is-ke-nu-un* KUB XL 88 IV 14 (NH), *us-sa-ni-is-ke-nu-un* KUB XIV 7 III 19 (NH), 3 sg. pret. *us-sa-ni-is-ke-et* KUB XXI 27 IV 40? (NH) = [usnesk-] < Pre-Hitt. **usne-ye-ské/ó-* : **usne-yé/ó-*; cf. Gk. ὠνέομαι (**wosne-ye/o-*), Skt. *vasnayáti* (**wesne-yé/ó-* or **wosne-yé/ó-*). Non-iterative forms with an *o*-grade suffix vowel, which only appear in texts

written down in the NH period (NH, MH+), have *us-(sa)-ni-ya-*: 3 sg. pres. *us-sa-ni-ya-zi* KUB XIII 4 II 40 (MH(?)+), 2 pl. *us-sa-ni-ya-at-te-ni* ib. II 72, 1 sg. pret. *us-sa-ni-ya-nu-un* KUB XL 91 III 14 (NH), 3 sg. *u[s-sa-ni-ya-at* KUB XIII 35 + III 16 (NH), 1 pl. *us-sa-ni-ya-u-e[n]* ib. III 24, 3 sg. imp. *us-sa-ni-ya-ad-du* KUB XIII 4 II 39.

For examples and discussion see Neu, *WO* 11 (1980) 79–88.

*tuwarniya-* "damage" probably continues **dhwerne-yé/ó-* {3.2.2.1.}, but it has a stem in -NI-EC-, which can be read [dwarn-ye-] in OH and MH texts: 3 sg. pres. *tu-wa-a[r-n]i-ez-zi* (MH), *du-wa-ar-ni-<ez>-zi* (MH), 3 sg. pret. *du-wa-ar-ni-et* (MH), 3 pl. *tu-wa-ar-ni-er* (OH). The earliest forms with an *o*-grade suffix vowel are from MH texts and both *-iya-* and *-a-* are found; with *-iya-*: *tu-wa-ar-ni-ya-an-zi* KBo XX 34 Vs. 10, 12 (MH); with *-a-*: 3 pl. pres. *du-wa-ar-na-an-zi* KBo XIII 146 I 17 (MH), ptcp. nom.-acc. pl. n. *du-wa-ar-na-an-da* KBo X 34 I 24 (MH). However, a singular form with unequivocal *hi*-conjugation inflection also shows up in late MH: 3 sg. pres. *tu-wa-ar-na-i* KBo XXIV 1 I 8, 12, and *hi*-conjugation forms are frequent in OH+, MH+ and NH texts. This suggests that MH *-anzi* and *-ant-* might show analogical *hi*-conjugation inflection rather than loss of **e* before **a*.

Examples *Stammbildung* 308–9, *PW* 742–4.

The forms of *tuwarniya-* and *us(sa)niya-* in [-yē-] and [-ya-] suggest that Melchert's formulation should be modified. The most likely examples of elision show loss of accented **é* or PA **ē* from **éh₁*. In denominatives in *-ye/o-*, however, the accent was on the thematic vowel. Forms of *tuwarniya-* with *e*-grade thematic vowel might well have developed as **-e-yé-* > **-i-yé-* > [-iyē-], perhaps with later phonological reduction to [-yē-] or remodeling to [-yē-] after other denominatives. The reduction of the unaccented **e* to /i/ after **y* must have been independent of the reduction of unaccented **e* to /i/ in other environments, since it preceded the loss of intervocalic **y*. The *o*-grade **-o-yó-* may have developed to **-oó-* with subsequent phonological development and/or analogical remodeling to [-ya-]. This would mean, however, that OH *us-ne-es-k°* should be read as [usnisk-] < **usneyesk-* with reduction of unaccented **eye* to [i] and -NE-EŠ- for -NI-IŠ {1.6.}.

Melchert's derivation of *pāi-, pēhhi, piyanzi* "give", is unlikely. He derives the stem *pāi-* from preverb **pe-* plus **ai-* "give" in e.g. Gk. ἄνυμαι and Toch. A *ai-*, B. *e-* "give" with deletion of the vowel of the preverb, i.e. **pe-ai-* > *pāi-* (32). While the root etymology is surely correct, the reduplicated forms in Luvian (CLuv. it. *pipissa-*, Lyc. 3 sg. pres. *pibeti*, pret. *pibete*) suggest that the deletion of the vowel of the preverb took place early enough within PA for the stems **pai-* and **pi-* (< **pe-i-*) to have been reinterpreted as an ablauting verbal root **pai-*, **pi-*. There is no guarantee, however, that the loss of the vowel of the preverb was due to a rule simply deleting the first vowel. For example, the verb root may have been accented in strong stem forms and the endings in forms of the weak stem and the vowel of the preverb lost by syncope (i.e. **pe-ái-* > **pāi-*; **pe-i-* > **pi-*). It is also possible that the preverb was **po-* rather than **pe-*; cf. *pāi-, pā-* "go" < **po-(h₁)ei-*, **po-(h₁)i-* etc. {4.9.1.}.

Elision may also have occurred in *kate(r)ra-* "lower": nom. sg. c. *kat-te-er-ra-as* (NH), dat. sg. *kat-te-ri* (OH+), *kat-te-er-ri-ma* (OH+), abl. sg. *kat-te-ra-az* (OH+), *kat-ti-ir-ra-az* (OH+), *kat-te-er-ra-az* (OH+), nom. pl. c. *kat-te-re-es* (U), nom-acc. pl. n. *kat-te-ra* (MH), dat.-loc. pl. *kat-te-ra-as* (MH, MH+), nom.-acc. pl. n. (?) *kat-te-er-ra-* (MH+), acc. pl. c. (as nom.) *kat-te-er-ru-us* (NH), perhaps [katēra-] < **kat(a)-éro-*, cf. Gk. κατά {8.5.2.}.



## 3.11.2. Contraction

Loss **y* of between like vowels or between the non-front vowels **ā* or **ă* and **o* left a sound spelled with plene writing in the animate nominative-accusative plural ending *-ēs* (*-V-e-es, Ce-e-s°*) from *i*-stem ending **-éy-es* {9.3.1.1.}; the denominative suffix *-ā-* (e.g. *ha-at-ra-a-mi* "I write") from **-ā́y-o-* {9.3.1.2.} and in certain lexical items: e.g. *dān* "second(ly) (*da-a-an, ta-a-an*) < **dwoyóm* {9.3.1.1.}; stem *pā-* "go" (e.g. 3 pl. pres. *pa-a-an-zi*, ptcp. *pa-a-n-t°* < Pre-Hitt. **pó-y-nti*, **pó-y-ont-*). Hyperplene spellings are found in *ā-* "be hot" (e.g. 3 sg. pres. *a-a-ri* < **áy-ori*, ptcp. *a-a-an-t°* < **áy-nt-* < **áy-yt-* {9.3.1.1.}). Loss of intervocalic **h₃* left a sound spelled with plene writing in forms of the paradigm of *dā-* "take" (e.g. 3 sg. pres. *da-a-i* (OH etc.) < **dóh₃-ei*, 3 pl. pret. *da-a-er* (OH) < **dóh₃-ēr* {10.4.3.}) and in *sū-* "full" < **séuh₃-u-* shows up as *su-u* or as *su-u-ú* with hyperplene {10.4.3.}.

It is likely that some or all of these forms show contraction to long vowels, and not hiatus, especially those with loss of **h₃*, a PA sound change. Hyperplene spellings by themselves do not necessarily indicate hiatus {1.4.}. Contraction rather than hiatus is difficult to prove, however. Luvian and Lycian verbs in *-āi-* with suffix *-ā-* from **-ā́yo-* do usually have PA voicing of the third person singular present or preterit, first person singular preterit or third person singular imperative endings, e.g. CLuv. *il-ha-a-ti* "(s)he washes", 1 sg. pret. *e-el-ha-a-ha*, 3 sg. imp. *e-el-ha-a-du* (*CLuv. Lex.* 87); *pa-si-ha-a-ti* "(s)he pulverizes" (ib. 172; note, however, 1 sg. pret. *pa-a-si-ha-ah-ha*, 3 sg. pret. *pa-si-ha-a-it-ta*; Lyc. *χttadi* "harms", pret. *χttade* (*Lyc. Lex.* 93). However, it is not certain that the loss of intervocalic **y* was common Anatolian {9.3.1.2.}.

See also Melchert, *AHP* 115, 176–7 for discussions of contraction and elision.

# Chapter Four

# Diphthongs

## 4.1. System inherited from IE

IE had six diphthongs composed of a vowel plus glide **y* or **w*: **ei*, **oi*, **ai*, **eu*, **ou*, and **au*. The *e*-grade diphthongs **ei* and **eu* alternated within paradigms with *o*-grade **oi* and **ou* and zero-grade **i* and **u*, e.g. Gk. λείπω "I leave", perf. λέλοιπα, aor. ἔλιπον, or χεῦμα "stream", χοή "libation" (< **χοϝη*), 3 sg. midd. perf. κέχυται "(s)he poured". There is also evidence for ablaut **ai* : **i* and **au* : **u*, e.g. Gk. αὔω "I kindle" : Skt. *idhmaḥ* "fuel", 3 sg. pres. *inddhe* "burns", Hitt. *inu-* "make warm". IE also had diphthongs with long vocalic elements **ēi*, **ōi*, **āi* and **ēu*, **ōu*, **āu* which appeared in lengthened-grade contexts (e.g. nominative singular suffix **-ōu-* in Hitt. *-āus*, Av. *-bāzāus* "armed", and Gk. -ως, gen. -ωος (< **-ωϝος* e.g. in ἥρως "hero", gen. ἥρωος) and in part as the result of contraction within IE (e.g. thematic dative singular ending **-ōi* < **-o-ei* e.g. in Gk. λύκῳ "wolf", Lith. *vilkui* id. (Mayrhofer, *Idg. Gr.* I/2, 172–5).

## 4.2. Developments from IE to PA and Pre-Hittite

Eichner, *MSS* 31 (1973) 76–9, *Laryngaltheorie* 139–40; Kimball, *Sprache* 36 (1994) 1–28; Kronasser, *VLFL* 43–6; Melchert, *SHHP* 59–76, *AHP* 76; Pedersen, *Hitt.* 129–130, 144, 170; Sturtevant, *Language* 6 (1930) 25–35, *CGr*$^1$ 99–104, *CGr*$^2$ 35–7, 39–40, *Language* 26 (1950) 1–5; Zinko, *Vertretung* (passim).

The short diphthongs **ei* and **eu* were monophthongized in PA. IE **ei* became a long front vowel that shows up as *i* in the Luvian languages and as /ē/ or /ī/ in Old Hittite. The reflexes of monophthongized diphthongs appear to have been long vowels that, when accented, caused voicing of a following stop or fricative in PA (e.g. CLuv. 1 sg. pret. *iha* "I went" < **$h_1$éi-h$_2$a*, 3. sg. pret. *iti* < **$h_1$éi-ti*) {6.2.3.}.

### 4.2.1. Diphthong plus laryngeal

Eichner (*Laryngaltheorie*) claims that *i*- or *u*-diphthongs plus **$H_{1/3}$* merged with long diphthongs in IE, ultimately showing up in Hittite as *ai* and *au*, i.e. **ei$H_{1/3}$* > IE **ēi* > Hitt. *ai*; **oi$H_{1/3}$* > IE **ōi* > Hitt. *ai*; **ai$H_{1/3}$* > IE **āi* > Hitt. *ai*, and in parallel fashion: **eu$H_{1/3}$* > IE **ēu* > Hitt. *au*; **ou$H_{1/3}$* > IE **ōu* > Hitt. *au*; **au$H_{1/3}$* > IE **āu* > Hitt. *au*. There is, however, a counterexample from a morphologically isolated word,



*eua-* "barley" < **yéu$H_{1/3}$-o-* {9.2.1.1.}; for the medial laryngeal, note the acute i of Lith. *jáujas* "barn" (*"place for storing grain" < **yóu$H_{1/3}$yos* (Kimball, *Spra* (1994) 26). Another counterexample might be $^{GIŠ}$*e(y)a(n)-*, an evergreen tree, = [ē(y)a-] < **(h$_1$)éi$H_{1/3}$-o-* or **(h$_1$)éi$H_{1/3}$-eh$_2$-* {4.3.2.1.}. It is likely that IE **ēi* bec front vowel in *udnē* "country" (OH etc.) < **udnḗi* and **wisūr* or **wesūr* "oppressi denom. *wisūriya-* "oppress, constrict" (MH etc.) < **wēisúro-* {4.8.1.}. What evi exists for inherited **ēu* suggests that it became PA **ū*, not **au* {4.8.3.}.

Reconstructions of *hi*-conjugation stems in *-ai* from *e*-grade **ēih$_1$-C* or lengthened **īih$_1$-C* (e.g. Oettinger, *Stammbildung* 405, 460, 526–7, Eichner, *Fl. u. Wb.* 84, 91, Ja *Heth. u. Idg.* 88–7, Melchert, *SHHP* 73–4) may have had their inspiration in attempts the *-s* of the *hi*-conjugation 3 sg. preterit with the sigmatic aorist and in Sturtevant's con (*Lang.* 6, *Lang.* 26) that synchronic *ai* and *au* in inherited words must derive from H diphthongs. However, the latter conclusion will not stand {4.4.2.,4.7.2.}, and since the is otherwise well established in primary *hi*-verbs, it seems unnecessary to posit anythi an *o*-grade for the strong stem of the type in **eih$_1$-*.

### 4.2.2. Conditioned monophthongization

The idea that all inherited short diphthongs were monophthongized in Hitt Anatolian while long diphthongs remained was first articulated by Sturtevant (J 6, *CGr*$^1$, *CGr*$^2$, *Lang.* 26) and it seems to have won more or less general accept (Pedersen, Kronasser, Eichner, Zinko, Melchert). An examination of the ava evidence, however, suggests that this claim, and its implication, that all synch diphthongs are reflexes of long diphthongs or result from secondary sound ch or borrowing, cannot stand without modification (Kimball). Inherited **oi*, **au* perhaps **ou* and **ai* do not seem to have been subject to unconditioned monopht gization. Kimball finds solid support for monophthongization of these soun word-final position and medially before laryngeals and stops, but a few words synchronic diphthongs in contexts where a lengthened grade **ōi* or **ōu* woul unlikely suggest that monophthongization did not occur before resonants or clu with initial *s*. In addition, many of the examples of monophthongization cited i literature will not work, because they involve forms or morphological categ from which a zero-grade **i* or **u* cannot be excluded, or because they rest on un able etymologies.

Fairly frequent plene writing of the first element of unmonophthongized d thongs suggests that these were lengthened when accented {1.8}.

## 4.3. **ei*

Carruba, *KZ* 95 (1981) 244; Čop, *Sprache* 6 (1960) 7 n. 15; Eichner, *MSS* 31 (1973) 7 Ivanov, *Xettitskij Jazyk* 96; Kimball, *PW* 55–6, 63–6, 371–80, 384–6, 466–76, 480–1, 68 Kronasser, *VLFH* 44; Melchert, *SHHP* 10 n. 3, 67–70, 76, 93–4, 98, 102–3, 133, 141–3, 14 *AHP* 56, 76, 100, 102, 145–6, 148; Neu, *StBoT* 18, 41, 43 w. n. 9, *Heth. u. Idg.* 187; Oettin *StBoT* 22, 30–1; *Stammbildung* 364, 460, 482, 515, 528–9, 535–6, 544; Pedersen, *Hitt.* 170; Sturtevant, *CGr*$^1$ 100–1, *Lang.* 6 (1930) 26–8, *CGr*$^2$ 35; Weitenberg, *u*-Stämme 372; Zi *Vertretung* 10–21, 52, 78, 87, 89, 91, 102, 130, 121.

Scholars have assumed unconditioned monophthongization to a high front vowel (Carruba, Čop), to a mid front vowel (Pedersen, Ivanov, Kronasser) or to (undifferentiated) /e/i (Sturtevant). There is a growing consensus, however, that **ei* underwent conditioned split, becoming a high front vowel (here transcribed as PA **ī* = Hitt. /i/ and /ī/) in some environments but a mid front vowel (here transcribed as PA **ē* = Hitt. /e/ and /ē/) in others. Eichner (*MSS* 31) posits **ei* > **ē* > /i/ after velars and word-finally but **ei* > **ę* > /e/ before stop, fricative, and laryngeal (cf. also *Lautgesch. u. Etym.* 163–4 where Eichner derives *gimmant-* "winter", read as [g[h]ĕmmant-], from **ghēmánt-* < IE **ĝheimón-t-* with **ei* > PA **ē* after velar). Neu reconstructs **ei* > /e/ before **t* in *hantezziya-* "first", *appezziya-* "last", *wēzzi* "comes", and *wēt* "came" (*StBoT* 18, 41, 43), but **ei* > /i/ in *ki-* "lie" and word-finally in the dative singular ending (*Heth. u. Idg.*). Oettinger posits **ei* > /e/ as unmarked reflex but **ei* > /ī/ or /i/ word-finally depending on accent. Zinko claims final **ei* > /i/ (10–21, 120) but medial **ei* > /e/ (121). Kimball assumes **ei* > /ī/or /i/ depending on accent as the unmarked reflex but **éi* > /e/ before laryngeals and **éi* > /e/ before *zz* = /ts/ from **ti/y*. Melchert argues for monophthongization to PA close **ē* (*ę*, when unaccented) which became Hitt. /i/ after velars.

## 4.3.1. Monophthongization to /ī/

### 4.3.1.1. After velars

Monophthongization to /ī/ or /i/ after reflexes of IE palatalized and non-palatalized velars is certain. The *i*-vocalism is assured by the plene writing in *kīs-* "become".

*kīs-* "become": 1 sg. pres. *ki-is-ha* KBo XXII 2 Rs. 15 (OH), *kis-ha-ha-ri* KUB XXVI 12 + II 9 (NH), 2 sg. *ki-is-ta* KUB XXIX 1 I 12 (OH+), 3 sg. *ki-i-sa* e.g. StBoT 25, 139 Rs. 7, KBo XIII 31 I 3 (MH), *ki-sa* e.g. KBo XIII 34 III 6, 9, 12 (OH+), KUB XII 63 Rs. 1 (MH), *ki-i-sa-ri* e.g. StBoT 25, 3 IV 9, KBo III 22 Vs. 22, Rs. 49 (OH), *ki-i-sa-ri* KBo XIX 1 II 22 (OH), *ki-sa-ri* e.g. KBo III 1 II 40, 64, (OH+), *kI-i-sa-ri* KBo XIII 34 III 21, 3 pl. *ki-i-sa-an-ta* KUB VIII 27 L. edge 19 (Pre-NH ), *ki-sa-an-da* Bo 871 + Bo 2516 III 22 (StBoT 5), *ki-i-sa-an-ta-ri* KUB XXXIV 14 Rs.? 6 (OH+), *ki-sa-an-da-ri*, KUB IX 15 II 24 (NH), *ki-sa-an-ta-ri* KUB XXXII 135 I 9 (OH+), 1 sg. pret. *ki-is-ha-at* KBo XII 62 Rs. 11 (MH), KUB XXX 10 Rs. 16 (MH), KUB XXXX 11 Rs. 13 (MH), *ki-is-ha-ti* ib. Rs. 22, 3 sg. *ki-sa-at* e.g. KBo III 1 II 4, 19, KUB XXXX 10 Rs. 14, *ki-i-sa-ti* KBo III 41 + KUB XXXI 4 Vs. 15 (OH+), 3 pl. *ki-i-sa-an-ta-at* KBo XVI 47 Vs. 3 (MH), *ki-sa-an-da-at* KUB XXVI 43 Vs. 54 (NH), *ki-sa-an-ta-ti* KBo VI 2 II 56 (OH), 3 sg. imp. *ki-i-sa-ru* KUB XXIX 7 Rs. 17 (MH) = [kīs-], 3 sg. pres. [kīsa] from acrostatic middle **keis-*, 3 sg. **kéis-o* etc. : **keis-* in Skt. *ceṣṭā* "movement", denominative *ceṣṭati* "stirs, acts, moves"; **keis-* should be an extended form of **kei-* "move" in e.g. Skt. *cyavate*, Gk. κίω, and Lat. *ciēre* "set in motion".

Examples *StBoT* 5, 91–8, *PW* 466–9. The etymology is that of Szemerényi, cited in Tischler, *HEG* 3, 585; see also Kimball, *PW* and Melchert, *SHHP* 69, 103 w. n. 58, *AHP* 102. The derivation of *kīs-* from **geis-* "turn" (in e.g. Germ. *kehren*, OE *cierran*) suggested by Klingenschmitt apud Eichner, *MSS* 31 (1973) 78 (see also *Lautgesch. u. Etym.* 164 and Oettinger, *MSS* 34 (1976) 128–9, *Stammbildung* 525 and Zinko 102) depends on accepting a devoicing of the root-initial stop in the reduplicated iterative *kikkis-* = [kikis-]. There is, however, no unambiguous evidence to support Eichner's claim (*MSS* 31) of **gi* > [ki], or Oettinger's claim (*Stammbildung* 231–2) that the stop became fortis in initial position or Oettinger's claim (*MSS* 34) that devoicing occurred in reduplicating syllables (6.11.4.).



The *i*-vocalism of *kīs-* suggests that in several other words with **ei* after velar an ambiguous KE/I or GE/I is to be read with *i*-vocalism.

*ki-* "lie": 3 sg. pres. *ki-it-ta* (OH etc.), *ki-id-da* KBo III 21 II 9 (OH+), *ki-it-ta-ri* KBo XV 2 I 7, 9 (NH), KUB II 13 I 55 (OH+), 3 sg. pret. *ki-it-ta-ti* KUB IX 28 IV 6 (OH+), *ki-it-ta-at* e.g. KBo X 45 I 30 (MH+), KBo XV 33 II 15 (MH), 3 sg. imp. *ki-it-ta-ru* e.g. KBo V 3 + III 43 (Supp. I+), KUB XXIII 1 + II 7 (NH), *ki-id-da-ru* KUB XXVI 43 Rs. 35 (NH), 2 pl. *ki-id-du-ma-ti* KBo V 12 IV 7 (Supp. I) = [ki-], [kita]. Although the lack of plene writing appears to indicate a short vowel, Skt. *śete* "is lying" and Gk. κεῖμαι "I am lying" point to an IE acrostatic middle present **kéi-to(i)*, and since there is no evidence from the other IE languages for primary verbal forms with the zero-grade root, it is likely that *ki-* and Pal. 3 sg. pres. *ki-i-tar* = [kīdar] (with /d/ via PA voicing (6.2.3.)) are ultimately from **kéi-to*. There is little agreement, however, on how to explain the Hittite short vowel.

Examples *StBoT* 5, 86–7.

*gimaniya-* "spend the winter": 3 sg. pret. *gi-ma-ni-e-et* KBo III 53 + KBo XIX 90 L. 7 (OH+), KBo III 54 L. 7 (OH+), *gi-ma-ni-et* KBo III 46 Vs. 36 (OH+) = [gimanyē-], denominative to *gīman-* "winter" in acc. sg. *gI-ma-an* 1729/u (Oettinger, *Fs Neumann* 237) < **ĝhéimn̥* = Skt. *heman-*, "winter", Gk. χεῖμα id. or **ĝhéimōn* = Gk. χειμών "snow" (Zinko, Kimball, *PW* 385–6, Melchert, *SHHP* 70, 127 n. 90 and *AHP* 145) (7.3.2.).

*gimmant-* "winter": nom. sg. *gi-im-ma-an-za* (NH), gen. sg. *gi-im-ma-an-da-as* KUB XIII 2 IV 24 (MH?), dat.-loc. sg. *gi-im-ma-an-ti* (NH) = [gimmant-], also found in *gimmandariya-* "spend the winter" (*gi-im-ma-an-t/da-ri-ya-*, NH). The derivation is not entirely certain. It has been suggested that *gimmant-* continues IE **ĝheim-ónt-* with doubling **m* > *mm* before an accented syllable (Eichner, *Lautgesch. u. Etym.* 163–4, Oettinger, *Fs Neumann* 236–8) **ĝhimn-ónt-* from **ĝheimn-*, oblique stem of **ĝhéimn̥* "winter, snow" or **ĝhéimōn* id. with **mn* > *mm* is also possible (Melchert, *SHHP* 70, 146–7) (7.3.3.2.).

### 4.3.1.2. Other examples of monophthongization to /ī/

There are at least three other possible examples of **éi* > /ī/ or **ei* > /i/. The most likely is **misri-* "spark, ray, gleam" in *misriwant-* "bright, splendid, glowing, perfect": e.g. nom. sg. c. *mi-is-ri-wa-an-za* KBo IV 6 I 13 (NH), *me-es-ri-wa-an-za* KUB XXXVI 89 Rs. 42 (NH), acc. sg. c. *mi-is-ri-wa-an-ta-an* KBo XV 10 II 9 (MH), dat.-loc. sg. *mi-is-ri-wa-an-ti* KBo VIII 70 L. 8 (MH), nom. pl. c. *mi-is-ri-wa-an-te-es* KBo XV 10 I 17, acc. pl. c. *mi-is-ri-wa-an-du-uſs* ib. III 32, dat.-loc. pl. *mi-is-ri-wa-an-ta-as* KBo XV 34 II 38 (MH) = [misriwānt-], derivative of a noun **méisri-* : **meis-* "blink, wink, glitter". For the *e*-grade, cf. *ēs(sa)ri-* "shape" or *ēdri-* "food". Etymology, Neumann, *KZ* 75 (1957) 88, cf. Tischler, *HEG* 6, 216–7 and Kimball, *Sprache* 36 (1994) 15–17. Compare with zero-grade HLuv. *mizra-* and Lyc. *mizre-* (both in proper names) from adj. **misro-* "shining, pure" (Melchert, *AHP* 273–4).

*sālīg-* "approach, molest, accost: 3 sg. pres. midd. *sa-li-i-ga* StBoT 25, 42 II 17 = *sa-li-ga* StBoT 25, 43 I 15, *sa-li-ga* KUB XII 63 II 8 (MH), *sa-a-li-ga* Bo 1917 L. 7 (StBoT 5), *sa-a-li-qa* KUB XIII 4 III 65, 80 (MH?+), *sa-li-qa-a-ri* KBo XIII 119 II 16 (OH+), 3 pl. *sa-li-ki-an-ta* (sic) KBo XV 33 II 20 (MH), 1 pl. pret. */s/a-li-ku-wa-as-ta-ti* KBo III 45 L. 9 (OH+), 2 pl. *sa-li-ik-tu-ma-ri* KBo XXII 2 Vs. 19 (OH), 3 sg. imp. *sa-li-ka-ru* KUB IX 4 III 21 (NH); active forms occur from MH on: e.g. 1 sg. pres. *sa-li-ik-mi* KUB V 1 I 29 (NH), 3 sg. pret. *sa-li-ka-as* ABoT 60 I 7 (MH), vbl. noun *sa-li-k[u]-ar* KUB V 1 III 77, *sa-li-ku-ar* ib. 97, inf. *sa-li-ki-wa-an-zi* (sic) KUB XXIX 53 I 10 (MH) = [slīg-], [slīga] etc.? This verb may be from an acrostatic middle **slóigo* : **sloig-* "be slimy, smooth, even stick, adhere", cf. OIr. **sligim* "adhere" in *adsligim* "tempt, entreat", OHG *slīhhan* "creep", Goth. *slaihts* "smooth, even", OE, OHG *sleht* id. (Oettinger, *MSS* 34 (1976) 130–2), but the plene writing in the initial syllables of some examples (3 sg. pres. *sa-a-li-ga* Bo 1917 L. 7 (NH dup. of StBoT 25, 43), *sa-a-li-qa* KUB XIII 4 III 65, 80, MH(?)+, *sa-a-li-ga-ri* 945/c Rs. 2, StBoT 5, 147) makes the assumption of a dead vowel problematic.

Examples *StBoT* 5, 147–9, Oettinger, *loc. cit.*

For *wisūriya-* "press, oppress, stifle constrict" (*ú-i-su-(u)-ri-(ya)-* , MH etc.) Eichner, *MSS* 31 (1973) 77, reconstructs a base **wéisuro-*, but a lengthened-grade **wēisúro-* is also possible {4.8.1.}.

## 4.3.2. Monophthongization to /ē/

### 4.3.2.1. Before laryngeals

*nē-* "turn": midd. 3 sg. pres. *ne-e-a* StBoT 25, 43 I 12, *ne-e-a-ri* IBoT I 36 III 63 (MH), 3 pl. *ne-e-an-da* StBoT 25, 12 II 29, KUB XXXIX 64 L. 8 (OH), ptcp. nom. sg. c. *ne-e-an-za* StBoT 25, 27 Rs.! 11, nom. pl. c. *ne-e-an-te-es* StBoT 25, 27 Rs.! 10, 11 = [nēa-], [nēa], [nēanta] etc. from an acrostatic middle **néiH$_{1/3}$-o-*, cf. Skt. *nayati, nayate* "leads", Av. *nayeiti* id.; for the laryngeal cf. Skt. ptcp. *nītaḥ* < **niH$_{1/3}$-to-*.

Examples *CHD* 3, 349–50; for the etymology see Eichner, *Lautgesch. u. Etym.* 129 n. 41, *Laryngaltheorie* 140, Kimball, *PW* 373–80 (**néih$_1$-o-*), Melchert, *SHHP* 46, 67–8, 93 (**néih$_1$-o-*) and Oettinger, *Stammbildung* 460–1, 481–2, 515 (**néiH$_{1/3}$-o-*).

*ehu* "come!" (*e-hu*, OH etc.) = [ēhu] < **h$_1$ei-h$_2$(a)u*, second person singular imperative of **ei-* (< **h$_1$ei-*) "go" plus particle *hu* < **h$_2$(a)u-* {10.4.2.2.}.

*zē-* "be done, be cooked": midd. 3 sg. pres. *zi-e-ya* StBoT 25, 54 II 20, *ze-e-a-ri* KBo V 1 I 29, 36 (Pre-NH), *ze-a-ri* KBo XV 25 Rs. 6 (MH?), *zi-ya-ri* KUB XLIV 63 II 14 (NH), ptcp. acc. sg. c. *ze-e-an-da-an* KBo III 60 II 12 (OH+), nom. pl. c. *zi-e-an-te-es* StBoT 25, 3 III 21 = 6 III 13 = [tsēa-]? [sēa-]? from an acrostatic middle **séih$_1$-o-*. The structure of the verb and the development of the diphthong would be comparable to that seen in *nēa-*, but the etymology depends on the treatment of initial **s* {11.8.2.2.}.

Examples *StBoT* 5, 206–7. The etymology is that of Eichner apud Oettinger, *Stammbildung* 152 n. 39; see also ib. 515, Eichner, *Laryngaltheorie* 140 n. 56 (**séiH$_{1/3}$-*) and Melchert, SHHP 325, 29 n. 61, 114.

*wēh-* "turn": 3 sg. pres. act. *ú-e-eh-zi* e.g. StBoT 25, 3 IV 3, StBoT 25, 31 II 13, 1 sg. pret. act. *ú-e-hu-un* KUB XXIII 11 II 13 (MH), 3 sg. pret. *ú-e-eh-ta* KUB XL 5 + KBo XXII 4 L. 6 (OH+), 1 sg. pres. midd. *ú-e-ha-ah-h[a* KUB XXXVI 75 III 18 (MH), 3 sg. *ú-e-eh-ta-ri* KUB XIII 4 III 20 (MH(?)+), *ú-e-ha-at-ta* KUB VII 1 + II 33 (Pre-NH), 3 pl. *ú-e-ha-an-ta* StBoT 25, 47 II 17, 3 sg. pret. *ú-e-ha-at-ta-at* KUB IV 1 I 14 (MH?), *ú-e-eh-ha-at* KBo XII 8 IV 16 (OH+), 3 pl. imp. *ú-e-ha-an-da-ru* KUB XIII 2 I 12, II 22 (MH?) = [wēḫ-], probably < **wéiH$_2$-* : Skt. *veti* "follows after", ptcp. *vītaḥ*, Lith *vejù, výti* "follow after, hunt", ptcp. *výtas* reflecting IE act. **wéih$_2$-ti*, ptcp. **wih$_2$-to-*. The forms in *wah-* (e.g. 3 pl. pres. act. *wa-ha-an-zi*, OH etc., ptcp. *wa-ha-a-an* KBo XV 10 II 28, MH) must be analogical on the model of *mi*-verbs in *ē* : *a*.

Examples *StBoT* 5, 195–9, *PW* 375–8; for the etymology see Eichner, *MSS* 31 (1973) 76–7 and Kimball, *PW* 379. Oettinger, *Stammbildung* 99–100, reconstructs an acrostatic active **wéh$_2$-ti* : **wéh$_2$-n̥ti* with strong stem **wéh$_2$-* > [wēh-] with lenition beside weak stem **wh$_2$-* > *wahh-* in 1 pl. pres. *wa-ah-hu-e-ni* 829/v L. 3 (described as OH) and weak stem *wah-* with voiced /ḫ/ by analogy to *wēh-*. See also Melchert, *AHP* 68, 98, 122. There are no apparent cognates, however, and forms with *wahh-* appear to be marginal (note also the aberrant 3 sg. pres. *wa-ah-hu-zi* in the horse-training text KBo III 5 III 4 (MH+).

The pronominal nominative-accusative plural neuter ending *-e* in dem. pro. *apē*: (e.g. *a-pe-e-a* (with *-(y)a-* "and") StBoT 25, 105 L. 8) = [abē], dem. pro. *kē* (e.g. *ke-e* KBo III 22 Vs. 33 (OH), KBo VIII 42 Rs. 6 (OH), KUB XXXVI 106 Vs. 9 (OH), StBoT 25, 3 III 4 = StBoT 25, 4 III 4) = [kē] and rel. pro. *kue* (e.g. *ku-e* KUB XXXVI 108 Vs. 7 (OH), StBoT 25, 25 IV 26, 34) = [k$^{w}$ē] can be from pural **-ei-h$_2$*, i.e. **obhéi-h$_2$*, **ḱei-h$_2$*, **k$^{w}$éi-h$_2$* or from dual **-oi-h$_1$*, i.e. **obhói-h$_1$*, **ḱói-h$_1$*, **k$^{w}$ói-h$_1$*. See Eichner, *MSS* 31 (1973) 79, and Melchert, *SHHP* 70–1.

Another example is perhaps $^{GIŠ}$*e(y)a(n)-*, an evergreen tree, perhaps "yew": nom.-acc. sg. *e-ya-an* e.g. KBo VI 2 II 62 (OH), KUB XXIX 1 IV 17 (OH+), *e-ya* KUB XVII 10 IV 28 (MH), *e-a-an* KUB VII 18 L. 4 (OH+), gen. *e-ya-as* Bo 2839 III 4, Bo 2967 III 2 (HED), dir. *e-ya* KBo III 8 III 9, 27 (Pre-NH), dat.-loc. sg. *e-ya-ni* KUB XII 19 III 17 (MH+), *e-a-ni* KUB XXVII 67 III 70 (NH), abl. sg. *e-ya-az* KUB XVII 10 IV 28, nom.-acc. pl. *e-i-e* Bo 2689 II 30 (*HED*) = [ēa-] or [ēya-] with glide insertion < **(h$_1$)éiH$_{1/3}$-o-* or **(h$_1$)éiH$_{1/3}$-eh$_2$-*. The word is comparable to several words for plants with a root **(h$_1$)ei-*, perhaps originally designating a reddish color (Pokorny, *IEW* 297), and various suffixes, e.g. **(h$_1$)ei-wo-* in Gaul. *ivo-*, OIr. *eo*, W. *ywen* "yew", Gmc. **īwaz* "yew" (OE *īw*, ON *ýr*, OHG *īwa*), **(h$_1$)ei-weh$_2$-* in Lith. *ievà* "buckthorn", Latv. *ieva* id., Russ. *iva* "willow", Gk. ἴτα, οἴτα "rowan" and **(h$_1$)ei-ko-* in OHG *īgo*, Sw. *iche*, OE *ih, eoh* "yew". A **(h$_1$)eiH$_{1/3}$-* with laryngeal root extension was reconstructed by Eichner, *MSS* 31 (1973) 77, *Sprache* 24 (1978) 151, and may be supported by SCr. *ìèva* < **(h$_1$)eiH-wah$_2$-* (see also Melchert, *SHHP* 93 n. 33, 164, who reconstructs **h$_1$eih$_1$-o-*, and Zinko 89–90).

Examples *HED* 2, 253–7.

### 4.3.2.2. Before /ts/

A change of **ei* to *ē* before /ts/ from **ti* or **ty* seems certain.

*hantezziya-* "first": nom. sg. c. *ha-an-te-ez-zi-ya-as* e.g. KUB XXIX 29 Vs. 13 (OH), KBo VI 3 II 6 (MH), *[ha]-an-te-ez-zi-as* KBo XVI 25 I 21 (MH), acc. sg. c. *ha-an-te-ez-zi-an* StBoT 25, 43 IV 4, KBo XVI 24 + I 15, *ha-a[n-t]e-ez-zi-ya-an* KBo III 7 II 18 (OH+), nom.-acc. sg. n. *h[a-an-te-ez-zi-an* StBoT 25, 13 I 13, *ha-an-te-ez-zi* e.g. KBo

XVI 25 I 13, nom. pl. c. *ha-an-te-ez-zi-e-es* StBoT 25, 61 Vs.? II 1 = [hantetṣya-] < **h₂n̥téi-tiyo-*. Plene writing °*te-e-ez*° is virtually never attested, even in early texts, (only *ha-an-te-e-ez-zi* KUB XXXVI 55 II 21 (NH) occurs) suggesting that -TE-EZ- indicates short /ĕ/ {1.3.3.4.}. As Neu, *StBoT* 18, 41, notes, the diphthong is assured since **h₂n̥ti-tiyo-* should have resulted in ***hanzizziya-* with assibilation of the first **t*.

Examples *HED* 3, 108–111; see also Eichner, *MSS* 31 (1973) 77, Zinko, *Vertretung* 87, 91 and Melchert, *SHHP* 93, 113, 141 for discussions. The °I° of nom.-acc. sg. n. *ha-an-ti-iz-zi-an* StBoT 25, 123 L. 8 is anomalous (see Melchert, *SHHP* 113, who considers it the result of dialect variation, and note *ú-i-it* "he came" ib. L. 4 for *ú-e-et* {1.6.3.8.}).

Sporadic spellings with °A-I° (*ap-pa-iz-zi*°) with NH °A-I° for OH /ĕ/ suggest that *appezziya-* "last" should be read as *ap-pe-ez-zi-ya-* = [apĕtṣya-] with /ĕ/ < **éi* as in *hantezziya-* (Neu, *StBoT* 18, 41, Kimball, *PW* 692–3, cf. also Zinko 87). It is possible that *appezziya-* was remade from **[apitṣya-] < **h₁opí-tyo-* with stem **h₁opi-* as in Gk. ὀπίσ(σ)ω "backwards", ὄπι(σ)θεν "behind" after the model of *hantezziya-*.

### 4.3.2.3. Elsewhere

For *wē-* "come", OH normally shows *e*-vocalism: 3 sg. pres. *ú-ez-zi* e.g. StBoT 25, 3 I 40, StBoT 25, 12 I 13, II 16, IV 10 (and passim OH, MH etc.), *ú-e-ez-zi* StBoT 25, 3 III 13 = *ú-e-[ez-zi* StBoT 25, 4 III 13, 3 pl. *ú-en-zi* KBo VI 2 IV 13 (OH), StBoT 25, 12 II 18, IV 2, 14 (*ú-en-[zi]*), StBoT 25, 19 Rs. 47, 3 sg. pret. *ú-e-et* KBo III 22 Rs. 66 (OH), KBo XXII 2 Rs. 13, *ú-et* KBo VII 14 + KUB XXXVI 100 Vs. 7, Rs. 3, 5, KBo XXII 2 Rs. 8, KUB XXXVI 99 Rs. 8 (OH) (and Post-OH *passim*), 3 pl. pret. *ú-e-er* KBo III 22 Vs. 23, KBo VII 14 I 16, KBo VI 2 III 16, cf. 3 sg. imp. *ú-ed-du* KUB XIV 1 Rs. 74 (MH), 2 pl. *ú-et-te-en* KBo III 41 Vs.! 22 (OH+). Eichner, *MSS* 31 (1973) 76, Oettinger, *Stammbildung* 132–4, and Melchert, *SHHP* 28, 40–1, 67, 113, 117, 130 and 141 derive the *e*-vocalism directly from **ei*. However, **éi* would have become /ĕ/ before /tṣ/ in the third person singular present *ú-ez-zi* = [wĕtṣi] from PA **(o)u-éiti* or **áu-eiti* (cf. CLuv. *a-ú-i-ti* "comes") from IE **h₁éiti* "goes" plus preverb **(o)u-* "to". If **éi* became /ĕ/ or /ĕ/ only before laryngeals and /tṣ/, then it is possible that the OH third person singular preterit *ú-i-it(-ma-ra-as)* in StBoT 25, 123 L. 4 shows the regular development of PA **(o)wéit* to [wīt] while the *e*-vocalism of other forms of the paradigm is analogical from the third person singular preterit and the third person plural preterit *ú-e-er* = [wēr] < PA **(o)u-éy-ēr*.

Note, however, that Melchert, *SHHP* 113, considers this form dialectal, and cf. *ha-an-ti-iz-zi-an* with anomalous [itṣ] < **éity* in the same text {1.6.3.8.}.

### 4.3.2.4. Uncertain examples

Several other examples of /e/ (/ĕ/ from **ei*) have been cited, but none is certain.

*wesi-* "pasture": acc. sg. *ú-e-si-in* KUB XXIX 29 Vs. 8 (OH), dat.-loc. *ú-e-sa-i* KBo XII 3 IV 6 (OH+), nom. pl. *ú-e-sa-e-es* KUB XVII 10 I 17 (MH), acc. pl. *ú-e-sa-us-s*° KUB XXXI 64 IV 7 (OH+) and *wesiya-* "graze" (*ú-e-si-ya-*, MH etc.) are derived from **weis-* "be green, flourish" (also in e.g. Lat. *virēre* "to flourish", *viridis* "green") by Eichner, *MSS* 31 (1973) 79, Oettinger, *Stammbildung* 544 and Kimball, *PW* 663–4, however, derive *wesi-* and *wesiya-* from **wes-* "feed, fodder" (also in *wēstar* "herdsman", hap. leg., NH).



Melchert, *SHHP* 10 and 70 n. 130, suggests that if the word is from **weis-*, the unusual "adjectival" inflection indicates that it is in origin a nominalized adj. **wéisi-* "the green/flourishing one".

*wēs* "we" can be from **wéis* as in Goth. *weis* and OHG *wir* or from **wéyes*, cf. e.g. Skt. *rayam* (Oettinger, *Stammbildung* 544, Zinko, *Vertretung* 52, Melchert, *SHHP* 10, 92, 129, *AHP* 103) {9.3.1.1.}.

### 4.3.2.5. Doubtful examples

Two other examples that have been cited are unlikely: *gi-e-mi* loc. "in winter" (MH? etc.), derived from **ǵheim-* by Georgiev, *Orbis* 27 (1978) 47, is probably [gyēmi] from locative **ǵhyémi* {7.3.1.2.}. The *mi*-verb *huēk-* "strike, slaughter" (*hu-e-ek-*, OH etc.) is derived by Eichner, *MSS* 31 (1973) 82, from a root aorist **h₂uéikt* beside Lat. *vincere* "conquer", perf. *vīcī*, but it is more likely to continue an aorist **h₂ueǵ(h)-* beside nasal pres. *hūni(n)k-*; cf. O.Pers. 1 sg. aor.(?) *avajam* "I struck off (someone's nose, ears, eyes)" and see Strunk, *Heth. u. Idg.* 237–56, and Puhvel, *HED* 3, 327–30.

Eichner's reconstruction of a root aorist **h₂uik-énť* > **huykanzi* > *hukanzi* : Lat. *vincere* "be victorious" relies on a metathesis and contraction that are unparalleled.

## 4.3.3. Final **ei*

There is little agreement on the outcome of final **ei*. Oettinger, *Stammbildung* 544 and Melchert, *SHHP* 93–4, 98, argue for **-ei* > /-e/ (/-ę/), but **-ei* > /-i/ is also widely advocated (Eichner, *MSS* 31 (1973) 77–8, Oettinger, *StBoT* 22, 31, Neu, *Heth. u. Idg.*, Zinko, *Vertretung* 10–21, Kimball, *PW* 63–6, Weitenberg, *u*-Stämme). There are two likely examples, the *hi*-conjugation third person singular present ending *-i* (OH also rarely *-e*) from the IE third person singular perfect or **h₂e*-present ending **-e* plus deictic particle **-i*, and the dative-locative singular ending *-i*, if this is from the IE dative ending **-ei* and not from the locative ending **-i*.

Melchert, *SHHP* 93–4, 98 and *AHP* 102, 145, 184, argues that the regular reflex of **-ei* is preserved in the rare OH *hi*-conjugation third person singular ending *-e* (found only in *ma-az-ze* "endures" KBo VII 14 Vs. 8 and in *wa-ar-as-se* "harvests" KUB XXIX 30 III 4 beside *wa-ar-si* ib. III 8), which should continue **-ei* from the *h₂e*-present or perfect plus deictic **-i* (PA **wórs-ei*). The regular *hi*-conjugation ending *-i* (found from OH on) would have /i/ by analogy to the *mi*-conjugation. If this analysis is correct, then the addition of the deictic particle **-i* must have preceded the reduction of inherited final **-e* to /-i/ (which is independent of accent {3.2.1.7.}) and the dative-locative ending *-i*, which virtually always has *i*-vocalism when it can be spelled unambiguously in OH texts, must be from the IE locative ending **-i*.

The main argument in favor of a treatment **-ei* > /-i/ is that the regular dative-locative singular ending, which can continue the IE dative singular ending **-ei*, is *-i* (spelled -CI-I, -CI and in *u*-stems -U-I, -Ú-I). As Weitenberg, *u*-Stämme 372, notes, if the regular treatment were **-ei* > /-e/, then OH texts should have dative-locatives in unambiguous °E°. Where unambiguous spellings are possible, however, and identification secure, OH virtually always has °I° (see Kimball, *PW* 63–6). The contrast between -CI-I with plene writing and -CI without it appears to be linked to accent

(pace Zinko, *Vertretung* 12, who reconstructs **-ei* > *-ī* but **-i* > *-ĭ* independent of accent), cf. from paradigms with original mobile accent *ha-as-si-i* "hearth" (OH etc.) and *tak-ni-i* "earth" (MH etc.) with *-ī* < **-éi*? beside gen. *ha-as-sa-a-as*, *tak-na-a-as* with [-āas] < **-ós*, but *pe-e-di* "place" (OH etc.), *pe-e-ti* (OH etc.) with *-ī* < ** ´-ei*? beside nom.-acc. sg. *pe-e-da-an* < **pédom* {2.4.3.}.

Cf. also Oettinger, *Stammbildung* 544, who posits **-éi* > *-ē* in *ut-ne-e* "land" < **udnéi*?, but unaccented **-ei* > **-ē* > *-i*. *pe-te[-* in StBoT 25, 32 L. 9 for *pe-(e)-di* "place" is perhaps the only exception to the OH spelling of the dative-locative singular ending with -CI(-I); but note *pe-(e)-di*$^{(?)}$*-is-mi* ib. L. 4. Melchert, *AHP* 185, assumes generalization of locative **-i*.

If **-éi* became */-ī/*, then the *hi*-conjugation third person singular present can show a regular reduction of unaccented **-ei* to */-ĭ/*, and OH *mazze* and *war(a)sse* have to be considered anomalous or analogical to OH 1 sg. *-(h)he* < **-h₂ai* and 2 sg. **-(t)te* < **-th₂ai* (cf. Zinko, *Vertretung* 12, who accepts as regular **-éi* > */-ī/* and suggests that OH *-e* resulted from false archaising on the model of 1 sg. pres. *tēhhe* "I put" etc.).

Eichner, *MSS* 31 (1973) 77–8, reconstructs **-re-i* for the third person singular middle present ending *-ri* and **-tene-i*, **-th₂ene-i* for the second person plural active present endings *-ttени* and *-ttani*, comparing Vedic *-tana* and *-thana* for the latter (see also Oettinger, *Stammbildung* 521 for the middle endings). In each case, however, the ending probably simply has deictic **-i*, i.e. **-ri* > *-ri* and **-tén-i* > *-ttēni* (Melchert, *SHHP* 97).

## 4.4. **oi*

Catsanicos, *BSL* 81 (1986) 156 w. n. 198, 161–4; Čop, *Sprache* 6 (1960) 7; Eichner, *MSS* 31 (1973) 44; Kimball, *Sprache* 36 (1994) 2–3, 4–6, 14–22, 8–9, 11–13; Kronasser, *VLFH* 44; Melchert, *SHHP* 70–1, 93 w. n. 70; Neu, *StBoT* 18, 41; Sturtevant, *CGr*$^1$ 101, *CGr*$^2$ 35–6, *Lang.* 6 (1930) 23–35; Zinko, *Vertretung* 53, 55, 120.

### 4.4.1. Monophthongization

#### 4.4.1.1. In final syllables

Two generally accepted etymologies establish that IE **oi* was monophthongized to OH *e* in absolute final syllables:

Animate nominative plural pronominal ending *-ē* < **-ói*, *-e* < **-ói* in dem. pro. *apē* (e.g. *a-pe-e* StBoT 25, 3 II 33) = [abē]); dem. pro. *kē* (e.g. *ke-e(-ma)* StBoT 25, 122 II 8 ?) = [kē]; enclitic personal pronoun *-e-* < **-oi-* (e.g. in *ne* = /nu-e/ StBoT 25, 3 IV 21, *te* = /ta-e/ StBoT 25, 26 Vs.? I 10, *se-e* = /su-e/ KBo XXII 2 Rs. 13 (OH), *e-es-ta* = /e-asta/ KBo XII 3 III 10 (OH+)); cf. e.g. Skt. dem. pro. nom. pl. masc. *te*, Gk. τοί, Goth. *þai* < IE **toi*.

Dative singular of the third person enclitic personal pronoun OH *-(s)se* < **soi*, cf. e.g. YAv. enclitic loc.-gen.-dat. *hoi*, GAv. *hoi*, *he*, *se*, Hmc. Gk. οἵ.

OH *-(s)se* was replaced by *-(s)si* starting in the MH period (e.g. from the Law Code *tak-ku-us-se* OH KBo VI 2 II 39 = MH *tak-ku-us-si* KBo VI 3 II 60). It probably reflects analogy to nominal datives in (OH) *-i*. See Eichner, *MSS* 31 (1973) 78, Zinko 53, 120 and Melchert, *SHHP* 68 n. 127.



#### 4.4.1.2. Before laryngeals

Pre-Hittite **ói* became */ē/* before **h₂* in OH 1 sg. pres. *te-e-eh-he* "I put", which continues PA 1 sg. pres. **dóh₁y-h₂ai* > **dóihai* > [dēhhe]. For the *o*-grade stem see Kimball, *Sprache* 36 (1994) 22–28.

#### 4.4.1.3. Before stops

Monophthongization in medial position also took place before a stop in *mītā(i)-* "fix, attach": 3 sg. pres. *mi-ta-iz-zi* KUB VII 13 Vs. 27 (NH), KUB XII 49 I 9 (NH), 1 sg. pret. *mi-ta-a-nu-un* KUB VII 13 I 30, ptcp. nom. sg. c. *mi-i-da-an-za* 91/d I 4 (CHD), nom.-acc. pl. n. *mi-i-da-an-da* KBo XIII 209 L. 3 (NH), it. $^{SIG}$*mitieskē-* (?) = [mēdā(i)-] (with NH °I° for OH */ē/*), denominative from a noun **mēda-* < **(h₂)móito-* (Catsanicos, *BSL* 81 (1986) 121–80). It is necessary to reconstruct an *o*-grade, which is expected in a noun in **-to-*, to explain the loss of the initial laryngeal as opposed to its retention in the related adjective *sūhmili-* "well fixed" {10.1.1.2.}.

Examples *CHD* 3, 305; other etymological refs. *HEG* 6, 219–20. The spelling of the iterative with the determinative SIG "wool" in 3 pl. pres. $^{SIG}$*mi-ti-es-kan-zi* 91/d I 8 and gerund $^{SIG}$*mi-ti-es-ke-u-wa-an* ib. I 10 (CHD) is perhaps the result of confusion with *mit(t)ā-* "red" (Kimball, *Sprache* 36 (1994) 4–5).

#### 4.4.1.4. Doubtful examples

Some examples of monophthongization that have been cited do not have reliable etymologies.

Eichner, *MSS* 31 (1973) 78, Oettinger, *Stammbildung* 389, 391, 470, and Zinko, *Vertretung* 77–9, 104–5, derive the preverb *pē* "away" from an IE locative **poi*, but HLuv. *pasiya-* "reject" = Hitt. *pēssiya-* "throw" < **pé-h₁syei̯o-* with **eh₁* > PLuv. **a* points to an *e*-grade **pe* {2.2.2.}.

*mēna/i-* "face" and the first element of *mēnahhanta* "opposite, against" are compared by Eichner, *MSS* 31 (1973) 79, to Ved. *nema-* "one half", Av. *naema-* "half, side" < **noimo-* with a metathesis of the nasals in Hitt. that is otherwise unparalleled, but the Hittite words are probably better derived from **men-* "stick out, project" (e.g. in Lat. *mentum* "chin", *prominēre* "be prominent") {7.3.1.1.}.

CLuv. *mānnahu(wa)nn(i)-*, if it refers to a part of the face (*CLuv. Lex.* 136 w. refs.), provides additional support for **méno-*. See also Melchert, *AHP* 242.

Čop, *Sprache* 6 (1960) 47, derives *-sepa-* in e.g. $^{D}$*Tagānzipa-* "sacred ground" and in gods' names (e.g. $^{D}$*Hantasepa-*, $^{D}$*Kamrusepa-* and $^{D}$*Miya(n)tanzasepa-*) from a **soibho-*, comparing Celt. **soibho-* in e.g. OIr. *soíb*, *saíb* "illusion", denom. *soíbim* "I deceive", and **seib-ar-* (e.g. in OIr. *síabar* "enchantment, charm"). However, the OH genitive singular *ta-ga-a-an-zi-pa-aš* of StBoT 25, 30 III 8 appears to continue a Pre-Hitt. **dagán-sebo-* with reduction of the unaccented **e* of the the second word to */i/*, while the consistent spelling of the dative singular of the third person enclitic personal pronoun as *(s)-se* in OH {4.4.1.1.} shows that the reflex of **oi* was not reduced to */i/* when unaccented.

### 4.4.2. Retention

Several words show that **oi* became *ai* without monophthongization before **n* and before clusters beginning with *s* (Kimball, *Sprache* 36 (1994) 14–22).

LÚ*kaina-* "relative by marriage, "in-law": nom. pl. *ga-i-na-as* KBo VII 28 + KBo VIII 92 L. 9 (MH), 20, 31, 36, *ka-i-na-as* KUB XIII 4 I 31 (MH?+), *ka-e-na-a[s]* ib. I 53, *ga-e-na-as* KBo III 1 II 41 (OH+), KBo III 67 I 3 (OH+), *ga-e-ni-es* KBo V 3 IV 27 (Supp.I+); LÚ*kainant-* id. (dat. sg. *ka-e-na-an-ti* KUB XIII 20 I 33, MH+) = [kāina-] < **ḱóino-* : Lat. *cīvis* "citizen", OHG *hīwo* "husband", OHG, OSax. *hīwo* "wife", OHG *hīrat* "marriage", OE pl. *hīwan* "members of a household", *hīred* "household, retinue", Goth. *heiwa-fraujin* (dat. sg.) "οἰκοδεσπότης", Lith. *šieva* "wife", *šeima* "domestic servant", Latv. *saime* "members of a household, family", OIr. *coím* "dear", Skt. *śeva-*, *śiva-* "friendly, intimate, propitious, dear", OCS *semьja* "family, domestic servants".

The etymology is that of Hrozný, *BoSt* 3 (1919) 100 n. 6; see also Kimball, *Sprache* 36 (1994) 17–22.

*maisza* "sun disk" (or sim.): nom. sg. *ma-i[(i)]s-za* KUB LVII 63 II 16 = *ma-is'-za* KUB LVII 60 Vs.? II 12 (both OH+), dat. sg. *ma-is-ti* KBo XXXII 14 II 44 (MH); these forms point to an animate *t*-stem [māist-], nom. [māists] < **móist-s* : **meis-* "blink, wink, glitter" in Skt. *miṣati* "blinks, winks", cf. **mei-k-* with velar extension in e.g. Lat. *micāre* "glitter" (Kimball, *Sprache* 36 (1994) 15–17).

*suwais* "bird" is written syllabically as *su-wa-is* only in 902 I 15 (vocab.), but the phonetic complement of e.g. nom. sg. MUŠEN-*is* KUB VI 45 III 40 (NH), KUB XII 61 III 12 (U), acc. sg. MUŠEN-*in* KBo V 2 III 21 (MH+) probably also indicates the existence of a [swāis] "bird" < Pre-Hitt. **suwóis* < **s* + **h₂wóis* with *s* mobile beside **h₂woi-*, **h₂uei-* in Ved. nom. sg. *víḥ* "bird", Lat. *avis* id., Arm. *haw* id. and Gk. αἰετός "eagle". The cognates do not support reconstructing a lengthened-grade.

The reconstruction with **h₂* is based on Gk. αἰετός (Schindler, *Sprache* 15 (1969) 148–9, Oettinger, *MSS* 35 (1976) 101, n. 17, n.23, Peters, *Unters.* 12, 41–2, 71). Since the Hittite word has *su-* rather than **ishuu-* < **shu-*, the laryngeal was probably lost in IE or PA preceding an *o*-grade, i.e. **(s)h₂wóis* > **(s)wóis* in IE, or because it was the middle member of a three-consonant cluster (10.1.1.1.). For Lat. *avis* and Arm. *haw* < **h₂,we/ois* with epenthesis see Peters, *op. cit.* 41–2. Reconstructions with **h₁* (e.g. Oettinger, *Stammbildung* 549 n. 13, **(s)h₁wóis*) or **h₃* (e.g. Eichner, *Sprache* 24 (1978) 162 n. 77, **s* + *h₂wéis* or **s* + *h₂wóis*; Lindeman, *ILTh* 49–50, **sh₂wóis*) do not explain Gk. αἰετός.

The *ai* of SÍG*maista-*, a unit of wool, "fleece"?, "bale"?, probably continues **oi* or **ai*: acc. sg. c. *ma-is-ta-an-na* KBo XVI 47 L. 8 (MH), *ma-is-t[a-a]n* KUB XXIII 72 Rs. 8 (MH) = [māista-] < **móisto-* (or **máisto-*) : Skt. *meṣa-* "ram, fleece", *meṣī-* "ewe, fleece, sheepskin", Av. *maešu-*, *maeši-* id., OCS *měchъ* "bag", Russ. *měch* "hide, bag", Latv. *màiss* "sack", Lith. *máišas* id., O.Pruss. *moasis* "bellows", all reflecting IE **moiso-s* or **maiso-s* "sheep, sheepskin, item made of sheepskin".

Examples *CHD* 3, 119 with refs.; for the etymology, see Kimball, *Sprache* 36 (1994) 14–5.



## 4.5. **ai*

Catsanicos, *BSL* 81 (1986) 161–4; Eichner, *MSS* 34 (1973) 76; Kimball, *Sprache* 36 (1994) 14–5; Kronasser, *VLFH* 44; Melchert, *SHHP* 70–1, 93–4 w. n. 37, *AHP* 102, 148–9, 184; Oettinger, *Stammbildung* 71; Sturtevant, *CGr[1]* 99–100; Zinko, *Vertretung* 60–1, 63.

### 4.5.1. Monophthongization

#### 4.5.1.1. In final syllables

Monophthongization in absolute final syllables is certain.

A clear example is PA **-h₂ai* from IE **h₂e* = **[-h₂a]* plus deictic **-i* in the OH *ḫi* conjugation first person singular present ending *-(ḫ)ḫe* (e.g. *dāḫḫe* "I take", *tēḫḫe* put"). The ending *-(ḫ)ḫe* was replaced by *-(ḫ)ḫi* even within OH (e.g. *da[-a-aḫ-ḫe* take" StBoT 25, 3 IV 32 but *d]a-a-aḫ-ḫi* ib. III 20). The *-i* is probably analogical to th *-i* of the *mi*-conjugation present.

The second person singular *ḫi*-conjugation ending PA **-th₂ai* from IE **-th₂e* **[-th₂a]* plus deictic particle **-i* should, by regular phonological development, hav become OH **-(t)te*, but the ending shows up as *-tti* in OH *au-ut-ti* "you see" StBoT 2 122 III 1, 3, 7, 9 etc. and *da-a-at-ti* "you take" in KBo XXII 1 Rs. 29. Like the fir person singular ending, *-(t)ti* probably had /-i/ by analogy to the *mi*-conjugatio The lack of OH spellings with *-e* is likely to be due to chance, since second person sin gulars are not well attested.

#### 4.5.1.2. Before laryngeals

Pre-Hittite **ái* became /ē/ before **h₂* in 1 sg. pres. *pe-e-eḫ-ḫe* "I give" (OH), *pe-(e) eḫ-ḫi* (OH etc.) and 1 sg. pret. *pe-(e)-eḫ-ḫu-un* (MH, OH+) from Pre-Hitt. **pái-ḫai* **pái-ḫun*. The verb is ultimately from a compound of the preverb **pe* plus **ai-/i-* also in e.g. Gk. ἄνυμαι "I distribute", αἶσα "fate, lot", Osc. *aeteis* "partis", *aítíum* "portionum", and Toch. A *e-* "give", B *ai-* id. The ablaut of the Hittite paradigm (note, e.g. 1 pl. pres. *pi-(i)-ú-e-ni*, MH, 3 pl. pres. *pi-(ya)-an-zi*, OH etc.) and the reduplication in CLuv. iterative *pippissa-* and Lyc. *pibiti* "gives" indicate that the compound **pe-ai-* **pe-i-* was reduced by syncope to **pai-*, **pi-* and reanalyzed as a root within PA (Kimball, *Sprache* 36 (1994) 23).

#### 4.5.1.3. Examples unlikely to have had full-grade

Several words that have been cited as examples of monophthongization of **ai* are better derived from zero-grade **i*, either based on morphological conserations or because they are spelled with °I° rather than °E° in OH (Kimball, *Sprache* 36 (1994) 8).

The *nu*-causative *inu-* "heat, make warm", derived by Catsanicos (161) and Puhvel, *HED* 1, 11, from an earlier **ai-nu-*, looks archaic, and spellings with *i*-vocalism in OH (2 pl. pret. *i-nu-ut-te-en* KBo XXII 2 Vs. 9) and later texts (e.g. NH 3 pl. pres. *i-nu-an-zi* KBo XXI 21 III 9) suggest that its source was zero-grade **i-neu-* (cf. full-grade **aya-* in *ā-* "be warm", and see Zinko, *Vertretung* 97, Lindeman, *Heth. u.*

*Idg.* 154 n. 8, Melchert, *SHHP* 38 w. n. 78, 70 n. 131, 95 w. n. 39, *AHP* 123, and Kimball, *Sprache* 36 (1994) 8.

*huinu-* "make run", which Catsanicos (161) derives from a full-grade **h₂uai-nu-*, could also be archaic, and again a zero-grade root would be expected (i.e. **h₂uh₁i-nu-*). Since the synchronic connection to the base verb *huwāi-* "run" is still clear, however, it is also possible that *huinu-* was formed productively within Hittite or PA to the weak stem of the verb meaning "run", Hitt. and CLuv. *huiya-* (see also Melchert, *SHHP* 95).

*iskunā(i)-* and *iskunahh-* "stain, defile": 3 sg. pret. *is-ku-na-ah-hi-is* KUB I 16 III 42 (OH), ptcp. nom.-acc. pl. n. *is-ku-na-an-ta* KBo IV 2 I 45 (OH+), it. 3 pl. pres. *is-ku-ne-es-kan-zi* StBoT 25, 146 I 6, stem [iskun-]. Puhvel (*HED* 2, 426–9 w. refs.) reconstructs a full-grade **ais-gh-*, comparing Gk. αἰσχύνω "disgrace, disfigure, tarnish". But the consistent spelling with IŠ- makes a zero-grade **is-gh-* likely despite the Greek full-grade (see also Melchert, *SHHP* 95 with n. 41 and Kimball, *Sprache* 36 (1994) 8).

Examples *HED*, *loc. cit.*

*inan-* "sickness": e.g. nom.-acc. sg. *i-na-an* KUB XXX 10 Vs. 23 (MH), KUB XLIII 38 Rs. 27 (OH+), *i-na-an-n°* KUB VII 1 I 8 (Pre-NH), gen. *i-na-na-as* ib. I 3, 4, 6 etc., dat. *i-na-ni* KUB XXX 10 Rs. 14 = [inan-]. Puhvel, *HED* 2, 365–6, derives *inan-* from the equivalent of a full-grade **ay-/*ay-a-*, citing Ved. *enas-* "sin, guilt", Skt. *īti-* "plague, disease", Av. *aenah-* "violence, damage", *iti-* "injury, offense", and maybe Gk. αἰνός "terrible" as possible cognates. The etymology does seem plausible, but there is no convincing morphological argument for a full-grade, and the consistent spelling with I argues against it (Kimball, *Sprache* 36 (1994) 8).

Oettinger's derivation of the third person singular preterit of *mēmai-* "speak" as [memesta] from **me-mais-t* (*Stammbildung* 71) is not supported by the evidence of the texts. The second syllable of the third person singular is usually written *me-(e)-mi-is-ta* with unambiguous °I° in its second syllable from MH on (*CHD* 3, 254) suggesting that it was historically **i*, i.e. [mēmista] (see also Melchert, *SHHP* 74, n. 140, Kimball, *Sprache* 36 (1994) 9).

### 4.5.1.4. Unlikely and doubtful examples

Other examples cited in the literature are based on etymologies that are incorrect or at best uncertain.

$^{NA4}$*hekur* "cliff sanctuary" is derived by Melchert, *SHHP* 143 n. 113 from the root **h₂aik-*, also seen, for example, in Gk. αἰχμή "spear point" (Myc. acc. pl. *ai-ka-sa-ma* = αἰχσμανς), but the word is likely to be a loanword from Sum. *é.kur* "mountain house", perhaps via Hurrian; see Puhvel, *HED* 3, 287–9 w. refs. and Melchert, *AHP* 144.

Sturtevant, *Language* 6 (1930) 25, compared *idālu* "bad" with Gk αἴθαλος "smoke", OSax. *īdal*, OE *īdel* (> NE *idle*), Petersen, *Ar.Or.* 9 (1937) 205, compared Gk. ἀΐδηλος "destroying", and Čop, *Linguistica* 1 (1955) 59–66, *Linguistica* 7 (1965) 108, compared Gk. αἴσυλος "evil", but Watkins' etymology (*Harv. IE. St.* IV p. 270 = *Gds*



*Kronasser* 261), deriving *idālu-* from PA **(h₁)eduṓ-l* : IE **h₁ed-* "bite", "eat", is more satisfying phonologically and semantically.

Oettinger, *Stammbildung* 71, 526 n. 17, suggests that *is-hi-e-ni-* "body hair" or "beard hair" can be from **sh₂ain-* comparing Lat. *saeta* "bristle" (< **sh₂ait-*) for the meaning. But *is-hi-e-ni-* only occurs in acc. pl. *is-hi-e-ni-us* KUB XIII 4 III 62 (MH(?)+) beside *is-hi-ya-ni-us* in dup. KUB XIII 19 L. 5 (MH(?)+). Since both texts were written down in the NH period, it is not certain which variant is older, and the spellings *-hi-ya-* and *-hi-e-* suggest that the stem was [shyen-] or [shyan-] rather than [shen-].

Oettinger now concedes this himself (*Gram. Kat.* 301).

Puhvel, *HED* 2, 260, derives *ēkt-* "hunting net" and Luvoid acc. pl. *"aggatius* id. from *a* stem **aik-t-*, also in Lat. *ictus* "thrust", "stroke". However, Hamp's etymology (*IF* 83 (1978) 119–20) deriving these words from **yek-t-* : IE **yek-* (also in OHG *jagōn* "to hunt") is more plausible semantically, and the sound changes it requires: loss of initial **y* before PA **e* and lowering of PA **e* to PLuv. **a* are paralleled elsewhere in Hittite and Luvian (see also Berman, *IF* 83 (1978) 123 and Melchert, *SHHP* 14 with n. 26.).

Puhvel, *HED* 2, 206–7, also derives *asara-/esara-* "white, bright" from **esara-* < **ais-ro-*, comparing OCS *jasnŭ* "clear, bright" (< **ais(k)no-*) and Lith. *aiškùs*, *iškùs* "clear, obvious". Semantically, the etymology is sound, but the morphology and phonology are uncertain. The variant *esara-* occurs only in acc. sg. c. *e-sa-ra-an* in MH KUB XXIV 11 II 25 and its NH duplicate KUB XXIV 10 II 4 beside *a-sa-ra-an* in the same two texts (11 II 31, 10 II 10) and others. The relationship between the variants is not clear. There is no independent reason to suppose, for example, that *asara-* is Luvian. Since *esara-* occurs in MH, while NH texts texts only have *asara-*, it is conceivable that *asara-* is from *esara-* with vowel assimilation [3.6.1.].

Puhvel's derivation of *enant-* "tame(d)"? from a root **ain-* "be agreeable" (*HED* 2, 271) probably does not work. *enant-* only occurs in the Law Code (§ 65 and § 60): nom. sg. c. *e-na-an-za* KBo VI 2 + KBo XIX 1 III 48, acc. sg. c. *e-na-an-da-an ... e-na-[an-da-an* ib. III 44) and perhaps in one other badly damaged passage (*e-[na-* KBo XXI 14 Vs. 18; see Kammenhuber, *HW*$^2$ 37) modifying MÁŠ.GAL "he-goat" and UDU.KUR.RA "mountain sheep". The gloss "tame" is a plausible guess, since the other animals that occur in the Law Code passages are trained or domesticated in some way. Puhvel's connection of *enant-* with Greek αἶνος, glossed as "agreement, consensus", "praise" and ἀναίνομαι "spurn, reject" < ἀνα + **αἴνομαι* (?) "be agreeable" assumes that the basic meaning of the Greek words is "agree", "comply", "be in agreement", but αἶνος means "tale" or "story", and the related αἴνιγμα simply means "riddle". If *enant-* does mean "tame", then Tocharian *en-* "instruct, enjoin" (e.g. A 3 pl. midd. pres. *enäskentär*, abstr. *enäṣlune* = B *enäṣṣälne*), which Puhvel also compares, would be a better match semantically, but these words cannot come from IE **ain-*, since **ai-* should remain in Tocharian B, cf. A *ekär* = B *aikare* "empty" : Lat. *aeger* (Kimball, *Sprache* 36 (1994) 12–3).

Joseph's connection (*Orbis* 31 (1982[5]) 158) of *enant-* as "branded" with *inu-* "make warm" depends on reading the latter word with *e*-vocalism and will not, therefore, work.

## 4.6. **eu* and **ou*

Kimball, *Sprache* 36 (1994) 6–8, 9–11; Kronasser, *VLFH* 44–5; Melchert, *SHHP* 59–61, *AHP* 56, 76, 104, 148, 149; Oettinger, *Stammbildung* 233, 277 n. 36; Pedersen, *Hitt.* 144, 170; Sturtevant, *CGr*$^1$ 101–2, *CGr*$^2$ 30; Zinko, *Vertretung* 69.

Monophthongization of preconsonantal **eu* and **ou* to /u/ (PA **ū*) is widely assumed but difficult to prove. One sort of evidence favoring monophthongization (noted by Oettinger, *Stammbildung* 277 n. 36) is that tautosyllabic *u*-diphthongs are descriptively rare, and many are clearly of secondary origin. Most of the examples of monophthongization that have been cited, however, are not truly isolated words or morphemes from which it is possible to exclude an analogical zero-grade **u* completely (see especially Melchert, *SHHP* 59–61). Even in cases where monophthongization seems likely, it is often not possible to decide whether the original diphthong was **eu* or **ou*.

### 4.6.1. Monophthongization

A likely example is *tūḫusiya-* "keep quiet, keep silent": 1 pl. pres. *tu-u-hu-si-ya-u-e-ni* KUB XIX 13 + 14 I 16 (NH), 3 sg. pret. *du-hu-si-ya-at* KBo V 8 III 17 (NH), *tu-u-hu-si-ya-it* KUB XIX 13 + 14 I 30 beside Luvian *dahusiya-* id. (in Hitt. context) = [tūḫusiya-] < **tḗuh₂s-ye/o-* with anaptyxis (3.9.4.): **tuh₂s-* in Skt. *tūṣnīm* "quietly, silently", Av. *tūšni-* id. (Oettinger, *Stammbildung* 326). The Anatolian full-grade is suggested both by the plene writing of U in Hittite and by the single H.

As Oettinger notes, if this etymology is correct, then Skt. *tūṣṇīm* cannot also be related to *tuṣyati* "rejoices" and Hitt. *tuskaratt-* "joy", *tuskariya-* "rejoice", which do not have an internal laryngeal (cf. Mayrhofer, *KEWA* I 52).

A possible example of monophthongization of **eu* or **ou* to *u* in an isolated and unproductive morphological formation is provided by several oblique stem forms in *-u-* of *u*-stem nouns and adjectives. Weitenberg, *u*-Stämme 314–5 and 369, suggests that these could be relics of original proterokinetic paradigms and continue a full-grade **-éu-* or **-óu-*. Two of the nouns which attest such forms have *u*-stem cognates with traces of proterokinetic inflection.

*tāru* "wood, tree": abl. sg. GIŠ-*ru-za* VBoT 120 I 16 (MH+) and (fragm.) in KUB IX 39 II 9 (U) = [drūṭṣ] (or with full-grade root from strong cases [dāru], [dāruṭṣ]) with suffix *-u-za* = [-ūṭṣ] from **-éu-ti* or **-óu-ti*: Skt. *dāru* "tree", gen. *droḥ* < IE **dór-u* : **dr-éu-s* (**dr-óu-s*).

The **OH** genitive singulars GIŠ-*ru-u[a-as]* StBoT 25, 12 I 10 and GIŠ-*as* StBoT 25, 4 I 17 = [d(ā)rwas] indicate that replacement of the expected genitive singular ending **-ūs* < **-éu-s* (**-óu-s*) was underway by the OH period. The ablative *[ta/da]-a-ru-az* in KUB XXIX 1 I 2 (NH copy of OH KUB XXIX 3), however, does not necessarily reflect the unattested OH ablative, since modernization is well known in NH copies; cf. *-uwas* and *-awas* for genitive singular *-us* below.

*gēnu* "knee", instrumental singular *-ut* = [-ūT] < **-éu-T* (**-óu-T*) in *ga-nu-ut* KUB XII 63 Vs. 26 (MH). See already Sturtevant, *CGr*$^2$ 39, and see Neu, *KZ* 86 (1972) 288–95, and Weitenberg, *u*-Stämme 40, 324. The zero-grade root suggests a full-grade suffix, i.e. **ǵn-éu-T* (**ǵn-óu-T*) > [gnūt]; cf. Gk. dat. pl. γνυσί Η. Hermes 152 (written πεϱ᾽ ἰγνύσι but identified as πεϱὶ γνυσί by Forssman, *KZ* 79 (1964) 31) and OH inst.



sg. *ge-ṇu-ṭa-at-kan* StBoT 25, 9 Vs.? I 12 = [gēnut-at-kan] with analogical full-gr root plus third person singular nominative-accusative neuter personal pronoun and particle *-kan*.

For proterokinetic inflection in IE see Schindler, *BSL* 70 (1975) 7.

Several *u*-stems have a genitive singular ending *-us* (usually replaced by proc tive *-uwas* or *-awas*) which may be from **-éu-s* or **-óu-s* (see Weitenberg, *u*-Stän 372 and n. 806 w. refs.). Weighing in favor of interpreting at least some of th forms as old and, therefore, likely to have reflexes of preconsonantal **éu* or **óu* the fact that most occur in texts that are copies copies of OH or MH texts and occur in OH or MH originals. (Weitenberg 45). Unfortunately, none come fr words for which proterokinetic inflection is preserved in cognates, and only on from a word whose interpretation and meaning are reasonably certain.

The genitive singular of *sēknu-* "cloak" is attested as *se-e[k-n]u-us* in KBo II 3 II (MH+ = *se-ek-nu-wa-as* in MH+ dup. KUB XXXII 115 + III 25), *se-ek-nu-us* KUB XX I IV 46 = KUB XXVI 8 IV 33 (NH, late). The genitive of *kīlu-* (*kēlu-*), an object for wh a ritual is performed, occurs as *ki-i-lu-us* in colophons (*nu* SISKUR.SISKUR *ki-i-lu kissan sipanti* "performs the k.-sacrifice/sacrifice of the k. as follows:") in KUB IX II 42 = HT 1 II 15 (both MH(?)+). Weitenberg, *u*-Stämme 35, points out that the co phon for the entire collection of rituals in KUB XI 31 (IV 43) has gen. *ki-la-a-u-wa* (*nu* SISKUR *kilauwas* GIM-*an* DU-*anzi* "when they celebrate the k.-festival/festi of the k.") and suggests that *kilauwas* is a replacement for the archaic (and to the sco obscure) *kīlus* after other forms of the paradigm (cf. e.g. dat.-loc. pl. *ki-i-la-u-wa* KUB IX 31 I 26 = *ke-e-la-u-wa-as* HT 1 I 19). A genitive $^{LU.GIŠ}$TUKUL-*us* "man of th (a spear)" occurs in KBo VI 2 II 21 (OH, Law code) but is not preserved in MH and O duplicates. Two other examples are from proper names: $^{M}$*Nu-un-nu-us-sa* KBo III 3 16 (OH+), and $^{M}$*Ta-ru-uh-su-us-sa* (a man's name) Telepenus Proclamation 31 II (OH+, cf. $^{M}$*Za-ru-wa-as*, genitive of *Zaru* ib. II 52). Another example might be *sa-an-l us*? (hap. leg., meaning unknown) KUB XXXIII 68 I 1 (MH), but the interpretation genitive singular is only one possibility (see Weitenberg 45).

Since there is some evidence for syncope of *wa* to *u* in other words (3.7.4.), it ca not be entirely excluded that some of these forms may show syncope of the ablati ending *-uwaz* to *-uz* and the genitive ending *-uwas* to *-us* (cf. Melchert, *SHHP* 5. Plene writing indicates that three of these words, *sēknu-* (cf. OH dat.-loc. *se-e-ek-u u-i* StBoT 25, 54 III 5), *kīlu-* (*kēlu-*) and *tāru*, were originally root-accented (cf. al the plene writing in *[ta/da]-ā-ru-az* in KUB XXIX 1, which suggests that [dārut with analogical root-vowel *ā* is possible), and syncope would be likely in unaccent syllables (cf. Melchert, *SHHP* 53).

$^{UZU}$*kudur*, a fleshy part of a sacrificial animal: nom.-acc. sg. *ku-du-ur* KU XXVII 70 III 3 (OH+), nom.-acc. pl. *ku-du-úr-ra* KUB II 13 III 12 (OH+) = [gudu ([gūdur]?) < nom.-acc. **géutuṛ* or **gḗutuṛ* (cf. Lühr, *IBS* 52, 72, who reconstruc **góutuṛ* beside **góuṭ* or **géutṛ* in Lat. *guttur* "throat, crop" and **gutṛ* with generaliz zero-grade in OHG *koder, goter* "gullet, throat, fleshy skin under the chin" and MLG MNdl. *koder* "double chin, goiter"). Alternatively, Poetto, *KZ* 99 (1986) 220–2, tran lating "thigh", compares ON *kjǫt* "meat", Dan. and NNorw. *kött* "flesh", ON *kv* "meat" and Icl. *kvetti* "a big piece of meat", which would point to **géuduṛ* or **gḗudu*

In *kutt-* "wall" an alternation *ū* : *u* could be derivable from original ablaut **eú* or **oú* : **u*. The long vowel occurs in nom. sg. *ku-ú-uz-za* KUB XXIX 4 IV 27 (NH), cf. also *ku-uz-za* IBoT I 36 I 10, 16 (MH); other forms of the paradigm are always spelled *ku-ut-t°* or *ku-ud-d°*: e.g. acc. sg. *ku-uṭ-ta-an* KUB II 2 III 39 (Pre-NH), gen. sg. *ku-ut-ta-as* StBoT 25, 25 IV 30, KBo XXI 85 I 40 (MH), dat.-loc. *ku-uṭ-ti* StBoT 25, 25 I 44, abl. *ku-ut-ta-az* StBoT 25, 56+ I 15, nom. pl. *ku-ut-te-es* KUB XIII 2 + XXXI 84 III 53 (MH?), acc. pl. *ku-ud-du-us* KBo IV 1 I 32 (OH+). This is an animate *tt*-stem, perhaps [gŭts] : [gŭt-a-], probably from **ǧheu-* "pour" (e.g. in Skt. *juhoti* "pour a libation", Gk. χέω "I pour", χόω "I pile up (earth)", Goth. *giutan* "to pour"; see Kimball, *IF* 99 (1994) 82 w. refs.). The *ú* of the NH nominative-accusative singular beside the *ŭ* of the rest of the paradigm suggests ablaut, and the voiceless stop *tt* = /t/ of the latter suggests that it has a zero-grade root, **ǧhu-t-*. For the nominative singular either **ǧhéu-t-s* (cf. Oettinger, *Stammbildung* 538, who reconstructs nom. pl. **ǧhéu-t-es*, and Kimball, *PW* 453) or **ǧhóu-t-s* (cf. Melchert, *SHHP* 60, who reconstructs nom. **ǧhóu-t-s* : gen. **ǧhéu-t-s*) is possible.

The genitive singular **ǧhéu-t-s* which Melchert reconstructs cannot be the basis for the oblique stem, since **ǧhéut-V-* should have led to [gŭd-V-] with PA voicing.

## 4.6.2. Ablaut grade uncertain

In several examples of monopthongization that have been cited a zero-grade cannot be excluded.

Melchert, *SHHP* 61 w. n. 110 and *AHP* 104, 149, 177, derives *lukke/a-* "set on fire" from an iterative-causative **louk-éye/o-* (see also Watkins, *TPS* 1971 68–9). If this reconstruction is correct, it suggests that the reflex of the diphthong was shortened in an unaccented syllable prior to PA voicing. However, other evidence may suggest that reflexes of diphthongs in unaccented syllables were long vowels in PA prior to PA voicing (cf. *sissūra-* "irrigation" < **sesúro-* with double *ss* after short unaccented vowel [11.4.3.], but **wisūra-* or **wesūra-* "oppression" < **weisúro-* or **wēisúro-* [2.3.1.]) with single *s* after the reflex of a monophthongized diphthong. Although there are no certain examples of the reflex of a voiceless stop after a monophthongized diphthong in an unaccented syllable, if, as the single *s* of **wisūra-* suggests, monophthongization preceded PA voicing and produced long vowels, **louk-éye/o-* should have become **lugē-*. Similarly, thematic **léuk-e/o-*, as reconstructed by Hoffmann, *KZ* 82 (1968) 214–20, Oettinger, *Stammbildung* 271–7, and Zinko, *Vertretung* 103, should have become **lugi/a-*. But forms of *lukke/a-* are consistently spelled with double velar (*CHD* 3, 78–9), pointing to [lŭk-] with voiceless /k/. The voiceless velar, and perhaps the root vowel itself, should, therefore, be analogical from the related middle *lukk(a)-* "grow bright" (OH etc.), which probably had a zero-grade root (i.e. **luk-to-*, **luk-o-to-*, cf. Oettinger, *Stammbildung* 273, 275, 277 and Melchert, *SHHP* 60–1 n. 110).

The reflex of **éu* would be expected in singular forms of causatives in *-nu-*, and in the second person plural preterit and imperative, which should have the strong stem in **-néu-*; but plene writing is extremely rare in *nu*-presents (note *wa-ah-nu-ú-mi* StBoT 25, 3 II 18, first person singular present of *wahnu-* "swing, make turn" and *hu-*



*e-nu-ú-ut* KBo III 28 II 19 (OH+), third person singular preterit of *huinu-* "make run"). Otherwise plene writing does not occur in OH texts: *ar-nu-zi* KBo VI 2 IV 5, *i-nu-ut-te-en* KBo XXII 2 Vs. 9, *pa-ha-sa-nu-ut-te-en* KBo VII 14 + Vs. 13, KBo XXII 1 Vs. 5, *par-ku-nu-uz-zi* KBo VI 2 II 34, III 35, KBo VI 2 + XIX 1 III 60, KUB XXIX 16 III 7, 9, 12, *pit-ti-nu-uz-zi* KBo VI 2 II 10, *sa-al-la-nu-us-kat* KBo XXII 2 Vs. 7, *sa-al-la-nu-us-ker* ib. Vs. 5, StBoT 25, 1 I 9, *sa-al-la-nu-us-k[e-er* ib. I 10, *u-nu-ut* StBoT 25, 110 II 23, StBoT 25, 119 L. 3, *ụ-nu-us-kan-za* StBoT 25, 109 III 15, *wa-ah-nu-me-ni* StBoT 25, 3 II 21, *wa-a[h-nu]-uz-zi* StBoT 25, 3 II 32 = *wa]-ah-nu-uz-z[i]* StBoT 25, 4 II 40, *za-nu-u[z-zi* StBoT 25, 75 I 3, *za-nu-uz-zi* StBoT 25, 106 L. 7. Despite the two examples with plene writing, it seems likely that the suffix had a short vowel generalized from the plural suffxi **-nu-* within PA, since the first and third person singular preterit forms that are attested in Cuneiform Luvian do not show the voicing that would be expected after a long vowel if the suffix had been [-nū-] < **-néu-*: *aranu(wa)-* (meaning unknown): *a-ra-an-nu-uh-ha* (1x), *a-ra-nu-wa-at-ta* (*CLuv. Lex.* 25); *arlanuwa-* (meaning unknown): *a-ar-la-nu-wa-at-ta* (*CLuv. Lex.* 28, Starke, *StBoT* 31, 567); *huinuwa-* "make run": *hu-i-nu-wa-ah-ha* (*CLuv. Lex.* 82); *pastarnauwa-* (meaning unknown): *pa-as-ta-ar-nu-wa-at-ta* (*CLuv. Lex.* 173).

The spellings in *-nu-wa-aC-* suggest that Luvian generalized [-uwa-] by reanalysis from forms with endings in initial vowels; see Oettinger, *KZ* 92 (1978) 84–5.

*ūpp-* "rise": 2 sg. pres. *u-up-[si]* e.g. KUB XXXI 135 Vs. 7 (MH), *u-u[p-s]i* KUB VI 45 III 14 (NH), 3 sg. *u-up-zi* e.g. KUB VIII 23 L. 6 (OH+), KUB XXXI 127 I 40 (MH+), *ú-u[p-z]i* e.g. KBo XV 34 II 22 (MH+), 2 sg. pret. *u-up-ta* KUB XXXI 147 II 18 (MH+?), 3 sg. *u-up-ta* KBo V 8 III 23 (NH, NH also *up-ta*), 3 sg. pret. midd. *u-up-ta-at* KUB XXI 10 I 13 (NH), vbl. noun gen. sg. *u-up-pu-u-wa-as* KUB VIII 21 L. 8 (OH+) = [ūpp-]. This verb clearly belongs with **(h₁)up-* "up(wards)", which otherwise does not attest primary verbal forms, cf. e.g. Skt. *upári* "above", Gk. ὑπέρ "over", and Goth. *ufar*. Its morphological analysis, however, remains elusive. The /ū/ can continue full-grade **éu* (cf. Melchert, *SHHP* 60 and *AHP* 104, who reconstructs an athematic present **éup-ti* > *ūpzi*, and Oettinger, *Stammbildung*, 232–3, who reconstructs a root aorist, 3 sg. **(h₁)éup-t* > *ūpta*). The double *pp* = voiceless /p/ of the verbal noun *ūppuwas*, however, should point to a zero-grade, since **(h₁)éup-V-* would have yielded PA **ūb-* with PA voicing, suggesting that the weak stem **(h₁)up-* was at least partially generalized in this paradigm.

The paradigm of *māu(ss)-*, *mū-* "fall" is likely to have been heavily influenced by *au(s)-*, *u-* "see", though unlike *au(s)-* the stem has /ss/, and the sibilant is not confined to forms with endings with initial dental stop: 1 sg. pres. *[mu]-u-uh-hi* KUB XLIII 60 I 33 (MH+), *mu-uh-hi* ib. I 34, 3 sg. *ma-a-us-zi* KUB VIII 36 III 10 (NH), *ma-us-zi* e.g. KUB XXX 29 I 25 (Pre-NH, also NH), 3 sg. pret. *ma-a-us-ta* KBo XII 75 L. 8 (NH), *ma-us-ta* e.g. KBo XII 85 III 5 (MH+, also NH), 3 pl. *ma-ú-er* KBo XXI 22 L. 4 (MH), *ma-us-se-er* e.g. KUB XXVII 29 III 16 (MH+, joins KBo XII 85, also NH), ptcp. nom. sg. c. *mu-us-sa-an-za* KUB IV 1 IV 26 (NH), KUB V 7 Rs 28 (NH), KUB V 7 Rs. 28, nom.-acc. sg. n. *ma-us-sa-an* ib. Rs. 27. Middle forms occur in OH+ and NH texts, e.g. 2 sg. pres. *ma-us-ta* KUB I 16 III 52 (OH+). The word has long been compared with, e.g., Lat. *movēre* "to move", *mōtum* < **movitum* and Lith. *máuju*, *máuti* "draw up, raise" (root **meuh₁-*, **mouh₁-*). It is possible that the root of *mūhhi* directly

continues *e*-grade **meuh₁-*, but the apparent *o*-grade of other forms of the paradigm and the *hi*-conjugation inflection would have to be secondary. NH *ma-ú-er*, however, is likely to be based on *a-ú-e-er* "they saw". The stem *mauss-* probably cannot directly continue **meuh₁s-* or **mouh₁s-*, since monophthongization would be expected before the laryngeal (cf. *ūssiya-* "draw curtains" < **(o)u-h₁syé/ó-* {11.6.3.1.}. It may, however, be an early replacement for a **meuh₁s-* (> ***mūss-* with gemination of **h₁s*) on the model of *aus-*.

Examples *CHD* 3, 211–12. For etymological refs. see *HEG* 6, 166–8; *māu(ss)-* is derived from a sigmatic aorist by Eichner, *Fl. u. Wb.* 84, who reconstructs 3 sg. midd. **mé/óuh₁-s-to* (cf. also *Laryngaltheorie* 139–40), and by Oettinger, *Stammbildung* 526–7, who reconstructs act. **mó̄uh₁-s-t*, midd. **méuh₁-s-to*, but it is difficult to motivate an *o*-grade (Anatolian shows no trace of the causative **mouh₁-éye/o-* in Lat. *monēre*), and a change of **euH* to **ou(H)* or **au(H)* is otherwise unsupported {4.2.1.}. A stem with *s*-extension **meu(h₁)s-* occurs in the other IE languages, but the original meaning seems to have been "steal" (cf. Skt. *mosati, muṣṇāti* "steals", OHG *chreomosido* "corpse-snatching").

## 4.7. **au*

### 4.7.1. Monophthongization

#### 4.7.1.1. Before laryngeals

The clearest examples of monophthongization of IE pre-consonantal **au* to *u* occur before the reflex of **h₂*. The language had no synchronic sequences ***aih(h)* or ***auh(h)*, and *huhha-* "grandfather", which is morphologically isolated, provides especially clear evidence.

*huhha-* "grandfather": nom. sg. *hu-uh-ha-as* KUB I 16 III 41 (OH+), KUB XXXIII 24 I 32, 34, 46 (OH+), acc. sg. *hu-uh-ha-ma-an* KUB I 16 III 40 = /huhhan-man/ "my grandfather", gen. sg. *hu-uh-ha-as* e.g. KUB VI 45 I 42 (NH), *hu-u-uh-ha-as* HT 2 I 3 (U), *hu-ha-as* KUB XIX 5 Vs. 12 (NH), dat.-loc. sg. *hu-uh-hi* KUB XXI 27 IV 4, 9 (NH), *hu-uh-hi* KUB XXXIII 24 I 30 (OH+), nom. pl. *hu-uh-hi-is* KBo XXII 86 + KUB XXXVI 2 III 6 (NH), acc. pl. *hu-uh-hi-is* (*sic*) KUB XXX 24 II 23 (OH+); *hu(h)hant-* "(great)grandfather": nom. pl. *hu-uh-ha-an-te-es* KUB XXI 5 I 14 (NH), *hu-u-ha-an-te-is* KUB XXXVI 87 IV 27 (NH) = [huhha-] (with geminate *h*) ultimately from **h₂éuh₂o-* = **[h₂áuh₂o-]* : Lat. *avus*, Arm. *haw*, cf. also CLuv. *huha-* and *huhat(t)alla/i-* "grandfatherly, ancestral" (*CLuv. Lex.* 71), HLuv. *huha-, huhati-* "great grandfather", *huhatali-* "grandfatherly", and Lyc. *χuga* "grandfather". The PA voicing in the Luvian and Lycian cognates is phonologically regular, but Hittite can have restored a geminate /hh/ on the model of other the nouns of relationship *atta-* "father", *anna-* "mother", and *hanna-* "grandmother".

Examples and etymological discussion *HED* 3, 355–8; see also Eichner, *MSS* 31 (1973) 55.

The first person singular present and preterit of *au(s)-* "look, see", *u-uh-hi*, e.g. KBo VIII 41 L. 2 (OH) and *u-uh-hu-un*, e.g. KBo III 34 I 23 (OH+), KUB XXXVI 98b. Rs. 10 (OH+), should be from Pre-Hitt. **áu-h₂ai* and **áu-h₂un* with **au* from IE **au* as in Skt. *avati* "notices" {4.7.2.}.



The iterative *ūsk-*, which sporadically has plene writing in its first syllable (3 sg. pres. *ú-us-ke-ez-zi* KBo VIII 42 Vs? 2, OH, *u-us-kan-zi* KUB XXIII 103 Vs. 14, NH), may have /ū/ by analogy to the first person singular present and preterit.

#### 4.7.1.2. Monophthongization elsewhere

In phonological terms, the preverb *u-* "to" beside CLuv. *au-* in *a-ú-i-ti* [awidi] "comes" etc. can continue **ou-*, **eu-* or **u-*. It seems unlikely that Hittite and Luvian generalized different ablaut variants, but unconditioned monophthongization is not the only possible explanation for Hitt. *u-*. Melchert, for example (*AHP* 66), suggests that *u-* was generalized from the weak stem of *uwa-* "come" (PA **ū-y-* < **au-h₁y-*). If PA **ou-* regularly became *u-* only before stops, then it is possible that *u-* was generalized from those verbs in which monophthongization was phonologically regular (e.g. **óu-deh₃-* > [ūda-] in *u-da-* "bring").

The IE etymology of the preverb is not clear, and none of the etymologies that have been suggested is without problems. In view of the doubts that Strunk, *Fs Risch* 253–69, has raised about the existence of Arcado-Cyprian ὐ-, εὐ- "ἐπί", Kimball's suggestion (*PW* 464–6) that the Anatolian and Greek preverbs can come from an IE **eu-*, **u-* "to" is probably wrong.

#### 4.7.1.3. Examples unlikely to have had full-grade

Some examples cited in the literature probably had zero-grade rather than full-grade.

*unu-* "decorate, adorn": 3 sg. pres. midd. *ú-nu-ud-da* KUB IV 4 II 15 (NH), 3 sg. pret. act. *ú-nu-ut* e.g. StBoT 25, 110 II 23, *ú-ṇu-ṷt* StBoT 25, 119 L. 3, midd. *ú-nu-ut-ta-at* KUB XVII 5 L. 5 (OH+), it. ptcp. nom. sg. c. *ú-nu-us-kan-za* StBoT 25, 109 III 15, *ú-[n]u-us-kan-za* StBoT 25, 111 III 22 = [unu-] (NH also *unuwā(i)-*). This verb is derived by Eichner, *Sprache* 24 (1978) 151 n. 28, from a full-grade **au-neu-*, cf. Arm. *aganim* "I put on" also with full-grade **au-* and e.g. Lat. *exuere, induere* with zero-grade **u-*. But *unu-* is archaic, and like *inu-* "make hot" < **i-n(e)u-* {4.5.1.4.}, it probably had a zero-grade root **u-n(e)u-* (Kimball, *Sprache* 36 (1994) 9).

Ultimately *unu-* is related to the root **wes-* "have on, wear" of *wess-* "have on" and *wassiya-* "put on"; see Eichner, *loc. cit.*

### 4.7.2. Retention

Like **ou*, **au* did not monophthongize before resonants.

*aulis*, a tube-shaped organ, "throat, windpipe" or "carotid artery": nom. sg. *a-ú-li-is* e.g. KBo XII 89 II 9 (NH), KBo XXI 21 Rs. 3 (NH), KBo XXIII 56 IV 7 (U), KUB XI 18 III 7 (OH+), acc. sg. *a-ú-li-in* e.g. KBo XI 49 VI 15 (OH+), KUB XI 26 II 10 (OH+), gen. sg. *a-ú-li-ya-as* KBo XX 73 IV 4 (U), dat.-loc. *a-ú-li-i* KUB II 8 III 15 (OH+), *a-ú-li-li* KBo XXI 21 Rs. 11 (U), dir. *a-ú-li-ya* KBo XV 33 III 12 (MH), KUB II 8 III 13 = [auli-] < **auli-* : Gk. αὐλός "flute", αὐλών "canal", Lith. *aulỹs* "beehive", O.Pruss. *aulis* "shinbone", N.Norw. *aul(e), geitaul* "angelica, angelica stalk" (*IEW* 88–9).

Examples *HW*² 627–31, *HED* 1, 229–32; for the meaning and etymology, see Kühne, *ZA* 76/1 (1986) 85–117 and Kimball, *Sprache* 36 (1994) 13–4. The stem **eu-l-* in OIcl. *hvannjóli* "stalk of the angelica plant" (NIcl. *njoli*, NNorw. *kvannjol*) and *joli, joll* (NNorw. *jol*, dial. *geit-*

*jol*) used of the plant itself, could be from **ēul-* > **eul-* > *jōl-*, but lengthened-grade **ēu-l-* is not necessarily to be reconstructed for IE. Hittite *aulis* and Norse **ēu-l-* cannot be derived from **h₂ḗul-* and **h₂ēul-*, since the laryngeal is not preserved in Hittite. Puhvel's rejection of Kühne's etymology (*HED* 3, 452) is based on an unsupported interpretation of the meaning of *auli-* as "spleen".

A diphthong occurs in strong stem forms of *au(s)-* "look, see": 2 sg. pres. *au-ut-ti* StBoT 25, 122 III 3, 9, 11, etc., 3 pl. pret. *a-u-i̯-[(e)-er]* KUB XIII 1 I 20 (MH), *a-ú-e-er* KUB XVII 9 I 37 (NH), 2 sg. imp. *a-ú* KBo III 23 I 5 (OH+); the sigmatic stem *aus-* occurs only before endings that begin with dental stops or /tṣ/: 3 sg. pres. *a-us-zi* (OH etc.), 2 pl. pres. *a-us-te-ni* KUB XXIII 77 L. 15 (MH), 3 sg. pret. *a-us-ta* KBo III 34 I 22 (OH+), *a-ú-us-ta* KBo III 60 I 8 (OH+), 3 sg. imp. *a-us-du* e.g. KUB VII 8 III 11 (MH+), 2 pl. imp. *a-us-ten* KUB XXXI 101 Rs. 34 (U). This verb belongs with e.g. Skt. *(pra-/ud)-avati* "notices", OCS *umŭ* "understanding" < **au-mo-*. An extended stem **awis-* or **āwis-* is found, e.g. in Skt. adv. *āviṣ* "openly", Gk. impf. αὗον "hear, comprehend" < **ἀϝιο-ον* (originally from an aorist), and with stem **awiz-dh-* ἀισθάνομαι "I understand" and Lat. *audīre* "to hear". The lengthened grade of Skt. *āviṣ* can be secondary, and since tautosyllabic **oi* was retained before clusters beginning with /s/ (4.4.2.), it is likely that *au-* can continue a full-grade **au-* as well as a lengthened grade **āu-* beside zero-grade **u-* in 3 pl. pres. *ú-wa-an-zi* (e.g. KUB XIII 2 I 6, MH?), 3 pl. imp. *ú-wa-an-du* (e.g. KBo XI 1 Vs. 28, NH). It is likely that the second person singular present *autti* and imperative *au* have *au-* by analogy to the forms with endings in dental plus *s* and to the third person plural preterit *auēr*. Another possible source for *aus-* is the extended stem **awis-* with syncope, i.e. **awis-ti* > [austṣi] (3.7.1.).

Examples *HED* 1, 234–44, paradigm *Stammbildung* 82; for 1 sg. pres. and pret. *ūhhi*, *ūhhun* see (4.7.1.2.). Note also *auri-* "watch tower" from unextended *au-* (Melchert, *AHP* 148).

## 4.8. Long diphthongs

Eichner, *Gds Kronasser* 18 n. 13, *Laryngaltheorie* 139–40; Kimball, *Sprache* 36 (1994) 23–27; Kronasser, *VLFH* 45; Melchert, *SHHP* 60, 61–7, 71–2, *AHP* 149–50; Neu, *StBoT* 18 123 n. 292, *Lok.* 47; Pedersen, *Hitt.* 37–8, 175–6; Sturtevant, *Language* 6 (1930) 34–5, *CGr*[1] 102–4, *CGr*[2] 36–7, 39–40, *Language* 26 (1950) 1–5; Weitenberg, *u*-Stämme 115, 175–6, 356, 373; Zinko, *Vertretung* 38, 39, 40, 101, 120, 121, 122–3.

Sturtevant originally claimed that all long *i*-diphthongs resulted in /ai/ and that all long *u*-diphthongs resulted in /au/, but this conclusion is not supported by solid examples. The best examples of /āi/ and /āu/ from long diphthongs continue *o*-grade **ōi* and **ōu*. For example, the animate nominative singular *āi*-stem suffix *-āis* and the nominative-accusative singular *-āi* should continue *ō*-grade **-ōis* and **-ōi* rather than **-ēi-s*, **-ēi* (4.8.2.). Forms such as *hi*-conjugation singulars (e.g. *dāi* "puts"), which Sturtevant derived from lengthened *e*-grades, can continue PA *o*-grades (4.9.1.). The diphthong **ēi* seems to have monophthongized to a front vowel, and **ēu* may have become /ū/ or /ǖ/. Clear-cut examples of inherited **āi* and **āu* are lacking, since most of the examples that have been cited can continue short diphthongs or are secondary.



It is possible that inherited long diphthongs retained their length in unaccented syllables. A few animate nouns with the suffix *-āi-* (IE **-ōi-*) that are not productively derivable from verbs seem to have had a long diphthong in the suffix, which was not accented in IE, and a long root vowel from an accented short vowel, since both root and suffix show up with plene writing (Weitenberg, *u*-Stämme 356): e.g. *sāgāi-* "omen": nom. sg. *sa-ga-i-is* (OH), *sa-ga-a-is* (MH) beside acc. sg. *sa-a-ga-a-in* KBo XIV 86 + IV 7 (MH+) = [sāgāi-] < PA **sáǵōi-* : IE **seh₂ǵ-* (cf. e.g. Lat. *sāgus* "wise"); *sāklāi-* "rite, custom": nom. sg. *sa-ak-la-a-is* (OH+, MH(?)+, NH) beside *sa-a-ak-la-is* (Supp. I+) = [sāklāi-] < PA **sáklōi-* or **sắklōi-* : IE **seh₂k-* or **sak-* in Lat. *sacer* "sacred", Osc. σακρομ (nom. sg. n.) id., Umb. *sacra* "sacrās" and Ital. **sākri-* in Umb. nom.-acc. sg. n. *sakre* and OLat. *sācrem* (10.9.1.2.). The animate nouns seem to continue an IE proterokinetic inflectional type with accented full-grade root in strong stem forms, i.e. **CéC-ōi* as in Skt. *sákhā* "friend", acc. *sákhāyam*, dat. *sákhye*, or Gk. ἥρως "hero", gen. ἥρωος with suffix CGk. **-ωϝος* (Weitenberg, *Heth. u. Idg.* 391, *u*-Stämme 369–78; the accent of the Gk. πειθώ "persuasion" type is secondary; Schwyzer, *Gr. Gr.* I 478–9 w. refs.). The suffix of neuter collectives in *-āi-* also frequently has plene writing. One that must be old, *hastāi* "bone(s)", may ultimately be from an amphikinetic collective nom.-acc. **h₂éǵst[H]-ōi* (Melchert, *SHHP* 59–60, 71), but it never has plene writing of the vowel of its root syllable, although it is well attested (see the examples in *HED* 3, 233–7), and it is possible that it generalized an accented suffix after the model of collectives in *-ār* < **-ór* such as *widār* "water" or *uddār* "words", i.e. **h₂ǵést[H]-ōi* › Pre-Hitt. **h₂ǵast[H]-ói*.

Melchert also reconstructs an amphikinetic collective **léuHt-ōi* : **leu(H)-* "cut" in e.g. Skt. *lūnāti* "cuts" for *luttāi* "window", but this should probably have become **[lūdāi] with PA voicing as would **lḗutōi* from the *aniṭ* root. A zero-grade **lut-ói*, however, would have given [lutāi].

### 4.8.1. **ēi*

The long diphthong **ēi* monophthongized to a front vowel.

One example that may show **ḗi* > OH /e/ is *udnē* "land, country" (nom.-acc. sg. *ud-ne-e*, e.g. KBo III 22 Vs. 38 (OH), StBoT 25, 118 I 5) which can continue a hysterokinetic collective **udnéi* (Schindler, *BSL* 70 (1975) 9–10, Melchert, *SHHP* 46–7, 73–3; see also Oettinger, *Stammbildung* 544). The expected oblique stem **udn(i)y-* is found in the OH dat.-loc. pl. *ud-ni-as(-)* StBoT 25, 118 I 6 and in the extended stem *udniyant-* (e.g. nom. sg. *ud-ni-ya-an-za* StBoT 25, 140 Rs. 9, 12, acc.? sg. *ud-ni-an-ta-an* StBoT 25, 124 III 16).

For the paradigm see Neu, *StBoT* 18, 113. The /e/ of the nominative-accusative was apparently extended to the oblique stem some time after the OH period, and *udnē[y]a-* in NH copies of OH texts (e.g. gen. sg. *ud-ne-ya-as* KBo III 21 II 4, nom. *ud-ne-e-an-z[a* KBo III 1 I 35) is probably not an archaism (Neu, Melchert, *SHHP* 79 n. 135 and *AHP* 149).

There is, however, at least one other word that may show **ēi* > PA /ī/. *wīsūriya-* "constrict, oppress, stifle", first occurs in KUB XVII 10 (3 pl. pret. midd. *ú-i-su-u-ri-ya-an-ta-t[i]* I 6, *ú-i-su-u-ri-ya-an-ta-ti* ib. I 7), a MH copy with conservative spellings of an OH exemplar. Later texts have both I and E in the first syllable: 3 pl. pres. act. *ú-e-su-ri-ya-an-zi* KUB IX 6 III 10 (NH), it. 3 sg. pres. *ú-i-su-re-es-ke-ez-zi* KUB V 1 III

51 (NH), ptcp. *wisūriyant-* in $^{D}$*Wisūriyant-*, a baleful goddess: nom. $^{D}$*Ú-i-su-ri-ya-an-za* KBo XV 25 Vs. 9 (MH?), acc. $^{D}$*Ú-i-su-ri-ya-an-da-an* ib. Vs. 5, 7, $^{D}$*Ú-i-su-u-ri-ya-an[-da-an* ib. Rs. 33, gen. $^{D}$*Ú-i-su-ri-ya-an-da-[as]* ib. Vs. 2, dat. $^{D}$*Ú-i-su-ri-ya-an-ti* ib. Vs. 19. The verb presupposes a base noun **wisūra-* or **wesūra-* from **wēisúro-* or **weisúro-*. Evidence for a PA diphthong is also provided by the Luvian-Lycian cognates, CLuv. *wisi-*, *wisai-* "press" (*CLuv. Lex.* 270) and Mil. *wis(e)i* id. (*Lyc. Lex.*$^{2}$ 128). Baltic and Slavic cognates preserve lengthened-grades, and OCS *vichŭrŭ* "whirlwind", Russ. *vichrŭ* id. < **wēisuro-* and Lith *viẽsulas* id. < **wēisulo-* may ultimately be replacements for IE heteroclitics **wēiswr̥* and **wēiswl̥* from the root **weis-* "twist" of e.g Skt. *veṣṭati* and Russ. *vichatĭ* "to move, shake". Hittite **wisūra-* or **wesūra-* could be from **wēisúro-*, an independent thematization of **wḗiswr̥*. For the suffix accent, cf. *isnūra-* "dough bowl" < **yesnúro-* {2.4.4.2.}. If *sissūra-* "irrigation" continues **sesúro-* with **sV* > [ssV̄] after short vowel {11.4.3.}, then the single °Š° of **wisūra-*, *wisūriya-* confirms the Pre-Hittite long vowel from a monophthongized diphthong and excludes Carruba's (*StBoT* 2, 48–53) derivation from **wes-* "wither".

The root etymology is that of Eichner, *MSS* 31 (1973) 77. For forms and morphological discussion see Carruba, *loc. cit.*

It is possible that the /ŏ/ of *udnē* and the front vowel of *wisūriya-* both continue **ḗi* if **ḗi* underwent split, becoming OH /ŏ/ in absolute final position, but /ĭ/ elsewhere (cf. Schindler's suggestion *apud* Melchert, *SHHP* 73 n. 135, that final **ēi* became **ē* with loss of the second element of the diphthong). Alternatively, if **ḗi* became **ē* with loss of the second element of the diphthong, MH *ú-i-su-(u)-ri-(ya)-* represents OH **ú-e-su-(u)-ri-(ya)-* = [wesūriya-] with Post-OH I for OH /ŏ/.

## 4.8.2. *ōi

The long diphthong **ōi* became *ai* without monophthongization.

Neuter plural-collective of *āi*-stem nouns, e.g. *hastāi* "bone(s)": *ha-as-ta-e* KUB XVII 28 I 23 (OH+), *ha-as-ta-i* KUB IV 1 I 17 (MH? ), *ha-as-ta-i-i* KUB V 1 I 75, IV 6 (NH), *ha-as-ta-a-i* ib. II 18, 64 = [hastāi] from pl.-coll. **h₂ést[H]-ōi*, perhaps remade as **h₂ast[H]ṓi* in Pre-Hittite; *sa-ga-e* "omens" KBo XXIII 55 I 13 (U) = [sāgāi] < **séh₂g-ōi* or from Pre-Hitt. **sāgṓi* with accent shift and analogical long root vowel, cf. the animate nominative singular *sa-ga-a-is*, *sa-a-ga-is* {4.8.}.

Nominative singular of animate *āi*-stem nouns, e.g. *i[s-tar-ni-in-ga-is* "sickness" KUB XXIX 1 I 47 (OH+), *li-in-ga-is* "oath" e.g. KUB XXIX 7 Rs. 17 + KBo XXI 41 Rs. 26 (MH), KUB XXXV 148 IV 18 (OH+), *sa-ga-i-[i]s* "omen" StBoT 25, 3 IV 9, *sa-ga-a-is* KBo XVI 97 Rs. 31 (MH?), *sa-ga-is* KBo XIII 34 III 13 (OH+); *sa-a-ak-la-is* "rite, custom" KBo V 3 III 28 (Supp. I+), *s[a-ak-la-a-is* KBo XII 42 Rs. 13 (OH+), *sa-ak-la-a-is* KUB XIV 4 I 12 (NH), KUB XIII 4 III 21 (MH(?)+), *sa-ak-la-a-is* ib. IV 36, *sa-ak-la-is* KUB XXIII 72 Rs. 52 (MH); *sa-an-ku-wa-a-[is]* "fingernail" KBo XIII 31 III 10 (MH) with suffix [-āis] < PA **-ōis* (Weitenberg, *Heth. u. Idg.* 289–90 w. refs., Melchert, *SHHP* 71–2).

For the lengthened-grade suffix, cf. **-ōi* in Skt. *sákhā* "friend" and Greek nouns of the πειθώ "persuasion" type. The addition of the animate ending **-s* is an Anatolian innovation (Melchert). The suffix of the animate accusative singular *-āin*, e.g. *sa-a-ga-a-in* KBo XIV 86 + IV 7 (MH+), *sa-ga-a-in* KUB XXXVI 51 Rs. 5 (OH+), acc. sg. *s[a-ak-la-a-in* KBo XI 1 Vs. 23 (NH) should continue Pre-Hitt. **-ṓin*, analogical from the nominative, for **-an* < **-óy-n̥* (cf. Weitenberg, *op. cit.* 289, 293).



The dative-locative singular of *i*-stem adjectives (e.g. *su-up-pa-i* StBoT 25, 94 L. 6, StBoT 25, 102 Vs.? II 2 : *suppi-* "pure"; *sal-la-i* e.g. KBo III 1 II 49 (OH+) : *salli-* "big") can continue a locative in **-ōi* (cf. Sturtevant, *CGr*$^{2}$ 37, Kronasser, *VLFL* 110 and Weitenberg, *u*-Stämme 381).

A few dative-locative singulars in *-ai* are found for nouns (e.g. *ha-as-sa-an-na-i* KBo III 1 II 49 (OH+), modifed by *sallai* "great" : *hassātar* "family"; *tak-na-i* KUB XXIV 9 II 22 (MH+) : *tēkan* "earth"), but as Neu, *Heth. u. Idg* 188, shows, these are secondary and do not continue the IE *o*-stem dative singular in **-ōi* < **-o-ei*.

*karaīz* "overflow, flood" (nom. sg. *ka-ra-i-iz* StBoT 25, 140 Rs. 19, dat.-loc. *ka-ra-it-ti* ib. Rs. 18) can be from **ĝrṓi-t-s*, **ĝrṓi-t-* : **ĝr-it-* in oblique stem *ka-ri-it-t°*, cf. IE **ĝrei-* in Skt. *jrayas-* "heavenly expanse", Av. *zrayah-* "lake, sea" (Melchert 72 n. 134). An IE **ĝrŏit-* would have become OH **[grēd-] with monophthongization of the short diphthong before the dental stop {4.4.2.}.

## 4.8.3. *ēu

Reflexes of **ēu* that have been suggested are /u/, /iu/ and /au/. The most likely example of a word with **ēu*, *sīus* "god" in nom. sg. *si-i-us-(mi-is)* "my god" KBo III 22 Rs. 47 (OH), is ambiguous. It could reflect [s(i)yūs] from nom. sg. **d(i)yḗus* comparable to Skt. *d(i)yāuḥ* "sky" (Neu, Kimball, Weitenberg), but **d(i)yḗus* with **ḗu* cannot be excluded (Watkins, *Gds Güntert* 103; see also Schindler, *Sprache* 19 (1973) 156–7 and Melchert, *SHHP* 60, *AHP* 104, 150). Much depends on how the spelling ŠI-I- is to be interpreted. If **y* disappeared as part of the process of assibilation (i.e. **dy* > /s/), then °I-I-U° should represent the regular reflex of **ēu*, i.e. **dyēus* > **sēus* > *sīus* or **dyḗus* > **dyīus* > *sīus* (Pedersen 175–6, Weitenberg).

Evidence for monophthongization of **ēu* to /ū/ (perhaps in final syllables only) may come from *karū* "previously" (*ka-ru-ú*, OH etc.), if it can be analysed as [Krū] from a locative **Kr-ḗu* (or as [Karū] from a Lindeman variant **Kr̥-ḗu*) from a *u*-stem noun **Kér-u* or **Kór-u*.

For the analysis as locative see Zinko, *Vertretung* 101 and Neu, *Lok.* 46–8. The root etymology is not certain. Neu derives *karū* from **ĝr-ḗu* : **ĝer-* "(a)waken" in Skt. *jarate* and Gk. ἐγείρω (see also Zinko, *loc. cit.*). Čop, *Slav. Rev.* 13 (1961/2) 188–97, 206–8 and *KZ* 85 (1971) 31 w. n. 31, who also starts with a locative, derives it from **ĝhr-ḗu* : Gmc. **grēwa-* (IE **ĝhrēwo-*) in e.g. ON *grȳjandi* "to dawn, become light", NHG *grauen* id. Kimball, *PW* 454–5, who also favors the locative analysis, notes that **ḱr-ḗu* : **ḱér-u*, **ḱer-u-* in Ved. *apiśarvare* "at nightfall", *śarvari-* "night" (an etymology proposed by Benveniste, *BSL* 50 (1954) 41) is also possible. Eichner, *Sprache* 23 (1978) 160 n. 70, *Heth. u. Idg.* 59 n. 57, reconstructs **ḱr-ḗu*, with short diphthong, connecting Lat. *cras* < **ḱr̥-eh₂-s* (see also Weitenberg, *u*-Stämme 114–15) For references to other etymological and morphological analyses see Tischler, *HEG* 3, 526–8 and Weitenberg, *u*-Stämme 114–5.

*tarrū* (*tar-ru-u*, OH + etc.) is analyzed as a locative **tors-ḗu* by Čop, *KZ* 85 (1971) 30–2 and Kimball, *PW* 456–7, but the meaning and etymology of the word are by no means certain {8.6.5.1.}.

There is no evidence to support the change *$\bar{e}u$ > /au/ proposed by Sturtevant (*CGr*$^1$ 103, *Language* 26), Kronasser (45), and Eichner. Most of the relevant examples can continue *o*-grade *$\bar{o}u$ (e.g. *au*-stem loc. sg. *-au*) or the short diphthong **au* (e.g. *au(s)-* "see" [4.7.2.]).

For *$euH_{1,3}$- see [4.2.1.].

### 4.8.4. *$\bar{o}u$

Kronasser, *VLFH* 45; Melchert, *SHHP* 61–7, *AHP* 149; Sturtevant, *CGr*$^1$ 103, *CGr*$^2$ 39–40; Weitenberg, *u*-Stämme 356, 373.

IE *$\bar{o}u$ became *au* in the nominative singular suffix *-āus* in *au*-stem nouns (e.g. *har-na-a-us* "**birthstool**" KBo V 1 I 44, Pre-NH) with [-āus] < *-$\bar{o}us$, cf. Av. *-āus* in e.g. *-bāzāus* "**armed**", gen. *-bāzuuō* and Gk. -ως, gen. -ωος (< *-o*F*ος) e.g. in ἥρως, gen. ἥρωος "hero".

See Weitenberg, *u*-Stämme 352–6, on the synchronic inflection of these nouns and 369–76 on their prehistory. As both Weitenberg and Melchert (*SHHP* 62) note, Hittite tended to generalize the full-grade suffix *-āu-* of the nominative throughout the paradigm.

A lengthened-grade also occured in the nominative-accusative singular ending *-āu*, e.g. in $^{GIŠ}$*tanāu* "fir tree" (?) ($^{GIŠ}$*ta-na-a-ú* hap. leg. LS 4 Vs. 10, OH) = [dānāu]? < **dhónōu*, cf. Gmc. **danwō* in Germ. *Tanne* "fir tree".

See Weitenberg, *Heth. u. Idg.* 294, 296 w. n. 12, *u*-Stämme 268 w. refs. and 366, and Tischler, *HEG* 8,102. The etymology is that of Neumann, *KZ* 77 (1961) 77–8.

## 4.9. Secondary diphthongs

Melchert, *SHHP* 38–40, 63–6, 73–4.

Many synchronic diphthongs are from sources other than IE long and short diphthongs, having arisen through loss of intervocalic *$h_1$, *$h_3$ and **y*, through syncope in forms derived from existing words, or as the result of other sound changes. Loanwords are another source of synchronic diphthongs, e.g. $^{GIŠ}$*paini* "tamarisk (?)" from Hurr. *paini* "tamarisk", itself from Akk. *bīnu* (Beckman, *StBoT* 29, 99 w. refs.), or *aikawartana* "one turn" from Indic.

### 4.9.1. *i*-diphthongs

Sequences of *$VH_{1,3}i$ resulted in synchronic *i*-diphthongs before consonants and word boundaries (*Melchert* 73–4). Similarly, *$\acute{V}H_{1,3}e$ resulted in /Vi/ with reduction of unaccented **e* to *i*.

Strong stem forms of several *hi*-conjugation diphthong stems can be derived from a PA sequence *$\acute{o}h_1i$, e.g. *dāi-* "put": 2 sg. pres. *ta-it-ti* KBo III 38 Vs. 24 (OH+), 3 sg. *da-a-i* (OH etc.), 3 sg. pret. *da-is* KUB XXXVI 100 Rs. 3 (OH), KBo XV 10 III 62 (MH), *da-a-is* KBo III 53 L. 5 (OH+), 1 pl. *da-a-i-ú-en* KBo XV 10 I 32, 2 pl. *da-is-te-en* KBo VIII 42 Rs.? 2 (OH), *da-is-t[e-en]* ib. Rs.? 3 = [dāi-C] < PA *$dóh_1i$-C*, 3 sg. pres. [dāi] < *$dóh_1y$-e(i)*; similarly *huwāi-* "run": 3 sg. pres. *hu-wa-a-i* (OH etc.), pret. *hu-wa-i-is* KUB XVII 10 I 13 (MH), *ḫu-wa-is* KUB XIV 1 Rs. 60 (MH), *hu-wa-i[t* KUB XXIII 72 I 17 (MH) = [hwāi-C] < PA *$h_2wóh_1y$-e(i)*; *ispāi* "be satiated": 3 sg. pres. *is-pa-a-i* KUB XXXIIII 11 II 11 (MH+) = [spāi] < PA *$spóh_1y$-e(i)*. The similar looking *nāi-* "turn" should be from *$noiH_{1,3}$-*, for the laryngeal cf. Skt. ptcp. *nītaḥ* < *$niH_{1,3}$-to-*.

For the *o*-grade see Kimball, *Sprache* 36 (1994) 27.

*tāiszi-* "warehouse, shed": acc. sg. *t[a-is-zi-in* KBo VI 2 IV 59 (OH), *ta-is-zi-in* KBo VI 3 IV 59, 61, 62 (MH), and in denominative *tāistai-* "load": 3 sg. pres. *ta-a-is-ta-i* KBo VI 10 II 5 (OH+), pl. *da-is-te-ya-an-zi* KUB XXXI 79 Vs. 13 (MH), 3 pl. pret. *da-is-te-i-e-er* ib. Vs. 9, ptcp. nom.-acc. sg. n. *ta-a-is-ti-ya-an* KBo X 2 III 12 (OH+). The stem [dāistṣi-] is perhaps ultimately from a PA neuter *s*-stem PA *$dóh_1y$-es-* < *$dhóh_1y$-es-* : *$dheh_1$-* "put" with reduction of unaccented **e* to /i/ (Oettinger, *Stammbildung* 476–7). The source of the stem final /tṣ/, however, is problematic (Joseph, *Sprache* 30 (1984) 7–8).

*āis* "mouth": nom.-acc. sg. *ai-i-i[s* e.g. StBoT 25, 4 I 10, 12, *a-i-is* KUB XLI 23 III 10 ( OH//MH?), *a-is* KBo XII 18 I 8 (OH+), KBo XV 10 I 17 (MH, as voc. ib. II 8) = [āis], perhaps from a PA neuter *s*-stem **óes* also in CLuv. *āss-* (*a-a-as-s*, *CLuv. Lex.* 34) with *$\bar{e}$ > *a* and **aa* > /ā/. Cognates point to an original neuter *s*-stem *$h_1éh_3$-es-* = *[$h_1$óh$_3$-es-] with analogical retention of the *e*-coloring of the suffix vowel beside oblique stem *$h_1h_3$-es-ó-* > *issā-* [10.5.4.], cf. Ved. *āḥ*, gen. *āsaḥ*, Lat. *ōs*, gen. *ōris*. As in *nēpis* "heaven" the suffix *-es- was generalized to the nominative-accusative singular. Indo-Iranian and Latin generalized the productive acrostatic inflection.

Etymological discussions Tischler, *HEG* 1, 48–50, Puhvel, *HED* 1, 117. For the reconstruction *$h_1eh_3$-es- see also Rix, *IF* 96 (1991) 272. A stem *$h_3éh_1$-os- was originally reconstructed by Lindeman, *Fs Jakobson* 1188–90; cf. also Schindler, *Fl. u. Wb.* 264 (*$h_3éh_1os$ or *$h_3éh_1$-s*), Eichner, *MSS* 31 (1973) 84 n. 5, *Sprache* 24 (1978) 162 n. 77 (Pre-Hitt. *$h_3óh_1$-es*), Puhvel, *loc. cit.*, and Lindeman, *IIS* 105 (1992) 165. Since initial *$h_3$ remained in Anatolian, however [10.2.3], these preforms should have become **$h\bar{a}is$* or **$h\bar{a}s$*.

*pāi-* "go": 1 sg. pres. *pa-i-mi* KBo VII 14 Vs. 4 (OH), StBoT 25, 2 I 9 (and Post-OH), 2 sg. *pa-i-s[i]* StBoT 25, 124 I 9, 3 sg. *pa-iz-zi* (OH etc.), *pa-a-i-iz-zi* e.g. StBoT 25, 127 Vs.? II 7, Rs.? III 4, 1 pl. *pa-i-wa-ni* KBo XXII 2 Vs. 15 (OH), StBoT 25, 3 I 30 = 4 I 15 (etc.), 3 sg. pret. *pa-it* KBo VII 14 Rs. 6, KBo VIII 42 Vs.? 11 (OH), KUB XXXVI 99 Rs. 99 (OH, and Post-OH), *pa-i-it?* KBo XXII 2 Rs. 10. Ultimately *pā(i)-* is a compound of the preverb **pe* plus IE *$*h_1ei$-* "go". It is possible that the preverb had *o*-grade, in which case the preconsonantal stem, PA *$po$-(h$_1$)éi-* can have arisen through loss of the laryngeal and later monophthongization of the resulting diphthong, i.e. *$po$-(h$_1$)éi* > [pāi-], or *$po$-(h$_1$)éi-* > *$paē$-* > [pāi-]. The stem *pā-* would have zero-grade, e.g. ptcp. *$po$-(h$_1$)y-ónt-* > *$payānt$-* > [pānt-] [9.3.1.1.].

Oettinger, *Stammbildung* 388–9, reconstructs PA *$poy$-ē-* (with *$\bar{e}$-* "go" from *$h_1ei$-* with monophthongization and preverb **poi-*), but HLuv. *pasiya-* "reject" : Hitt. *pēssiya-* "throw, reject" points to PA **pe* as the source for *pē* [4.4.1.4.]. Melchert, *SHHP* 34, 73–4, reconstructs *$pe$-(h$_1$)ei-* > *$pe$-ę-* > *pāi-* with contraction. However, most other examples claimed to show contraction of *$*e\bar{e}$* or *$*\acute{e}\acute{e}$* to /āi/ can be reconstructed with *o*-grades, and do not, therefore, provide evidence to support this development in *pāi-*. For *pāi-*, *piya-* "give" see [3.11.1.2.].

A stem *haik-* "bow" occurs sporadically beside *hi-in-k°*, *hi-ik-* and *he-en-k°*, *he-ek-* in OH texts and later copies: 3 sg. pres. midd. *ha-ik-ta* KBo XXIII 91 Rs 6 (OH+, cf. 3 sg. pres. act. *hi-ik-zi* ib. Rs. 9, and *hi$^{pl}$-ik-ta* Rs. 11), *ha-ſik-ta-ri* KUB XXXVI 100 + KBo VII 14 Vs 19 (OH), *ha-ik-ſta-ri* ib. Vs 20, 3 pl. *ha-in-kan-ta* KBo XVII 74 + I 10 (MH copy of OH KBo XVII 11+). Melchert, *SHHP* 23–4, 74 n. 141, 113, connects *hink-* "offer" and reconstructs a compound with the preverb **h₂o-* "to" and verb stem **h₁nḱ-*, i.e. **h₂o-h₁enk-* > **haĭnk-* with raising of **e* before [ŋk] > *haink-* > *henk-*.

For the preverb as **h₂o-* see Melchert, *IIS* 101 (1988) 224 n. 17, and for **h₁nḱ-* with **h₁* in cognates such as Gk. ἤνεγκον "I carried" etc. see Meier-Brügger, *Sprache* 33 (1987) 102–7.

*sāi-* "be angry (at)": 3 sg. pret. *sa-a-i-it* KUB XVII 10 I 22 (MH), *sa-a-it* e.g. KUB XXX 10 Rs. 2 (MH), KUB XXXIII 15 L. 7 (MH+) = [sāit] perhaps from Pre-Hitt. **sáy-et*, reflecting **sáye-t*, remade from athematic **sáy-t* (Melchert, *SHHP* 38–9) : **sai-* in e.g. Lat. *saevus* "fierce" (cf. Oettinger, *Stammbildung* 262–3 w. refs.) beside 3 pl. pres. *sa-(a)-an-zi* (MH etc.) with *sā-* < **sáyo-*.

Cf. also Eichner, *Laryngaltheorie* 142, who, like Oettinger, reconstructs **sah₂ye/o-*. As Melchert notes, however, cognates provide no evidence for a long diphthong or laryngeal.

The suffix *-āi-* in denominatives in *-ā(i)-* in large part continues Pre-Hitt. **-ā-yé-* < IE **-eh₂-yé-* beside *-ā-* from **-ā-yó-* < **-eh₂-yó-*. The denominatives in *-ā(i)* are ultimately related to denominatives in **-ah₂-ye/o-* in e.g. the Greek τιμάω type, the Latin first conjugation, and the Germanic partially thematic type of Goth., OHG *salbōn*, OE *sealfian* etc. (cf. Melchert, *SHHP* 39–40, and Watkins, *Fl. u. Wb.* 371–2). A conglomerate suffix **-oy-é-* from the nominal thematic suffix **-o-* plus the denominative suffix **-yé/ó-*, comparable in formation to the Greek factitive type in -όω (e.g. δηλόω "make clear" : δῆλος "clear, visible"), is also a possible source in some verbs, e.g. *sāktā(i)-* "take care of a sick person", denominative to a PA **sókto-* "sickness" (Oettinger, *Stammbildung* 357–9).

## 4.9.2. *u*-diphthongs

The suffix *-āun-* in oblique stems of several neuter nouns in *-āuwar* reflects a composite suffix **-ā-un-*: *asāuwar* "sheepfold, pen": oblique stem in: dat.-loc. sg. *a-sa-ú-ni* KBo VI 2 III 49 (OH), *a-sa-ú-ſni* KBo VI 3 III 53 (MH), *a-sa-u-ni* KUB XIII 5 II 22 (MH(?)+), *a-sa-u-na-i* Bo 6002 Vs. 7 (*HED*), abl. *a-sa-ú-na-az* KUB XXXX 10 Vs. 15 (MH), *a-sa-u-na-az* KUB XIII 4 IV 59 (MH(?)+), KUB XXIV 3 II 12 (MH+); *harsāuwar* "plowed field", vbl. noun of *hārs-* "break up earth": dat.-loc. pl. *har-sa-ú-na-a[s* KBo VI 34 II 39 (MH+); *karāuwar* "horn": dat.-loc. sg. *ga-ra-ú-ni* StBoT 25, 4 III 25, *ga-ra-ú-n[* ib. III 40; the suffix [-ūwar], [-āun] probably originated in a suffix with hysterokinetic inflection, nom.-acc. sg. **-uér*, gen. **-un-és* attached to base nouns in **-ā* from **-eh₂*, cf. e.g. *karāuwar* "horn" from ***k(a)rā* id. < PA **kr̥-ah₂* or **kr̥-ah₂* plus hysterokinetic **-uér*, **-un-* (Melchert, *SHHP* 63–4 w. refs.).

A sequence [āu], presumably diphthongal, arose occasionally through syncope in first person plural presents of verbs in *-ā(i)-*, e.g. *ha-a]t-ra-a-u-ni* KUB XIV 1 Rs. 36 (MH) : *hatrā(i)-* "write", *ha-an-da-a-u-en* e.g. 1691/u II 15 (HED 3, 98): *handā(i)-* "prepare"; cf. unreduced *-ā-weni* in *tar-na-a-u-e-ni* "we nail down" KUB XVII 28 I 16 (OH+).



OH *saudisza* "heifer, yearling": nom. sg. *sa-ú-di-is-za* KBo VI 2 III 23, 27, 34 etc., KUB XXIX 16 III 10, *[s]a-ú-di-is-za* KUB XXIX ib.III 4 = [sāudists] < **só-ut-es-t-s* "of this year", compound of demonstrative pronoun **so-* plus **utes-* : **wetes-* "year", cf. Skt. *vatsa-* "calf", Aeol. ἔταλον, Coan ἔτελον id., Lat. *vitulus* id., Goth. *wiþrus*, OE *weþer* "wether".

The connection with **wetes-* "year" was originally made by Sturtevant, *Lang.* 6 (1930) 219, who, taking the basic form as *sāwitisza* (MH, OH+), reconstructed **sm̥-wetes-* "of the same year". Since the OH forms point to an inherited zero-grade **utes-*, however, the first element would have had to have been prevocalic **sm-(utes-)*. For Post-OH *sāwitisza* see {4.10.2.}; for /d/ by PA voicing see {6.4.4.5}.

## 4.9.3. Synchronic *eu*

The synchronic sequences [eu] and [ēu] are secondary.

*mēu-* "four" (*CHD* 3, 308): acc.pl. c. *mi-e-ú-us* KUB XXXI 127 I 52 (MH+) beside *mi-e-wa-as* ib. I 54, *mi-e-ya-wa-as* ib. I 55, dat.-loc. *mi-ú-wa-as* KBo XXIII 50 III 19 (Pre-NH), nom. pl. *mi-ya-u-e-es* KBo XXXII 13 II 31 (MH), *mi-ya-u-e-ſes* 878/c L. 4 (MH, *HEG*), acc. pl. *mi-e-ya-u-u[s* ib. L. 2. Luvian provides a cognate, inst. *ma-a-u-wa-a-ti* (*CLuv. Lex.* 145), which can continue a stem **méh₁y-ow-* > PA **méyow-* > **māaw-* > *māw-* with contraction. MH *miyaw-* can continue **mh₁y-ow-* or, conceivably, a full-grade **méh₁y-ow-* > **méyow-* > **mēaw-* > [mē(y)aw-] with glide insertion and MI for OH *[mē] The stem **méh₁-ow-* should be the oblique stem of a *u*-stem adjective with analogical full-grade. It is possible that the accusative plural *mēūs* continues a strong stem **méh₁y-u-*. Although this reconstruction will not explain the /ū/ of *mēūs*, the form is apparently accusative plural and, therefore, likely to be a replacement for **mēu(m)s* < Pre-Hitt. **mēw-us*. The accusative plural *he-e-ú-us* "rains" (OH+, NH), though itself obscure, may have provided a model.

For further etymological refs., see Tischler, *HEG* 6, 176–8.

The diphthong of *hēū-* "rain" is also likely to be secondary, although a satisfactory explanation for this word and its inflection has yet to be offered. Plene writing occurs in both elements of the diphthong in the nominative and accusative singular: nom. sg. *he-u-us* KBo III 7 II 22 (OH+), *he-e-ú-us* KUB XIX 14 L. 9 (Supp. I), *he-e-us* KUB V 1 IV 77 (NH), KUB VII 5 I 18 (MH(?)+), *he-e-us* KUB XVI 81 Rs. 4 (NH), KUB XIX 50 IV 27 (NH), acc. *he-e-u-un* KBo III 21 II 25 (OH+), *he-e-un* ABoT 5 II 12 (OH+), *he-ú-un* KBo XV 25 II 3 (MH?), *he-i-ú-un* KBo III 7 II 25. In other forms of the paradigm, by contrast, the original stem was *hē(y)aw-*: e.g. gen. *he-e-u-as* KBo X 31 II 12 (OH+), *he-e-u-wa-as* KUB XXV 23 IV 47 (NH), *he-e-ya-u-wa-as* ib. IV 52, inst. *he-e-a-u-it* KUB XXXIV 16 III 4 (OH+), nom. pl. *he-e-a-u-e-es*° StBoT 25 I 8 = *he-e-ya-u-e-es* in NH dup. KUB XXIX 1 I 27, *he-e-ya-u-e-s*° StBoT 25, 137 II 12, *he-e-u-e-es* KUB VIII 1 III 8 (OH+), acc. pl. *hi-e-a-mu-us* KUB XXXIII 9 III 10 (MH); the stem *hēu-*, *hēam-* is not old (OH+, NH). Much depends on whether this word is derived from the root of Gk. ὕει "it rains", Toch. A *swase* "rain", B *swese* id., AB *su-*, *swas-* "to rain", OPruss. *suge* and Alb. *shi* < **sū-* < IE **(s)H₂ǰeuH-* (Kimball, *PW* 502, Puhvel, *HED*, cf. also the refs. in *HEG*), or whether it is derived from **(s)hǰei-* : **(s)hǰei-k-* in *hininк-* "rain, pour" and Skt. *siñcati* "pours" (cf. Eichner, *Gds Kronasser* 18 n. 13, Weiten-

berg, *Hethitica* 1 (1972) 34–5, Georgiev, *RHA* 30 (1972) 91–3, and see *HEG* for other refs.). Reconstruction of a *u*-stem **$H_2$ǵ$^{h}$ei[H]-u-* (cf. Eichner, Georgiev, Melchert, *SHHP* 93 n. 33, Kronasser, *VLFH* 115, Kammenhuber, *HdO* 281) will not explain the plene writing of the U. Kimball's reconstruction of a root noun **hǵ$^{h}$euh$_1$-s* (*PW* 502) might explain the /ū/ if **ǵ$^{h}$u* did not monophthongize before **h$_1$*, but it will not explain the adjectival inflection. There is no independent evidence for the dissimilation of **hewaw-* to *hew(a)-* that Puhvel (*HED*) assumes.

Examples, etymological discussions *HEG* 2, 238–40, *u*-Stämme 29–32, *HED* 3, 301–4.

The sequence [ēu] is clearly secondary in *tamēu(m)man-* "other, alien" (e.g nom.-acc. sg. n. *ta-me-u-ma-an* KUB I 16 III 49, OH+, *ta-me-e-u-ma-an* Bo 6109 L. 4 (*HED* 2, 337), *ta]me-u-um-ma-an* KUB XXVI 1 II 52, NH), from pronominal stem *tamē-, damē-* "other" plus locatival suffix *-u(m)man-* (Melchert, *Sprache* 29 (1983) 4–120).

The etymology of *mēura-, miura-*, a body part (nom. pl. *mi-u-re-s* StBoT 25, R Rs? IV 4, beside */mi]-e-u-ra-as* and *mi-u-ra-as* in NH dup. KUB XLIII 53 I 14), is unknown (*HEG* 6, 223).

## 4.10. Developments within the historical period

Čop, *Linguistica* 6 (1964) 39–40 n. 57; Kimball, *PW* 636 n. 131; Melchert, *SHHP* 93 w. n. 36; Neu, *StBoT* 18, 39–40; Oettinger, *Stammbildung* 360.

### 4.10.1. Monophthongization of OH *ai* to *e/i*

There is evidence for monophthongization of /āi/ to /ī/ or /ē/ within Hittite, although the conditioning behind the change is not entirely clear. Čop cites examples before suffixes beginning with /s/, while Oettinger and Melchert specify that the change occurred in unaccented environments, but at least one example can be cited from a (presumably accented) monosyllable. Kimball suggests that monophthongization occurred before /ts/, but it also occurred before [sk] in iteratives.

Oettinger and Melchert note that monophthongization of stem final /āi/ to /ī/ or /ē/ occurred in the syllable preceding the suffix *-skē/a-* in iteratives from *mi*-verbs in *-ā(i)-* with stems of two or more syllables. Since the thematic vowel of the iterative suffix was originally accented, the monophthongization presumably occurred in unaccented syllables. Spellings with plene writing are fairly frequent, suggesting that the result of monophthongization was a long vowel. The earliest examples are found in OH, and both *-ēsk-* and *-īsk-* are found. In all periods, stems in *-ēsk-* or *-īsk-* are found beside *-aisk-* suggesting that *-ēsk-/-īsk-* was sporadically replaced by *-aisk-* by analogy to other forms of the paradigm: e.g. OH 3 sg. pres. *pal-ú-i[s-ke-ez-zi* (?) StBoT 25, 69 II 6 (?), 3 pl. *pa]l-ú-e-es-kan-zi* StBoT 25, 76 L. col. 9 : *palwā(i)-* "recite" (?) and *ha-at-re-es-ke-ez-zi* KBo XXII 1 Vs. 22 (OH) : *hatrā(i)-* "write" beside *a-ru-wa-is-k[e-(ez)-zi* StBoT 25, 72 II 9 : *aruwā(i)-* "prostrate oneself"; *er-ha-i$^{!}$/a$^{!}$-is-ke-ez-zi* StBoT 25, 84 I 5: *erhā(i)-* "make a circuit"; post OH examples include: *ap-pa-le-es-kan-zi* KBo V 6 III 49, 54 (NH) : *appalā(i)-* "trap"; *a-ru-ú-i-is-ke-ez-zi* KUB IV 1 I 12, 20 (MH?), *a-ru-ú-is-ke-ez-zi* KUB XX 46 III 16 (OH+), *a-ru-i-i[s]-ga-zi* KBo XX 34



Rs. 7 (MH), *a-ru-ú-e-es-kan-zi* KUB XXXVI 79 I 34 (MH+), *a-ru-e-es-kan-zi* e.g. KUB XXXI 134 L. 8 (MH+) : *aruwā(i)-* "prostrate oneself"; *ha-at-re-es-ke-mi* KUB XIV 1 Vs. 25 (MH), *ha-at-re-es-ke-[si]* ib. Rs. 37, *ha-at-re-es-ki* KUB XXVI 90 IV 3 (U) : *hatrā(i)-* "write"; *ma-le-es-ke-zi* KUB V 6 III 8 (NH) : *mālā(i)-* "approve of"; *mu-ki-is-ke-mi* KUB XXIV 2 Vs. 12 (Pre-NH), KBo VIII 92 L. 2 (MH), *mu-ki-is-ke-u-e-ni* KUB XV 31 I 49 (MH+), *mu-ke-es-ke-nu-un* KUB XXIV 3 IV 6 (Pre-NH) : *mūgā(i)-* "implore" (other examples *CHD* 390); *sa-a-ku-is-ke-ez-zi* KUB XX 54 + KBo XIII 122 Rs. 9 (OH+), *sa-ku-e-es-ke-ez-[zi]* KUB VII 41 I 11 (NH) : *sākuwā(i)-* "look at"; *tu]h-hi-is-ke-u-wa-an* KUB XXXIII 118 L. 11 (NH) : *tuhhā(i)-* "pant, gasp".

Monophthongization of /āi/ to /ē/ in an accented syllable is found in nom. sg. *ge-re-e-ez-za* "flood" KUB XXXIV 10 L. 10 (OH+), *ka-re-ez* KUB VIII 27 L. edge 3 (NH) = [grēts] for OH nom. sg. *ka-ra-i-iz* StBoT 25, 140 Rs.19 = [grāits] < **ĝrḗit-s* (4.8.2.) (Kimball).

Sporadic examples of reverse, or spurious, etymological spellings, in NH and OH+ texts with °A-I° for OH /ē/ or /e/ suggest that the scribes of the NH period were aware of a correspondence between /ē/ or /e/ in their speech and °A-I° in earlier texts. The spellings with A-I° in e.g. 3 sg. pret. *a-ip-ta* KBo V 6 I 11 (NH) for *e-ep-ta* "seized" with /ē/ < **eh$_1$*, or *[ap-p]a-iz-zi-an* KUB XII 66 IV 2 (OH+), *[ap-p]a-iz-zi-us-sa* ib. IV 3, *ap-pa-iz-z[i-is]* Bo 777 R. col. 6 (StBoT 18, 41) for *appezziya-* "last" with /ē/ < Pre-Hitt. **ei* can be considered false archaisms (Neu, *StBoT* 18, 39–40).

### 4.10.2. Post-OH *āwi* for OH *au*

At least two words show a change of OH /āu/ to MH and later /āwi/ before a syllable with /i/ or /y/ (Kimball, *PW* 76–9). The scope of this change is not entirely clear, since *auli-* "throat, windpipe, carotid artery" (or sim.), a word which appears to meet the conditioning for the change and is well attested, apparently did not undergo it (4.7.2.).

OH *sa-ú-di-is-za* "heifer, yearling" = [sāudists] < **só-ut-es-t-s* (4.9.2.) is spelled *sāuwitisza, sāwitesza* in the MH and NH copies of the Law code: e.g. *sa-a-ú-i-ti-is-za* KBo VI 3 III 29 (MH), *sa-a-ú-i-ti-is$^{!}$-za* ib. III 33, *sa-ú-ti-is-za* ib. III 26, 30, 38 etc., *sa-a-ú-i-te-es-za* KBo VI 6 I 37, 40, *sa-a-ú-i-te-e[s-za* ib. III 33, *sa-a-ú-ti-es-za* ib. III 45 = [sāwidists].

For the place name $^{URU}$*T/Dāuniya-*, $^{URU}$*T/Dāwiniya-*, the spelling *Ta-(a)-ú-n°, Da-(a)-ú-n°* appears to be the older (Otten, *StBoT* 17, 39, Kimball, *PW*). The word occurs in OH as *Da-a-ú-ni-ya* StBoT 25, 12 III 15, StBoT 25, 43 I 18, *Da-a]-ú-ni-ya* ib. I 8, *Da-a-ú-[ni-ya* StBoT 25, 34 Vs 8, and the spelling with *T/Da-a-ú-* is also attested in MH and NH copies of OH material: e.g. *Da-a-ú-[ni-ya* KBo VII 35 + I 5 (MH copy of StBoT 25, 42 and 43), KBo XVI 678 I 5 (MH), *Ta-a-ú-ni-ya* KUB XXX 29 Vs 12 (Pre-NH), VBoT 32 I 3 (OH+). The variant with [āwi], spelled *Da-(a)-ú-i-n°, T/Da-(a)-wi-n°* occurs in texts written down in the NH period, including copies of OH texts: e.g. *Da-ú-i-[ni-ya* KBo XIX 54 L. 8 (U), *Ta-a-wi-ni-ya* KBo XIX 161 I 4 (OH+), KBo XIX 163 III 11 (OH+), *Ta-wi-ni-ya* KUB X 91 I 12 (OH+), *Da-wi-ni-ya* ABoT 56 II 13 (NH).

It is not clear whether *a-ú-ti* (dat. sg. ) "lion-like animal, sphinx" (?) in KUB II 10 V 93 (OH+), beside NH *a-ú-i-ti-, a-ú-i-ti-(ya)-, a-wi-ti*, and *a-ú-si-ya-u-wa-as* hap. leg.

IBoT III 102 + Bo 3436 I 13 (MH+), genitive singular of the verbal noun of an **ausiya-*, **awisiya-* (meaning unkown) beside $^{LÚ.MEŠ}$*a-ú-i-si-ya-la-as* KUB IX 4 + Bo 7125 IV 8 = KUB IX 34 IV 12 (both MH+) represent original [audi-] and [ausiya-] that became [awidi-] and [awisiya-], whether they are mistakes for *a-ú-<i>-C°*, or whether they are from [awi-] with syncope (cf. Kammenhuber, *HW*$^2$ 634, 637–8 and Puhvel, *HED* 1, 245–6 and 246–7 w. refs.).

# Chapter Five

# Syllabic resonants

## 5.1. System inherited from IE

IE had four sonorant sounds, here transcribed as *$\underset{\circ}{r}$, *$\underset{\circ}{l}$, *$\underset{\circ}{m}$, and *$\underset{\circ}{n}$ that could form syllable nuclei between non-syllabics. These sounds originated as vocalic allophones of **r*, **l*, **m* and **n*, and their distribution in IE was essentially parallel to that of vocalic **i* and **u* beside **y* and **w* (Mayrhofer, *Idg. Gr.* I/2, 159–60). Prevocalic syllabic resonants (here transcribed as sequences of *$\underset{\circ}{R}R$) arose variably after heavy syllables and in monosyllables through the operation of Sievers-Lindeman's Law

## 5.2. IE to PA and Pre-Hittite

Couvreur, *H* 177–9; Eichner, *Laryngaltheorie* 136 w. n. 4; Friedrich, *Heth.* 27; Kimball, *IF* 91 (1986) 83–101; Melchert, *AHP* 75, 125–7, 180–2; Pedersen, *Ar. Or.* 5 (1933) 180–1; *Hitt.* 166–7.

The treatment *$\underset{\circ}{R}$ > *aR* is well established. Reflexes of syllabic resonants tended to be spelled CAR when CVC signs were available and CA-AR without plene writing when they were not (Couvreur, Kimball). Kimball notes that Cuneiform Luvian may have plene writing where Hittite cognates lack it and suggests that in Cuneiform Luvian reflexes of syllabic resonants could be spelled with plene writing. However, since Hittite *an-t/da* "into" and CLuv. *a-a-an-ta, (a)-an-t/da* id. can be explained as **éndō* {3.2.2.2.} rather than **n̥to* with Kimball (94), then reflexes of syllabic resonants may also lack plene writing in Cuneiform Luvian. Other reflexes that have been suggested and their conditioning are less well understood, but there is clear evidence for vocalization of **w* plus syllabic resonant to [uR] and of labiovelar plus syllabic resonant to [KuR]. Reflexes of **w*$\underset{\circ}{R}$ are spelled CUR, CU-UR, and (CU)-U-UR; the latter spelling suggests that vocalization to **uR* preceded lengthening of accented vowels and **uR* from **w*$\underset{\circ}{R}$ underwent lengthening if it came to be accented in PA.

Although CAR and CA-AR would be appropriate ways of representing [C$\underset{\circ}{R}$] with retained syllabic resonant (cf. Sturtevant, *CGr*$^1$ 105–6) who claimed that syllabic resonants were retained), there is evidence that syllabic resonants did vocalize in PA with genuine anaptyctic vowels (here transcribed **ə*). Kimball (96–7) claims that the spelling *sa-(a)-ah-(h°)* "seek" beside the more usual *sa-an-hV-* and *sa-an-ah-(h°)* indicates loss of the nasal before /h/ with compensatory lengthening of a preceding vowel and that this provides evidence for vocalization of *$\underset{\circ}{n}$ to [ăn]. The reconstruc-

tion **sn̥h₂-* > [sănh-] with generalized zero-grade for this verb was overly optimistic, since *sa-an-hV-* and *sa-an-ah-(h°)* can also represent [sanh-] from full-grade **senh₂-* with generalized full-grade and lowering before resonant plus laryngeal {3.2.2.3.}. But the spelling *sa-a-ah-(h°)* = [sāh̯-] with loss of the nasal and occasional plene writing indicating compensatory lengthening is also attested for *sanh-* "rinse, cleanse, flush" from the athematic present attested in Skt. *snáti* "bathes". Here [sanh-] can only continue a generalized zero-grade **sn̥h₂-*, since the full-grade **sneh₂-* would have become *[snah-] and would not have provided a context for nasal loss.

The occasional plene writing of the vowel of the oblique stem suffix in *pattar, pattān-* "basket" and *uttar, uddān-* "word, thing" may also point to genuine anaptyxis. The suffix *-ān-* in these words either results from homorganic glide insertion in a Sievers variant and reduction of **ənn* to [ān] with compensatory lengthening (i.e. PA **p(o)th₂-n̥n-* > **p(o)th₂ənn-* > [pattān-]), or it is due to analogical lengthening of a real suffix vowel on the model of e.g. [widēn-] "water" < **wedén-* (Kimball 97–9, cf. also Sturtevant, *Lang.* 20 (1944) 208 and Kronasser, *VLFH* 135).

Lyc. **pere* "further" = Hitt. *pa-ra-a* "forth" from a Lindeman variant **pr̥ó* beside **prō* or **pro* (Kimball 99) does not provide evidence, however, since the identification of the Lycian word is uncertain (Melchert, *AHP* 30).

The anaptytic **ə* that developed before **r̥*, **l̥*, **m̥* and **n̥* seems to have remained distinct from reflexes of */a/, */ā/, */o/ and */ō/, since it apparently was not lengthened even when it came to be accented in Pre-Hittite (Kimball). Melchert's suggestion (*AHP* 125) that plene writing in *ándara-* "blue" (two examples from one text) can indicate vocalization to **oR* and subsequent lengthening of accented **ó* is implausible. For *ámmiyant-* "small, weak, immature" and *pánku-* "all" (< PA **bongu-*?) see 5.7.

## 5.3. Vocalization to *aR*

Benveniste, *HIE* 69–71; Carruba, *Fs Risch* 117–24; Hrozný, *SH* 35–6; Kimball, *PW* 708–801, *IF* 91 (1986) 83–101; Kronasser, *VLFH* 52–3; Kuryłowicz, *PICL* 8 227–8; Lehrman, *Sprache* 33 (1987) 13–15; Melchert, *SHHP* 44–5 w. n. 91, *Sprache* 29 (1983) 7 w. n. 17, 8. n. 21, *AHP* 125–6, 180; Pedersen, *Hitt.* 90–1, 166, 174; Oettinger, *Stammbildung* 104, 145, 149, 372 w. n. 235; Sturtevant, *Language* 4 (1929) 228, *Language* 6 (1930) 30, *RHA* 3 (1931) 76–88, *CGr*[1] 68, 70, 104–7, *CCr.*[2] 24, 25, 41.

Vocalization to *aR* is well established as unmarked reflex despite the attempts of Sturtevant (*AJPh* 48 (1927) 251f, *CGr*[2]), Pedersen (*Hitt.* 90–1), Szemerényi (*KZ* 73 (1955/6) 65–80) and Čop (*Linguistica* 4 (1961) 57–62, *Linguistica* 7 (1965) 104 w. n. 29b, *Linguistica* 8 (1966/8) 61) to argue otherwise. Since **oRC* yielded *aRC* and **e* was lowered to /a/ before some resonant plus consonant sequences {3.2.2.}, it is often necessary to establish that a given sequence *aRC* continues zero-grade **R̥C* on the basis of morphological criteria or by using evidence from the effects of other Pre-Hittite sound changes.

Kimball's assumption that Hittite *CăRC* must continue **CR̥C* will not stand (note e.g. **eRC* > *aRC* in *pars(i)na-* "thigh, buttock" < **persneh₂-* {3.2.2.1.}). A correspondence Hitt. *ăR* : Lyc. *R* (e.g. in Hitt. *tarhu-* "prevail over", *tarhuili-* "brave" : Lyc. *trqqñt-* "Storm God", Mil. *trqqis* id.) does not, therefore, necessarily point to **R̥*.



### 5.3.1. **r̥*

Since prevocalic **rs* became [rr] after an accented vowel in *ārra-* "arse" < **h₁órso-* {8.6.5.1.}, one source of retained prevocalic [rs] is likely to be **r̥s* (cf. Kimball, *PW* 735–6). Morphological considerations point to at least two examples.

*parsā-* "bread crumb", $^{NINDA}$*parsā-*, "a kind of bread": nom. sg. *par-sa-as* KUB VII 53 I 48, 49 (2 ex.) (MH+), acc. *par-sa-a-an* KUB XXVII 62 Vs. 10 (NH), *par-sa-an* KUB XX 75 II 11 (NH), KUB XVII 27 II 19 (OH+), *par-sa-an-n°* ib. II 27, acc. pl. *par-su-us* StBoT 25, 54 II 8, StBoT 25, 56 I 10, StBoT 25, 58 II 6, KUB XXVII 63 IV11 (NH), dat.-loc. pl. *par-sa-a-as* KUB XXVII 62 Vs. 7, *par-sa-as* KUB XXVII 63 IV 7 = [barsā-]. The plene writing in *par-sa-a-* points to an accented thematic vowel, and *parsā-* could continue a substantivized adjective **bhr̥só-* "crumbled" : **bhres-* in e.g. OE *berstan,* OHG *brestan,* ON *bersta* "burst".

Examples Hoffner, *Alimenta* 175.

*marsa-* "unholy, profane, false, treacherous": acc. sg. c. *mar-sa-an* KBo V 2 I 4, 5 (MH+), *mar-sa-<an>* ib. IV 64 and derivatives, *marsē-* "be false" (OH, OH+), *marsēss-* "become false", *marsahh-* "desecrate", *marsātar* "falseness", *marsant-* "deceitful, of poor quality" with stem [marsā-] < **mr̥só-* "bad, corrupt, false".

Examples *CHD* 3, 195–200; etymology and discussion *HEG* 6, 143–5. CLuv. cognates are **marsa-* "treachery" (*CLuv. Lex.* 140), and *mars/zast(ar)ra/i-* "sacrilege, desecration" (ib. 141).

Since prevocalic **rH* became [rr] {8.6.6.2.,10.8.}, the synchronic sequence *arhV* should continue **r̥H₂/₃V* (cf. Kimball, *PW* 778–801).

$^{TU}$*marhā-*, a kind of stew or cooked food: acc. sg. *mJar-ha-a-an* IBoT II 5 Vs. 14 (NH), *mar-ha-an* e.g. KBo II 13 Vs. 15 (NH), dat.-loc. sg. *mar-hi* KBo XV 35 + KBo XXI 61 II 6, 11 (MH?) = [mărhā-] < **mr̥h₂-ó-* : **mérh₂-* in *marra-* "break up, disolve" {10.8.2.}.

The reflex of IE **r̥* is also found in several verbs that are derivable from nasal-infix verbs and should, therefore, have had zero-grade roots.

*tarna-* "loose, set loose": 1 sg. pres. *tar-na-ah-he* StBoT 25, 4 III 3, *tar-na-[a]-he* StBoT 25, 4 IV 38, *tar-na-ah-hi* StBoT 25, 3 III 3 (and Post-OH), 3 sg. pres. *tar-na-i* e.g. KBo XXII 1 Rs. 22 (OH), StBoT 25, 36 III 11 (and Post-OH passim), *tar-na-a-i* StBoT 25, 43 I 11 (*tar-na-i* ib. I 3), 2 pl. *tar-na-at-te-ni* KBo VIII 35 II 4 (MH), 3 pl. *tar-na-an-zi* e.g. StBoT 25, 31 II 15, IV 5, 6, StBoT 25, 32 L. 7, StBoT 25, 33 I 11 (and Post-OH), 1 sg. pret. *tar-na-ah-hu-un* StBoT 25, 4 III 3, 3 sg. *tar-na-as* e.g. KBo XXII 2 Vs. 3 (OH), StBoT 25, 3 III 5 = 4 III 5 (and Post-OH), 2 sg. imp. *tar-na* KUB XVII 10 III 24 (MH), 3 pl. *tar-na-an-du* KBo XVII 54 IV 7 (MH) = [tărna-] < **tr̥-n-h₂-*, weak stem of a nasal present to **terh₂-* "cross over" in *tarh-* "prevail over". IE **r̥* also occurs in nasal presents with full-grade suffix generalized, e.g. *istarnink-* "make sick" = [starniŋk] < Pre-Hitt. **starnēk-* < IE **str̥-ne-k-*, cf. *istarkk(iya)-* "be(come) sick" and *sarnink-* "make restitution" = [sarniŋk-] < **sarnēk-* < **sr̥-ne-k-* {3.10.}.

A zero-grade root with **r̥* is expected in *arnu-* "bring, transport, deliver": 1 sg. pres. *ar-nu-mi* KBo XVI 47 Vs. 10 (MH), KUB XIV 1 Rs. 22 (MH), *ar-nu-si* KBo V 4 Vs. 23 (NH), *ar-nu-uz-zi* KBo VI 2 I 38 (OH), KBo VI 3 III 77 (MH), *ar-nu-zi* ib. KBo VI 2 IV 5, *ar-n̥u-z̥i* KBo VI 3 I 47, *ar-n̥u-zi* ib. III 77, 1 pl. *ar-nu-um-me-ni* e.g. KUB XXXIII 106 II 16 (NH), 2 pl. *ar-nu-ut-te-ni* KUB XIII 4 I 51, 56 (MH (?)+), 3 pl. *ar-nu-*

*an-zi* KUB XV 31 II 11 (MH+), KUB XXX 17 I 2 (OH+), *ar-nu-wa-an-zi* KBo IV 2 IV 41 (OH+), 3 sg. pret. *ar-nu-ud* e. g. KBo III 34 II10 (OH+) = [arnu-] < *$h_1$r̥-n(e)u- : *$h_1$er- "set in motion", cf. Skt. *ṛṇóti* "moves, stirs".

The reflex of *r̥ is probably also attested in plural, infinitive and participle forms of two athematic *hi*-verbs with roots in *rC*.

*ark-*, weak stem of *ārk-* "cut off, cut up, divide up": 3 pl. pres. *ar-kan-zi* KBo XI 45 III 20 (OH+), KUB VII 1 I 9 (Pre-NH), KUB X 63 I 30 (MH), KUB XVII 28 III 4 (OH+), KUB XX 88 Rs. 8 (OH+), ptcp. *ar-kan-za* KBo XI 45 III 26 = [argantsi], [arkānts] < *$h_1$r̥ĝh-, cf. 3 sg. pres. *ārki, ārgi* < Pre-Hitt. *órgei-* or **érgei.*

Examples *HW*$^2$ 300–1, *HED* 1, 140–2, etymological refs. *Stammbildung* 414, 58–9 and *HED, loc. cit.*

*mark-* "divide, distribute, cut up": 3 pl. pres. *mar-kan-zi,* e. g. KBo V 1 I 28, 35 (Pre-NH), KUB XV 32 II 22 (MH+), KUB XLIII 56 III 15 (Pre-NH), ptcp. nom. sg. c. *mar-kan-za* VBoT 128 II 9 (U), acc. sg. c. *mar-kan-ta-an* KBo XV 31 I 8 (MH+), *mar'-kan-ta-an* ib. I 4, *mar-kan-ta-[an* KUB XVII 23 II 25 (OH+), *mar-kan-da-an* KUB LI 50 III? 9 (U), nom.-acc. sg. n. *mar-kan* KUB XIII 5 II 19 (MH(?)+) probably = [marg-] < *mr̥g- beside 1 sg. pres. *ma-a-ar-ka-ah-hi* (OH) which has [mārg- ] < *mórg- : IE *merg- "set off, delimit" in e. g. OE *mearc,* OHG *mar(c)ha,* ON *mǫrk* "border, march", Lat. *margō* "margin", MIr. *brí* (Schindler, *BSL* 67 (1973) 34–5).

Examples *CHD* 3, 187–8. The derivation from **merk-*, also in Skt. *marcayati* "harms", Av. *mərənčaiti* id., OE *mearg* "sausage" = ON *mǫrr* id. suggested by Oettinger, *Stammbildung* 425–6, is possible, but assumes that the basic meaning is "cut up". Other etymological refs. are given by Tischler, *HEG* 6, 136–8.

*ar-* "stand, be standing" can continue an inherited middle with zero-grade: 1 sg. pres. *ar-ha-ri* StBoT 25, 3 I 7 = 4 I 2, *ar-ha-ha-ri* KBo XVI 98 II 16 (NH), 2 sg. *ar-ta-ti* KBo V 3 II 11 (Supp. I+), *ar-ta-ri* KUB XXXII 130 edge 28, 30 (NH), 3 sg. *ar-ta* StBoT 25, 27 Rs.? 14, 15, StBoT 25, 69 Rs.? 3, KUB XXX 10 Vs. 23 (MH), KBo III 34 II 36 (OH+), *ar-ta-ri* StBoT 25, 4 III 35 (and later), 1 pl. *ar-wa-as-ta* KBo XVI 27 II 3 (MH(+?), KUB XVII 21 IV 6 (MH), 3 pl. *a-ra-an-da* StBoT 25, 25 I 6, StBoT 25, 81 Rs. 4, *a-ra-an-ta* KUB VIII 12 L. 9 (OH+), *a-ra-an-ta-ri* IBot I 36 IV 32 (MH), *a-ra-an-da-ri* e. g. KUB VII 10 I 3 (NH), 1 sg. pret. *ar-ha-ti* KBo III 29 I 18 (OH+) = *a]r-ha-ti* KBo VIII 41 L. 7 (OH+), *ar-ha-ha-at* KUB XXVI 1 III 30 (NH), 3 sg. *ar-ta-at* IBoT I 36 II 20, 3 pl. *a-ra-an-da-ti* KBo III 35 L. 7 (OH+), 3 sg. imp. *a[r-t]a-ru* KUB XXIII 68 Rs. 2 (MH), KUB I 16 III 51 (OH+), KUB XXIX 1 IV 12 (OH+), 2 pl. *ar-du-ma-at* KUB XIII 20 I 8 (MH+), *a]r-du-ma-at* KBo VIII 35 I 27 (MH), KUB XVII 21 II 3, *ar-d[u-m]a-at* KUB XXIII 68+ Rs. 11 = [ar-], [arta], reflecting middle *$h_1$r̥tó, cf. with thematization, ἔρετο · ὠρμήθη (Hesych.), and **é-$h_1$r̥to* in Skt. *ārta.*

Examples and etymological discussions, *StBoT* 5, 4–11; *HEG* 1, 49, HED 1, 104–5, *HW*$^2$, 194–208. Since **h*$_3$ remained in PA {10.2.3.}, Oettinger's reconstruction **h*$_3$*(e)rto* (*Stammbildung* 523–4, 546) will not work.

The oblique stem of the word for "house" (e. g. gen. *par-na-as,* e. g. StBoT 25, 27 Rs.! 12, StBoT 25, 106 L. 5, dir. *par-na,* e. g. KBo VI 2 I 3, 21, 23 etc. (OH), KUB XXIX 16 III 4, 6, 13 etc. (OH), StBoT 25, 3 III 17, VI 11) can continue [parn-] < *p̥rn- beside nom.-acc. sg. **pēr* (É-*er*) = *[pēr] < **pḗr*.



The word for "house" does not have certain cognates outside of Anatolian, cf. CLuv. *parna-* "house" (*CLuv. Lex.* 170), Lyc. *prñnawa-* "(grave-)house", *prñnawa-* "build", *prñneze/i-* "household", *prñnezije-* "household member" (*Lyc. Lex*$^2$ 55–6) and Lyd. *bir* "house"). For the Antolian word for "house" see Laroche, *RHA* 23/76 (1965) 52–4, and for its ablaut, see Schindler, *Sprache* 19 (1973) 81 and Neu, *Lok.* 28–30, 54. Similar looking words in other Near Eastern Languages, e. g. Egyptian *pr* and Hurrian *parli, purni,* may be borrowings from Anatolian.

It is likely that the same ablaut pattern is continued at least in part in the oblique stem of *ker* "heart": gen. *kar-ta-as* e. g. VBot 58 I 13 (MH+), abl. *kar-ta-az* e. g. StBoT 25, 7 Rs.? IV 6, KUB XXX 11 Rs. 19 (MH), dir. *kar-ta* KBo III 41 Vs. 9 (OH+), KUB I 16 III 58 (OH+), inst. *kar-di-it* KUB XXX 10 Vs. 24, 27, and *kardia-:* gen. *kar-di-ya-as* e. g. KBo III 7 I 26 (OH+), KUB I 16 II 53 (OH+), *kar-ti-ya-as* KUB IV 1 IV 20 (MH?), abl. *kar-di-an-za* KUB VIII 43 L. 3 (MH) = [kard-] < *k̂r̥ : nom-acc. *ke-er* = [kēr] < **k̂ḗr*, cf. Att. καρδία, Ion. κραδία beside Hmc κῆρ, κηρός from nom.-acc. **k̂ḗr*, and O.Ir. *cride,* reflecting PCelt. **kridion* < **k̂r̥dyom*. Hittite *kardiya-* probably shows independent suffixation of **-yo-*. The locative *kardi,* however (OH *kar-di-is-si* "in his heart" StBoT 25, 102 Vs.? II 6, *kar-di-is-mi* "in their (sic) heart" StBoT 25, 3 I 12), and perhaps Palaic *kārti*),can continue an IE locative **k̂érdi*, and ***k̂érd-* would have shown up as *kard-,* suggesting that, alternatively, the oblique stems forms could have a generalized *e*-grade from the locative {3.2.2.1.}.

For the IE paradigm see Szemerényi, *Fs Stang* 515–33 = *Scripta Minora* 172–90. The locative *ke-er-ti* in KBo III 21 III 12, 16, 22, 26 (OH+) would have analogical lengthened grade from the nominative-accusative singular {3.2.2.1.}, and the dative-locative *kar-ti-i* in KUB XXVI 25 II 4 (NH) could continue a dative **k̂r̥d-éi*. CLuv. *zār*° (*CLuv. Lex.* 280) and HLuv. *za + ra/i-za* should continue **k̂r̥d-* from the oblique stem or **k̂erd-* from the locative, since **k̂ḗr* should have become Luvian **zir* (Kimball, *MSS* 53 (1992), 84–5).

The reflex of *r̥ may also occur in *parku-* "high", which corresponds to a *u*-stem adjective with zero-grade root and accented suffix in Armenian: nom. sg. c. *par-ku-us* KUB III 94 I 13 (vocab.), KUB XIV 16 III 8 (NH), acc. sg. c. *par-ku-un* KUB XXIV 7 II 10 (NH), nom.-acc. sg. n. *par-ku* KBo IV 4 IV 7 (NH), KUB X 72 V 11 (Pre-NH), gen. *par-ga-u-wa-as* KBo XX 82 III 7 (OH+), abl. *p]ar-ga-u-az* KBo XXII 129 Vs. 15 (U), *par-ga-wa-az* KBo IV 10 I 28 (NH), dat.-loc. *par-ga-u-e-i* KBo III 8 III 10 (Pre-NH), nom. pl. c. *par-ga-u-e-es* KBo IV 14 IV 30 (NH), acc. pl. c. *par-ga-mu-us* KUB XVII 10 I 24 (MH), *par-ga-u'-us* KUB XII 63 I 25 (MH), *par-ga-u-us* (as nom.) KBo III 8 III 22, nom.-acc. pl. n. *par-ku* KUB XXIV 1 I 25 (Pre-NH), *par-ga-u-wa* KBo XX 28 Vs. 20 (MH), dat.-loc. pl. *par-ga-u-wa-as* KBo XVII 61 Rs. 18 (MH), KUB XXVII 67 II 39 (NH), *par-ga-u-wa-as* KBo XVII 54 I 4 (MH), *par-ga-a-u-wa-as* KUB XXVII 67 III 43 = [bargu-] < **bhr̥ĝh-ú-* as in Arm. *barjr* "high", cf. also Skt. *br̥hant-* "high".

Examples, discussion *u*-Stämme 123–30.

The ending *-ar* in the nominative-accusative singulars of a number of *r/n*-stems continues IE **-r̥*: *sakkar* "excrement" (*sa-ak-kar*) = [sākar] < **sókr̥*; *pattar* "basket, tray" (*pat-tar, pa-at-tar*) < **póth$_2$-r̥*; *wātar* "water" (*wa-a-tar*) = [wādar] < **wód-r̥*; *uttar* "word, thing, matter" (*ut-tar*) if [uttar] < PA **udh$_2$-r̥* for IE **h$_2$wódh$_2$-r̥* (> ***wādar* {10.7.1.}). OH etc. *ēshar* "blood" can be from singular **h$_1$ésh$_2$r̥* (as in Skt. *asr̥k*) or from collective **h$_1$ésh$_2$ōr* (as in Toch. A *ysār,* B *yasar*) {3.2.1.1.}. *pittar* or *pattar* "wing" (PIT-*tar*) can be [pettar] < **péth$_1$-r̥* or coll. **peth$_1$-ōr* or [pattar] < **póth$_1$-r̥* : **peth$_1$-* "fly, fall", cf. Skt. *pattram* "wing", Gk. πτερόν "feather" {10.7.4.}.

A zero-grade suffix *-r̥- is found in the instrumental *ki-is-sar-ta* "hand" StBoT 25, 105 L. 5, *ke-es-sar-ta* KBo X 45 II 28 (MH+) = [gissarTa] < **ĝhes-r̥-T*, cf. [-an-Ta] < *-n̥-*T* in *r/n*-stems {5.3.4.}.

The reflex of **r̥* also occurs in **arsan-* "envy, anger" in derivatives *arsant-* "envious": nom.-acc. pl. n. *ar-sa-an-d[a]* KUB XXXIII 9 III 7 (MH+), agent noun *arsa-nat(t)alla-*: acc. pl. *ar-sa-na-tal-lu-us* KUB I 1 I 59 (NH), *ar-s]a-na-at-tal-lu-us* KUB I 8 IV 25 (NH), dat.-loc. pl. *ar-sa-na-at-tal-la-as* KBo III 6 I 45 (NH), *arsaniya-* "be angry, envious": 2 sg. pres. *ar-sa-ne-e-si* StBoT 25, 122 III 2, 4, 6, 8 etc., *ar-sa-ni-e-se* ABoT 65 Rs. 6 (MH), 1 sg. pret. *ar-sa-n̥i-e-[nu-un]* ib. Rs. 4, 3 pl. pret. *"ar-sa-ni-i-e-er* KUB I 1 I 32, stem *[arsana-] : **r̥h₁s-* in e.g. Skt. *īrṣyá-* "envy, jealousy", *irasyá-* "ill will", Av. *ərəši* "envy", OE *yrre* "angry", Skt. *irasyati* "be angry", Av. *arəšyant-* "envious", OE *eorsian* "wish ill".

Examples, etymological discussion *HED* 1, 172–3, *HW*² 344–5.

## 5.3.2. **l̥*

*dalūki-* "long": abl. sg.(?) *da-lu-ga-ya-az* KUB XV 16 I 6 (NH), nom. pl. *ta-lu-ga-e-es* StBoT 25, 124 III 7, *da-lu-ga-es* (as acc. pl.), KUB XXI 27 III 38 (NH), acc. pl. *ta-lu-ga-ú-us* StBoT 25, 124 III 6, *da-lu-ga-us* KUB XV 3 I 6 (NH), *ta-lu-ga-us(°)* KUB XII 63 Vs. 24 (MH), KBo XI 72 II 33 (U), KUB X 55 L. 3 (U), nom.-acc. pl. n. *ta-lu-u-ga* KBo X 7 II 27, 31 (OH+), gen. pl. *ta-lu-ga-as* KUB XVII 10 III 33 (MH), dat.-loc. pl. *ta-lu-ga-as* StBoT 15, 124 III 8 = [dalūg-] < **dl̥h₁gh-*; for **h₁*, cf. Skt. *dīrgha-* "long", Gk. δολιχός id., ἐνδελεχής "continual, constant". An *o*-grade **dolh₁gh-* (as reconstructed by Oettinger, *Stammbildung* 239 n. 23) should probably have become **dolgh-* (> Hitt. ***dalg-*) with loss of the laryngeal after **oR* in IE {10.1.1.2.}, and since **e* was not lowered before **lC* {3.2.2.}, **delh₁gh-* should probably have resulted in ***delg-* or, with vocalization of the laryngeal, in ***del(V)g-*.

For the vocalization of the laryngeal see {10.9.2.1}.

Since **élC* became *ēlC* (e.g. in *wēllu-* "meadow" < **wélnu-* {8.6.4.}), the sequence *alC* in the athematic *mi*-verb *salk-* "knead, mingle", which is derivable from an IE root present or aorist, should have a generalized zero-grade **l̥C*: 1 sg. pres. *sal-ga-mi* KUB XXIV 14 I 10 (NH), 3 sg. *sa-al-ak-zi* StBoT 25, 54 II 17, 3 pl. *sal-kan-zi* KUB XV 31 I 20 (MH+), stem *salkiya-* in 3 sg. pres. *sa-al-ki-ez-zi* KBo XVII 105 II 27 (NH); either [salg-] from present **sélg-ti* : **sl̥g-énti* : Skt. *sr̥jati* "shoots, pours", implying a semantic development *"pour together" → "mix together", or [salk-] from root aorist **(e)sélk-t* : **(e)sl̥k-ént* : Gk. ἕλκω "draw, drag" and Toch. B *sälk-* "pull out" (from nasal infix **sl̥-ne-k-*, cf. 3 sg. pres. midd. *slaṅktär*) implying *"pull" → "knead" (Kimball, *MSS* 53 (1992) 80).

Since **VlHV* became *VllV* {10.8.}, the retention of the laryngeal in *palhi-* "broad", DUG*palhi-*, name of a vessel, indicates a zero-grade: nom. sg. c. *pal-hi-is* KUB IV 4 Rs. r. col. 13 (OH+), KUB XXXIII 8 III 7 (MH+), gen. sg. *p]al-ha-as* StBoT 25, 14 III 4, nom pl. c. *pal-ha-a-e-es* StBoT 22, 124 III 7, KBo XV 10 I 16 (MH), *pal-ha-e-es* KUB XXVIII 8 Rs. r. col. 46 (OH+), *pal-ha-es* KUB XXXIII 66 II 9 (MH?), nom.-acc. pl. n. *pal-ha-e-a* StBoT 25, 110 II 22 = [palhi-], [palhā-] < **pl̥h₂-í-*, **pl̥h₂-óy-* : **pelh₂-* "flat, wide, broad", cf. e. g. Lat. *plānus* "flat", Skt. *pr̥thús* "broad", Gk. πλατύς id.

*galank-* "appease, propitiate" may continue a nasal infix verb, in which case, a zero-grade root would be expected: 3 sg. imp. *k]a-la-an-kad-du* KUB XXXIII 68 III 15 (MH), ptcp. nom. sg. c. *ga-la-an-kan-za,* e.g. KUB XVII 10 II 13 (MH), nom. pl. c. *ka-la-an-kan-te-es* KUB XXXIII 11 II 23 (MH+), vbl. noun *ga-la-ak-tar,* e.g. KUB XVII 10 II 12 = [glang-] from weak stem **gl̥-n-ĝ-*, cf. **gleĝ-* in Lith. *glėžnas* "soft, weak", Bulg. *glézŭ* "excuse, soften", and with nasalization, ON *kløkkr* "soft, pliable" (Oettinger, *Stammbildung* 149, Tischler, *HEG* 3, 463 w. refs.).

## 5.3.3. **m̥*

*siptamiya-,* a drink, *si-ip-ta-mi-ya* KBo V 1 IV 35 (Pre-NH) = [siptamya] < **sep-tm̥yó-* < IE **septm̥* "seven".

3 pl. pres. *sa-am-na-an-zi* StBoT 25, 19 Rs. 52 "they disappear, pass in review" (NH) = [sa(m)mnantsi] < **sm̥n-ent(i)* (Oettinger, *Stammbildung* 104) beside the full-grade *sa-me-en-, se-me-en-* = [smēn-] {1.16.6.1., 3.9.2., 11.3.3.2.}.

The reflex of **m̥* occurs in two descendants of IE nasal presents.

*hamink-* "bind": 3 pl. pres. *ha-mi-in-k[an]-zi* KUB II 3 II 24 (OH+), 3 sg. pret. or act. *ha-mi-ik-ta-at* KBo III 8 + KUB VII 1 III 33 (2x), 34, 40, 14 and dup. IBoT III 107 L. 3, 3 sg. imp. *ha-me-in-kad-du* 244/p IV 27 (*Stammbildung* 147, NH), 3 pl. *ha-mi-in-kan-du* KUB XLI 8 IV 25 (MH), ptcp. nom. sg. c. *ha-mi-in-kan-*<*za*> StBoT 25, 27 Rs 12 (see *StBoT* 26 n. 240) = [hamiŋg-] < **h₂m̥-né-ĝh-*, nasal infix present to **h₂emk-* in e.g. Gk. ἄγχω "constrict".

Examples, etymological discussion *HED* 3, 64–8, *Stammbildung* 146–7.

*tamink-* "stick together": 3 sg. pres. act. *da-mi-ni-ik-zi* KBo XVII 105 IV 3 (NH) , *ta-me-ek-zi* KUB XXIII 1 III 9 (NH), midd. *t]a-me-ek-ta-ri* KUB XLI 8 I 5 (MH+) = *ta-me-ek-ta-ri* KUB VIII 41 Vs. 26 (MH) = *da-me-ek-ta-ri* KBo X 45 I 19 (MH+), ptcp. 3 pl. pret. *da-me-in-ker* VBoT 58 I 40 (MH+), nom. sg. c. *ta-mi-in-kan-za* KBo XV 28 Vs. 12 (NH), *ta-me-in-kan-za* An. Ar. 10753 (StBoT 9) L. col. 4 (NH), acc. sg. c. *ta-mi-in-kan-ta-a[n* KBo XV 35 + I 4 (MH), *da-mi-in-kan-ta-a-an,* KBo XV 34 Vs. 12 (MH+), *da-me-en-kan-te-es* KUB IV 1 III 19 ( MH?) = [tamiŋk-] < **tm̥-né-k-*, cf. Skt. *tanakti* "sticks together, coagulates" from IE root **temk-*.

Examples and discussion, *Stammbildung* 144.

Final *-an* from **m̥* is found in the accusative singular of animate consonant stems: e.g. *kisseran,* acc. sg. of *kissar* "hand": *[ki-i]s-se-ra-an* StBoT 25, 141 L. 5, *k[i-i]s-se-ra-an* KBo XVII 75 I 3 (OH+), *ke-es-si-ra-an* KBo XIX 132 Vs.? 3 (OH+) = [gissēran] < PA **ges-ér-əm* for IE **ĝhés-or-m̥* {8.4.1.2.}; *tu-e-ek-ka-am-ma-an* "my body" (*tuēkkan=man*) KUB XXX 10 I 14 (MH) = [twēkan] < root noun **twék-m̥* {2.4.3.}.

## 5.3.4. **n̥*

*sanh-* "rinse, flush, wet, cleanse: 1 sg. pres. *sa-ah-mi* KBo XVII 61 Vs. 13, 15 (MH), 3 sg. *sa-an-*<*ah*>*-zi* KUB XXVII 29 I 9 (MH+), 3 pl. *sa-an-ha-an-zi* KBo V 1 IV 32 (Pre-NH), KBo XIII 179 II 9 (OH+), KBo XV 33 II 22 (MH), KBo XXI 33 I + 6 (MH+), KUB IX 15 III 5 (NH), KUB XXVII 29 I 28 (MH+), KUB XLVI 39 III 7 (NH),

*sa-an-h[a-a]n-zi* StBoT 25, 59 I 3, 3 pl. pret. *sa-an-[ah-h]i-ir* KUB XXIX 1 III 40 (OH+), 3 pl. imp. *sa-an-ha-an-du* KUB XIII 2 II 23 (MH), ptcp. nom.-acc. sg. n. *sa-an-ha-an* KUB XIII 4 III 60 (MH(?)+), *s[a-a]n-ha-an* ib. I 19, it. 3 pl. imp. *sa-an-hi-is-kan-du* KUB XIII2 II 4 = [sanh-] < **sn̥h₂-* with generalized zero-grade from the athematic present **sneh₂-ti* : **sn̥h₂-enti* preserved in Skt. *snāti* "bathes" and indirectly in Av. *snāyeite* "bathes onself, rinses", Lat. *nāre* "to swim", OIr. *snáid* "swims, floats". The zero-grade is confirmed by several forms that show loss of the nasal before *h(h)*: 1 sg. pres. *sa-ah-mi* KBo XVII 61 Vs. 13, 15 (MH), 3 sg. pret. *sa-ah-ta* KBo III 8 II 30 (Pre-NH), 3 sg. imp. *sa-ah-du* ib. II 29, 2 pl. imp. *[s]a-a-ah-te-en* KUB XXIX 1 I 48 (OH+), cf. 3 pl. pret. *sa-an-[ah-h]i-ir* ib. III 40), it. 1 sg. pres. *sa-ah-hi-is-ke-mi* KUB XII 58 III 2 (MH+). The loss of the nasal implies that it was in contact with /h/ and, therefore, that *sa-na-ah-* and *sa-an-h°* are to be read as [sanh-] < **sn̥h₂-* rather than [snah-] < **sneh₂-* (Kimball, *MSS* 53 (1992) 90–1).

For the etymology and identification of this verb as distinct from *sanh-* "seek" see Puhvel, *Fs Laroche* 299–300 = *An. IE* 367–8.

*kank-*, weak stem of *kānk-* "hang": 3 pl. pres. *k[a]-a[n-ka]-an-zi* StBoT 25, 2 I? 1, *ka-an-kan[-* ib. I 11, 3 pl. imp. *ka-an-kan-du* KBo III 27 Vs. 10 (OH+), *kan-kan-[du* ib. Vs. 12, ptcp. nom. sg. c. *kan-kan-za* KUB XVII 10 IV 28 (MH), KUB XXXIII 12 IV 15 (MH+), *ga-an-[kan-za* KUB XXXIII 19 II 10 (MH+), nom.-acc. sg. n. *ga-an-kan* KUB XXIX 4 I 36 (NH), *kan-ga-an* KBo II 16 L. 3 (NH), nom. pl. c. *ga-an-ga-an-te-es* StBoT 25, 3 III 26, StBoT 25, 6 III 19, *[g]a-an-g[a]-an-te-es* StBoT 25, 4 III 27, *kan-kan-te-es* KBo XIII 58 II 17 (MH?) = [kănk-] < **k̂n̥k-* beside *o*-grade **k̂ónk-* in 1 sg. *gāngahhe*, 3 sg. *kānki* {2.4.1.}.

Examples, paradigm *Stammbildung* 45, *PW* 202–4. Note that *e*-grade **k̂enk-* would have become *[kiŋk-] with raising of *e before nasal plus velar {3.2.1.2.}.

*anze/ā-*, oblique stem of *wēs* "we": acc.-dat. (NH also as nom.) *an-za-as* KBo XXII 2 Vs. 12 (OH), *an-za-a-as* KBo IV 1 Vs. 30 (OH+), KBo IV 3 IV 15 (NH), KBo IV 4 IV 59 (NH), KUB XIII 4 IV 72 (MH(?)+), KUB XIII 35 IV 14 (NH), KUB XXII 70 Vs. 25 (NH), gen. *an-zi-[el]* KBo XXII 2 Vs.? 12 (OH), *an-zi-el* KUB XXIV 2 I 6 (Pre-NH), *an-zi-l(a-wa-ra-at)* StBoT 25, 103 Vs.? I 6 = [antsē-], [antsā-] < **n̥s-é/ó-*, cf. Goth. *uns*, OE *ūs* (Sturtevant, *RHA* 3, 86–7, *CGr²* 41, Pedersen, *Ling. Posnaniensis* 4 (1953) 60–1, Oettinger, *StBoT* 22, 24, *Stammbildung* 439, KZ 94 (1980) 45 w. n. 4, Melchert, *Sprache* 29 (1983) 7–8).

The third person plural present endings, active *-anzi*, middle *-ant/da(ri)* and third person plural imperative endings active *-ant/du*, middle *-ant/daru*, normally do not have plene writing, even in athematic verbs with ablaut in early texts, although accented **-énti*, **-énto* and **-éntu* would have been regular in IE, and **-ént-* became [-ānt-] in adjectives in *-ānt-* and *-wānt-* (note MH *ki-iṣ-dụ-wạ-ạ-aṇ-[du]-uṣ* "hungry" KUB XIV 1 Vs. 9 < **K̂est-wént-*) {3.2.2.2.}): e. g. from OH active athematic third person plural presents: *a-ku-an-zi* "they drink" e. g. 12 II 13, 21, 23, StBoT 25, 72 III 6 (20+ x), *a-ku-wa-an-zi* e. g. StBoT 25 35 II 4, StBoT 25, 54 III 12, StBoT 25, 68 Rs. 7; *ap-pa-an-zi* "they take, seize", e. g. StBoT 25, 4 II 14, StBoT 25, 19 Vs. 4 (10 + x); *a-sa-an-zi* "they are" KBo VI 2 III 7, StBoT 25 3 III 29 = 4 III 29 = 6 III 21, IV 25 = 4 IV 22; *a-da-an-zi* "they eat" StBoT 25 10 Vs.? II 3, Rs.? III 3, StBoT 25 41 Rs.? III 4, 49 Rs. 7, StBoT 25 56 III 17, *a-ta-a[n-zi* StBoT 25 56 III 17; *wa-ha-an-zi* "they turn", e. g. StBoT 25 21 Vs.? 13, StBoT 25 31 II 14 (2x), (10 + x); *hu-kan-zi* "they strike" StBoT 25 13 I 10, 25 I 44, 48(?), StBoT 25 46 I 4, StBoT 25 99 Rs.? 3; *ku-na-an-zi* "they kill" StBoT 25 13 I 12, 14, StBoT 25 54 II 2; *ar-kan-zi* "they cut up" StBoT 25 104 Vs.? II 14; *iṣ-gạ-rạ-an-zi* "they stick" StBoT 25 56 I 6; *k[a]-a[n-ka]-an-zi* "they hang" StBoT 25 2 Vs. I? 1; *i]s-pa-an-ta-an-zi* "they make a libation" StBoT 25 27 Vs.? 18, *s]i-pạ-an-da-an-zi* StBoT 25 58 Rs. 5; *is-pa-ra-an-zi* "they strew" StBoT 25, 3 III 10, *is-pa-ra-a[n-zi* StBoT 25, 48 Rs.? 3; *tak-kan-zi* "they resemble" StBoT 25 9 Rs.? IV? 5; *hu-wa-an-zi* "they run", e. g. StBoT 25 3 I 3, StBoT 25 21 Vs.? I 11 (10+ x); *pi-an-zi* "they give", e. g. StBoT 25 13 I 9, 11, 15 etc., (20 + x), *pi-ya-an-zi* StBoT 25 12 III 19; *ti-an-zi* "they put", e. g. StBoT 25 3 II 36, 12 II 8, 20 (30+ x), *ti-ya-an-zi* StBoT 25, 25 I 38; *ha-as-sa-an-zi* "they open" StBoT 25, 25 I 31, IV 28, StBoT 25, 52 II 14, StBoT 25, 59 I 1, StBoT 25, 81 Vs. 5, StBoT 25, 92 r. col. 3; active third person plural imperative: *ap-pa-an-tu* KUB XXXVI 106 Rs. 6, *ap-pa-an-t[u* ib. Vs. 10 "take!"; *a-sa-an-tu* "be!" StBoT 25, 3 III 7, StBoT 25, 4 III 2, 7, StBoT 25, 122 II 8, *a-s[a-a]n-du* StBoT 25; *pe-e-ta-an-tu* StBoT 25, 3 IV 4; middle third person plural present: *a-ra-an-da* "they stand, remain" StBoT 25, 25 I 6, StBoT 25, 81 Rs. 4, *a]-ra-an-da-ri* StBoT 25, 6 II 15; *ki-an-da* "they lie, are placed" StBoT 25, 37 Vs.? I? 7(?), *ki-ya-an-ta[(-)* StBoT 25, 104 Vs.? II 15; *ú-e-ha-an-ta* "they turn" StBoT 25, 47 II 17; *ú-es-sa-an-da* "they wear" StBoT 25, 3 I 24 = 4 I 19. The lack of plene writing in these endings suggests to Kimball (*PW* 745–52) that Hittite generalized **-n̥ti*, **-n̥to* and **-n̥tu* from acrostatic and reduplicated verbs. Since the *hi*-conjugation may in part derive from an acrostatic conjugation type with **ó* : **é* ablaut (Jasanoff, *Heth. u. Idg.* 79–90), the existence of *hi*-conjugation third person plurals in **CéRC-n̥ti*, **CéRC-n̥tu* may have tended to favor generalization of the zero-grade allomorphs.

Plene writing does occur, but very sporadically, in a few texts written in the NH period: act. 3 pl. pres. *ap-pa-a-an-zi* "they take, seize" KBo XXV 145 L. 7 (OH+), KUB X 21 II 14 (OH+); *a-ra-a-an-zi* "they arrive" VBoT 133 Vs. 9 (U); *a-ta-a-an-zi* "they eat" KBo III 60 II 5 (OH+); *ku-ra-a-an-z[i* "they cut" KUB XX 13 IV 5 (NH); *wa-ha-a-an-zi* "they turn" KBo XXV 52 L. col. 3 (OH+); 3 pl. midd. *a-ra-a-an-ta* "they stand" KUB II 6 III 38 (OH+), *a-ra-a-an-ta-ri* 251/u L. 20 (StBoT 5, 5); act. 3 pl. imp. *ap-pa-a-an-d[u* "let them take!" KBo III 1 II 39 (OH+); midd. 3 pl. pres. *ne-e-a-an-ta* "they turn" KBo XXX 149 Rs.? 4, (OH+; also *ne-e-a-an-ta-ri*, see CHD). Some of these forms may have a long vowel generalized from the particple in *-ānt-* < **-ónt-* {2.4.1.}, note, e. g.: *ap-pa-a-an-t°* (OH, MH), *a-da-a-an* KUB XIII 2 IV 19 (MH), *hu-ta-a-an-t°* "slaughtered" (OH), *is-k/ga-ra-a-an* MH), *ku-ra-a-an* KBo XXII 180 I 13 (NH), *la-hu-(wa)-a-an* (OH, MH), *pi-ya-a-an* (OH etc.), and cf. ptcp. *ne-e-a-an-za* KBo XVI 97 L. edge 5b (MH?), KBo XXX 149 Vs.? 5 with analogical *-ānt-* {2.3.3.4.}. It is possible, however, that Palaic retained a full-grade, note Pal. *a/ta-a-an-ti* "they eat", *mu-sa-a-an-ti* "they satiate themselves", *a-hu-wa-a-an-ti* "they drink" and *ha-sa-a-an-ti* "they satisfy a thirst" (see Hart, *BSOAS* 43 (1980) 4).

Adv. *hanti* (< dat.-loc.) "facing, frontally, opposite, against, instead, in return, apart, asunder": *ha-an-ti-i* (NH), *ha-an-te-i* (MH+), *ha-an-ti* (OH, MH, OH+, MH+), *ha-an-di* (OH); postpositive *ha-an-da* "in view of, on account of, because": *ha-an-da* (OH+) = [hantī] < dat. **h₂n̥t-éi* and [handa], perhaps with analogical short vowel in directive ending [-ă] < **h₂n̥t-ó*, oblique stem forms of a root noun **h₂ent-* "front, forehead"; cf. loc. **h₂énti* in *hānza* "in front" (OH+) {3.8.1., 6.7.2.2.}. The weak stem **h₂n̥t-* is probably also continued in *hantezziya-* "first", *handā(i)-*, "prepare", CLuv. *hantil(i)-* "first", *handawat(i)-* "supreme authority, king" (*CLuv. Lex.* 51–3) and in Lyc. *χñtawat(i)-* "ruler, king" (*Lyc. Lex.²* 92–3).

For examples and discussion, see Kimball, *IF* 91, 88–90.

In archaic instrumentals from several *r/n*-stems, the oblique stem suffix *-an-* is from zero-grade **-n̥-*: *ú-i-ta-an-ta* (OH), *ú-i-da-an-<da>* (MH+) = [widanTa] < **wed-n̥-T* : *wātar* "water"; similarly, *sa-ka-an-da* KBo XXII 2 Vs. 2 (OH) : *sakkar* "excrement"; *ti-ya-[m]a-an-ta* KBo XIX 132 Rs.? 5 (MH+) : *tiyam(m)ar* "cord", *ud-da-an-ta* KUB XXX 10 Vs. 18 (MH) : *uttar* "word, thing".

The nominative-accusative singular of neuter *men*-stems in *-man* continues **-mn̥*, e.g. *lāman* "name" (nom.-acc. sg. *la-a-ma-an,* MH etc.) = [lāman] < **h₁néh₃mn̥* {2.9.1.3., 10.3.1.3.}; *ērman* "sickness" (*(e)-er-ma-an*) = [ērman] < **h₁ḗrmn̥* : Arm. *jerm* "daze, stupor" {3.3.1.}.

The reflex of **n̥* may also occur in the adjective *panku-* "all": e.g. nom. sg. c. *pa-an-ku-us* StBoT 25, 86 Vs. 10, *pḪa-an-ku-us* StBoT 25, 13 II 9, *pa-an-ku-ú-s*° KUB XXXV 136 IV 9 (NH), *pa-an-ku-s*° ib. IV 5, *pa-aḪn-ku-us* ib. IV 17, 21 (sic), nom.-acc. sg. n. *pa-an-ku* KUB V 1 I 47 (NH), *pḪa-an-ku* KUB XXIV 8 I 14 (OH+), gen. sg. *pa-an-ku-us-s*° (sic) KUB IX 34 II 2 (MH+), *pa-an-ga-u-wa-as* KUB XII 58 II 14 (MH+), *pa-an-ga-wa-as* KBo X 45 IV 3 (MH+), inst. *pa-an-ku-ni-it* KBo XXI 8 IV 33 (MH), KBo XXV 191 Rs. 6 (OH?), acc. pl. *pa-an-ku-us* (sic) KUB IX 1 III 25 (NH), gen. pl.(?) *pa-an-ga-u-wa-as* KUB IX 34 IV13 = [băngu-] < **bhn̥ĝh-ú-* as in Skt. *bahú-* "strong, thick" and Gk. παχύς id.

Cf., however, Meyer, *IF* 98 (1993) 40–7, who reconstructs **pn̥kʷu-* "all, whole" beside **ponkʷ-to-* in Lat. *cunctus* "all, whole".

### 5.3.5. Doubtful examples

In a few commonly cited examples a reconstruction with syllabic resonant is incorrect or at least unlikely.

*ārsk-*, it. of *ār-* ,"arrive": e.g. 3 sg. pres. *a-ar-sa-ke-ez-zi* KUB XIII 2 I 25 (MH), cf. 3 sg. imp. *a-ra-as-kan-du* ib. III 5), *a-ar-as-ke-ez-zi* VBoT 24 I 32 (MH+), 3 pl. *a-ar-as-kan-zi* Bo 6859 I 5 (*HED* 110), 3 sg. pret. *a-ra-as-ke-et* KUB I 6 II 7 (NH), KBo III 4 III 70 (NH), KUB XIX 11 IV 5 (NH) < **h₁r̥-sḱé/ó-* as in Skt. *ṛcchati* "moves, stirs" and Gk. ἔρχομαι (Sturtevant, *CGr¹, CGr²,* Kronasser, *VLFH,* Benveniste 70). The plene writing of the initial vowel, however, suggests that it was formed productively within Hittite as *ār-skē/a-*. The multiplicative suffix *-anki* was derived from **n̥k-* < **mk-* by Pedersen, *Hitt.* 174, and Sturtevant (*CGr¹*). However **m̥* became *am* before a velar in *hamink-* "bind" and *tamink-* "stick together" {5.3.3.}. *kuwask-*, iterative of *kuēn-* "strike, kill", has often been derived from **gʷhn̥sk-* (e.g. Sturtevant, *CGr¹, CGr²,* Szemerényi 76, Oettinger, *Stammbildung* 97 n. 25, 136 n. 5, 329 n. 15, Justeson-Stephens, *JAOS* 101 (1981) 369); but zero-grade **gʷhn̥sk-* should have become **[gunsk-] with vocalization of **gʷhn̥* to [gun] (Melchert, *Sprache* 29). *kuwask-* was instead formed productively within Pre-Hittite as **gʷensk-* with the full-grade stem {3.2.2.2.}. Similarly *kuwarsk-* : *kuēr-* "cut" should continue Pre-Hittite **kʷersk-* rather than **kʷr̥sk-* with Oettinger, *Stammbidung* 119. Sturtevant (*RHA* 3, *CGr¹*).derived *andūrza* "inside" from **n̥-dhur-* = **n̥-* "in" plus **dhur-* "door" as in Gk. θυρά, and Kimball (*IF* 91, 93–4) derives *anda, andan* "in(to)", CLuv. *ānda, āndan* id., and Lyc. *ñte* id. from **n̥-to-* : **en-to-* in Gk. ἐντός. There is, however, little independent evidence for a zero-grade of **en-* "in".



### 5.3.6. Secondary vocalization

There are at least two words which may show secondary vocalization of /r/ to syllabic /r̥/ and ultimately to /ar/ between non-syllabics. Eichner, *Heth. u. Idg.* 81 n. 5, derives *labarna, tabarna,* title assumed by Hittite kings, from **t/labr̥na* < **t/la-brana,* with syncope after heavy syllable, ultimtately reconstructing **dhabhro-no-* : **dhab(h)-* in Lat. *faber* "artisan", Slav. *dobrŭ* adj. "good", MHG *tapfer* "brave", Arm. *darbin* "smith", and CLuv. *tapar-* "govern" {3.7.1.}. It is possible too that the oblique stem *awari(y)a-* (MH etc.) beside *auri-* "lookout, watchtower", oblique stem *auri(y)a-* (also MH) arose through secondary vocalization of **r* to syllabic **/r̥/*, i.e. **aurya-* > **[awr̥ya-]* > [awarya-] {3.7.4.4.}.

## 5.4. Vocalization to *uR*

Benveniste, *HIE* 69–73; Eichner, *MSS* 31 (1973) 62, 73–6, *Laryngaltheorie* 136 w. n. 44; Lehrman, *Sprache* 33 (1987) 14 w. n. 4; Melchert, *SHHP* 12, 52, 120, *Sprache* 29 (1983) 8 n. 21, 9 n. 23, *AHP* 75, 126–7, 180; Neu, *Heth. u. Idg.* 192; Oettinger, *StBoT* 22, 26, *Stammbildung* 119–20, 192 n. 22, 204; Schindler, *BSL* 70 (1969) 8; Sturtevant, *AJPh* 48 (1927) 251–2, *Language* 4 (1928) 28, *Language* 6 (1930) 30, *CGr²* 40–1, 42; Szemerényi, *KZ* 73 (1956) 57–80.

Syllabic resonants show up as [uR] after **w* and labiovelars; vocalization to [uR] in other contexts is doubtful. The sequence **wR̥* was resyllabified to [uR] after consonants or initially, while postvocalic **wR̥* became [waR], perhaps in the verbal noun suffix *-war,* generalized from postvocalic **-wr̥* (see Melchert, *SHHP* 23 w. refs.), in **sū-wr̥* > **sū-war* > **sūmar* in *sumrā(i)-* "be pregnant" {9.7.1.}, or in Hitt. *walkuwa* (something unpleasant), and HLuv. *walwa-, walwi-* "lion" from **wl̥kʷó-* "wolf" with generalization of the postvocalic sandhi variant (Lehrman). This change apparently preceded lengthening of accented vowels in Pre-Hittite, since plene writing in several examples suggests that Pre-Hitt. [uR] was lengthened when accented. NH HU-U- in several examples, however, (e.g. *hu-u-ur-ki-* "wheel", *pa-ah-hu-u-ur* "fire") can be a ligature and does not necessarily indicate a long vowel {1.5.1.}. A change **wr̥* > [ur] was originally proposed by Eichner and the conditioning was established by Schindler (see also Lehrman). Melchert (*SHHP* 52) proposes that the change involved resyllabification and (*AHP*) that it occured in PA. The plene writing in *tu-u-ri-ya-* "harness" < **dhwr̥H-yé/ó-* or **twr̥H-yé/ó-* and *u-ur-re-er* "help" < **wr̥h₁-* suggests a treatment *Cwr̥H* > *CurH* > [Cūr] with compensatory lengthening {2.2.3.}.

#### 5.4.1.1. **r̥*

*ūrki-* "trail, track": nom. sg. *u-ur-ki-is* KUB XLIII 38 Rs. 10 (OH+), *ur-ke-es* (sic) KUB XXIX 7 II 45 (MH), acc. sg. *ur-ki-in* KUB XIII 2 I 6, 16 (MH), denominative *urkiya-, urkiyā(i)-*: 3 sg. pres. *ur-ki-ya-iz-zi* KUB XXIX 30 II 5 (OH) = [ūrgi-] < Pre-Hitt. **úrgi-* < **(h₁)wr̥ĝi-*, cf. Skt. *vrajati* "wanders", *vrajana-* "way, track" (Eichner 73, Melchert 12, 52, Lehrman).

*ūrr-* "help": (hap. leg.) 3 pl. pret. *u-ur-re-er* KBo III 60 II 7 (OH+) = [ūrr-] (for **ūr-*) < **wr̥h₁-* (Melchert, *SHHP* 12 n. 20). The verb has [rr] from the noun *wārr(a)-* "help" < root noun **wṓrh₁-* : **wērh₁-* in Gk. ἦρα "help".

GIŠ*hurki-* "wheel": nom. sg. *hu-u-ur-ki-is* KUB XXXVI 91 + XLIII 68 Rs. 10/11 (U), acc. *hur-ki-in* ib. Rs. 10 (= *hu-u-ur-ki-in* in dup. Bo 2477 Rs. 13; *HED*), KBo XI 14 II 22 (OH+), gen. *hur-ki-as* IBoI I 31 Vs. 16 (NH), dat.-loc. *hur-ki* KUB V 9 Vs. 12 (U) = [hurgi] < **h₂wr̥g-i-* : **h₂werg-* "turn, twist" in e.g. Skt. *vr̥jiná-* "curved, crooked", *vr̥ṇakti* "turns, bends". For the initial laryngeal, cf. Ved. impf. *ávr̥nak* (Eichner, *MSS* 31, Melchert, *SHHP* 52). From the same root may come *hurkil* "perversion": nom.-acc. sg. *hu-u-ur-ki-il* KBo VI 26 III 20, 28, 31 (OH+), *hu-ur-ki-el* ib. III 23, KUB XIII 30 L. 3. 7 (OH+), *hu-u-ur-ki-il* KUB XXX 34 IV 18 (MH+), gen. *hu-ur-ki-la-as* KUB XII 63 Vs. 21, 22 (MH), *hur-ki-la-as* KUB XIII 2 III 11 (MH) = [hurgil].

Alternatively, Puhvel, *HED* 4 401–2, taking the basic meaning as "hanging matter", compares OE *wyrgan* "to strangle, throttle, OHG *wurgen* id., ON *virgill* rope", OE *wurgil* id., MHG *würgel* "strangler", Lith. *veržiù* "constrict" from a parallel root with extension **ĝh*, **h₂werĝh-*.

*hurne-, hurna-* "hunt": *hu-u[r-ni-es-ke-ez-zi* KBo XII 59 ib. I 3 (NH), inf. *hu-ur-nu-wa-an-zi* KUB XXXIII 121 II 8, 10, 12 (NH) with stem [hurne-], [hurna-] from a nasal present **h₂wr̥-né-h₁-* from the root **h₂wer(h₁)-* of Gk. αὐρι̯άτης "fast going", SCr. *júriti* "rush after, chase", Latv. *vert* "run" and Lith. *varýti* "drive, chase".

See *HEG* 2, 305 and *HED* 3, 433 for examples and discussion. For it. 3 sg. pres. *h]u-u-wa-ar-ni-is-ke-ez-zi* KBo XII 59 I 7 see {3.7.4.3.}.

*hurna-* "sprinkle": 1 sg. pres. *hur-na-mi* 1808/c L. 5 (*Stammbildung* 307), 3 pl. *hur-na-an-zi* KUB XXXVIII 32 Vs. 10 (NH), *hur-[n]a-an-zi* KBo XXIV 46 I? 6 (U); *hurniya-*: 3 sg. pres. *hur-ni-e-ez-zi* VBoT 58 IV 24 (MH+), *hur-ni-ya-zi* KBo X 45 II 15 (MH+), *hur-ni-ya-iz-[zi]* KBo XXII 125 II 4 (NH), 3 pl. *hur-ni-ya-an-zi* KUB XLI 30 III 9 (U), 3 sg. pret. *hur-ni-it* 1808/c L. 7 with stem [hūrna-] from a nasal present **h₂wr̥-né-h₁-*, cf. Gk. ϝαίνω "I sprinkle" (Melchert, *SHHP* 59, Oettinger, *Stammbildung* 151, 307); the variant *hurā(i)-*, also "sprinkle" (3 pl. pret. *hu-u-ra-i-ir* (OH+), ptcp. nom. sg. c. *hu-u-ra-an-za* (U) and CLuv. *hur-* "give liquid" (*CLuv. Lex.* 75)) = [hūrā(i)-] may be derivable from the weak stem of a root aorist **h₂werh₁t* : **h₂wr̥h₁-ént-* {3.7.4.3.}.

See *HEG* 2, 305–6 and *HED* 3, 402–4. For the reading of HUR/HAR as /hur/ note also vbl. noun gen. sg. *hu-u-ur-nu-wa-as* KUB XXXIX 6 Vs. 14 (OH+) and perhaps Pal. *hu-wa-ar-ni-na-i* "sprinkles"(?), and see *HED loc. cit.* For 3 pl. pres. *hu-u-wa-ra-an-zi* see {3.7.4.3.}.

*sūrka/i-* "root": *i*-stem acc. sg. *sur-ki-in* KBo VIII 130 II 6 (NH), gen. *sur-ki-ya-as* KUB XXXIII 117 I 13 (NH), nom. pl. *su-ur-ki-is-s°* StBoT 25, 124 III 10, *a*-stem acc. pl. *su-u-ur-ku-us* KUB XXIX 1 IV 14 (OH+), *sur-ku-us* ib. IV 16 = [sūrka/i-] < **súrko/i-* < **swr̥ko/i-*, cf. Lat. *surculus* "twig" (Eichner 74 w. refs.).

Suffix *-ur* in *mēhur* "time" and adv. "in/at the time": nom.-acc. sg. *me-e-hu-ur* (OH etc.), *me-hu-ur* (NH), *me-e-hur* (OH+, NH), *me-hur* (MH, MH+, NH) = [mēḫur] < nom.-acc. sg. **méh₂wr̥* {2.9.5.1., 10.4.2.2.}; *sēhur* "urine": nom.-acc. sg. *se-e-hur* (MH+) = [sēḫur] < nom.-acc. sg. **séh₂wr̥* {2.9.5.1., 10.4.2.2.} and *pāhhur* "fire": nom.-acc. sg. *pa-a-ah-hu-ur* (MH), *pa-ah-ah-hu-u-ur* (NH), *pa-ah-hur* (OH, OH+ etc.) = [pāhur] < **péh₂wr̥* {2.9.1.2., 10.4.2.1.} (Eichner, *MSS* 31, 62, Schindler, Melchert, *SHHP* 52, *Sprache* 29).

*pēru-* "rock" < **pérwr̥* is unlikely, however {8.9.5.}.

*tūriya-* "hitch up, harness": 3 sg. pres. *tu-u-ri-ez-zi* KBo VI 2 II 60, IV 1, 12 (OH), *t]u-u-ri-ez-zi* KUB XXIX 30 II 20 (OH), *tu-u-ri-e-ez-zi* KUB XXIII 77 + L. 81 (MH), 1 pl. *tu-u-ri-ya-u-e-ni* KUB XIII 35 III 25 (NH), 3 pl. *tu-u-ri-an-zi* e.g. KBo III 3 I 12, 21 (& passim, MH+), KUB I 13 I 15 (& passim; MH+), 3 sg. pret. *tu-u-ri-et* KBo III 8 III 17 (Pre-NH), 3 pl. *tu-ri-er* KBo III 34 I 16 (OH+), 2 sg. imp. *tu-u-ri-ya* KUB XXX 10 Rs. 20 (MH), ptcp. nom. sg. c. *tu-ri-ya-an-za* KBo I 42 I 12 (NH, vocab.), nom.-acc. sg. n. *tu-u-ri-ya-an* KUB XIII 35 IV 3, *tu-u-r[i-ya-an* ib. III 33, vbl. noun gen. sg. *tu-u-ri-ya-wa-as* KBo VI 2 + XIX 1 III 43, *tu-u-ri-ya-u-as* ib. III 47 = [tūryē/a-] < **twr̥H-yé/ó-*, cf. Lith. *tveriù, tvérti* "make firm, fasten", *tvirtas* "firm, fast" (Kimball, *PW*) or [dūryē/a-] < **dhwr̥H-yé/ó-* : Skt. *dhūr*, gen. *dhūraḥ* "chariot pole" < **dhwr̥H-* : **dhwr̥Hos* with loss of the prevocalic laryngeal (Eichner, *MSS* 31, Kimball, *PW*, Melchert, *SHHP* 52).

Examples and discussion *PW* 513–16. The connection with Lith. *tveriù* goes back to Pedersen, *MS* 71, and that with Skt. *dhūr* goes back to Mayrhofer, *Sprache* 10 (1964) 186–9.

### 5.4.1.2. **l̥*

*hulana-* "wool": dat.-loc. sg. *hu-u-la-[ni* KBo III 8 III 8 (Pre-NH), also SÍG-*la-n* < **H₂/₃l̥H₂/₃-neh₂-* : Skt. *ūrṇā*, Av. *varəna*, Lat. *lāna*, Lith. *vilna* etc. It is not clear whether this word should be read as [hulna-] with loss of the laryngeal or as [hulana-] with vocalization of the laryngeal {10.9.1.4.}.

Nominative-accusative suffix *-ul* in e.g. *āssul* "greetings", *taksul* "peace (treaty)", *parsul* "gruel", *immiul* "mixture" < **-wl̥* (Melchert 120).

### 5.4.1.3. **m̥*

The OH gen. sg. *us-tu-la-as* "of sin" KUB XXIX 29 I 10 should be from an original **wm̥st-(wl̥)* beside full-grade **wems-* in *wastul* (< **wemst-wl̥*) and *wasta-* "sin", *wastāi-* c. "a sin" (Melchert, *SHHP* 12) {7.8.1.}.

### 5.4.1.4. **n̥*

The verb *ūnh-* (meaning unclear, but not "suck"; see Košak, *THeth.* 10, 242) has plene writing of its root vowel (e.g. 3 pl. pres. *u-un-ha-an-zi* StBoT 25, 61 Vs? II 3). Since a a full-grade **wenH-* should have become **wan-* with **e* > /a/ (perhaps ultimately **wanh-* with analogical restoration of the root-final laryngeal), *ūnh-* probably shows generalization of a zero-grade weak stem, i.e. **wn̥H₂/₃-* > **un-*. In singular forms, the root would have been accented and the **u* eventually lengthened if the zero-grade had been generalized before lengthening of accented vowels, i.e. **únh-C* > **ūnh-C*. OH *ūnhanzi* suggests that the long root vowel of the singular was generalized throughout the paradigm.

## 5.4.2. After labiovelar

Vocalization of syllabic resonants after labiovelars is discussed most thoroughly by Eichner (*MSS*, 31) and Melchert (*Sprache* 29, 8 n. 21). Oettinger, *Stammbildung* 119–20, distinguishes a prevocalic treatment **Kʷr̥-* > [Kur-] and a preconsonantal treatment **Kʷr̥-* > [Kwar-] in *kuwarsk-*, iterative of *kʷēr-* "cut". However, there are a number of clear examples of vocalization to *Kur* before consonants, and *kwarsk-* should be derived from full-grade **kʷer-sk-* with **erC* > [arC] {5.3.5.}.

*gulss-* "write, engrave, incise": 1 sg. *gul-as-mi*, KBo XV 25 Vs. 31 (MH?), 3 sg. *gu]l-as-zi* ib. Rs. 21, 1 sg. pret. *gul-su-un* KBo XII 38 II 14 (NH), *gul-as-su-un* KUB XXXI

76 + KUB XL 88 III 13 (NH), 3 sg. *gul-as-ta* KBo III 21 II 4, III 19, *gul-as-ta*! ib. III 20 (OH+), KUB XXX 10 Rs. 20 (MH), ptcp. nom.-acc. sg. n. *gul-as-sa-an* KBo IV 2 IV 43 (= MS 30, NH), KUB XIII 2 I 10 (MH), (KUB XIII 2 +) KUB XXXI 84 III 67, IBoT I 31 I 3, 13 (NH); $^{D}$*Gulsa-* "fate goddess": acc. sg. $^{D}$*Gul-sa-an* KBo VII 36 I 11 (NH), dat.-loc. pl. $^{D}$*G[ul-s]a-as* KBo XV 25 Vs. 21; *gulzi-* "mark": acc. sg. *gul-zi-in* HT 20 L. 10 (U), 266/u L. 1 (Carruba), 1076 L. 4 (Carruba), acc. pl. *gul-zi-us* KUB IV 7 I 21 (NH), all with root [kulss-] < **k$^{w}$l̥s-*, cf. also CLuv. *gulzat(t)ar* "sign, rough draft, (wooden) writing tablet" and *gulz(ā)i-* "mark" (inf. *gulzāuna)*. These words belong with **k$^{w}$el-s-* also in Skt. *karṣati* "draws, drags, ploughs", *kṛṣati* "ploughs", *karṣū-* (f.) "furrow, trench", Av. *karša-* "furrow", *karšaiti* "draws a furrow", Gk. τέλσον "boundary furrow, last furrow in a ploughed field" and τέλσας · τροφάς, πέρατα (Hesych.). The consistent spellings with GUL suggest that the stem was [kulss-] with a short vowel and that the zero-grade was generalized after lengthening of accented vowels had ceased being productive.

For forms and discussion see Carruba, *StBoT* 2, 35–7, and for etymological refs. see *HEG* 4 627–30 and Kimball, *MSS* 53 (1992) 77. The treatment **ls* > *lz* is Luvian. Note also the oblique stem of *gulzātar, gul-za-at-n* with Luvian retention of **tn*. On the Luvian forms see Starke, *StBoT* 31, 457–64. Oettinger, *Stammbildung* 203–4, suggests, however, that *gulzi-* "sign" can be a native Hittite word from **k$^{w}$l̥s-ti-* > [kultsi] with loss of the **s* in a consonant cluster and assibilation of **ti* to [ts].

Several derivatives of **k$^{w}$er-* "cut" appear with zero-grade [kur] from **k$^{w}$r̥*: *kursa-* "hunting bag" (e.g. acc. sg. *kur-sa-an* StBoT 25, 25 I 33, gen. sg. *kur-sa-as* StBoT 25, 12 II 18, dat.-loc. sg. *kur-si* StBoT 25, 88 L. 15, 23, *ku-úr-s[i* ib. L. 10) < **k$^{w}$r̥s-o-*; $^{GIŠ}$*kurta-* "(wooden?) writing tablet" (nom. *kur-ta-as* KBo XVII 65 Rs. 45, MH, abl. *kur-ta-za* KUB XLII 100 L. 17, *gur-ta-za* ib. IV 10, U) < **k$^{w}$r̥tó-*; $^{GIŠ}$*kurtāl*, a vessel; *kukkurs-* "mutilate" < **kurkkurs-* by dissimilation (cf. Eichner, *MSS* 31, Oettinger, *Stammbildung* 119–20, Tischler, *HEG* 4 619, 654–7, 661, 661–3, Beckman, *StBoT* 29, 161–2). On *kursa-* as "hunting bag" see McMahon, *State Cult* 20–2, 182–6 and 250–4 w. refs., and for $^{GIŠ}$*kurtāl* see ib. 65 n. 53.

*gurta-* "citadel, acropolis": acc. sg. *gur-ta-an* KBo IV 14 II 61 (NH), dat.-loc. *gur-ti* KBo V 6 III 23 (NH), $^{É}$*gur-da-az* (abl.) Bo 3948 II 1 (*HEG*), $^{É}$*gur-da-a[z* KBo VIII 19 Vs. 10 (U), perhaps [gurtā-] from **g$^{w}$r̥tó-* : **g$^{w}$er-*, **g$^{w}$r̥-* "mountain, height" in e.g. Skt. *giriḥ* "mountain", Av. *gairiš* id., OCS *gora* id., Alb. *gur* "cliff."

*kūrūr* "war, hostilities": e.g. nom.-acc. sg. *ku-ru-ur* KBo III 38 Vs. 7, 28 (OH+), dat. sg. *ku-u-ri-ri* KBo VI 2 I 52 (OH), perhaps [gūrūr] < **ĝhwr̥-wr̥,* with analogical zero-grade root : **ĝhwer-* in Skt. *hvarate* "be crooked, go astray", Av. *zbarəmna-* "going crooked", *zūrō.jata-* "unlawfully killed" (Eichner, *MSS* 31, Mayrhofer, *KEWA* III 619).

### 5.4.3. Doubtful examples

Szemerényi (*KZ* 73) and Sturtevant (*CGr*$^{2}$) argue for unconditioned vocalization of **r̥* and **l̥* to [ur] and [ul]. Sturtevant also (*CGr*$^{2}$ 41) posited vocalization of **m̥* to [um] and **n̥* to [un] (except before stops and **s*) and (*Language* 4) **n̥* > [un] (retracted *Language* 6). Several of the examples they cite, however, are actually examples of vocalization after **w* or labiovelar: *hurkil* "perversion" : *hark-* "abscond, disappear" (as "perish") (Szemerényi 72, Sturtevant), *hurki-* "wheel" < **Hwr̥ghi-* : Gk. ἔρχομαι (Szemerényi 74) are from **h$_2$wr̥ĝ-* or **h$_2$wr̥gh-* {5.4.1.1.}; *gurta-* "citadel" < **ghr̥to-* or **ghr̥dho-* : Lat. *hortus,* Goth. *gards,* Eng. *yard*, OCS *gradŭ* (Szemerényi 72) is perhaps from **g$^{w}$r̥tó-* {5.4.2.}; ending *-ur* in *mēhur, sēhur* etc. < **-ur̥* (Szemerényi 75) is from **-wr̥* {5.4.1.1.}; *hurt-* "curse", noun *hurtāi-* < **h$_2$wr̥dh-* (Szemerényi 73, Sturtevant) is from **h$_2$wr̥t-* {5.4.1.1.} and *hurnā(i)-* "sprinkle" < **h$_2$wr̥n-* (Szemerényi 74) is from **h$_2$wr̥-né-h$_1$-* {5.4.1.1.}. Other examples, where the syllabic resonant follows a sound other than **w* or labiovelar, depend on etymologies that do not work: *andūrza* "outside" < **entr̥-yo-* : Lat. *inter* (Szemerényi 73), < **n̥tr̥-* (Sturtevant); *hulle/a-* "strike" < **Hl̥neH-* (Szemerényi). As both scholars recognize, apparent exceptions with **R̥* > [aR] need to be explained. Yet Sturtevant's reconstruction of **R̥* with reduced vowel > *aR* is, by his own admission *ad hoc,* and Szemerényi's derivations from zero-grades are sometimes not justified morphologically.

Vocalization of **m̥* to [um] is posited as an unconditioned change by Sturtevant (*CGr*$^{2}$), and Eichner (*MSS* 31, 76, 99 n. 82 and *Laryngaltheorie)* posits **m̥* > PA **əm* > [um] with rounding in the vicinity of a labial to derive the first person singular ending *-un* from the IE first person singular secondary ending **-m̥* and the pronominal accusative singular animate ending *-un* in the demonstrative pronouns *apūn* and *kūn* from IE **-m̥*. The animate accusative plural nominal and adjectival ending *-us* is derived from athematic **-m̥s* (> **-ums* > **-uns* > **-us*) by Sturtevant, *loc. cit.*, Oettinger, *StBoT* 22, 25–6, *Inc. Ling.* 3 (1976) 7, *Stammbildung* 366 n. 223 and Eichner, *Laryngaltheorie* 136 n. 44 and from **-n̥s* by Sturtevant, *AJPh* 48 (1927) 241. See also Melchert, *AHP* 181–2.

The nominal and pronominal endings may, however, have other explanations. Benveniste, *HIE* 69–73, derives the accusative ending from **-um*, a conflation of the element **-u-* (perhaps originally a deictic particle) seen in Vedic pronominal inflection in the demonstrative pronoun acc. sg. *amúm,* gen. *amúṣya,* dat. *amúṣmai* etc. plus the accusative singular ending **-m*. If **-u-* were accented in Pre-Hittite as in Indic, the plene writing in *a-pu-u-un* and *ku-u-un* (= [abūn], [kūn]) would be expected. Benveniste also (ib. 73) derives the accusative plural animate ending *-us* from pronominal **-u-* plus ending **-s* (see also Neu, *Heth. u. Idg.* 192). It is possible, however, that the accusative plural ending was generalized from the animate ending accusative plural **-us* < **-u-ns* of proterodynamic *u*-stems (Dressler, *Sprache* 10 (1969) 10, Neu, *StBoT* 18 121–2, and Weitenberg, *u*-Stämme 375–6, 381–2, 479–80 n. 813). Weitenberg (ib. 375–6, 392) finds traces of **-u-ns* too in the CLuv. accusative plural forms IX-*unza* "nine" and *alalunza* (meaning unclear). Melchert, however (*CLuv. Lex.* 8) derives the latter from a *-wan*-stem. A parallel for the generalization of the ending in Hittite can be found in the generalization of the animate nominative plural anding *-ēs* from *i*-stem **-éy-es* throughout other nominal and adjectival paradigms. The first person singular preterit ending is obscure. It might perhaps be from **-wm̥*, zero-grade of **-wém* in 1 pl. pres. *-wēni,* pret. *-wēn,* 1 pl. pres. *-wāni* (analogical from 1 pl. pret. **-wān* < **-wém*) with regular vocalization of **m̥* to *um* after **w*. Presumably **-wm̥* would be an Anatolian innovation that replaced inherited **-m*, **-m̥*.

The only likely-looking example from a morphologically isolated context that has been cited is *ummiyant-* "immature" (?), adjective describing birds, hap. leg. *um-mi-ya-an-du-us* KBo VI 14 I I 9 (OH+; HW 233 w. refs.), which Eichner, *Laryngaltheorie*

136 n. 44, derives from **n̥-miyant-*, lit. "not grown", explaining the apparent **n̥-m-* > *amm-* of *ām̥miyant-* "small, weak, immature" as analogical. If Puhvel's translation "young", lit. "grown up, adult" (*HED* 1 48, sub *ām̥miyant-*) is more accurate, however, then it may be possible to derive *ummiyant-* from preverb **ud-* "up" plus *miyant-* "grown" with assimilation *dm* > *mm* {6.10.1.2.}. See also Melchert, *AHP* 160.

## 5.5. Vocalization to *a*

Čop, *Linguistica* 4 (1961) 57–62, *Ling.* 7 (1965) 104 w. n. 29b, *Ling.* 8 (1966/8) 61; Hrozný, *SH* 32 n. 6, 187; Jucquois, *RHA* 74 (1964) 86–91; Kronasser, *VLFH* 53; Pedersen, *Ar. Or.* 5 (1933) 180–1, Hitt. 90–1; Sturtevant, *AJPh* 48 (1927) 247–57, *CGr*$^{1}$ 105; Szemerényi, *KZ* 73 (1955/6) 65–80, *Kratylos* 11 (1966) 218 n. 44.

Vocalization of **m̥* or **n̥* or both syllabic nasals to /a/ has been proposed by several researchers. Pedersen, Szemerényi, Kronasser and Čop (*Linguistica* 7, *Linguistica* 8) posit **m̥* > /a/ medially as did Sturtevant in *AJPh* 48 and *CGr*$^{1}$, suggesting it was a conditioned change. Szemerényi and Čop (*Linguistica* 4) also argue for medial **n̥* > /a/ (Čop as a conditioned change before voiceless stop or **s*), while Jucquois and Kronasser posit a differential treatment **n̥* > /an/ or /a/ without specifying conditioning. Szemerényi and Čop also suggest that final **m̥* underwent split in sandhi, becoming postvocalic /-an/ and postconsonantal /-a/.

Unconditioned vocalization of **m̥* to /a/ can be ruled out on the evidence of *samnanzi* = [sa(m)mnantsi] "they pass in review, disappear" < **sm̥n-enti, haminк-* "bind" < **h₂m̥-ne-ĝh-*, and *tamink-* "stick together" < **tm̥-ne-k-* {5.3.3.}. The two most plausible looking examples of vocalization to /a/ that have been cited might show vocalization before voiceless stops (cf. Čop, *Linguistica* 4, who posits **m̥* > **am* with later assimilation of the nasal to the voiceless stop). These are *katta* "down(wards)", *kattan* "beneath", *katti* "with" < **km̥t-* : Gk. κατά "down, along, with", OW *cant* (NW *gan*) "with", Bret. *gan* id., OIr. *cēt-* "with" < **km̥ta* (Hrozný, Pedersen, Čop, Szemerényi, Sturtevant) and *kappuē-* "count, worry over": *kap-pu-e-* (OH etc.) from preverb **km̥-* "with" plus **pu-ye/o-* or **peu-ye/o-* < : **peu-*, **pu-* "think" in OCS *putajǫ* "inquire", Gk. πινυτός "intelligent", νήπιος "not understanding, childish", Lat. *putāre,* cf. NE *compute* (Čop, *Linguistica* 7, *Linguistica* 8). An unmarked PA change **m̥* > /a/ before voiceless dental stop seems unlikely, however, since an Anatolian development of **m̥t* to **ənt* is perhaps seen in Lyc. *sñta* "ten(?)" from **k̂m̥t-eh₂* ? (Melchert, *HS* 102 (1989) 24–5, *Lyc. Lex.*$^{2}$ 64 w. refs.) and *kbisñtta* "twenty"(?), "twelve"(?) from **dwi-(d)k̂m̥t-* ? (*Lyc. Lex.*$^{2}$ 34 w. refs.). It is possible, perhaps, that *katta* points to a different treatment of **m̥t* in clitics (cf. Pedersen, *Ar. Or.* 5 and Melchert, *AHP* 126). Čop's etymology of *kappuē-* is appealing semantically, but direct assimilation of **mp* to *pp* can be ruled out if *dampu-* "rough, prickly, pointed" (?) and *dampūpi-* "barbarian" are to be derived from **tompu-* : OCS *tǫpŭ-* "blunt, obtuse, dull" etc. {7.4.1.2.}. Note, however, that Melchert, who reconstructs **km̥-puHye/o-*, suggests a general loss of nasalization in unaccented, non-final sequences of syllabic nasal plus consonant.

Other suggested examples of this treatment are unlikely or based on untenable etymologies.



*saudisza* "heifer" (*sa-ú-di-is-za,* OH, *sa-(a)-ú-i-ti-is-za,* MH), which Sturtevant analyzed as **sm̥-wetes-*, lit. "of one year, of the same year" with **sm̥-* "one" : Gk. ἅμα (cf. also Kronasser), can be from demonstrative pronoun. **so* plus **utes-t-s* "of this year" {4.9.2.}; *sālīga* "approaches, accosts" < **sm̥-* "together" plus **leiĝh-* "lie" (Sturtevant, Kronasser) is perhaps from **sléig-o* : **sleig-* "stick, adhere" {4.3.1.2.}; *dāssu* "strong", which Sturtevant (*RHA* 3) derived from **dn̥su*, and which Szemerényi (*Glotta* 33, 259–60 n. 1) derived from **tn̥su* : OCS *tęžŭkŭ* "βαρύς", ON *þungar* "heavy", should be from full-grade **dé/ónsu*, since **n̥s* should have become *nz* as in *anzās* "us" < **n̥s-é/ó-* {5.3.4.}; similarly, *kuwask-*, iterative of *kuēn-* "kill", and *hassu-* "king" are from full-grades **gʷhensk-* {5.4.3.} and **h₂é/ónsu-* {7.8.2.}; **dasu-* "blind" in *taswuant-* "blind" (MH etc.) and *dasuwahh-* "make blind" (OH etc.) from **tm̥Hs-u-* : Skt. *tamiśraḥ* "darkness", Lat. *tenebrae* id. (Sturtevant, Kronasser) or from **dhm̥su-* : MIr. *deim* "black", OE *dimm* (Szemerényi, *Glotta* 33 (1954) 259–60 n. 1) is better derived from **té/ómHs-* with full-grade {10.10.1.}; *mēma-* "speak, say" and *mēmiyan* "word, thing", which Čop derives from **me-mn̥-m*, are unclear.

Szemerényi derives *-ā* or *-a* : *-an* in e.g. *parā* "forward(s)" : *pēran* "in front" or *anda* "into" : *andan* id. from the consonant stem accusative singular ending **-m̥* via sentence sandhi (**-m̥* > *-a* before consonant or word boundary vs. **-m̥* > *-am* before vowels), but *-ā* and *-a* are more likely to continue accented and unaccented forms of the directive ending **-ō* {2.5.1., 2.7.1.}.

*asiwant-* "poor": nom. sg. c. *a-si-wa-an-za* KUB VIII 16 + 24 III 12 (OH+), *[a]-si-wa-an-za* KUB XLIII 4 I 5 (OH+), acc. sg. c. *a-ṣi-wa-an-ta-an* KUB XXIII 72 Rs. 8 (MH), *a-si-wa-an-da-an* KBo XXII 1 Rs. 29 (OH), nom.-acc. sg. n. *a-as-si-wa-an* KUB XLI 32 Rs. 9 (MH+), gen. sg. *a-si-wa-an-da-as* KBo III 7 III 4 (OH+)= [āsiwant-], cf. also *asiwantēss-* "become poor" and CLuv. *āssiwant(i)-* "poor" and derivatives (*CLuv. Lex.* 36). Derivations from **n̥-diu-went-* or **n̥-diw-ent-* "without a god" (Jucquois, *RHA* 74 (1964) 86–91, and see the refs. provided by Kammenhuber, *HW*$^{2}$ 407 and Tischler, *HEG* 1, 211–12) do not work. Since IE **dy* or **di* did not assibilate to *s(i)* in Luvian, a **diu-went-* would have become CLuv. ***diuwant-* or ***diumant-* with **uw* > *um*. Watkins, *Gds Güntert* 106 notes that privative **n̥-* would not be expected in a negative.

See also Weitenberg, *u*-Stämme 175 w. refs. and *HED* 1, 211–12.

## 5.6. Sievers-Lindeman's Law

Kimball, *IF* 91 (1986) 97–9; Pedersen, *Hitt.* 90; Sturtevant, *Language* 20 (1944) 208.

Sievers or Lindeman variants may have been generalized in at least three words. Plene writing in two examples may indicate that syllabic nasals in Sievers-Lindeman environments were vocalized to **[n̥n]* and **[m̥m]*, and later beccame PA **ənn* and **əmm*, which showed up in Hittite as [ān] and [ām] with loss of the first nasal and compensatory lengthening. In the one example with **r̥r*, however, plene writing does not occur.

Prevocalic suffix *-ān-* < **-n̥-* in oblique stem forms of *pattar* "basket": dat.-loc. sg. *pad-da-a-ni* (OH), *pat-ta-a-ni* (OH+), *pa]ta-ni-i* (OH), *pad-da-ni-i* (OH, OH+), *pad-da-*

*ni* (OH, MH), inst. *pat-ta-ni-it* KUB XXXXI 4 Vs. 8 (OH+), abl. *pad-da-na-[az]* (OH+) = [pattān-] < **p(o)th₂-n̥n-* beside nom.-acc. sg. [pattar] < **póth₂-r̥* : **peth₂-* "spread open" {10.7.2.}; *uttar* "word, thing": e.g. dat. *ud-da-a-ni* KUB XLIII 55 II 11 (Pre-NH), abl. *u]d-da-a-na-az* KUB XXX 43 IV 5 (NH) = [uttān-] < **udh₂-n̥n-* for **h₂udh₂-n̥n-* (> ***huttān-*) {10.7.1.}; *ēshar* "blood": e.g. gen. sg. *is-ha-a-na-as* KUB XVII 18 II 29 (NH), *is-ha-na-a-as* StBoT 25, 3 IV 8 = [ishānās] < **sh₂n̥n-ós* (Sturtevant, Kimball).

*āndarā-* "blue" (of wool): acc. sg. c. *an-da-ra-a-an* KUB XLVI 43 L. 9 (U), *an-da-ra-an* VBoT 24 I 14 (MH+), *a]n-da-ra-an* KUB XLI 1 I 3 (MH+), *an-t]a-ra-an* ib. I 5, *a-an-da-ra-an* VBoT 24 I 23, *a-an-da-ra-an* ib. I 14, KBo V 2 III 19 (MH+); *antarant-an-ta-ra-an* VBoT 24 I 23, *an-da-ra-an-ta-an* KUB XXIV 9 I 43 (MH+), *an-d]a-ra-an-da-an* ib. I "blue" acc. sg. c. *an-ta-ra-an-ta-an* KUB XXIV 9 I 43 (MH+), *an-d]a-ra-an-da-an* ib. I "blue" acc. sg. c. *an-ta-ra-an-ta-an* KUB XXIV 9 I 43 (MH+), *an-d]a-ra-an-da-an* ib. I 45 = [āndrā-] ? < **m̥mdró-*, cf. Slav. **modrŭ* in Cz. *modrý* "blue" (cf. Puhvel, *HED* 1, 77–8 w. refs.). The accented suffix **-ró-* > [-rā-] would be paralleled in a color term, cf. **h₁rudhró-* "red" in Skt. *rudhiráḥ* and Gk. ἐρυθρός.

Examples and etymology *HED* 1, 177–8 and *HW*² 107–8.

Hitt. *parā* " forth, forwards" (*pa-ra-a,* OH etc.) and Lyc. **pere* "further" (in *perepñ* "furthermore") < **pr̥ró* beside **prō*, **pro* in e.g. Skt. *pra,* Gk. πρό, Lat. *prō* and **pr̥os* in Gk. πάρος (Kimball) is incorrect, see {5.2.}.

## 5.7. Reflexes of syllabic resonants with plene writing

Plene writing is very rare for the anaptyctic vowel that developed before syllabic resonants even where it probably had come to be accented in PA or Pre-Hittite, suggesting that it was a very short *ə*-like vowel that was not subject to lengthening. Given the evidence that vocalization of syllabic resonants was PA, while lengthening of accented vowels was Hittite only, the lack of lengthening cannot be used as evidence that vocalization of syllabic resonants followed lengthening. Most apparent exceptions to the lack of lengthening can be explained. A Sievers variant **-n̥n-* became **-ann-* (**-ənn-*) and later [ān] with compensatory lengthening in the oblique stem suffix *-ān-* of *pattar* "basket" and *uttar* "word", and the plene writing in *āndarā-* "blue" suggests that it may be from a Lindeman variant **m̥mdró-* {5.6.}. It is possible that the sporadic plene writing in *a-am-mi-ya-an-t°/d°* "small, weak, immature" (2x; acc. pl. *a-am-mi-ya-an-tu-us* KBo III 34 II 28, OH+, dat.-loc. pl. *a-am-mi-ya-an-da-as* KBo VIII 107 L. 7, NH) beside *a-mi-ya-an-t°/d°, am-mi-ya-an-t°/d°* < privative **n̥-* + **mih₁ónt-* "grown" reflects a similar process, i.e. **n̥m-* > **ənm-* > **amm-* with assimilation > [ām-] with loss of the first nasal and compensatory lengthening. The restoration of the geminate would then be secondary and analogical. In 2 pl. imp. *[s]a-ah-te-en* KUB XXIX 1 I 48 (OH+) : *sanh-* "flush, wet, rinse", the plene writing points to compensatory lengthening accompanying the loss of the nasal before *h*, i.e. **sn̥h₂-* > *sanh-* > [sāḫ-] {5.3.4.}.

In other words, the plene writing may indicate the analogical generalization of a full-grade vowel. For *ar-* "place oneself, stand, be standing", plene writing is found sporadically in texts written in the NH period: e.g. 3 sg. pres. *a-ar-ta* KBo III 35 Vs. 13 (OH+), KBo III 46 Vs. 45 (OH+), *a-ar-ta-ri* KUB XXX 43 IV 5 (NH; *ar-ta-ri* ib. III 15, 16), 1 sg. pret. *a-ar-ha-at* KUB XII 31 Rs. 16 (NH), 2 sg. imp. *a-ar-hu-ut* KBo V 4 Vs. 20 (NH), KBo V 9 II 18 (NH), KBo V 13 II 8 (NH; *ar-ta-ti* ib. II 8) for [arta] etc. < midd. **h₁r̥tó*; similarly *arnu-* "transport, bring" occasionally has plene writing in NH: e.g. 1 sg. pres. *a-ar-nu-mi* KUB XXXI 127 III 29 (MH+), 3 pl. *a-ar-nu-wa-an-z]i* KBo VI 26 IV 2 (OH+), 3 sg. pret. *a-ar-nu-u]t* KUB XIX 8 I 24 (Supp. I), *a-ar-nu-ut* KBo V 13 III 3, 15 (NH, *ar-nu-ut* in III 2, cf. *a-ar-hu-ut* for *ar-hu-ut* ib. II 8), ptcp. nom. sg. c. *a-ar-nu-wa-an-za* KUB XXIII 92 Rs. 15 (NH), vbl. noun nom.-acc. sg. *a-ar-nu-ma-ar* KUB XIV 17 II 7 (NH) for [ărnu-] < **h₁r̥-n(e)u-* : **h₁er-* "set in motion". The long vowel in each verb can be analogical from *ār-* "arrive" (*a-ar-hi* etc.) with *o*-grade root **h₁ór-* {2.8.2.1.}. The spelling of *ha-a-an-da* KBo III 4 III 17 (NH) may be based on *ha-a-an-za* "in front" = [hāntṣ] < loc. **h₂énti* {3.8.1.,6.7.2.2.}, and *a-ar-kan-zi* KUB VIII 16 + XLIII 2 III 14 (OH+) may have */ā/* from the singular *ārki* "cuts up" < **h₁órĝh-ei* {8.3.2.}.

In *pa-a-an-ku-* "all" (n. "council") acc. sg. c. *pa-a-an ku-un* (sic as 2 words) KUB XIX 11 I 6 (NH), nom. sg. c. (adj.) *pa-a-an-ku-us* KUB XXIV 1 IV 18 (Pre-NH)), beside *pa-an-ku-, pa-an-ga-u-* < **bhn̥ĝhu-* "thick, dense" it is possible that the forms with plene writing reflect a PA **bóngu-* with accented *o*-grade root after *dāssu-* "strong" < **dónsu-* (an *e*-grade **bhénĝhu-* should have become ***[biŋgu-]* with raising of **e* before nasal plus velar).

The plene writing in the second syllable of *er-ma-a-an* "illness" (1x, KUB XXVI 87 L. 8, U) < **h₁ér̥mn̥* {5.3.4. } can be a mistake.

# Chapter Six

# Stops

## 6.1. System inherited from IE

### 6.1.1. Voicing, aspiration, glottalic theory

Mayrhofer, *Idg. Gr.* I/2, 91–118; Melchert, *Gds Cowgill* 182–204, *HS* 101 (1988) 220–4, 241–3, *HS* 102 (1989) 23–32, *AHP* 46–7.

IE stops had a five-way distinction in place of articulation, opposing labial, dental, palatal, velar and labiovelar articulations, and a three-way distinction in manner of articulation, opposing voiceless stops, voiced stops, and a series of stops traditionally termed voiced aspirates.

| | labial | dental | palatal | velar | labiovelar |
|---|---|---|---|---|---|
| voiceless | *p | *t | *$\hat{k}$ | *k | *$k^w$ |
| voiced | *b | *d | *$\hat{g}$ | *g | *$g^w$ |
| voiced aspirate | *bh | *dh | *$\hat{g}$h | *gh | *$g^w$h |

IE probably did not have a fully developed set of voiceless aspirates as reconstructed in the traditional system. However, a few correspondences involving possible loanwords (e.g. Ved. *śaṅkhá-* "mussel" : Gk. κόγχος id.) and onomatopoetic or affective words (e.g. Skt. (Dhātupada) *kakhati* "laughs", Arm. *xaxank'-* "laughter", or Gk. λαφύσσω "I lick", Arm. *lap'em* id.) suggest a tendency to fill a typological gap in the IE system that may have begun within late IE and was later carried out more completely in Indo-Iranian through the creation of a fuller series of voiceless aspirates from sequences of stop plus laryngeal and in Greek by the devoicing of the IE voiced aspirates (Mayrhofer 98). Anatolian offers no evidence for voiceless aspirates in IE. The example of an Anatolian reflex of a voiceless aspirate commonly cited by scholars working within the traditional system, Hitt. *hi*-conjugation second person singular present *-(t)ti* : Skt. 2 sg. perf. *-tha*, Av. *-θa*, and Gk. *-θα* (IE 2 sg. perf. **-tha*) is instead to be reconstructed as PA **-th₂ai* (from IE perfect or *h₂*-present ending **-th₂e* = *[-th₂a] plus deictic particle* *-i*) and shows gemination of the stop rather than devoicing {10.7.}. Similarly, the second person plural present ending *-(t)tani*, which shows close affinities to the Vedic second person plural present indicative ending *-thana*, can be reconstructed as **-th₂ani* (the productive ending *-(t)tēni* and second person plural preterit ending *-(t)tēn* would have analogical *e*-vocalism after first person plural *-wēni* and *-wēn*). Apparent correspondences between Anatolian *h* or *hh* and an IE **kh* (e.g. *hahhars-* "laugh" : Skt. *kakhati*, Gk. καχάζω and Arm. *xaxank'-*) that depend on an unconditioned change of a velar stop to PA **h* are in error {8.6.1.}.

The glottalic theory advocated by some scholars has little relevance for Anatolian. The Anatolian languages do not provide evidence that supports or contradicts it, and none of the sound changes that can be posited for PA or the individual Anatolian languages are better explained using it as a starting point. Anatolian does provide at least two plausible examples of IE **b* (*palsa-* "way, time" < **bel-so-* or **bl̥so-* : IE **bel-* "split, cut out, excavate" {6.3.1.2., 11.6.2.} and *dapi-* "all" < **dobi-* {6.4.2.1.}) the rarity of which as an independent phoneme has been cited as an argument in favor of reconstructing a series of glottalized ejectives or implosives in place of the traditional plain voiced series.

For a discussion of the glottalic theory and references up to 1985 see Mayrhofer 93–9. To these can be added Haider, *Lingua* 65 (1985) 1–27, Huld, *IF* 91 (1986) 67–79, the papers in part III (85ff.), "Glottalic Theory", in Venneman, ed., *New Sound,* and Gamkrelidze, *Kratylos* 37 (1992) 1–13.

### 6.1.2. Plain velars, palatalized velars, and labiovelars

As Melchert, *Gds Cowgill* 182–204, *HS* 101 (1988) 241–3, and *HS* 102 (1989) 23–32, has shown, PA and Proto-Luvian preserved the IE distinction between plain velars, palatalized velars and labiovelars, although in Hittite and Palaic the plain and palatalized velars merged. The contrast is clearest among the voiceless stops. IE **$\hat{k}$* became CLuv. *z*, HLuv. *z* and Lyc. *s*, but Hitt. *k* and Pal. *k*: e.g. demonstrative pronoun: CLuv. *zā-, zi-*, HLuv. *za-, zi-* : Hitt. nom. sg. *kā,* nom. pl. c. *kē,* nom.-acc. sg. and pl. n. *kī,* Pal. *kā-* < IE **$\hat{k}$o-/*$\hat{k}$i-*, cf. e.g. Lith. dem. pro. *šis,* OCS *sĭ*, Arm. *-s*, Gk. ἐκεῖ, Lat. *c-is,* Goth. *hina, hita* (Melchert 191–3, *CLuv. Lex.* 274); CLuv. *zār-, zarti* "heart", HLuv. *zarta* id. : Hitt. nom-acc. sg. *ker,* loc. *kerdi,* oblique stem *kard-, kardiya-*, Pal. loc. *kārdi* < IE **$\hat{k}$ḗr*, **$\hat{k}$r̥d-*, cf. Arm. *sirt,* Lith. *širdìs,* O.Pruss. *seyr,* OCS *srŭrdĭce,* Gk. κῆρ, καρδία, Lat. *cor, cordis,* (Melchert 196–7, *CLuv. Lex.* 280); HLuv. *a-zu-wa/i* "horse", Lyc. *esbe-* < IE **ék̂wo-*, cf. e.g. Skt. *áśvaḥ,* Lat. *equus* (*Lyc. Lex.*² 20). IE **k*, however, resulted in a velar stop in all of the Anatolian languages, e.g. CLuv. *kīsā(i)-* "comb", Hitt. *kiss-, kīsā(i)-* id., $^{SÍG}$*kis(sa)ra-* "figure made of wool" : **kes-* in e.g. OCS *cestǫ, cestati* "comb", Gk. ξυρόν "razor" (*CLuv. Lex.* 104); CLuv. *kattawatnalli-* "plaintiff", Hitt. *kattawātar* "grounds for a quarrel", cf. **katu-* in OIr. *cath* "battle", Russ. *kotora* "quarrel" (Melchert, *KZ* 93 (1979) 268–71, *CLuv. Lex.* 103). The voiceless labiovelar stop **$k^w$* became Hitt., Pal. and CLuv. [$k^w$], HLuv. *ku/hw* and Lyc. *t*, e.g. CLuv. rel./int. pro. nom. sg. c. *kuis,* Hitt. *kuis, kuwāpi* "wherever" etc., Pal. *kui,* Lyc. *ti, tike* "whichever" < IE **$k^w$i-*, **$k^w$o-* in e.g. Skt. interrogative *kaḥ, kataraḥ* "which of two", *cid* "what", Gk. interrogative τίς, τί, πότερος "which of two", Lat. *quis, quod* etc., Goth. *ƕa, ƕaþar* etc.

In view of the Anatolian preservation of **$k^w$*, the Luvian development of **$\hat{k}$* should not be confused with the satem treatment of **$\hat{k}$* in e.g. Skt. *śatam,* Av. *satəm,* OCS *sŭto* < **$\hat{k}$m̥tom* "100". Hitt. *āssu-* in $^{LÚ}$*āssussani-* "stable master" is an Indic loanword via Hurrian (Puhvel *HED* 1, 222–3).

### 6.1.3. "thorn"

Kretschmer, *Glotta* 20 (1932) 60–7; Kronasser, *VLFH* 70; Mayrhofer, *Idg. Gr.* I/2, 150–8; Melchert, *AHP* 47, 64; Oettinger, *Stammbildung* 219; Petersen, *Language* 9 (1933) 23–4; Schindler, *Sprache* 23 (1977) 25–35.

An early IE sequence of dental stop plus velar or labiovelar /TK/ was retained in Anatolian and Tocharian but metathesized to /KT/ in the other IE languages, and this sequence, when tautosyllabic, was realized as velar plus a spirant, conventionally transcribed as þ; i.e. */KT#/ → *[Kþ#]. The sequence *[Kþ] is indicated by a correspondence of Skt. *kṣ* : Gk. κτ : Lat. *s*, which can continue neither **ks* nor **tk* (Mayrhofer, *Idg. Gr.*).

Petersen proposed a period of Anatolian-Tocharian unity because of the retention of *TK in these families, but retention can be understood as an archaism that suggests the independent splitting off of communities of Proto-Anatolian and Proto-Tocharian speakers before the metathesis and thorn rules had become established over the rest of IE speaking territory.

In the word for "bear" Hittite retains **tḱ* as [tk]: nom. sg. *har-ta-ga-as* (OH etc.), acc. sg. *har-tak-kan* (OH), *har-tag-ga-an* (NH) = [hartka-] < **h₂r̥tḱo-* or **h₂ertḱo-*, cf. **h₂r̥ḱþo-* in Ved. *ṛkṣa-*, Gk. ἄρκτος {1.10.2.1.}.

Mayrhofer derives the stem with **þ* from the full-grade of an ablauting paradigm: strong stem */h₂erṭḱo-/ → *[h₂arkþo-] (cf. e.g. OIr. *art*, W. *arth*) vs. weak stem */h₂r̥ṭḱo-/ (in e.g. Ved. *ṛkṣa-*, Lat. *ursus*). Presumably forms with zero-grade **h₂r̥-* and **þ* such as *ṛkṣa-* show analogical generalization of **kþ* from the original strong stem.

The oblique stem of the word for "earth" (in gen. *taknās*, dat. *taknī*, abl. *taknāz*) reflects PA **daǧ-m-* with secondary zero-grade for IE **dheǧh-* (e.g. in gen. **dhǧh-m-és*), cf. Toch. A *tkaṃ*, B. *keṃ* with **tk* preserved in Proto-Tocharian. CLuv. *tiyammi-* "earth" continues locative **dhǧhém* with **dhǧh* preserved, and Hitt. *gim(ma)ra-* "field", CLuv. *im(ma)ri-* id., and Lyc. *iprehe/i-* "of the open country" (*Lyc. Lex.*² 32) continue PA **ǧemmró-* from IE **ǧhem-*, probably from earlier **dhǧhm̥-* with reduction of the initial consonant cluster and analogical reintroduction of full-grade **e* (Schindler 32), cf. also Gk. χαμαί "on the ground", Lat. *homo* "man, human being", Goth. *guma* id., and Av. *zam-*. For **ǧhþ* from */dhǧh/ cf. Skt. loc. *kṣám* and Gk. nom. χθών.

*taks-* "undertake, unify, mingle" (from an original basic meaning "put together", cf. *taksul taks-* "conclude an agreement, peace treaty") looks like it should be related to Skt. *takṣan-* "carpenter" and Gk. τέκτων id. etc. < IE **tekþ-on-*. However, since **kT* should correspond to Anatolian **tk*, the Hittite verb and its derivatives are better derived from a parallel root **teks-*, as in Lat. *texere* "put together, weave", OPers. *ham taxša-* "put together", Gk. τέχνη "skill", OIr. *tál* "axe" (< **tokslo-*) and OHG *dehsala-* "axe" (Schindler 27, cf. Oettinger, *Stammbildung* 217–19 w. refs.).

For full references see Tischler, *HEG* 8, 40–3. ~~T~~here is no basis for Oettinger's assumption that *taks-* is directly from a full-grade **teks-*, since **e* is otherwise retained before obstruent clusters, and see Watkins, *MSS* 45 (1986) 253, who reconstructs an *o*-grade. For the anaptyxis in preconsonantal *tak-ki-is-* see {3.9.3.}.



## 6.2. IE to PA and Pre-Hittite

### 6.2.1. Initial voicing distinction

Crossland, *TPS* 1951 127; Eichner, *Lautgesch. u. Etym.* 136 n. 55; Ivanov, *Xettitskij Jazyk* 85, *Fs Kuryłowicz* 131; Jensen, *Act. Or.* 26 (1961) 138–9; Melchert, *AHP* 18–20; Pedersen, *MSS* 73, *Hitt.* 176; Rosenkranz, *Fs Friedrich* 417; Starke, *KZ* 100 (1987) 248 n. 21.

While the texts themselves give no direct evidence for voicing distinctions among initial stops, evidence from conditioned sound changes in Hittite and the Luvian languages shows that voicing remained distinctive in PA and into Proto-Luvian and Pre-Hittite. Evidence for the status of aspiration is limited. It is usually assumed that voiced aspirates and voiced stops merged in PA, although Crossland and Eichner suggest that a distinction was likely in PA. Lycian appears to have lost initial voicing distinctions, cf. e.g. *trisñni* (multiple of three) and *trppeme* "threefold" (*Lyc. Lex.*² 78, 79) < IE **tri-* "three", *tupm̃me* "twofold, pair" (ib. 81) < IE **du-* "two" and *tadi* "puts" (ib. 66) < IE **dheh₁-* "put". Starke cites the HLuv. PN *Aza-tiwara-* with *tiwara-* < **diwot-* "sun-god", which is transcribed *'z-twd* in Phoenician, as evidence of devoicing of initial **d*. There is, however, no concrete evidence for the status of initial voicing distinctions in Second Millennium Hittite. The evidence of CLuv. *papparkuwa-* "cleanse, purify" with °P-P° (*CLuv. Lex.* 165) : IE **bhr̥ǧ-* is equivocal. It might have been formed as **papargw-o-* with devoicing of an initial **bh*, but the double °P-P° can can perhaps continue PLuv. **b* after **é* (i.e. PLuv. **bébargw-o-* with *e*-reduplication), or even **ébhV*, if it was formed very early in PA before the merger of voiced aspirates and voiced stops as **b[h]é-b[h]r̥ǧ-* with *e*-reduplication {6.2.2.2.}. Melchert suggests that devoicing of initial stops spread as an areal feature among the Anatolian languages in the Post-PA period.

#### 6.2.1.1. Hittite treatment of dental plus **i/y*

Eichner claims that the Hittite treatment of **d* plus **i* or **y* provides evidence for a distinction between voiced stops and voiced aspirates into Pre-Hittite (cf. also Pedersen). IE **dy* became [sy] or [s] in *sīus, siun-* "(sun)god" (IE **d(i)yḗus* or **d(i)yḗus*), and **di* became [si] or [s] in *sīwatt-* "day" < **díwot-* {4.8.3.,6.7.3.}. Inherited **dhi-* did not assibilate in *tittiskezzi* "suckles" (OH+) and *titissalli-* "suckling" (U) from a reduplicated **tit(t)iya-* "suckle", it. **titissa-* from **dhi-dhh₁i-* : IE **dheh₁i-* "suck, suckle" {6.7.4.} (cf. also Ivanov). It is possible, however, that lack of assibilation is analogical, cf. Hitt. *tītha-* "thunder" < **títh₂o-* with lack of assibilation of **ti* in a reduplicating syllable. There are no clear examples of assibilation of inherited initial **ti* or **ty*, but the second person singular pronoun *zīk* < **tu̯íǵ* < **tu̯ú(g)* < **tú(g)* via palatalization {6.7.2.3.} suggests that inherited **ty-* would have undergone assibilation and that initial voiceless **t* was perhaps distinguished from voiced **d* and the voiced aspirate **dh*. Jensen's suggestion that voicing distinctions were neutralized in PA and that the apparent development of **di/y* to *s(i)* but of **ti* to *z* instead reflects a Hittite change of initial **ti* (< IE **di*) to *si* but of non-initial **ti* to *z* is difficult to refute, since there are no unambiguous examples of initial **ti*, but in view of the evidence from Luvian for voicing distinctions among palatalized velars and labiovelars voicing distinctions among dental stops in PA are likely.

### 6.2.1.2. Luvian treatment of palatalized velars

IE palatalized **k̂* was assibilated in Proto-Luvian and shows up as CLuv. *z*, HLuv. *z* and Lyc. *s* (e.g. CLuv. *ziyar, ziyari* "lies", Lyc. *siyeni* id. : IE **k̂ei-*: Melchert, *HS* 102, *AHP* 251–2). The voiced aspirate **ĝh*, however, did not assibilate but became a palatal glide **γ* before front vowels (e.g. CLuv. *is(sa)ri-* "hand", HLuv. *istri-* id., *izre/i-* id. < IE **ĝhes-r-* with **γi > i*), and **ĝh* remained as a velar stop before non-front vowels in CLuv. *katmarsi-* "defecate" : IE **ĝhod-mr̥* (see Kimball, *IF* 99 (1994) 79–89). The lack of assibilation of the aspirate shows that the voiceless stop and the aspirate were distinguished into Proto-Luvian The lack of clear examples of initial **ĝ*, however, makes it unclear whether the distinction was one of aspiration and voice or whether voiced **ĝ* and the voiced aspirate **ĝh* had merged.

### 6.2.1.3. Luvian treatment of labiovelars

Differing Luvian outcomes of IE **k*$^{w}$, which became CLuv. *ku* = [k$^{w}$], HLuv. *kw* (*hw*?), and Lyc. *t* (e.g. rel./int. pro. CLuv. *kuis,* indef. *kuisha,* HLuv. *kuman* "while", Lyc. rel. pro. *ti,* indef. *tike* < IE interog. **k*$^{w}$*i-*) and **g*$^{w}$, which became PLuv. **w-* (e.g. HLuv. *uwa/i-* "cow, ox", Lyc. *uwa-/wawa-* id., CLuv. **wāwi-*(?) id. (*CLuv. Lex.* 268) < IE **g*$^{w}$*ou-*, or CLuv. *wana-, wanatti-* "woman", HLuv. FEMINA-*nati* id. < IE **g*$^{w}$*en(eh₂)-*, cf. Starke, *KZ* 94 (1980) 74–86, Melchert, *CLuv. Lex.* 254, 255), provide clear evidence for a PA and Proto-Luvian voicing distinction. Evidence from Cuneiform Luvian supports a merger of **g*$^{w}$ and **g*$^{w}$*h*, cf. *"winal* "stick, staff, pole" < **g*$^{w}$*hēn-* : IE **g*$^{w}$*hen-* "strike, kill" (Starke, StBoT 31, 313–16; the lengthened-grade is necessary to explain the front vowel, pace Melchert, *CLuv. Lex.* 269).

### 6.2.1.4. Evidence from reduplication

Jucquois (116–129) examines words with reduplication collected from Friedrich, *HW* and the *Ergänzungshefte,* and finds that the root-initial consonant (both in forms with root in initial stop and in forms with root in initial continuant) is virtually always spelled consistently with single or double consonant. The two exceptions he finds, (*pa-par-as* for *pa-ap-par-as-* "sprinkle" and *kugulla-* for *kug-gulla-,* name of a vessel) are surely defective spellings. He concludes (120) that the consistency of spellings points to the maintenance of initial voicing distinctions, i.e. that reduplicated forms made from roots beginng in voiceless stops show doubling, but those made from roots beginning in voiced stop or voiced aspirate do not.

A few reduplicated forms that appear to show a single stop for the reflex of a voiceless stop may have consonant clusters (e.g. it. 3 sg. midd. pres. *pa-ri-pa-re-es-kat-ta-ri* KBo XXII 101 L. 9 (NH), perhaps [paripriskatari] : *parāi-* "breathe, blow" = [prāi-] < **proh₁i-* (cf. Oettinger, *Stammbildung* 468). Melchert (*AHP* 19), reversing his position on several etymologies, claims that gemination of the root-initial stop in several verbs derived from roots in initial voiced stop or voiced aspirate (*tittanu-* "establish" : **dheh₁-* "put, place", *titti-* "suckle" : **dheh₁(i)-*, and perhaps *kikkis-* "become" : **geis-* and *dudduwarant-* "lame" : **dheu-* or **dhwer-*) suggests that the verbs were formed in pre-Hittite after devoicing of initial stops. See, however, {6.11.4.}.



## 6.2.2. Sturtevant's Law, Čop's Law

Čop, *Linguistica* 5 (1964) 21–46, *IF* 75 (1970) 85–6; Deroy, *Recherches Ling. en Belg.* 23–32; Ivanov, *Xettitskij Jazyk* 63–4; Jucquois, *Hethitica* 1 (1972) 59–128; Kammenhuber, *BSL* 54 (1950) 28–9; Melchert, *AHP* 16–8, 62–3, 252–3; Rosenkranz, *Akt. d. 24. Int. Or. Kongr.* 161–2, *Vgl. Unters.* 30–1, 40–1, *Beitr. z. Luv.* 35–7; Sturtevant, *JAOS* 52 (1932) 1–2, *CGr*$^{1}$ 73–84, *CGr*$^{2}$ 26–8.

Sturtevant's student, C. L. Mudge, originally noticed a correlation between single and double writing of °P° and IE **p*, but Sturtevant developed this idea, claiming that double dental and velar stops as well as labial stops could be correlated with IE voiceless stops, while stops regularly written single could in general be derived from voiced stops or voiced aspirates. Despite the skepticism of, e.g., Friedrich and Kronasser, and despite lack of agreement on the phonetic basis of single and double writing, the principle that double stops are reflexes of IE voiceless stops and single stops reflexes of voiced stops and voiced aspirates has been widely accepted. Statistical and etymological studies such as those of Čop (Linguistica 5) and Jucquois have supported it, and the work of Eichner, Oettinger, Morpurgo Davies, and Catsanicos on PA voicing {6.2.3.} has explained a number of apparent exceptions in which the reflex of an IE voiceless stop appears as a single, or voiced, stop. Other apparent exceptions with double stops as the reflex of an IE voiced stop or voiced aspirate continue stop plus laryngeal, e.g. *mekki-* "numerous" : Skt. *mahí,* Gk. μέγα < **mégh₂-i-* {10.7.1.}, *huēttiya-* "lead, draw" : Skt. *vadhū-* "bride" (*"one who is led"), Lith. *vèžti* "to lead" < **h₂wédh₂-*, second person plural middle ending *-dduma* < **-dh₂uwe-* {10.7.1.}.

### 6.2.2.1. Cuneiform Luvian and Palaic

It is unlikely that the distributional facts and etymological conclusions established for Hittite may be accepted for Cuneiform Luvian and Palaic without question, and Kammenhuber, *BSL* 54 (1950) 28–9, writing on Palaic, is right to stress that each language had its own system (see also Rosenkranz, *Beitr. z. Luv.* on Cuneiform Luvian). The question that needs to be considered is whether differences among the three languages reflect different scribal traditions or whether they reflect divergent phonological development. For Cuneiform Luvian, the latter is at least partially the case.

### 6.2.2.2. Čop's Law

Čop (*IF* 75) suggested that the regular reflex of a voiced aspirate following **é* in Cuneiform Luvian is a doubled stop, citing CLuv. *tappassa-* "heaven" < *IE *nébhes-* beside Hitt. *nēpis* id. with single labial stop. Although the other example Čop cited in his article, CLuv. *tiyammi-* "earth", HLuv. *takami* (dat.) id. < IE **dhéĝhōm* does not work, a clear example of **édhV* can be found in *maddu* "wine" < IE **médhu* : Skt. *mádhu* (adj.) "sweet" and Gk. μέθυ "wine" (*CLuv. Lex.* 144).

It is now also clear that IE **d* underwent a Čop's Law treatment, becoming a sound written with doubled stop after **é* in *āddwa-* (adj.) "evil" < **édwo-*, *āddu̯āl* (noun and adj.) "evil" < **édwōl* (*CLuv. Lex.* 41–2) and perhaps in CLuv. *paddaliya-* "carry off" (vel. sim.), if, as Melchert (*CLuv. Lex.* 174) suggests, this word is ulti-

mately related to Hitt. *pēda-* "take away" < **pé-deh₃-* {2.9.1.3.}. A Čop's Law treatment of **édV* may also perhaps be found in several words having to do with springs or water, the clearest of which is *wattant(i)-* "having a spring as source" (*CLuv. Lex.* 267), which could continue **wed-ént-* "having water", derived from the root noun **wed-* also seen in Hitt. "*widas* "water". Although the suffix would have been accented in the derivative, the root *watt-* < **wéd-V-* could be analogical from the root noun, which might be preserved in *wa-at-ti* "in water" (??) < loc. **wéd-i* (*CLuv. Lex.* 268). The word *wattaru-* "spring", which shows up in Hittite texts from OH on, may be a prehistoric and thoroughly nativized borrowing from a Luvian **wattar* from the collective **wédōr* "waters" (cf. Hitt. coll. *witār* < Pre-Hitt. **wedṓr* with analogical suffix accent).

See, however, Weitenberg, *u*-Stämme 194–6, for an alternative explanation. OH gen. sg. *wa-at-ru-as* StBoT 25, 109 II 3 (= *wa-at-ta-ru-as* in dupl. 111 II 11) would either show syncope or be a defective spelling for *wa-at-<ta>-ru*. CLuv. *wida-* "wet" (dat.-loc. pl. *ú-i-da-an-za*) would be a vṛddhi derivative **wēdó-* with **ē* > PLuv. **i* (cf. Watkins, *Fl. u. Wb.* 376, Melchert, *CLuv. Lex.* 270). CLuv. *papparkuwa-* "cleanse, purify" (IE **bhṛĝ-*) can continue PLuv. **papargw-o-*, **bébargw-o-*, or conceivably PA **b[h]é-b[h]ṛĝ-* {6.2.1.}.

Unfortunately, the phonetic details remain obscure. It seems likely, however, that the doubling of reflexes of voiced and voiced aspirated stops after **ĕ́* is part of the development that produced double liquids and nasals after **ĕ́*, e.g. CLuv. *parran* "in front of" : Hitt. *pēran* id. < **pérom*, CLuv. *malli* "honey" : Hitt. *milit* id. < **mélit*, CLuv. $^{\text{NINDA}}$*tannas* "pretzel" (< *"thin bread") < **téne/os* (Starke, *StBoT* 31, 107, Melchert, *CLuv. Lex.* 204). Like the nasals and liquids, reflexes of voiced stops were not doubled after **o* (cf. *nātatta-* "reed" : Hitt. *nāta-* id. < **nódo-* and *pāta-* "foot" < **pódo-* or **pṓdo-* : Hitt. *patā-* < **podó-* {6.4.2.2.}. Evidence from Hieroglyphic Luvian and Lycian is of little help, though it is worth noting that one possible example of **édV* in Lycian, *pddãt-* "place" < **pedant-* and derivatives (*Lyc. Lex.*$^2$ 51–2), if from a base **pédo-* as in Hitt. *pēdan* "place" {2.4.3., 6.4.2.2.}, shows geminate *dd* (cf. Lyc. *pede-* "cavalry" from the word for "foot", **pod(o-)* or **pōd(o)-* (accent unclear)).

### 6.2.3. PA voicing

Catsanicos, *BSL* 81 (1986) 159–61; Čop, *Linguistica* 5 (1964) 33; Eichner, *MSS* 31 (1973) 78–83 100 n. 88, *Lautgesch. u. Etym.* 146 n. 69, *KZ* 99 (1986) 206–7 n. 10, 209–10 n. 14; Hart, *TPS* 1983, 132; Morpurgo Davies, *KZ* 96 (1982/3) 254–70; Melchert, *AHP* 16–7, 60–1; Oettinger, *Stammbildung* 46, 403, 449–50, *KZ* 92 (1978) 84–5; *Rosenkranz, Beitr. Luv.* 35–7, *Fs Friedrich* 417–19, *Akt. d. 24. Int. Or. Kong.* 161–2; Starke, *StBoT* 31 97–9, 567, 572.

Rosenkranz and Čop first suggested that some apparent exceptions to Sturtevant's Law in Hittite might result from sound changes that voiced originally voicless stops. Rosenkranz likened the effects of this putative sound change to those of Verner's Law in Germanic in that it left paradigmatic alternations between voiced and voiceless stops. Čop suggested that voiceless stops were voiced after unaccented vowels and in enclitics. But it was Eichner and Morpurgo Davies who first examined alternations between voiced and voiceless stops in the Anatolian languages systematically and described the conditions under which voiceless stops were voiced in PA. Catsanicos presents additional evidence from Hittite.



According to Eichner, voiceless (fortis) stops were voiced, or lenited, after accented long vowels and in unaccented syllables. Because inherited long vowels, monophthongized diphthongs, and long vowels from vowel plus laryngeal were shortened when unaccented before the lenition rule took effect, the lenition, or voicing, rule affected only voiceless stops after inherited accented long vowels, after accented long vowels from accented diphthongs, after accented reflexes of vowel plus laryngeal, and in unaccented syllables (*KZ* 99).

The evidence for PA voicing is in general best preserved in the Luvian languages, since Hittite seems to have leveled out many expected paradigmatic alternations between voiced and voiceless stops in favor of the variant with voiceless stop (cf. Oettinger, *KZ* 92). Evidence from Lycian is especially helpful, since it is written in a version of the Greek alphabet. Morpurgo Davies established that the Hieroglyphic Luvian correspondants of voiced dental stops in the other Anatolian languages are sometimes rhotacized to *r*; this in turn suggests that the correspondence HLuv. *r* : IE **t* points to a voiceless dental stop that has undergone PA voicing.

Oettinger (*Stammbildung* 46, 403, 449–50) and following him Starke (*StBoT* 31, 97–9, 567, 572) order PA voicing after a rule lengthening accented vowels in initial open syllables in disyllabic words, e.g. PA **nébhes* "heaven" > **nēbes* > Hitt. [nḗbis] and HLuv. *tipas* beside oblique stem **nébhes-V-* > **nĕ́bes-V* in the Hittite oblique stem (e.g. gen. [nĕ́bisas]) and generalized in CLuv. *tappassa-* (for the Luvian words see Starke 97–9). This implies that voiceless stops should have been voiced after short accented vowels in dissylabic words. Lengthening, however, affected vowels in closed syllables, in non-initial syllables, and in words longer than two syllables {2.3.2.1. }. Lengthening also appears to have been Hittite only, and there is clear evidence that voiceless stops remained voiceless after short accented vowels in disyllabic and other words, e.g. *ú-e-ek-kan-zi* KUB XXVII 66 II 15, 16 (NH) "they ask for" = [wēkanʦi] < **wéḰ-n̥ti* {6.4.1.3.}; dat.-loc. sg. *ú-i-it-ti* "year" (OH) = [wīt-] ([wēt-] < IE **wét-* {6.4.1.2.}; *a-ap-pa, a-ap-pa-an* "after, following" = [āpa], [āpan] < **h₁óp-ō*, **h₁óp-om* {6.4.1.1.}; *ha-a-ap-par* "price, business deal" (OH) = [hāpar] < IE sg. **h₃ép-r̥* {6.4.1.1.}; *hāpperiya-* "city, settled place" (< *"marketplace"), dat. sg. *ha-a-ap-pe-ri* (NH) = [hāperi] < PA **h₃óp-ēr* {6.4.1.1.} (Melchert; see also Eichner, *KZ* 99 207–8 n. 11).

Reflexes of voiceless stops remained voiceless when they preceded an accented vowel, e.g. *ma-li-id-du, mi-li-id-du* "sweet" = [mlitū] (or [mlitu] with analogical *-ŭ*) < **mlit-ú-* or *ak-ka-a-la-an* "furrow" < **ak-ó-lo-* : Gk. ὀξίνη "harrow", Late Lat. *occa* id. PA voicing apparently did not affect postconsonantal voiceless stops. In Lycian, the dental in third person plural presents, preterits and imperatives (PLuv. **-(V)nti, *-(V)nta, *-(V)ntu*) is voiceless whether or not the singular endings are voiced (e.g. 3 pl. pres. *tãti* "they put", pret. *tãtẽ*, imp. *tãtu* beside 3 sg. pres. *tadi*, pret. *tade* < PA **dắnti, *dắdi* etc.); for evidence from Hittite note 3 sg. imp. *sa-me-ed-du* = [smētu] : *samen-* "disappear, pass in review" for *sa-me-en-du* with nasal loss {7.4.3.1.}.

The Luvian languages and Palaic do not preserve good examples of PA voicing after inherited long vowels, but since Hittite does, the lack of clear examples from Luvian and Palaic is surely accidental. Clear evidence for PA voicing after a monophtongized diphthong is found in the Palaic third person singular present middle *ki-i-ta-ar, ki-i-tar* "lies" (*StBoT* 5, 213 w. refs.) < PA **kíd̆o(ri)* < IE acrostatic **kêito* : Ved. *śéte* "lies", Gk.κεῖται id. (Eichner, *MSS* 31 (1973) 80) and in CLuv. 3 sg. pres. *iti,* pret. *ita,* imp. *idu* : *i-* "go", HLuv. *iri* "goes" < PLuv. **ĕdi* or **ĭdi* etc. < **h₁éi-ti* etc. The original position of the accent in the compound *awi-* "come" is unclear, and CLuv. *a-ú-i-ti* "comes", HLuv. *awiri* id. may continue PA **ou-h₁éi-ti* (> PLuv. **awēdi* or **awīdi*) or PA **ów-(h₁)ei-ti* (> PLuv. **awĭdi*) with voicing in unaccented syllable (Morpurgo Davies 261). A PLuv. **tūb-* from IE **(s)teup-* "strike" is preserved in CLuv. *dupā(i)-* "strike" (*CLuv. Lex.* 235) and HLuv. *tupa/i-* id., Lyc. *tubei-* id.

Words showing PA voicing after reflexes of accented vowel plus laryngeal make it clear that loss of preconsonantal laryngeals caused compensatory lengthening of a preceding vowel, e.g. Lyc. 3 sg. pres. *tadi,* pret. *tade* : *ta-* "put, place" < PA **dă̆di* etc. : IE **dhéh₁-* "put, make" (Morpurgo Davies, *Gds Cowgill* 224–8.); similarly, Lyc. 3 sg. pres. *hadi* "releases, lets go", pret. *hadẽ,* imp. *hadu* < PA **să̆di* etc. : IE **seh₁-* "release, sow seed" (Melchert, *HS* 102 (1989) 32–41, cf. *Lyc. Lex.*² 25); CLuv. 3 sg. pret. *ma-na-a-ta,* imp. *ma-na-a-du* : *manā-* "look at, see, experience" (*CLuv. Lex.* 135) = [manāda], [manādu], HLuv. 3 sg. pres. LITUS-*na-ri* + *i*, with rhotacism < PLuv. **m(a)nă̆di, *m(a)nă̆da, *m(a)nă̆du* < **mnă̆-ti, *mnă̆-ta, *mnă̆-tu*, with root **m(a)nă̆-* < **mneh₂-* : Dor. μνᾶμα (Morpurgo Davies, *KZ* 96 (1982/3) 261).

The etymology of *manāta* is that of Starke, *Kadmos* 19 (1980) 142–8.

PA voicing also occurred in the PLuv. ablative-instrumental suffix **-ă̆di* < **-ă̆ti* : CLuv. *-Ca-(a)-ti* (e.g. *is-sa-ra-a-ti* : *īssari-* "hand"); HLuv. *-Ca-ri* + *i*, *-Ca-* + *ra/i*; Lyc. *-edi* (*-adi*) (e.g. *esbedi* : *esbe* "horse"). Although the IE source of the Anatolian ablative is not entirely clear, the Hittite endings, *-az* = [-atṣ] and *-za* = [-tṣ], point to **-ti*, since **dhi* and non-initial **di* did not undergo assibilation in Hittite {6.7.2.2.}. Luvian generalized an allomorph with **-di*, which would have been the regular reflex with PA voicing either of *ā*-stem **-ă̆-di* < **-áh₂-ti* or of **-o-ti* in root accented forms. The former possibility seems more likely, given the frequency of plene writing in Cuneiform Luvian forms.

PA **-ē-ti*, as reconstructed by Eichner, *MSS* 31 (1973) 81, would have become **-idi*. For the PA abstract suffix **-ātər* see {6.4.4.3.}.

Luvian words with PA voicing in unaccented syllables include the word for "honey" and derivatives: CLuv. inst. sg. *ma-al-li-(i)-ta-a-ti,* nom. pl. *ma-al-li-ta-al-li-in-zi* "honey jar", "*ma-al-li-ti-wa-al-la-as* "honey-coated" (ib. 133), *ma-al-li-ti-in-zi* "honied" (*CLuv. Lex.* 132–3), HLuv. (PANIS)*ma-li-ri* + *-i-mi-sa* "honied, sweet" < PLuv. **mallid-*. See Eichner (*MSS* 31, 100 n. 88, *Lautgesch. u. Etym.*) and Morpurgo Davies (262) on the PA voicing. A few verbs may also show PA voicing in an unaccented syllable, e.g. HLuv. 3 sg. pres. AEDIFICARE-*ri* + *i* = **tamari* (with rhotacism) < **dámadi*, 3 sg. pret. *ta-ma-ta* (with *ta* = [da]) : *tama-* "build" < **démh₁-ti* or thematic **démh₁-e-ti* : **demh₁-* in e.g. Gk. δέμω (cf. Morpurgo Davies 261–2 w. n. 40) or reduplicated forms of the verb meaning "give", CLuv. *pipissa-* (*CLuv. Lex.* 177), Lyc. *pibe-* < **pi-pai-V.*



## 6.3. Initial stops

### 6.3.1. Labials

Reflexes of initial labial stops are normally spelled P° {1.9.2.1.}.

#### 6.3.1.1. **p*

IE **p* remained: e.g. *palhi-* "wide" < **pl̥h₂-* {5.3.2.}; *pās-* "take a swallow", UZU*pap-pa(s)sāla-* "esophagus" < **peh₃s-* {10.5.3.}; *pāhhur* "fire" < **péh₂wr̥* {2.9.1.2.,10.4.2.1.}; *pēda-* "place, location" < **péd-o-* {2.4.3.,6.4.2.2.}; *padā-* "foot" < **podó-* {6.4.2.2.}.

#### 6.3.1.2. **b*

IE **b* remained as a labial stop in ***palsa-* "way, time" < **bel-so-* or **bl̥so-*** : IE ***bel-*** "split, cut out, excavate" {11.6.2.}.

#### 6.3.1.3. **bh*

IE **bh* remained as a labial stop: e.g. *parku-* "high", *parkiya-* "ascend" : ***bhr̥ĝhu-*, *bherĝh-*** "high" {5.3.1., 6.6.3.}; *parkuī-* "clean, pure" : ***bherĝ(H)-*** "bright" {2.9.3.2.}; *panku-, pānku-* "all", noun "majority, assembly": < ***bhn̥ĝh-(ú)-*, *bhónĝh-(u)-*** {5.3.1.}.

### 6.3.2. Dentals

For spellings see 1.9.3.

#### 6.3.2.1. **t*

IE **t* remained: e.g. *twēkk(a)-, tukk-* "body, self" and *tukkā-* "be visible, important of consequence" < **twek-* : **tuk-*, **tuk-ó-* {2.4.3.}; *terepp-* "plow", *tereppi-* "plowed field" < **trep-* {6.4.1.1.}; *tuskaratt-* "joy" < **tus-sḱ-* {11.6.4.}; *tarh-, tarhu-* "overcome, prevail over"< **terh₂-*, **tr̥h₂-u-* : IE **terh₂-* "cross over" {2.8.4.1.}; *tarna-* "let, let loose" < **tr̥-n-h₂-* from the same root {5.3.1.}; *takku* "if"< **to-kʷe* {3.8.2., 6.9.1.}.

#### 6.3.2.2. **d*

IE **d* remained as a dental stop: e.g. *tekkussiya-* : "point out, show" < **dekʷs-* {6.5.1.}; *dā-* "take" (3 sg. pres. *da-a-i,* 1 pl. pres. *tu-me-e-ni* (OH etc.), *du-u-me-e-ni* (MH), 3 pl. *da-an-zi*) < **deh₃-*, **dh₃-* {2.9.1.3.,10.6.1.3., 10.6.1.3., 10.9.2.2.}; *dākk-, takk-* "resemble, correspond to" < **dok̂-* {2.4.1.}; *dān, tān* "second(ly)" < **dwoyóm* {9.3.1.1., 9.5.2.1.}, *tuwān ... tuwān* (OH, OH+), *duwān ...duwān* (MH, OH+) "here ... there" < **dwám* {2.5.2.}; *tāru-* "tree" < **dóru-* {2.4.1}; *dāssu-* "strong" < **dónsu-* {7.8.2.}.

#### 6.3.2.3. **dh*

IE **dh* remained as a dental stop: e.g. *tē-* "speak, say" < **dheh₁-* "put" (i.e. *"put into words) {2.9.1.1.} and *tēhhi, dāi, tiya-* "put(s)" < **dhoh₁-y-*, **dhh₁y-* {4.9.1., 10.5.5.}; *tēpu-* "small" < **dhébh-u-* {6.4.3.1.}; *tuhhui-, tuhhuwāi-* "smoke" < **dhuh₂-* {10.4.2.1.}; *tēkan* "earth" < IE nom. sg. *dhéĝh-ōm* {6.4.3.3.}.

### 6.3.3. Velars

No graphic distinction is made between reflexes of IE palatalized velars (*$\hat{k}$, *$\hat{g}$, *$\hat{g}h$) and plain velars (*$k$, *$g$, *$gh$). For spellings see see 1.9.4.1., 1.9.4.2., and 1.9.4.3. Since Proto-Luvian differentiated *$\hat{k}$ > *$z$ and *$k$ > *$k$ {6.1.2.}, the distinction between plain and palatalized was lost only in Pre-Hittite.

#### 6.3.3.1. *$k$, *$\hat{k}$

Reflexes of IE *$k$ occur in: e.g. *kiss-, kisā(i)-* "comb" < **kes-, *kēsāye/o-* {11.4.1.1., 11.4.2.}; *kalles-* "call upon" : **kalh$_1$-* {10.8.1.}; and *gagā-* "tooth" < **kogó-* {6.4.2.3.}; IE *$\hat{k}$ occurs in: dem. pro. *kā-, kī-, kē-* < *$\hat{k}o$-, *$\hat{k}(e)i$-, *$\hat{k}oi$-* {6.1.2.}; *ker, kard(iya-)* "heart" < *$\hat{k}$ér, *$\hat{k}$r̥d-, *$\hat{k}$érd-* {5.3.1.}; *ki-* "lie" < *$\hat{k}$ei-* {4.3.1.1.}; and *kānk- (gānk/g-), kank-* "hang" < *$\hat{k}$onk- : *$\hat{k}$n̥k-* {2.4.1., 5.3.4.}.

#### 6.3.3.2. *$g$, *$\hat{g}$

IE *$g$ is found in *galank-* "appease", *galaktar,* "appeasement" < *$g$l̥-n-$\hat{g}$-, cf. *gleĝ-* in Lith. *glẽžnas* "soft, weak", Bulg. *glézŭ* "excuse, soften", and **glenĝ-* in ON *kløkkr* "soft, pliable". {5.3.2.}. IE *$\hat{g}$ remained as a velar stop in e.g. *gēnu-* "knee" < **ĝén-u-* {7.3.1.1.}; *ganess-* "recognize" < **ĝnēh$_3$-s-* {10.5.3.}; *karaitt-, karitt-* "flood" (nom. sg. *ka-ra-i-iz,* OH, *ge-re-e-ez-za,* OH+, nom. pl. *ka-ri-it-ti-is,* OH+, *ga-ri-it-te-es,* OH+) < **ĝrőit-s, *ĝri-t-* {4.8.2.}.

#### 6.3.3.3. *$\hat{g}h$

IE *$\hat{g}h$ shows up as a velar stop in *kissar, kis(sa)r-* "hand" < **ĝhes-ōr, *ĝhes-ér-, *ĝhes-r-* {11.5.2.1.}; *kammars-* "defecate", denominative from a **ĝhód-mr̥* "excrement" (also in Toch. B *kenmer*) : **ĝhed-* in Skt. *hadati,* Gk. χέζω {6.10.1.2}; *gem-, giman-, gimmant-* "winter" : **ĝheim-*, loc. **ĝhyém(i)* < **ĝhéimn̥* or **ĝhéimōn*, and **ĝhimn-ónt-* {4.3.1.1., 7.3.1.2., 7.3.2., 7.3.3.2.}; and *kīnu-* "open a vessel" < **ĝhih$_1$-n(e)u-* {10.1.2.}. There are no certain examples of IE initial *$gh$.

### 6.3.4. Labiovelars

#### 6.3.4.1. *$k^w$

IE *$k^w$ remained and is usually spelled with KU.

Relative-interrogative pronoun: nom. sg. c. *ku-is,* acc. *ku-in,* neut. *ku-it* etc. = [k$^w$ī-], *ku-wa-* in indefinite adverb *ku-wa-a-pi* "wherever" = [k$^w$ābi] < IE **$k^w$i-, *$k^w$óbi* : Skt. *cid* "what", int. pro. *kas,* Gk. interrog. τίς, τί, πότερος "which of two", Lat. *quis, quid, quod,* Goth. *ƕa, ƕaþar* etc.

*kuēr-* "cut": e.g. 3 sg. pres. *ku-e-er-zi* KBo III 16 + Vs 7 (OH+, also NH), *ku-er-zi* KBo XIX 128 II 18, 21 etc. (OH+, also NH), 3 pl. *ku-ra-an-zi* e.g. KBo XI 14 I 13 (OH+, also NH), 3 sg. pret. *ku-e-er-ta* KBo III 16 + Vs 13, 3 pl. *ku-e-re-er* KUB XXXIII 106 III 42 (NH), 3 pl. imp. *ku-ra-an-du* KUB XIV 3 IV 49 (NH), inf. *ku-ra-a-an-na* e.g. KUB XXXII 84 I 12 (U); the participle occurs in $^{DUG}$*kattakurant/d-*, a vessel, perhaps incised on the bottom (e.g. acc. sg. $^{DUG}$*kat-ta-ku-ra-an-da-an* KUB XI 35 II 26, OH+) = [k$^w$ēr-], [k$^w$ērtṣi], [k$^w$rantṣi], [k$^w$rānna], [k$^w$rānt-] etc. < **$k^w$er-, *$k^w$r-*, cf. Skt. *kr̥ṇoti* "makes", OIr. *cruth* "shape, form" (< **$k^w$r̥tu-*). The labiovelar is guaranteed by the CLuv. cognates *kuwar-, kur-* "cut" (*CLuv. Lex.* 116 w. refs.) and **kūri-, kurai-* "cut into slices" (ib. 114 w. refs.).

#### 6.3.4.2. *$g^w$

It is likely that IE initial *$g^w$ remained as a labiovelar except before syllabic resonants. One possible example is *kwelwana-* "basin"(?) (hap. leg. gen. sg. *ku-e-lu-wa-na-as* KUB IX 1 III 21 (MH+)) from **gwel-* "drip, drop" in e.g. Skt. *galati* "drips out", OHG *quellen* "gush", NHG *Quelle* etc. The meaning of the word, however, is uncertain (Tischler, *HEG* 4, 604 w. refs.).

Neu, *HS* 103 (1990) 208–17, identifies the Hittite word for "woman" in *ku-in-na-[as]-sa-an* = (*kuinnan-san*) "his wife" with accusative singular possessive pronoun *-ssan* in KUB XII 60 I 24 (MH+), suggesting that this form, an accusative singular, represents either [gwenna-] (i.e. [g$^w$ennă-] from an *-eh$_2$*-stem **$g^w$en-eh$_2$-* or the weak stem **$g^w$n̥n-éh$_2$* (with analogical full-grade vowel **e*) of an *n*-stem root noun, which became a Hittite animate *n*-stem (cf. nom. sg. SAL*-an-za* KUB XXX 29 L. 1 (U), SAL*-za* e.g. KBo VI 2 I 7 (OH) = VI 3 I 14 (MH), acc. sg. SAL*-na-an* e.g. KBo VI 2 II 3, 6 (OH), gen. SAL*-na-as* KBo VI 26 IV 7 (OH+)). Güterbock, however, *HS* 105 (1992) 1–3, disputes Neu's interpretation, reading *kuinna-san* with *kuinnan,* animate accusative singular of the indefinite pronoun *kuissa* plus possessive pronoun *-ssan.* Unfortunately, arguments for either reading rest on incomplete data, as each scholar acknowledges. Note, especially Güterbock's observation that the word for "woman" in its ideographic spelling SAL (= MUNUS) does not occur with possessive pronouns in the meaning "wife."

Carruba, *HS* 106 (1993) 262–71, accepts Neu's identification of *kuinna* as a Hittite descendant of the IE word for "woman", but reads it as a genitive plural in *-an,* a reading that is quite plausible if PA-A[ (ib. II 24) can be read as gen. pl. GURUŠ "(young) men". Carruba also sees reflexes of the IE word for "woman" in DINGER$^{MEŠ}$ *kuwanses* "female deities" beside DINGER.LÚ$^{MEŠ}$ "male deities" in KUB XLIII 30 III 37–38, D(INGIR) *kuwansaya* in KUB II 13 II 54 (also "female deities") and in the $^{D}$*kuwassas*, who appears in various ritual texts (e.g. StBoT 25, 104 Vs? II 12, StBoT 25, 134 Rs? III 15). These identifications look promising, but there are morphological and phonological uncertainties. Carruba derives the stems *kuwansa(ya)-* and *kuwassa-* from an original genitive **$g^w$(u)én-s*, rethematized with **-o-* or from **$g^w$én-* plus suffix **-so-*. Phonologically *kuwassa-* could be [g$^w$āssa-], which would be the regular descendant of an earlier **$g^w$én-s-o-; kuwansa(ya)-,* however, would have to have been analogically remodeled after a stem **kuwan-* = *[g$^w$an-] < **$g^w$én-*, also in e.g. CLuv. *wana-* "woman" and perhaps in Hitt. gen. SAL*-na-as* after the change of secondary **ns* to *nz* had ceased being productive (cf. perhaps *uwansik-*, ultimately from **wen-sk-* for ***wask-* {3.2.2.2., 7.8.1.} for a comparable example). The geminate nasal of *kuinna* cannot, as both Neu and Carruba assume, directly continue **énV*, since this should have become [ēnV] {7.3.1.1.}; similarly, CLuv. *wana-* cannot continue **$g^w$én-V-*, since this should have become ***wanna-* with geminate [nn] by Čop's Law. If Carruba's interpretation of *kuinnan* is correct, however, the Hittite and Luvian words may perhaps continue a derivative **$g^w$en-éh$_2$-*, perhaps formed independently within PA (for geminiation of **n* before accented vowels see 7.3.3.1.}.

Carruba's connection of $^{LÚ}$*kūsa-* as "man related (to someone) through a woman" and derivation from **kuwansa-* with a dialectal treatment is less likely. Syncope of [wa] to [u] is late and irregular, while the divergence in meaning presupposes an early reduction of *wa*. The treatment **ns* > [ss] is also early, while the formation of **kwansa-* must have followed it.

A possible example of **g$^w$* before **r̥* is *kurta-, gurta-* "citadel, acropolis" (*ku-ur-ta-, gur-ta-*, NH), perhaps [gurtā-] from **g$^w$r̥tó-* "high" : Skt. *girih̥* "mountain", Av. *gairiš* id., OCS *gora* id., Alb. *gur* "cliff" {5.4.2.}.

#### 6.3.4.3. **g$^w$h*

**g$^w$h* remained a labiovelar stop.

Initial **g$^w$h* is found in *kuēn-* "strike, kill": 1 sg. pres. *ku-e-mi* (MH), 2 sg. *ku-e-si* (MH), 3 sg. *ku-(e)-en-zi* (OH etc.), 3 pl. pres. *ku-na-an-zi* (OH etc.), 3 sg. pret. *ku-(e)-en-ta* (OH+ etc.), ptcp. nom. sg. c. *ku-na-an-za* e.g. KUB XLIII 37 III 13 (OH) = [g$^w$ēmi] {7.5.3.4.}, [g$^w$ēsi] {7.8.5.}, [g$^w$ēn-], [g$^w$n-] < IE **g$^w$hen-*, 3 sg. pres. **g$^w$hén-ti* : 3 pl. **g$^w$hn-énti* : Skt. *hánti* "strikes, kills", 3 pl. *ghnanti*.

The development **g$^w$h* > *w* posited by Sturtevant, *Language* 6 (1930) 222–3, and Kronasser, *VLFL* 66–7, is not supported by good etymologies. *wēnzi* "rapes", which Sturtevant derived from **g$^w$hénti* "strikes, kills", is more likely to be from **wend(h)-* "strike" or from **wen-* "desire" plus a dental extention (see Melchert, *SHHP* 10 n. 4). *ur-, war-* "burn" : **wor-* (hap. leg. *wa-a-ra-ni* "sets on fire" KUB XVII 27 II 26, MH), 3 sg. pres. midd. *u-ra-a-ni, wa-ra-a-ni* "is burning", derived by Sturtevant, Kronasser and Seebold (*KZ* 96 (1982) 34–5, 49) from **g$^w$hr̥-n(e)u-* : **g$^w$her-* in Skt. *gharmah* "warm", Gk. θερμός id., and Lat. *formus* id., is from **wer-* "burn, be hot" {3.7.4.2.}.

## 6.4. Medial intervocalic stops

Benveniste, *HIE* 7; Čop, *Linguistica* 5 (1964) 21–46; Crossland, *TPS* 1951 125–8; Deroy, *Recherches Ling. en Belg.* 23–32.; Einarsson, *Language* 8 (1932) 177–82; Gamkrelidze, *Fs Diakonoff* 76–80, *Ar. Or.* 29 (1961) 417–8; Georgiev, *Orbis* 27/1 (1978/9) 50; Ivanov, *Xettitskij Jazyk* 85, *Fs Kuryłowicz* 131; Jucquois, *Hethitica* 1 (1972) 59–128; Kammenhuber, *Bi. Or.* 21 (1964) 201–2, HdO 1.II.1/2, 177–9; Kronasser, *VLFH* 55–61, 64–8, *EHS* 13–15; Kuryłowicz, *PICL* 8 219–222; Laroche, *Bi. Or.* 18 (1961) 254–5; Melchert, AHP 16–21, 55–6, 60–2, 117; Milewski, *Ar. Or.* 17 (1949) 189–95; Neumann, *Weiterleben* 104–5; Pedersen, *Hitt.* 173; Petersen, *Language* 9 (1933) 22–3; Rosenkranz, *Akt. d. 24. Int. Or. Kongr.* 161–2, *Vgl. Unters.* 30–1, 40–1, *ZA* 20 (1961) 105–110, *Fs Friedrich* 417–26; Sommer, *AU* 121, 341, 389, *HuH* 72–7; Sturtevant, *JAOS* 52 (1932) 1–12, *CGr$^1$* 73–84, *CGr2* 26–8 ; Weidner, *Stud.* 13–25.

### 6.4.1. Voiceless stops

#### 6.4.1.1. **p*

*āppa, āppan* "after, following" (*a-ap-pa,* OH etc., *a-ap-pa-an,* OH etc.) = [āpa], [āpan] < **h$_1$op-ó-*, **h$_1$op-om* (also in Lyc. *epñ* "after, following" with *e* < PA **o*) : **h$_1$op-* in Gk. ὀπίσσω, ὀπίσθε(ν) "after, behind" and **h$_1$ep-* in Gk. ἐπί.

*hāppar* "price, deal": nom.-acc. sg. *ha-a-ap-par* KBo VI 2 II 51 (OH), *ha-ap-par* (MH, OH+), dat. sg. *ha-ap-pa-ri* KUB XXIX 29 Vs 11 (OH; also OH+), abl. sg. *ha-a-ap-pa-ra-az* KBo VI 2 II 51 (OH), *ha-ap-pa-ra-az* (OH+) = [hāpar], [hap(a)r-] < IE sg. **h$_3$ép-r̥* {10.2.3.}; *hāpperiya-* "city, settled place" (< *"marketplace"): dat. sg. *ha-a-ap-pe-ri* KBo V 6 I 17 (NH) = [hāperi], derived from PA **h$_3$óp-ēr* with analogical full-grade for IE collective **h$_3$p-ér* {2.7.2.}.

*ūpp-* "arise, ascend", vbl. noun gen. sg. *u-up-pu-u-wa-as* KUB VIII 21 L. 8 (OH+) = [ūpwas] beside [ūp-C] in 3 sg. pres. *u-up-zi* (OH+ etc.), *ú-up-zi* (MH+), if these are from **(h$_1$)éup-ti* etc. {4.6.2.}.

*terepp-* "plow": 3 pl. pres. *te-re-ep-p[a-an-zi* KUB XXXI 57 I 11 (OH+), *te-re-ep-pa-an-zi* Bo 6250 Vs. 8 (Oettinger, *Stammbildung* 229), ptcp. nom.-acc. sg. n. *te-re-ep-pa-an* KUB XVIII 20 Vs? 10 (U); cf. also 3 sg. pres. *te-re-ep-zi* VBoT 58 I 30 (MH+), it. 3 pl. imp. *te-re-ep-pi-is-kan-du* KUB XIII 1 IV 24; *treppi-* "plowed field": nom.-acc. sg. n. *te-re-ep-pi* KUB XXXIII 65 III 2 (MH+), nom.-acc. pl. n. *te-re-ep-pi*$^{HI.A}$ KUB IX 4 II 32 (MH+) = [trēpantsi], [trēpan], [trēpisk-], [trēpi] < PA **trep-*, cf. HLuv. *tarap-* "plow". The variation in vocalism in e.g. Gk. τρέπω "I turn", OLat. *trepit* "turns", Skt. *trapate* "is ashamed" (< *"turns away out of shame", Dhātupāda only) beside Ionic and Doric τράπω suggests an athematic present **trép-ti* (> Hitt. [trēptsi]) : **tr̥p-énti*. Hittite, however, has generalized the full-grade, and all of these forms should reflect earlier **trép-V-*.

For the etymology see especially Davies, *Fs Risch* 133–5; forms Oettinger, *Stammbildung* 229.

#### 6.4.1.2. **t*

The clearest example is probably *wītt-, wētt-* "year": dat.-loc. sg. *ú-i-it-ti* KUB XXIX 32 L. 2 (OH), *ú*-E/IT-*ti* KBo III 22 Vs. 10 (OH), gen. pl. *ú-i-[it-ta-an-na]* StBoT 25, 1 I 2 = *ú*-E/IT-*ta-an-na* in NH dup. KUB XXIX 1 I 22, cf. also *ú-e-et-t[a-an-ta/da/an-ni-is-si-ma]*, dat.-loc. sg. of *wettantātar* "space of a year" KBo III 22 Rs. 64 = [wīt-], ([wēt-]?). These forms come from a root noun **wet-*, cf. zero-grade dat.-loc. **ut-(i)* in **per-ut-(i)*, Skt. *parut* "last year", Gk. πέρυσι id., Arm. *heru* id., beside *s*-stem **wetes-* in e.g. Gk. (*F*)έτος "year" etc. The OH *i*-vocalism is unexplained {1.6.3.8.}.

#### 6.4.1.3. **k*, **k̂*

The stem *wēkk-* = [wēk-] with voiceless /k/ in 3 pl. pres. *ú-e-ek-kan-zi* KUB XXVII 66 II 15, 16 (NH) "they ask for" = [wēkantsi] is from the weak stem **wék̂-* (e.g. 3 pl. **wék̂-n̥ti*), beside strong stem **wēk̂-* = [wēg-] with /g/ by PA voicing {6.4.4.1.}.

*dākk-* "resemble, correspond to" (3 sg. pres. *da-a-ak-ki,* OH+) = [dāki] < **dók̂-e(i)* {2.4.1.}.

*twēkka-* "body, self" (*tu-e-ek-k°, tu-e-eq-q°, tu-e-eg-g°*) = [twēk-] < root noun **twék-* beside zero-grade [tuk-] < oblique stem **tuk-* in abl. *tukkaz* (MH) {2.4.3.}; from the same root comes *dugga-* "be important, be visible": 3 sg. pres. *du-ug-ga-a-ri* KUB XXIII 72 Rs. 15 (MH), *du-ug-ga-ri* KUB XVII 28 III 25 (OH+), *du-uq-qa-a-ri* e.g. KUB XXIX 1 II 10 (OH+), *du-uq-qa-ri* e.g. KBo IV 1 Rs. 11, 30 (OH+), *tu-ug-ga-a-ri* KBo XVII 65 Vs. 22 (2x, MH), *tu-ug-ga-ri* KUB XXIX 51 I 12 (MH), *tu-uq-qa-a-ri* e.g. KUB VIII 38 II 6, 19 (NH), *tu-uq-qa-ri* e.g. KUB IX 31 III 20 (MH(?)+) = [tukāri] < **tukóri* {2.6.4.}.

In *sakkar* "excrement" plene writing does not happen to be attested: nom.-acc. sg. *sa-ak-kar* KUB XVII 28 I 5 (OH+) (also *za-ak-kar* MH(?)+, NH, vocab. {11.8.2.1. }) = [sākar] < **sók-r̥* beside gen. *sa-ak-na-(a)-as* (OH+ etc. ) = [saknās] < **s(o)kn-ós*, inst. *sa-kan-da* (*sa-<ak>-kan-da ?*) KBo XXII 2 Vs 2 (OH). {2.2.4.1.}.

## 6.4.2. Voiced stops

### 6.4.2.1. **b*

*dapi-* "all": abl. *da-pe-za* KBo II 9 I 7 (NH), *da-pe-da-az* KUB XII 57 IV 4 (NH), nom.-acc. pl. n. *da-pe-da* KBo XII 38 I 4 (NH) with stem [dabē-] probably from **dobói-* : IE **dheb-* "dense, compact, firm" also in Gmc. **dap-ra-* (MDu., MLG *dapper* "heavy, strong" → "nimble, quick", MHG *tapfer* "weighty, firm" > "brave", ON *dapr* "dreary, sad".

The etymology was originally suggested by Sturtevant, *Language* 10 (1934) 266. For other etymological references see Tischler, *HEG* 8, 126–8.

### 6.4.2.2. **d*

*ēd-, ad-* "eat": 1 pl. pres. *a-ta-an-zi, a-da-an-zi* (both OH etc.), 1 sg. pret. *e-du-un* (MH etc.), 3 pl. *e-te-er* (OH+, MH etc.) = [ēd-V-] < **h₁éd-V-* {2.8.1.1.}.

*nāta-* "reed, arrow": acc. sg. *na-a-ta-an* KUB LVIII 50 III 5 (NH), *na-ta-an* KBo XIII 99 Rs 2 (U), KUB XLVIII 8 Rs 6 (U), $^{GIŠ}$*na-ti-in* KUB XXXIX 14 III 10 (OH+), inst. pl. *na-ti-i-da* KUB XXXI 4 Vs. 9 + KBo III 42 Rs 8 (OH+) = [nāta-] < **nódo-* : Ved. *naḍáḥ* "reed" (later also *naláḥ*), *nāḍī́, nālī́* (f.) "tube, pipe, vein", Arm. *net* "arrow".

Examples *CHD* 4, 406–8, etymological discussion *HEG* 7, 382–4.

*padā-* "foot": gen. pl. *pa-ta-a-n* StBoT 25, 26 I 19, dat.-loc. pl. *pa-ta-a-as-sa-as* ([padās-sas]) "her foot" StBoT 25, 27 Rs! 10 = [padā-] < **podó-* : Skt. *pā́t,* gen. *padáḥ,* Gk. πούς, ποδός etc.

*idālu-* "evil": *i-da-(a)-lu-* (OH etc.), dat. sg. *i-ta-a-la-ú-i* StBoT 25, 103 Rs? 3 = [idālu-] < **edwól-u-* {2.8.1.1. }.

*wātar* "water": nom.-acc. sg. *wa-a-tar* (OH etc.), oblique stem *ú-i-te-e-n°* (Pre-NH), *ú-i-te-n°* (OH? etc.), *ú-e-te-en°* (MH etc.), inst. *ú-i-ta-an-ta* (OH), nom.-acc. pl. *ú-i-da-a-ar* (OH etc.), *ú-i-ta-a-ar* (OH), *ú-e-da-a-ar* (NH) = [wādar], [widēn-], [widanTa], [widār] < **wódr̥, *wedén-, *wed-n̥-T-, *wedór* {2.4.1., 2.6.3., 5.3.4.}.

*pēda-* "place": nom.-acc. sg. *pe-e-da-an* KBo XV 10 III 62 (MH), KBo XVI 50 Vs 18 (MH), KUB XXIII 77 L. 28, 29 (MH), *pe-e-ta-an* IBoT I 36 I 9 (MH), *pe-e-da-as-me-et* (/pēdan-smet/) StBoT 25, 25 I 4, dat.-loc. sg. *pe-e-di* StBoT 25, 31 III 4, *pe-e-di* e. g. KBo III 22 Rs. 48, KBo VI 2 I 17 (OH), KBo VI 3 I 26, III 77 (MH), KUB XXIII 77 L. 27, KUB XXX 10 Vs 8, Rs 15 (MH), XXIX 1 II 26 (OH+), *pe-di* e. g. KUB XXXVI 104 Vs 12 (OH), KBo XV 10 II 47, *pe-e-ti* KBo XVI 50 Vs 16, KUB XXIX 1 II 25, *pe-e-te* ib.II 24 (OH+), abl. *pe-e-ta-az* KUB IV 72 Rs 5 (OH?/MH?), dat.-loc. pl. *pe-e-da-as* KBo XIX 128 III 36, 38 (OH(?)+) = [pēda-] < **pédo-* : Gk. πέδον "ground", Arm. *het* "footprint", Umb. *peřum* "ground" {2.4.3.}.

Examples *PW* 305–307.



### 6.4.2.3. **g, *ĝ*

*sāgāi-* "omen": nom. sg. *sa-ga-i-is* (OH), *sa-(a)-ga-(a)-i* = [sāgāi-] < **séh₂g-ōi-* or **sā́gōi-* {10.9.1.2.}

*eka-* "ice": nom. sg. *e-ga-as* KUB XXI 18 IV 19 (OH+), acc. sg. *e-ka-an* KBo III 41 + XXXI 4 L. 8 (OH+), *e-kan* KUB XIII 2 IV 25 (MH(+?), gen. *e-ka-as* Bo 6980 L. 11 (*HED*), dat.-loc. *e-ki* KBo VI 2 + XXII 62 III 24 (OH) = [ēga-] < **yégo-*, cf. e. g. OIr. *aig* "ice", ON *jaki* "icefloe", *icicle"* beside **yégi-*, in ON *jǫkul* "glacier", OE *isesgicel* "icicle".

Examples, etymological refs. *HEG* 2, 103, *HED* 2, 257–9. The root **yeg-* is also found in the denominative *egā(i)-* (examples Neu, *StBoT* 5, 68 and Puhvel, *loc. cit.*) and in *ekuna-* adj. "cold", and *ekunima-* "coldness". {6.8.2.}.

*gagā-* "tooth": nom. sg. *ga-ga-a-as* KBo XV 10 II 8 (MH), *ga-ga-as* ib. II 50, acc. pl. *ga-ku-us* KBo III 46 Vs. 12 (OH+) = [kagā-] < **kogó-* : Gmc. **hōka-* in OE *hōc* "hook", ON *hākr,* OHG *hāko.*

*iukan* "yoke": nom.-acc. sg. *i-ú-kan* KBo XII 22 I 11 = KUB XXXI 4 + KBo III 41 Vs 7 (OH+), *i-ú-ga-an* KBo XIII 78 Vs 7 (OH+), KUB VII 11 Vs 2 (MH+), KUB VII 8 II 8 (MH+), dat.-loc. *i-ú-ki* KUB XIII 5 II 21 (MH(?)+) = [yugan] ([yugān]?) < **yugóm* "yoke" : Skt. *yugám,* Gk. ζυγόν, Lat. *iugum,* Goth. *juk,* OE *geoc.*

Examples *HED* 2, 495–6.

## 6.4.3. Voiced aspirates

### 6.4.3.1. **bh*

*nēpis* "heaven": nom.-acc. sg. *ne-(e)-pi-is* (OH etc.), gen. *ne-(e)-pi-sa-as* (OH etc.), dat. *ne-(e)-pi-si* (MH etc.), dir. *ne-(e)-pi-sa* (OH etc.), gen. pl. *ne-pi-sa-an* (MH) = [nēbis-] < **nébhes-* {2.6.3.}.

*tēpu-* "little": nom. sg. c. *te-e-pu-us* StBoT 25, 23 Rs 6, *te-pu-us* (MH), acc. sg. c. *te-pu-un* KBo XXIV 51 Vs? 2 (MH), KUB VII 2 I 10 (MH+), nom.-acc. sg. n. *te-e-pu-(se)* KBo VI 2 IV 43 (OH), *te-e-pu* ib. IV 46, KBo III 41 Rs 14 (OH+), *te-pu* KBo XV 10 I 9 (MH), KUB I 16 III 10 (OH+), *tḫi-e-pu* StBoT 25, 23 Rs 7, dat. sg. *te-e-pu-i-e* Bo 1941 L. 5 (StBoT 14 H. 26 L. 5), *te-pa-u-e* KUB XXXIII 106 II 5 (NH), abl. *te-e-pa-u-wa-az* KUB I 6 II 15 (NH), *te-pa-u-wa-az* ib. II 16, nom. pl. c. *tḛ-ḛ-pạ-ụ-i̯-ḛ-ḛs* KBo VI 5 IV 26 (OH+), nom.-acc. pl. n. *te-e-pa-u-wa* ABoT 56 III 28 (NH), dat. pl. *te-pa-ú-wa-as* KUB II 1 II 40 (OH+) = [dēbu-] < **dhébhu-* : IE **dhebh-* "diminish, harm" also in Skt. *adbhuta* "wonderful" (< **n̥-dhbhu-to-* "not small"), Skt. *dabhnoti* "deceives", and *dabhra-* "harmful".

Demonstrative pronoun *apā-, apē-*: nom. sg. c. *a-pa-a-as* StBoT 25, 2 I 2 (and Post-OH), *a-pa-as* KBo VI 2 III 24, 28 (OH), *a-ba-as* KBo VIII 41 L. 6 (OH), acc. sg. c. *a-pu-u-un* KBo VI 2 I 16, IV 5 (and Post-OH), *a-pu-un* KBo VI 5 IV 15 (OH+), nom.-acc. sg. n. *a-pa-a-at* StBoT 25, 4 II 13, KUB XIV 1 Vs 24, 48 (as acc. pl., MH) *a-pa-at-ta* StBoT 25, 4 IV 29, gen. sg. *a-pe-el* KUB XIV 1 Rs 33, *a-pe-e-el-la* e. g. KBo VI 3 III 50 (MH), dat.-loc. sg. *a-pe-e-da-ni* KBo V 3 II 34, III 57 (Supp. I+), KUB XIV 1 Vs 73, *a-pe-e-ta-ni* e. g. KUB XVI 83 Vs 28 (NH), dir. *a-pe-e-da* KBo III 41 + KUB XXXI 4 Vs

19 (OH+), inst. *a-pe-e-da-an-da* (OH+), abl. *a-pe-e-ez* KBo V 3 III 38, IV 32, nom. pl. c. *a-pe-e-a* StBoT 25, 105 L. 8, acc. pl. c. *a-pu-u-us* StBoT 25, 3 I 21 (and Post-OH), *a-pu-u-us-sa* KBo III 38 Vs 19 (OH+), gen. pl. *a-pe-e-en-za-an* e. g. KUB XLV 49 IV 8 (U), *a-pe-en-za-an* KBo I 42 I 27 (NH, vocab.), dat.-loc. pl. *a-pe-ḗ-da-as* KUB XIV 1 Rs 42 = [abā-] and [abē-] < **h₁obhó-* {2.2.1., 2.8.2.1.}, **h₁obhói-*, nom. pl. **h₁obhói* {2.8.2.1., 4.3.2.1., 4.4.1.1., 6.4.3.1.}.

*karāp-* "devour, fressen": 3 sg. pres. *ka-ra-a-pi* e. g. KBo VI 2 IV 2 (OH), *ka-re-ra-pi* KUB XXX 49 IV 24 (NH), *ka-re-pa-as* KUB V 7 I 34 (NH) = [grāb-], [grābi], [grēb-] < **ghróbh-*, **ghrebh-* : Skt. *agrabham* aor. "I seized", Lith. *grébiu, grébti,* id., OCS *grebǫ, greti* id.

The plene writing in *ka-a-ra-pi* KUB VIII 6 Vs 10 (OH+) is probably due to the influence of *sārapi* "swallows, slurps" (e. g. 3 sg. pres. *sa-a-ra-pi* KUB XXXIV 97 L. 15, U) < **sórbh-ei* : Lat. *sorbeō,* Gk. ῥοφέω.

*kuwāpi* "where, where to" (*ku-wa-a-pi* KBo XV 10 II 3, III 47, MH); *kuwāpi(k)ki* "anywhere" (*ku-wa-a-pi-ki* StBoT 25, 4 IV 9); *kuwāpit* "everywhere" (*ku-wa-pi-it* KBo XXII 2 Vs 10, 11, OH); *kuwāpitta* "everywhere" (*ku-wa-a-pi-it-ta* StBoT 25, 3 IV 17 = *[k]u-wa-a-pi-it-ta* 4 IV 13, KBo XV 10 II 74) = [kʷābi(-)] < **kʷó-bhi(-).*

### 6.4.3.2. **dh*

*pēhute-* "take": 1. sg. pres. *pe-e-hu-te-mi* (MH etc.), 3 sg. *pe-(e)-hu-te-ez-zi* (OH, MH etc.), *pe-hu-te-zi* (OH), 2 pl. *pe-e-hu-te-et-te-ni* (OH+), 3 pl. *pe-e-hu-da-an-zi* (OH etc.), *pe-hu-ta-an-zi* (MH) = [pēhudĕ-] < Pre-Hitt. **pé-h₂(a)u-de-* = preverbs **pe-* "away", **h₂(a)u-* "away" plus PA **dæ-* < **dheh₁-* "put, place" {2.9.1.1.} ; *uwate-* "bring": 3 sg. pres. *ú-wa-te-ez-zi* (OH), 3 pl. *ú-wa-ta-an-zi* (OH), 3 sg. pret. *u-wa-te-et* (OH), 3 pl. *ú-wa-te-er* = [watĕ-] from a preverb **wo-* plus **dheh₁-* {2.9.1.1.}; *wete-* "build": 3 sg. pres. *ú-e-te-ez-zi* (OH), *[ú]-i-te-ez-zi* (MH), 3 pl. *ú-e-da-an-zi* (MH), 1 sg. pret. *ú-e-te-nu-un* (OH), 3 sg. *ú-e-te-et* (OH), ptcp. nom.-acc. sg. n. *ú-e-ta-an* (OH), acc. pl. c. *u-i-ta-an-tu-us* (OH) = [wede-] or [wide-], originally from **we-dhéh₁-* > PA **wi-dæ-* > Pre-Hitt. **widē-* with verb stem [dē-] replaced by [dĕ-] after *pēhute-, uwate-* and *werite-* "is afraid" {2.9.1.1.}.

*atessa-* "axe, hatchet": nom.-acc. sg. n. (OH+), *a-tḭe-es* KUB XXIX 30 II 13, 14 (OH), KBo VI 26 I 1 (OH+), acc. sg. *a-te-es-sa-an* (MH?+), inst. *a-te-es-se-et* (MH+), nom.-acc. pl. n. *a-ti-is-sa* (MH+) = [adess-] ([adēss-]?) from **adhés-*, originally adjectival **"that which cuts" : Gmc. **adus-on-* in OE *adesa, adosa* "adze" {11.4.1.1.}.

### 6.4.3.3. **gh, ĝh*

*tēkan* "earth": nom.-acc. sg. *te-e-kan* (MH etc.), loc. *ta-ga-a-an* (OH etc.), *ta-ga-an* (OH etc.), *da-ga-an* (MH), *da-ga-a-an* (OH+); nom.-acc. sg. [dēgan] < IE nom. **dhéghōm* {2.7.1.}; loc. [dagān] < PA **dagén* {3.2.2.2.}.

*lāk-* "knock out, incline": 3 sg. pres. act. *la-a-ki* (OH etc.), ptcp. nom.-acc. sg. n. *la-ga-an* (OH), *la-ga-a-an* (MH), 3 sg. pres. midd. *la-ga-a-ri* (MH+, NH), *la-qa-a-ri* (MH (?)+), imp. *la-ga-a-ru* (MH+) = [lāge], [lăgāri], [lăgāru] < Pre-Hitt. **lóg-ei, *log-óri, *log-óru,* ultimately from IE perf. **(le-)lóghe* : *legh-* "lie" {2.4.1.}.

*dalūki-* : abl. *da-lu-ga-ya-az* (NH), nom. pl. *ta-lu-ga-e-es* (OH), *da-lu-ga-es* (NH), acc. pl. *ta-lu-ga-ú-us* (OH), *da-lu-ga-us* (NH), *ta-lu-ga-us* (MH etc.), nom.-acc. pl. n. *ta-lu-u-ga* (OH+), gen. pl. *ta-lu-ga-as,* dat.-loc. pl. *ta-lu-ga-as* (OH) = [dalūg-V-] < **dl̥h₁gh-* {5.3.2.}.

### 6.4.3.4. **gʷh*

*eku-* "drink": 1 pl. pres. *a-ku-e-ni* StBoT 25, 3 II 15, 16, 3 pl. *a-ku-(wa)-an-zi* (OH etc.),1 sg. pret. *e-ku-un* KUB XXX 10 Vs 17 (MH), 3 pl. *e-ku-er* e. g. KUB XXXIII 31 III 5 (OH+) = [ēgʷ-], [agʷ-] : IE **h₁eg*h-* "drink" also in CLuv. *ú-ut-ti-is* = *u-ttis* "you shall drink", HLuv. *uw-amis* ptcp. "having drunk", Lat. *ebrius* "drunk", *sobrius* "sober" (< **so-ebrius*) < **egʷhri-*.

For the etymology see Puhvel, *HED* 2, 261–8 w. refs., and for the Luvian words see Morpurgo Davies, *KZ* 94 (1980) 106 n. 24. Luvian seems to show a development **egʷh-* > **ew-* with subsequent merger with IE **eu-*; see Melchert, *Gds Cowgill* 185 w. n. 9.

## 6.4.4. Voiced stops from PA voicing

### 6.4.4.1. After inherited long vowel

*wēk(k)-* "ask for": 1 sg. pret. *ú-e-ku-un* KUB XXXIV 53 Rs. 2, 6, 7, (U), *u-e-ku-e-u-en* (sic) KUB XVI 42 Vs. 34 (NH), 3 pl. *ú-e-k[e-er* KBo III 38 I 21 (OH+), *ú-e-ke-er* KUB XIV 8 Vs. 2 (Pre-NH), KUB XXXVI 67 II 18 (NH), vbl. noun *ú-e-ku-wa-ar* KUB XV 5 IV 40 (NH), KUB XXI 29 II 29 (NH) = [wēg-], [wēgun], [wēger] etc. < **wḗk̂-*, strong stem of an acrostatic present 1 sg. **wḗk̂-mi* > [wēgmi] (*ú-e-ek-mi*, OH+ etc.), 3 sg. **wḗk̂-ti* > [wēktṣi] (*ú-(e)-ek-zi*, OH etc.), PA 3 pl. pret. **wḗk̂-ēr* > [wēgĕr] beside weak stem **wḗk̂-* > [wēk-] in 3 pl. pres. *ú-e-ek-kan-zi* (e. g. KUB XXVII 62 II 16, NH) = [wēkantṣi]. The acrostatic present is suggested by the full-grade of Gk. ἔκων "willing", ἀέκων "unwilling", and Dor. f. ἀέκασσα, which are from a participle, **wéḱ-n̥-t-*. In NH the original strong stem [wēg-] < **wḗk̂-* seems to have spread at the expense of [wēk-] from the weak stem **wéḱ-*, cf. 3 pl. pres. *ú-e-kan-zi* KBo XIX 133 L. 6 (NH), *ú-e-kan-z[i]* KUB XVII 24 III 6 (NH), ptcp. *ú-e-kan-ta-an* KUB IV 3 Vs 16 (NH), though there are also examples with analogical [k] from the weak stem, e. g. 1 sg. pret. *ú-ek-ku-un* = [wēkun] in KUB XVII 61 Rs 8 (MH).

Examples and paradigm *Stammbildung* 17–8. This analysis was proposed by Eichner, *MSS* 31 (1973) 81; see also Oettinger, *op. cit.* 100 w. n. 27. In Indo-Iranian the acrostatic present was replaced by **wéḱ̂-ti* : **uḱ̂-énti*, *cf. Skt. *vaśmi* "I desire", 1 pl. *úśmási,* ptcp. *úśant-*.

*sākuwa* "eyes": nom.-acc. pl. n. *sa-a-ku-wa* StBoT 25, 3 I 24, KBo XX 67 I 11 (MH), KBo III 7 III 15 (OH+), KBo III 28 Vs.11 (OH+), *[s]a-a-k[u]-wa* ib. Vs. 9, *sa-ku-wa* KBo III 7 III 11, 18, dat.-loc. *sa-ku-as* KUB XXXVI 104 Vs. 7 (OH), *sa-ku-wa-as* KUB XXIX 9 I 5 (NH), inst. (sg.!) *sa-a-ku-it* KUB XXIII 72 Vs. 9 (MH), *sa-a-ku-wa-at* ib. Rs.15 = [sāgʷa], either from **s* + **h₃ók̂ʷ-eh₂* with *s* mobile {10.1.1.3.}, nominative-accusative plural of a root noun with lengthened grade, cf. Gk. ὤπα "face", ὄσσε (du.) "eyes" < **h₃okʷ-ih₁* (Eichner, *MSS* 31 (1973) 82–3) or from **sók̂ʷ-eh₂* with lengthened *o*-grade from **sekʷ-* "see, notice" in Goth. *saíhvan* "to see", OE *sēon* id., cf. e. g. Goth. *siuns* "appearance, sight", ON *sýn, sjón* "ability to see, appearance", OE *sīen,* OS *siun* "seeing, power of sight", OHG *gisiht,* OE *gesiht.*

For the derivation from **h₃ek̂ʷ-* see also Oettinger, *Stammbildung* 395–6, but note that the form he reconstructs, **s-h₃ék̂ʷ-ah₂-*, would have become ***sēgwa-* (cf. Lindeman, *Trip. Rep.* 16). The derivation from **sekʷ-* "see" was first suggested by Sturtevant, *Language* 3 (1927) 163,

*Language* 6 (1930) 219, and Petersen, *Language* 9 (1933) 20. Sporadic spellings with plene writing in the first syllable for the denominative *sakuwā(i)-* "look" (*sa-a-ku-wa-(a)-(i)-*, examples Oettinger, *loc. cit.*) indicate that it is to be read as [sāg$^{w}$ā(i)-] with analogical /ā/ in its first syllable {2.3.3.4.}.

*epurā(i)-* "besiege, dam up": 3 sg. pres. *e-pu-ra-iz-zi* KUB XXXVI 89 Rs 41 (NH), inf. *e-pu-ra-wa-an-zi* KBo XVIII 54 Rs 14 (NH), it. 1 pl. pres. *e-pu-re-es-ga-u-en* ib. 13, *e-pu-re-es-sar* "siege" ib. Rs. 25, looks like a denominative from an unattested *[ēbur] < *$h_1ē(h_1)pu̯r$ : *ēpp-* "take, seize" (*Eichner, MSS* 31 (1973) 79; Oettinger, *Stammbildung* 88 w. refs., 367).

Puhvel's connection with Hmc. πολέμοιο γέφυραι (*HED* 2, 282–3) is not very plausible.

### 6.4.4.2. After accented diphthong

*itar* "way", hap. leg. *i-tar* KUB XLI 8 I 20 (MH) = [īdar] < *$h_1éi$-$t\u0329$ : Lat. *iter, itineris* "way" and Toch. A *ytar* "way" : *$h_1ei$- "go". The word is surely a very old heteroclitic, and the apparent full-grade in Hittite as opposed to the zero-grade root of the Latin and Tocharian cognates should indicate an ablauting paradigm: nom.-acc. sg. *$h_1éi$-$t\u0329$ : loc. *$h_1i$-*tén*- (in Lat. *itineris*) : coll. *$h_1éi$-tōr* in Toch. *ytar* with analogical zero-grade root.

*mitā(i)-* "fix, attach" = OH [*mēdā(i)-] denominative from a **mēda-* < **móito-* < **h₂móito-* (Catsanicos, *BSL* 81 (1986) 121–180) {4.4.1.3.}.

Eichner, *MSS* 31 (1973) 81, suggests that single (voiced) dental in the pronominal stems dem. *apēd-* (dat. sg. *apēdani* e. g. KBo V 3 II 34, III 57 (Supp. I+), dir. *a-pe-e-da* KBo III 41 + KUB XXXI 4 Vs 19 (OH+), inst. *a-pe-e-da-an-da* KUB XXVI 71 I 7 (OH+), *a-pe-e-da-an-ta* KUB XXXI 110 L. 4, OH+) and rel.-int. *kuēd-* (e. g. dat. *ku-e-da-ni* KBo XV 2 Vs. 14, NH) reflects PA voicing of *t after accented diphthong in the pronominal stems **h₁obhói-t-* and **k$^{w}$ói-t-* beside double (voiceless) dental in the adverbs *apatta(n), apattin* "there, thither" and *kuwatta(n), kuwattin* "where, whither" < **h₁obhó-t-* and **k$^{w}$ó-t-*; cf. also the demonstratives *ed-, sēd-, kēd-*, the personal pronouns 1 sg. *ammēd-* and 2 sg. *tuēd-*, and *tamēd-* "other" beside the archaic directive *ta-ma-at-ta* in KUB XXX 10 II 15 (MH), and cf. Melchert, *SHHP* 93, 130, 142, who reconstructs **obhói-* etc. without commenting on the dental).

### 6.4.4.3. After long vowel from vowel plus laryngeal

Abstract suffix *-ātar*: e. g. *ēpp-* "take": *ap-pa-a-tar-r°* KBo XV 25 Vs 11, 24 (MH); *haddulātar* "health": *ha-ad-du-la-a-tar* KBo XV 25 Vs 10, 23 (MH), KBo XXI 34 I 65 (MH?), KUB XV 34 II 8, 17, 40, III 39 (MH?), *ha-at-tu-la-a-tar* KBo XV 33 I 17 (MH); *i(n)narāwātar* "strength": *i-na-wa-u-wa-tar* KBo XV 25 Vs. 10, *in-na-ra-wa-a-tar* e. g. KUB XVII 33 IV 14 (NH), *i-na-ra-a-wa-a-tar* KUB XV 31 I 56 (MH+), *in-n[a]-ra-u-wa-tar* KBo XV 25 Vs. 10, *i]n-na-ra-u-w[a-tar]* ib. Vs. 24; *marsātar* "fraud": *mar-sa-a-tar* KUB XI 1 III 11 (OH+), KUB XL 82 Rs 2 (NH), *mar-sa-tar* KUB XIII 4 IV 32 (MH(?)+); the suffix should be [-ādar] < PA *-*ā́-dər* < **-ā́-tər*, in IE terms **-éh₂-t\u0329*, a conglomerate of **-eh₂* (> PA *-*ā*-) plus heteroclitic neuter suffix **-t\u0329* (Eichner, *MSS* 31 (1973) 60, 80, Melchert, *SHHP* 40 n. 82).

The conglomerate suffix was clearly PA as is shown by forms such as Lyc. *huwedr(i)-* "all" (*Lyc. Lex.*$^{2}$ 29) = CLuv. *suwatar* "fullness" (*CLuv. Lex.* 198 w. refs.) or Lyc. *tukedr(i)-* "statue" < **tukādar* or **twekādar* (*Lyc. Lex.*$^{2}$ 81). It seems to have originated in abstract heteroclitics formed to denominatives in **-eh₂-*, but forms such as *adātar* "food" : *ēd-* "eat" show that it was analogically extended as a productive derivational suffix in Hittite (Starke, *StBoT* 31, 438).

*mūtā(i)-* "root, dig in the ground, remove evils", with reflexive *-za* "neglect": 3 sg. pres. *mu-ú-ta-iz-zi* KUB IX 4 III 29, 31 (MH+), *mu-ta-iz-zi* KUB IX 34 IV 3 (MH+), 2 sg. imp. *mu-ta-a-i* KUB XII 57 I 8 (NH), 3 sg. *mu-ú-da-id-du* KUB IX 4 III 33, 36, *mu-da-id-du* KUB IX 34 IV 17, *mu-ta-id-du* ib. IV 7, 9, ptcp. nom.-acc. sg. n. *mu-ta-a-an* KUB XXXI 90 II 12 (MH+) = *mu-ta!-a-an* KUB XIII 2 II 30 (MH+) = [mūdā(i)-], denominative from a **mūda-* "(re)moved" < **mūta-* < *to*-adjective **muh₁-tó-* : Ved. *mūtá-* in *kāma-mūta-* "moved by love", ultimately : IE **m(y)euh₁-* "remove, move" (Eichner, *Heth. u. Idg.* 48–50 n. 14, Oettinger, *Stammbildung* 377, *I-H* 23; see *HEG* 6, 235–6 for further refs.). Eichner also connects *mūdan(a)-* "garbage", hap. leg. nom.-acc. pl.(?) *mu-ú-da-na* KBo X 37 II 15/17 (OH+), perhaps neuter plural in *-a* of an *n*-stem **muh₁-to-h₃on-* (see *CHD* 3, 337 and cf. Eichner, *loc. cit.*, who reconstructs **múh₁-to-n-* with characterizing *n*-suffix).

If **uh₁* became *ū* in unaccented syllables {2.3.3.2.}, then Eichner's reconstruction of a shifted accent is unnecessary. For arguments against Puhvel's interpretation (*AJPh* 97 (1976) 166–7) as "wet, flush, rinse" and connection with Skt. *mū́tra-* "urine" and OCS *mýti* "wash" see Eichner, *loc. cit.*

Hitt. and CLuv. *hūta-* "haste, readiness, ability to act swiftly" : nom. sg. *"hu-u-ta-as* KUB XXIII 1 IV 20, 21 (NH), *hu-u-da-as* KUB XXVI 17 I 5 (MH), KBo XVI 25 I 46 (MH), acc. sg. *hu-u-ta-an* KUB XXXV 92 (+) Vs. 27, 30 (NH), nom.-acc. pl. *hu-u-da* KBo XXII 105 Vs. 9 (NH); adv. *hūdāk* "straightaway, forthwith": e. g. *hu-da-a-ak* StBoT 25, 139 Rs. 7, *hu-u-ta-a-ak* e. g. KBo XXVI 73 I 6 (MH+), *hu-u-da-a-ak* KUB XIV 1 Rs 18 (MH), VBoT 1 L. 20 (MH), KBo IV 3 II 24 (NH), KUB XV 31 II 12 (MH+; dupl. KUB XV 32 II 6 has *hu-u-da-ak*), KUB XIII 2 I 6, II 46, III 41 (MH(?)+), KUB XIII 4 II 75 etc. (MH(?)+), *hu-da-a-ak* KBo V 3 IV 20 (Supp. I+), *hu-u-da-ak* KUB XXVI 1 III 45 (NH), KUB XII 65 + KBo XXVI 71 III 7, 10 (MH?+) = [hūdā-], [hūdāk], if the MH spelling *hu-u-* is early enough to represent a true long vowel and not the ligature HU-U- {1.5.1.}. The source is probably < **h₂uh₁-tó-*, also in CLuv. *hutarli-* "slave, servant", Lyc. *χddaza* id., HLuv. ptcp. *hutisama/i-* : it. *hutisai-* : **h₂weh₁-* "rush, blow" (cf. **h₂woh₁-i-* in Hitt. *huwāi-* "run", CLuv. *hui(ya)-* id.).

The connection of the Lycian word and derivation from **h₂uh₁-tó-* were made by Eichner, *Or.* 52 (1983) 54–9, although the conditioning behind the syncope of **u* is unclear. Starke, *StBoT* 31 359–65, reconstructs CLuv. **hūtar-* n. "speed", describing CLuv. *hūtarli-* as a substantivized adjective in *-lli-* (cf. also Lyc. *χudr-* in PN *Xudrehila-* (?)). Starke prefers to derive the Anatolian words from an extended root **h₂weh₁-d-* as in Lith. *vedìnti* "ventilate, cool, expose to the air" and OHG *wāzan* "blow", deriving Luvian **hūtar-* "speed" = *[hūtar-] from **h₂uh₁d-ró-*. See also *HEG* 2, 318–9 and *HED* 3, 414–16 and *Lyc. Lex.* 91) for forms and refs. Puhvel's connection with Gk. εὐθύς "straightaway" will not work phonologically.

### 6.4.4.4. In unaccented syllables

The best example is probably *sallakartātar* "pride, arrogance": nom.-acc. sg. n. *"sa-l[a-k]ar-ta-tar* KUB XIII 35 I 25 (NH), *"sal-la-kar-ta-t<ar>* ib. IV 43, abl. *sal-la-kar-ta-<ta>-na-za* KUB V 3 I 30 (NH) and its derivatives *sallakartā(i)-* "behave proudly,

arrogantly" (3 pl. pres. *sal-la-kar-ta-ta-a-ir* KUB XXI 8 III 11 (NH), ptcp. *sal-la-kar-ta-an-t°* KBo II 2 III 20, 27, IV 3 (U)) and *sallakartahh-* "make proud, arrogant" (3 sg. pret. *sal-la-[ka]r-ta-ah-ta* KUB XXI 19 I 17 (NH)). The base is **sallakartant-* "having pride, arrogance" (Starke, *StBoT* 31, 525) from a compound **sallakarta-* = **[sallagard-]* (lit. "big-hearted") of *salli-* "big" plus *kard-*, oblique stem stem of *ker* "heart". The single velar of *-kard-* suggests that the compound was formed in PA as **sáll-o-kard-* > **sáll-o-gard-* with voicing of **k* in an unaccented syllable.

### 6.4.4.5. Uncertain examples

The oblique stem of the word for "honey" should have shown up in OH as **[mēlid-]*, e.g. gen. **[mēlidas]* < **mélidas* < **mélitos* (cf. Gk. μέλιτος), and it is possible that the regular reflex is found in gen. *mi-li-ta-as* KUB XXXIII 76 L. 3 (MH?). Normally, however, the voiceless dental was restored, perhaps by analogy to *ma-li-id-du, mi-li-id-du* = [mlitu] "sweet" (cf. e.g. gen. sg. *mi-l[i-i]t-ta-as* Bo 3298 + KUB XXV 32 III 37 + KUB XXVII 70 + 1628/u III 37 (OH+?) = *mi-li-it-t[a-as* Bo 3234 Rs. 1; see Starke, *StBoT* 30 and McMahon, *State Cult* 72 n. 38 for the restoration). For CLuv. and HLuv. cognates with the expected reflex with PA voicing see {6.2.3.}, and see Eichner, *MSS* 31 (1973) 100 n. 88, *Lautgesch. u. Etym.* 146–7 n. 69, and Davies, *KZ* 96 (1982/3) 262.

Derivatives of *lālukke-* "be radiant, shine" < **ló-louk-* (Watkins, *MSS* 45 (1986) 252–3) show both K and °K-K° in early texts: e.g. *la-lu-uk-[ke-ma-as* in OH StBoT 25, 112; *lālu(k)kema-* "radiance", *la-lu-uk-ke-et* "became luminous" KUB XXXIII 66 II 7 (MH), but *la-lu-ke-es-du* KUB XV 34 II 28 (MH) beside *[la-l]u-uk-ki-is-sa-an* ib. II 27 : *lalu(k)kēss-* "become bright, glisten". Both *la-lu-uk-ke-* and *la-lu-ke-* occur in texts written down in the NH period, and there are two examples of *la-a-lu-ke-* with plene writing of the vowel of the first syllable and single stop *([la]-a-lu-ke-ma-as* KUB XXXXI 127 I 15 (OH+) and *la-a-lu-k[e-ma-an* KBo XVIII 85 Rs 3 (NH)). A PA **lálukǣ-* (or **láloukǣ-*) would have become [lālugĕ-] spelled *la-(a)-lu-ke-* with voicing of the **k* in an unaccented syllable. The spelling *la-lu-uk-ke-* with double velar suggests that the the voiceless stop was restored analogically, presumably on the model of *lukkē-* "kindle, set on fire" and *lukk-* "be bright."

*witantātar* "space of a year" in dat.-loc. *ú-i-da-an-da-ne* KUB XXXVI 71 L. 10 (OH+) is described by Eichner (*MSS* 31 (1973) 100 n. 86) as having lenition of **t* in an unaccented syllable (i.e. **[widantā́dar]*, [widantā́nni] : *wītt-* (*wētt-*) "year" < IE **wet-*). The OH copy, however, KBo III 22 Rs. 64, has *ú-e-et-ta[-* with °T-T° = /t/, and the one other example of this word that is spelled syllabically, *ú-i-(it?)-ta]-an-ta-an-ni* KUB XXIII 11 III 23 (MH+), is broken. The base form from which this abstract is derived, *wit(t)ānt-* "year" < **wet-ént-*, occurs as nom. sg. *ú-e-et-ta-an-za* KUB XII 62 Rs 2 (Pre-NH) with voiceless /t/ by regular phonological development, since PA voicing did not take place before accented syllables. By regular phonological development a PA abstract **wet-ent-ā́tr̥* would have become Hitt. [widantādar]. It is possible that this is preserved in KUB XXVI 71, which is a duplicate of OH KBo III 22 but not a copy of that text (Neu, *StBoT* 18, 6), and that *wētta[ntanni* in KBo III 22 shows analogical restoration after *wītt-, wētt-* (note the long vowel, which should be analogical, indicated by plene writing). A single dental also occurs in *witassa-* "pertaining to a year" in EZEN *witassa-* (*ú-i-ta-as-si-ya-as* e.g. KUB XVII 24 II 14 (NH), KUB XXVII 59 IV 18 (NH)), which Eichner transcribes as *witassá.* The form is to all appearances a Luvian genitive adjective, and the root vowel could continue IE **ē* (> PLuv. **ī*). This word would then have PA voicing after a long vowel. *saudisza* "heifer" = [sāudists] < **só-ut-es-t-s* "of this year" would also have /d/ by PA voicing {4.9.2.}.



### 6.4.4.6. Problematic examples

UZU*kudur* "fleshy part of the sacrificial animal" may be from **géut-wr̥* or **géut-wr̥* (cf. Lühr, *IBS* 52, 72). However, Poetto, *KZ* 99 (1986) 220–2, translating "thigh", compares ON *kjǫt* "meat", Dan. and NNorw. *köt* "flesh", ON *kvett* "meat", and Icl. *kvetti* "a big piece of meat", which would point to **géud-wr̥* or **géud-wr̥.*

In at least two cases a single dental stop may simply reflect NH scribes' inclination to use the CVC sign TAL in the value [tal].

Eichner, *MSS* 31 (1973) 100 n. 86, suggests that *hataluwā(i)-* "lock, bolt (a door)" and *hataluwala-* "club" (transcribed as *hatalwái-, hatalwála-*) beside *hattalu-* "bolt, bar" (transcribed *háttalu-*) may have voiced /d/ from **t* in unaccented syllables. However, each of these words shows variation in spelling between HA-AT-TA-AL-, HA-AT-TAL- and HA-TAL-. In each word the spellings with double dental predominate and occur in OH and MH texts, while the spellings with single dental are sporadic and found in texts written in the NH period (cf. nom.-acc. sg./pl. *ha-at-ta-lu* e.g. KUB XVII 10 IV 14 (MH), KUB XXXVI 55 III 20 (NH), gen. *ha-at-ta-lu-as* e.g. StBoT 25, 25 IV 32, StBoT 25, 36 III 13, StBoT 25, 64 L. 6, *ha-at-ta-lu-wa-as* e.g. StBoT 25, 46 I 10, *ha-at-ta-lu-w[a-as* StBoT 25, 45 r. col. 4, *ha-at]-ta-al-wa-as* StBoT 25, 29 Rs? III 5, *ha-[at-t]al-wa-as* KBo XVII 74 II 23, *ha-at-tal-wa-as* ib. IV 39 (MH), but with HA-TAL-: nom.-acc. sg./pl. *ha-tal-lu* KBo XXIII 65 L. 7 (U), gen. *ha-tal-wa-as* e.g. IBoT I 2 III 7 (OH+), KUB XI 35 II 19, 24 (OH+), KBo XXV 184 III 55 (OH+); the denominative *hattaluwā(i)-* is not found in OH, but here again, the double dental predominates: 3 pl. pres. *ha-tal-wa-an-zi* KBo XXIII 79 II 8 (U), 3 pl. pret. *ha-a]t-tal-wa-ir* KUB XXIII 79 Vs. 6 (NH), ptcp. nom. sg. c. *ha-at-ta-al-wa-an-za* KBo XIII 109 III 6 (NH) = *ha-at-tal-wa-za* KUB LVII 122 L. 2 (NH), but HA-TAL- in 3 pl. imp. *ha-tal-wa-an-du* KUB XIII 1 I 25 (MH). The base noun in probably **h₂étōl-* = [**h₂átōl]* : **h₂et-* in *hatt-* "strike, pierce" (cf. *idālu-* and CLuv. *ādduwāl(i)-* "evil", reflecting PA **édwōl-* : **ed-* "eat", and see Weitenberg, *u*-Stämme 28–9). While it is possible that PA voicing in an unaccented syllable was regular in a denominative **h₂atōlu-ā-yé/ó-*, and *hattaluwā(i)-* might have /t/ after *hattalu-*, it is unlikely that *ha-tal-lu, ha-tal-lu-wa-* had /d/ after the denominative.

The alternation of spellings with single and double dental in agent nouns in *-talla-* may also be an artifact of the orthographic system rather than an indication of a genuine phonological alternation. Both Catsanicos, *BSL* 81 (1986) 159–60, and Oettinger, *KZ* 99 (1986) 43–47, have described the distribution of spellings with single and double dental in these words. They find that forms derived from iterative stems tend to have double dental (e.g. *ma-ni-ya-ah-hi-is-kat-tal-la-an* "administrator" KBo III 36 Vs. 22 (OH+), *i-si-ya-hi-es-kat-tal-la-as* "informer" KBo I 30 I 12 (NH, vocab.), *i-si-ya-ah-hi-is-kat-tal-la-as* KUB XIV 4 III 14, 16 (Pre-NH)). Oettinger finds that spellings with double dental are common in NH texts, while the spelling

with single dental seems to be earlier (e.g. $^{LÚ}$*us-ki-is-ga-tal-la-as* KUB XIV 1 Rs 45 (MH)). Oettinger, who makes a convincing case for deriving the suffix via resegmentation of substantivized adjectives in *-alla-* from dental stems (e.g. $^{LÚ}$*tarnatt-alla-* "participant" : *tarnatt-* "part, ration" → *tarna-ttalla-*), reads the suffix as [-dalla-] and explains the tendency of forms from iterative stems to have double dental as the result of the scribes' use of the CVC sign KAT. Many of the dental stems that might have formed the original locus for these forms, however, ended in /t/ rather than /d/ (e.g. *tarnatt-*), and since the resegmentation took place well after the period of PA voicing, it seems more plausible to read [-talla-] and regard the spellings with single dental as having -TAL- in the value [-tal]- or as defective spellings.

A similar alternation between °T-TAL- and -TAL- is found in *hat(t)talkisna-* "hawthorn, whitethorn", but here TAL is probably to be read [dal]. The first element is written with single dental in MH and later texts: nom. sg. *ha-tal-ki-is-na-s*° KUB XVII 10 III 29 (MH), *ha-tal-ki-is-na-as* e.g. KBo XXI 47 II 7 (MH), *ha-tal-kis-na-as* KUB XXXIII 54 L. 13 (MH+), *ha-tal-ke-es-na-as* VBoT 24 I 36 (MH+), *ha-tal-kis-sa-na-as* (sic) KBo XXI 1 I 5 (MH+.), dat.-loc. *ha-tal-ki-is-ni* KUB XVII 10 III 28. Spellings with double dental occur in texts in NH ductus: e.g. nom. sg. *ha-at-tal-ki-is-na-as* KBo XIV 86 I 6 (MH+), gen. *ha-at-tal-ke-es-na-as* KUB XII 58 III 20 (MH+), *ha-at-tal-ki-is-na-as* KUB XVII 28 IV 49 (OH+), *ha-at-tal-kis-na-a[s* KBo XXI 1 II 10. This word was derived by Čop, *Linguistica* 3 (1958) 53–4, from a first element related to *hatt-, hazz-* "strike, pierce" plus *alkistna-*, thematized from *alkistan-* "bough, branch". Watkins, *Linguistica* 33 (1993) 243–8, however, compares the first element to OIr. *ad* "hawthorn" (IE **h₂ed-* or **h₂edh-*), suggesting that the NH spellings with double dental are due to folk etymology to *hatt-* "pierce" etc., and the distribution of spellings appears to confirm this analysis.

*tapassa-* "fever" (?): "*ta-pa-as-sa-as* KBo II 2 I 3, 12, 45, 54, (U), also *ta-pi-is-sa-na-as* KUB XVI 37 I 6 (NH), acc. sg. "*ta-pa-as-sa-an* KBo II 2 I 23 II 11, 17, *ta-pis-sa-a[n]* VBoT 136 L. 12, and adj. "*ta-pa-su-wa-an-ti* "fevered" KUB VIII 75 IV 16, 20 (NH), "*ta-p[-* ib., IV 59 = [tabassa-]? The meaning of this word is not assured, nor is it clear whether the word should be considered Luvian or both Hittite and Luvian (cf. Melchert, *CLuv. Lex.* 209, and Tischler, *HEG* 8, 121–3). The resemblance to Skt. *tapas-* "heat" is obvious and it suggests that if *tapassa-* means "fever", it might be a loanword. If *tapass-* is native Luvian, then phonologically it can be from **tepés-V-* with **ésV* > *assV* by Čop's Law.

### 6.4.4.7. Unlikely examples

*hekur* "crag, rock out-cropping" is derived by Eichner, *MSS* 31 (1973) 71, from **h₂ḗgwr̥* and by Melchert, *SHHP* 142 n. 113 from **h₂ḗkwr̥* < **h₂áiḱ-wr̥*. Puhvel, however, *HED* 3, 287–9, who notes that the meaning is more likely to be "rock sanctuary", considers the word a loanword from Sum. *é.kur* "mountain house" perhaps via Hurrian (cf. Hurr. *hikalli* and Ugr. *hkl*).

*aku-* "stone", e.g. nom. sg. *a-ku-us* KUB XXI 19 + 338/v III 14 (NH), acc. sg. *a-ku-un* ib. III 16, acc. pl. *a-ku-u-us-sa* (+ *-(y)a-* "and"?) StBoT 25, 137 II 17 = [agū-]. Laroche, *RHA* 15 (1957) 25–6, originally compared this word with the family of Gk. ἄκρος "top, summit", ὄκρις "crag", ἄκμων, Lat. *acer* "sharp" etc. (cf. esp. Skt. *aśman-* "stone", Lith. *akmuõ* id.), but the **a* : **o* alternation (in e.g. ἄκρος, ὄκρις) points to a root **h₂eḱ-*, *o*-grade **h₂oḱ-*, and if the root etymology is correct, some explanation must be found for the loss of the initial laryngeal. Eichner, *MSS* 31 (1973) 81, constructs a neuter paradigm nom.-acc. sg. **h₂ḗḱ-u* : gen. **h₂ḱ-éw-s* or **h₂ḱ-w-és*, giving **hégu-* : **akwas* (with vocalization **h₂* > *a*) by regular phonological development. The attested paradigm would, then, show leveling, with /a/ from **h₂* generalized from the oblique stem and /g/ from the nominative-accusative singular. There is no other good evidence for vocalization of initial **h₂* before stops, however, and, as Puhvel, *HED* 1, 24, notes, there is no evidence for neuter inflection.



For *ipul, ipulli-* "wrap"(?), "wrapping"(?) (nom.-acc. sg. *i-pu-ul* KBo X 23 IV 2 (MH+), *i-pu-[ul-li-se-et]* StBoT 25,33 I 30, *i-pu-ul-li* KUB IX 28 I 17 (OH+)), *i-pu-ul-li* KUB XVI 83 Vs 51 (NH) = [ibulli-], Eichner (80), who glosses the word as "grip", posits **ēpulá-*, lengthened-grade derivative of *ēpp-* "seize" > **ipulla-* with unaccented **ē* > /i/, but unaccented **ē* became OH /ĕ/ {2.7.2.}, and the meaning of *ipul(li)* is more likely to be "wrap(ping)" (see Puhvel, *HED* 2, 379–80). Eichner, *MSS* 31 (1973) 82, derives *hūkanzi,* third person plural present of *huēk-* "strike, slaughter" from **h₂wik-énti* > **huykánzi* > [hūgantsi]; however, this verb is more likely to be from **h₂weg(h)-* {4.7.5.}.

### 6.4.4.8. Alternating voiced and voiceless stop within paradigms

An alternation between double and single stop runs through the paradigms of *āk-, akk-* "die" and *istāp-, istapp-* "plug up, cover". The single stop occurs in forms of the paradigm where the strong stem would be expected and is often preceded by plene writing, while the double stop tends to occur where the weak stem would be expected (e.g. in the third person plural present and imperative) and does not normally co-occur with plene writing. The double stop in 3 sg. pret. *ākkis* and it. *ākkisk-* indicates devoicing before /s/ {6.11.1.}.

*āk-* "die": 3 sg. pres. *a-ki* e.g. KBo VI 2 I 7 (2x), II 15, IV 1, 5, 21 (OH), 3 pl. *a-ker* KBo XXII 2 Rs. 6, 13 (OH), *a-ke-er* KBo III 38 Rs. 22 (OH+), (NH also *e-ke-er, e-ker*) = [āgi], [āger], for the long vowel of the strong stem, cf. 2 sg. pres. *a-ak-ti* KBo VII 14 + KUB XXXVI 100 II 6 (OH), 3 sg. pret. *a-ak-ki-is* KBo VI 2 IV 3; stem *ak-k*°: 1 pl. pres. *ak-ku-e-ni* KUB XVII 1 II 18 (NH), *ak-ku-u-e-ni* ib. II 24, 3 pl. *ak-kan-zi* e.g. KUB XXIX 30 III 3 (OH), 1 sg. imp. *ak-kal-lu* KUB XIV 1 Rs. 94 (MH), *ag-gal-lu* e.g. KBo IV 14 II 35 (NH), 3 pl. *ak-kan-du* (OH+), *ak-kan-tu* KUB XXXVI 113 L. 5 (NH), ptcp. *ak-kan-t°/d°* (OH etc.), *ag-ga-(a)-an-t°/d°* (MH etc.) = [ākwēni], [ākantsi], [ākantu], [ākānt-].

Examples and etymological discussion *HEG* 1, 8–9, *HW*$^2$ 51–2, *HED* 1, 17–23. The plene writing in the first syllable of *a-ag-ga-an-za* KUB XLIII 72 Rs 14 (MH) is exceptional.

*istāp-* "shut, enclose, stop up": 3 sg. pres. *is-ta-a-pi* e.g. KBo V 11 IV 14, 16 (MH+), *i]s-ta-a-pi* KUB XXIX 30 II 17 (OH), *is-da-a-pi* KBo IX 22 II 43 (MH?/NH?), *is-da-pi* ib. II 33, 2 sg. imp. *is-ta-a-pi* KUB XXXIII 62 III 6 (MH?), 3 sg. *is-ta-a-pu* KUB XXVIII 82 I 23 (OH+) = [stābi], [stābu], cf. the full-grade with plene writing in 1 sg. pres. *is-ta-a-ap-he* StBoT 25 3 IV 37 = 4 IV 33; with stem *istapp-*: 3 pl. pres. *is-tap-pa-an-zi* KBo IV 2 I 8 (OH+), KBo XXI 34 I 61 (MH?), *is-tab-ba-an-zi* IBoT II 23 L. 4 (U), 3 pl. pres. midd. *is-tap-pa-an-da-ri* ABoT 60 Vs. 18 (MH), 3 pl. imp. *is-tap-pa-an-du* KUB XIII 2 I 7 (MH(?)+), ptcp. *is-tap-pa-an-t°* (MH etc.). Examples and etymological discussion *HEG* 3, 432–3, *HED* 1, 471–5.

Double *pp* also occurs in the 3 sg. pret. *is-tap-pa-as* KBo III 6 III 57 = KUB I 8 IV 12 (NH) (= [stāpps] for *[stābis] with devoicing?) and in the derivatives *istappulli-* "cover, lid, plug, stopper", vbl. noun *istappessar* and caus. *istapinu-*.

Sommer (*HuH* 74) first drew attention to the regularity of the alternation in *āk-* and *istāp-*, and Rosenkranz, *Akt. d. 24. Int. Or. Kong.* 161–2, connected it with ablaut (cf. also *Vgl. Unters.* 40). It has obvious parallels to the alternation of single and double stop in *wēk-*, *wēkk-* "ask" with original strong stem *ú-e-k°* = [wēg-] < **wéḱ-* beside weak stem *ú-e-ek-k°* = [wēk-] < **wéḱ-* {6.4.4.1.} and to the alternations between *s* and *ss* and *h* and *hh* in the paradigms of the other *hi*-verbs *hās-*, *hass-* "give birth, beget", *hās-*, *hass-*, *hēs(s)-* "open" {11.4.3.}, and *nāh-*, *nahh-* "fear" {10.4.2.1.} (cf. Oettinger, *Stammbildung* 448–9 and Catsanicos, *BSL* 75 (1980) 174).

The labial stop of *istāp-* should probably continue IE **p*; possible cognates would be Skt. *viṣṭap-* "top, surface, cover" and OCS *stopiti* "tread firmly". However, the other IE languages offer words with similar meanings but root-final **b* or **bh* (cf. **steb-* and nasalized **stemb-* in Gk. στέμβω "kick around, abuse", OE *steppan* "step, tread", pret. *stōp*, and *stempan* "stomp, stamp"), **stebh-* in Gk. στέφω "put around, entwine", ἀστεμφής "unmoved", Skt. *stabhnoti* "makes firm, supports", *stambaḥ* "post, pillar", and ON *stefja* "curb, restrain". Note too that Gk. σταφύλη "plummet" and OE *stapol* "post, pillar (NE *staple*) resemble *istappulli-* at least in formal terms.

Eichner, *MSS* 31 (1973) 81–2, *Fl. u. Wb.* 87, and Oettinger, *Stammbildung* 54, 401–2, 418–9, have tried to connect the alternation between single and double stop with PA voicing, and undoubtedly there is some connection, but the explanations that have been proposed are not satisfactory. Eichner posits a reduplicated perfect 3 sg. **h₃e-h₃ók-e* > **ṓke*, 3 pl. **h₃e-h₃k-re* as preform for *āk-* and derives the voiced stop of the strong stem through PA voicing after the loss of the laryngeal and subsequent contraction produced a long vowel. Similarly, Oettinger (410–2) reconstructs 3 sg. **(h₃e)-h₃ok-e-* and 3 pl. **h₃e-h₃k-eh₁-re*, which he also claims result in forms with long vowel after loss of the laryngeals and contraction, and ptcp. **h₃ként-* > *ākkant-* with vocalization of the laryngeal. Eichner notes that the etymology is not certain but tentively suggests a connection with Ved. *āśu* "swift", Gk. ὠκύς id. and Lat. *ōcior* "swifter", which he derives from an IE lengthened-grade or reduplicated adjective, reconstructing a stative meaning **"has gone" → "is dead" for the perfect. This explanation will not work, however, since **h₃* was preserved initially {10.2.3.}. Similar forms from a putative root **h₁ek-* (or **h₁eḱ-*) might work, however; a first person singular **h₁e-h₁ok-e(i)* might have become **eōki* > **ṓki* with contraction > [āgi] with PA voicing and **ṓ* > [ā] and 3 pl. pret. **h₁e-h₁ók-ēr* > **eṓkēr* > **ṓkēr* > [āgĕr]. Deriving the particple from zero-grade **h₁k-*, however, depends on whether **h₁* vocalized before stops, which is uncertain {10.2.5., 10.3.1.4.}, and there is no obvious etymology.

Oettinger (418–9) derives the voiced stop of *istāp-* by PA voicing, reconstructing an iterative-causative **stop-éye/o-*. However, there is little support for Oettinger's derivation of the *hi*-conjugation from IE iterative-causatives, and voiceless stops did not undergo voicing before accented syllables (cf. e.g. *tukkāri* "is visible, important" < **tukóri* {6.4.1.3.}). Puhvel's suggestion (*HED* 1, 474) that the paradigm has **stop-* beside **stob(h)-* will not explain why the voiced stop generally coincides with the strong stem in early texts. His suggestion that the voiceless stop originated in forms



of the paradigm with devoicing of an original voiced stop before voiceless consonants (e.g. 1 sg. **stób(h)h₂ai* > **stoph₂ai* > [stāphe], 2 sg. **stób(h)-th₂ai* > **stóph₂tai* > [stāpte]) seems more promising.

Eichner, *MSS* 31 (1973) 82, also derives *eku-* "drink" from a reduplicated stem **h₁e-h₁ekʷ-* beside it. *akkusk-* < **h₁kʷ-sḱ-*, but *eku-* is from **h₁egʷh-* {6.4.3.4.}, and the double velar of *akkusk-* = [akʷsk-] indicates devoicing {6.11.1.}.

## 6.5. Preconsonantal

### 6.5.1. Labiovelars

Čop, *RHA* 57 (1955) 69; Kronasser, *VLFL* 65; Kuryłowicz, *PICL* 8 231–2; Lindeman, *RHA* 76 (1965) 29–32; Milewski, *Indo-Hittite* 3–4; Puhvel, *JAOS* 94 291, 292 = *AnIE* 262, 263; Oettinger, *Stammbildung* 87 w. n. 10, 237; Pedersen, *Hitt.* 174; Schindler, *KZ* 81 (1967) 270; Sturtevant, *Language* 6 (1930) 223–4, *Language* 9 (1933) 7.

Opinion is divided over whether the labial element vocalized before consonants (i.e. **KʷC* > [KuC]) or whether preconsonantal labiovelars remained unitary phonemes (i.e. **KʷC* > [KʷC]). Vocalization is proposed by Sturtevant, Pedersen and Kronasser, while preservation is posited by Milewski, Kuryłowicz, Lindeman, Puhvel, Čop, Schindler, and Oettinger. On the whole, the evidence favors preservation (see Lindeman especially for a summation of the evidence). For example, *eku-*, *aku-* "drink" behaves like a consonant stem rather than a verb in final *-u*. The spelling of the 3 sg. pret. *e-ku-ut-ta* (KBo XII 3 III 16 (OH+), KUB I 16 III 17 (OH+)) points to a reading [egʷta] with anaptyctic /a/ {3.9.1.}. The spelling ***e-ku-ut* is never attested, although spellings in *-Cu-ut* are regular for verbs with stems in final [-u], e.g. *par-ga-nu-ut* [bargnut] "(s)he cleaned" (cf. Oettinger, *Stammbildung* 237).

Oettinger suggests that NH *wa-at-ku-ut* for earlier *wa-at-ku-ut-ta*, third person singular preterit of *waktku-* "jump" < **wo-tkʷ-t* {6.6.1.} indicates that preconsonantal /kʷ/ eventually merged with /ku/, but it is possible that the ending /-t/ was simply generalized from vowel stems without vocalization of the labiovelar.

The spellings *e-uk-zi* StBoT 25, 72 III 4, 7 (note also *ta-tak* for *ta-kan* or *tak-kan* ib. II 4 ) beside the much more common *e-ku-zi* (OH etc.), *e-uk-si* KBo XXII 1 Rs 28 (OH) beside *e-ku-us-si*, *e-uk-ta* KUB XXXVI 104 I 6 (OH) beside *e-ku-ut-ta*, and *ta-ru-uḫk-zi* KBo VII 35 + XVII 44 I + 99 I 22 (MH), *taṛ-uḳ-zi* StBoT 25, 43, I 9, *tar-uk-zi* ib. I 14, *tar-uk-zi* beside *tar-ku-zi* may be understood as attempts to indicate a preconsonantal labiovelar, i.e. [ēgʷtsi], [ēgʷsi], [ēgʷta], and [tarkʷtṣi] (Lindeman, Oettinger).

A telling bit of evidence in favor of preconsonantal labiovelars is the apparent devoicing in the iterative *akkuskē-* "drink" (e.g. 2 sg. pres. *ak-ku-us-ke-(e)-si* StBoT 25, 110 II 9, 16, 3 sg. *ak-ku-us-ke-(ez)-zi* OH etc., 1 pl. *ak-ku-us-ke-e-wa-ni* StBoT 25, 140 Rs. 70), apparently [akʷskē-] beside [ēgʷ-] in *e-ku-zi*, *e-uk-zi* etc. and [agʷ-] in *a-ku-(wa)-an-zi*, *a-ku-wa-a-tar* etc. While devoicing is otherwise attested in iteratives made from stems in final voiced stops (e.g. *hu-uk-ki-is-k°* = [hukisk-] "is reciting

spells" : *huēk-* = [hwēg-] {6.11.}), it would not occur in a stem *[agusk-] with a vocalized labiovelar. In view of the devoicing of /g$^{w}$/ here, the spellings *e-uk-si, e-ku-us-si* must be taken as representations of phonetic [ek$^{w}$si].

*tekkussiya-* "point out, show": 3 sg. pres. *te-<ek>-ku-us-si-ez-zi* KBo XXV 1 b. L. 2 (OH), usually with °K-KU, 3 sg. *te-ek-ku-us-si-[ez-zi* KUB XLIII 38 Rs. 10 (NH), *te-ek-ku-us-si-e[z-zi* ib. Rs. 12, 3 sg. pret. *te-ek-ku-us-si-e-et* KBo III 60 I 5 (OH+), with stem *tekkusā(i)-*: *te-ek-ku-us-sa-mi* KBo V 3 I 10 (Supp. I+), caus. *tekkusnu-*, e.g. 2 sg. pres. *te-ek-ku-us-sa-nu-si* KBo V 3 I 29, 1 sg. pret. *te-ek-ku-us-sa-nu-un* ib. I 5 with root [dek$^{w}$s-] < **dek$^{w}$s-* : Av. *daxsa-* "teach", *daxsta-* "sign".

The etymology was proposed by Goetze, *Language* 27 (1951) 471 n. 12. The alternative derivation from IE **deik-* (in Gk. δείκνυμι "I point out" etc.), proposed by Sturtevant, *Language* 6 (1930) 27–8 and 227–8, and *CGr*$^{2}$ 62, is precluded by the virtually consistent double °K-KU which points to a voiceless stop, since **eik* should probably have become [īg] or [ēg] with monophthongization and PA voicing.

The reflex of **g$^{w}$* probably occurs in *nekuz* "night" (*ne-ku-uz* , OH+, MH+, *ne-ku-uz-za, ne-ku-za*) and in *neku-* "become evening" (3 sg. pres. *ne-ku-uz-zi* KUB XXIX 50 IV 38, MH, 3 sg. pret. midd. *ne-ku-ut-t[a-at]* KUB XXIX 54 IV 9, MH) = [neg$^{w}$ts], [neg$^{w}$tsi] etc. from an IE *t*-stem with gen. sg. **nég$^{w}$t-s* beside nom. sg. **nóg$^{w}$t-s* in e.g. Lat. *nox*, Goth. *nahts*, Gk. νύξ (Schindler, *KZ* 81 (1967) 290–303). It is possible that the apparently consistent lack of plene writing indicates a short vowel before the heavy cluster [g$^{w}$ts] {1.3.3.4.}.

*nekumant-* "naked": nom. sg. c. *ne-ku-ma-an-za* e.g. KUB XIV 1 Vs 51 (MH), KUB XIII 4 III 32 (MH(?)+), *ni-ku-ma-an-za* KBo III 34 II 35 (OH+), nom. pl. c. *ne-ku-ma-an-ti-s°* KUB XXIX 50 IV 9 (MH?), nom.-acc. pl. n. *ne-ku-ma-an-ta* KUB XXXIII 86 II 10 (MH+), case unclear *ne-e-ku-ma[-* KUB XXIX 55 II 10 (MH) = [nēg$^{w}$mant-] < **nég$^{w}$nant-* with dissimilation {7.10.3.} < **neg$^{w}$no-* : Skt. *nagná-*, Gk. γυμνός (Puhvel, *JAOS* 94 (1974) 293 = *AnIE* 264).

LÚ*akuttara-*, a cult functionary (*a-ku-ud-da-ra-*, OH, *a-ku-ut-ta-ra-*) = [ag$^{w}$tara-] : *eku-* "drink" < **h$_1$eg$^{w}$h-* {6.4.3.4.}.

### 6.5.2. Gemination before laryngeals

Postvocalic stops were geminated when they preceded **h$_1$* or **h$_2$*. Reflexes of plain voiced stops and voiced aspirates preceding either laryngeal are written double: *mekki-* "much, many, numerous" (nom. sg. c. *me-ek-ki-is* (MH, OH+), nom.-acc. sg. n. *me-ek-ki* (OH, MH etc.), nom. pl. c. *me-eg-ga-e-es* (OH+, NH), acc. pl. c. *me-eq-qa-a-us* (NH)) = [mekki-], [mekka(y)-] < **mégh$_2$i-*, **mégh$_2$oy-* {10.7.1.}; *uttar* "word, thing" (nom.-acc. sg. *ut-tar* (OH etc.), gen. sg. *ut-ta-na-a-as* (MH), *ud-da-na-a-as* (MH), *ud-da-a-na-as* KUB XVII 18 II 29 (NH), *ud-da-na-as* (MH, NH etc.), nom.-acc. pl. *ut-ta-a-ar* (OH), *ud-da-a-ar* (OH etc.)) = [uttar], [uttān-], [uttār] < PA. **udh$_2$-r̥*, **udh$_2$-n̥n-*, **udh$_2$-ór* {10.7.1.}; second person plural middle endings, present: °*d-du-du-ma*, °*t-tu-ma*, preterit: °*d-du-ma-at*, imp. °*d-du-ma-at* = [-ttuma-] < Sievers variant **-dh$_2$uwe*: Skt. *-dhva(m)* < **-dh$_2$we-* {10.7.1.}; **tittiya-* = *[dittya-] "suckle" in it. *ti-it-ti-is-ke-ez-zi* "suckles" = [dittisketsi] (OH+) from reduplicated **dhi-dhh$_1$-* : **dheh$_1$-i-* "suckle" {6.7.4.}; *huēttiya-* "pull, drag, draw" (*hu-(e)-et-ti-ya-*, OH etc.) = [hwēttya-] < **h$_2$wédh$_2$-yo-* : **h$_2$wedh$_2$-* "lead" {10.7.1.}.



The doubling of the reflexes of voiced stops and voiced aspirates in these words suggests that reflexes of voiceless stop plus **h$_1$* or **h$_2$*, which are also written double, are to be interpreted as geminates rather than simple voiceless stops: e.g. *piddai-, pittiya-* "flee" (3 sg. pres. *pid-da-a-i* (OH, MH etc.),3 pl. *pit-ti-an-zi* (MH), *pit-ti-ya-an-zi* (OH+)), caus. *pittinu-*, and *pittar* "wing" (nom.-acc. sg. PIT-*tar*) = [pitta-], [pittya-], [pittar] or [pattar] : **peth$_1$-* "fly, fall" {10.7.4.}; post-vocalic *hi*-conjugation second person singular present ending ending °*t-ti* = [-tti] for **-tte* < PA **-th$_2$ai* {10.7.2. }; post-vocalic second person singular middle present endings °*t-ta*, °*t-ta-ri* and °*t-ta-ti* = [-tta] < **-th$_2$e*; *pattar* "basket, tray" (nom.-acc. sg. *pa-at-tar* (OH, OH+), *pad-da-ra* (OH)) = [pattar] < **póth$_2$-r̥* {10.7.2.}; *pittalwant-* "light, thin, plain, mere, unseasoned" (nom. sg. c. *pit-tal-wa-an-za* (NH), nom.-acc. sg. n. *pit-tal-wa-an* (OH+, MH+, NH), perhaps [pittalwant-] with PED-*d*° = [pitt] < **peth$_2$l̥wént-* : **peth$_2$-* "spread open" {10.7.2.}.

## 6.6. Postconsonantal

### 6.6.1. Voiceless stops

Reflexes of voiceless stops are sometimes doubled to indicate voicelessness.

IE **p* occurs in *karp(p)-* "lift, undertake": 3 sg. pres. *kar-ap-zi* e.g. StBoT 25, 34 Rs 5 , 3 pl. *kar-pa-an-zi* e.g. StBoT 25, 25 I 46, *kar-ap-pa-an-zi* Kbo IV 9 V 30 (OH+), ptcp. nom. sg. c. *kar-pa-an-za* e.g. IBoT I 36 I 20 (MH), nom.-acc. sg. n. *kar-pa-an* e.g. KBo IX 73 Vs 12 (OH), *kar-ap-pa-an* KBo XXIII 87 I 13 (OH+), KBo XXV 176 Rs. 14 (OH+), nom. pl. c. *kar-pa-an-te-es* e.g. KUB XIII 4 I 15 (MH(?)+), KUB XVI 77 Vs. 46 (U) 3 pl. imp. *kar-pa-an-du* KBo IV 9 V 31; *karp(ap)iya-* id., 3 sg. pres. *kar-pi-i-ez-zi* e.g. KBo VI 2 II 40, 49 (OH), *kar-pi-i-<ez>-zi* ib. II 39, *kar-pi-ez-zi* ib. II 42, 3 pl. *kar-pi-an-zi* StBoT 25, 128 L. col. 3 (OH), *kar-ap-pi-an-zi* StBoT 25, 72 II 3 (OH), KBo III 53 Vs. 3 (OH+), 3 pl. pret. *kar-pi-e-er* KBo VI 2 II 14, *kar-pi-i-e-e[r* KBo VI 6 I 23 (OH+), 2 pl. imp. *kar-ap-pi-ya-at-ten* KUB X 89 I 15 (OH+) = [karp-], [karpye/a-], [karpyēr] < **karp-* and **karp-yé/ó-*, cf. Lat. *carpere* "pluck", Lith. *kerpù, kir̃pti* "cut with scissors" : IE **kerp-*.

Words with postconsonantal **t* include: *siptamiya-*, a drink: *si-ip-ta-mi-ya-* = [siptamya] < **septm̥yó-* < IE **septm̥* "seven" {5.3.3.}; *paltana/i-* "arm, shoulder" (*pa-al-ta-n°*) = [palt(a)na/i-] < **pl̥th$_2$(e/o)no-* {10.6.1.2., 10.9.1.2.}; *hastāi* "bone(s)" (*ha-as-ta-(a)-i, ha-as-ta-e, ha-as-da-i*) = [hastāi] < PA **h$_2$astHói* {10.3.2.1.}.

After a labiovelar, the reflex of **t* is written UT-T°, UD-D° in *watku-* "run" (3 sg. pret. *wa-at-ku-ut-ta*, OH etc.) = [watk$^{w}$ta]; *eku-* "drink" (3 sg. pret. *e-ku-ut-ta* KUB I 16 III 17, OH+, KBo XII 3 III 16 (OH+), imp. *e-ku-ud-du* KUB XLIII 23 Vs 3 (OH?/MH?), 2 pl. imp. *e-ku-ut-ten* KBo V 3 III 37 (Supp. I+), KBo X 45 IV 12 (MH+), KBo XVII 10 III 30, NH) = [ēg$^{w}$ta], [ēg$^{w}$tu], [ēg$^{w}$ten] {6.4.3.4.}, and LÚ*akkutta(r)ra-*, a cult functionary: nom. sg. LÚ*a-ku-ut-tar-ra-[as]* KBo V 11 I 14 (MH+), acc. pl. *a-ku-ut-ta-ru-us* 2257 L. 11, *a-ku-ud-da-ru-us* ib. L. 12 (HED) = [ag$^{w}$tara-] {6.5.1.}.

The single dental of 2 pl. pret. *e-ku-te-en* KUB XXXIII 62 III 11 (MH?) is probably a defective spelling.

IE **k* or **ĥ* is found in *kānk-* "hang": 1 sg. pres. *ga-a-an-ga-ah-he* (OH), 3 sg. *ka-a-an-ki* (OH), 3 pl. *kan-kan-zi* (MH etc.), ptcp. e.g. nom. pl. c. *ga-an-ga-an-te-es* (OH) = [kāŋk-], [kank-] < **ĥónk-*, **ĥn̥k-* {2.4.1., 5.3.4.}; *wēlku-* "grass, hay" (*ú-(e)-el-ku(-)*) = [wēlku-] < **wélĥu-*; *tuskaratt-* "joy" (gen. sg. *tu-us-ka-ra-at-ta-as*, OH) = [tusk(a)ratas] < **tus-sk-* {11.6.4.}; iterative suffix -skē/*a-* (-VŠ-KE-(E)-, -VŠ-KA-) = [skē/a-] < **-ské/ó-* {2.4.3 }; *sūrka/i-* "root": acc. sg. *sur-ki-in* (NH), gen. *sur-ki-ya-as* (NH), nom. pl. *su-ur-ki-is* (OH), *a*-stem acc. pl. *su-u-ur-ku-us* (OH+), *sur-ku-us* (OH+) = [sūrki-] < **súrko/i-* < **swr̥ko/i-* {5.4.1.1.}.

For *har(k)-* "have, hold" see {6.12.3.}.

The reflex of postconsonantal **k*$^w$ occurs in *man(n)inkuwa-* "near" and derivatives, which are spelled *ma-ni-(in)-ku-(wa)-*, MH etc., *ma-an-ni-(in)-ku-wa-*, OH etc., *ma-ni-en-ku[-*, OH = [manniŋkʷa-], and have a suffix [-iŋkʷa-] < **-énk*$^w$*o-* {3.2.1.2., 7.3.3.1.}. Another example is found in *tarku-* "dance": 3 pl. pres. *tar-ku-an-zi* e.g. StBoT 25, 34 Vs 18, *tar-ku-wa-an-zi* StBoT 25, 32 L. 4, KBo XXIII 87 I 8, 9, 11 (OH+) beside athematic *tar-uk-zi* {6.5.1.} and Post-OH *tar-ku-wa-a-(i)-* = [tarkʷantsi], [tarkʷā(i)-] < **terk*$^w$*-* : Lat. *torquere* "twist".

Examples and etymological discussions *Stammbildung* 223–6 w. refs. and Puhvel, *JAOS* 94 (1974) 292, 294 = *AnIE* 263, 265.

IE **k*$^w$ is also attested in *watku-* "jump": 3 sg. pres. *wa-at-ku-uz-zi* e.g. KUB IX 22 II 47 (MH?/NH?), KUB XXIX 4 II 29, III 1, *wa-at-ku-zi* ib. IV 32 (NH), 3 sg. pret. *wa-at-ku-ut-ta* StBoT 25, 122 II 5, 3 pl. *wa-at-ku-er* KUB XIV 15 IV 23 (NH) = [watkʷtsi], [watkʷta], [watkʷer] < preverb **wo-* plus **tk*$^w$*-*, from the weak stem of the IE athematic present **tékʷti*, preserved in Skt. *tákti* "runs (Čop, *RHA* 57 (1955) 69, Oettinger, *Stammbildung* 237).

### 6.6.2. Voiced stops

IE **d* occurs in *hasduēr* "branches" (*ha-as-du-(e)-er*) = [hastwēr] < **h*$_2$*osdwḗr* = **[h*$_2$*ozdwḗr]* with devoicing {11.5.1.2.}. The reflex of **g* is found in *dankui-* "dark" (*da-an-ku-i, ta-an-ku-i*) = [dangwī-] < **dn̥gwih*$_2$*-* {6.8.2.}.

There are at least two examples of **g*$^w$.

*ārkuwā(i)-* "plead, exculpate oneself, explain oneself": 3 pl. pres. *ar-ku-an-zi* e.g. StBoT 25, 34 Vs. 17, *ar-ku-wa-an-zi* e.g. ib. Vs. 15, *a-ar-ku-wa-a-an-zi* KBo XXIII 97 IV 15 (OH+), 1 sg. pret. *ar-ku-wa-nu-un* e.g. KUB VI 45 III 35 = KUB VI 46 IV 3 (both NH); *arkuwar* "prayer, apology": *a-ar-ku-u-wa-ar* KUB XVI 10 I 22 (Pre-NH), *ar-ku-wa-ar* e.g. KUB XIV 1 Rs 36 (MH), KUB XXIV 1 IV 21 (Pre-NH), *ar-ku-u-wa-ar* e.g. KUB XV 22 L. 3 (NH), *ar-ku-ar* KUB V 1 II 109 (NH) = [ārgʷā(i)-], [ārgʷar], denominative to an **arg*$^w$*-éh*$_2$*-* "prayer, plea" > Hitt. **[ārgʷa]* : **arg*$^w$*-* in Lat. *arguere* "assert, prove, accuse".

Examples and etymological refs. *HED* 1, 148–51.

*tarkuwa-* "glaring, baleful, fierce" (nom.-acc. pl. *tar-ku-wa* KUB XXIV 7 III 21, NH), and derivative *tarkuwalliya-* "glower, glare", *targulliyawar* (*tar-gu-ul-li-ya-wa-ar* = Sum. IGI.HUS "raging eye" and Akk. *nekelmu* in KBo XIII 1 I 48, NH vocab.) = [targʷa-] < adj. **torg*$^w$*o-* or **tr̥g*$^w$*-* : **terg*$^w$*-* in e.g. Skt. *tarjati* "threaten", Gk. τάρβος "alarm, terror", Lat. *torvus* "staring, fierce".

The etymology is that of Neumann, *IF* 76 (1971) 262; see also Puhvel, *JAOS* 94 (1974) 293 = *AnIE* 264 w. refs., and Oettinger, *Stammbildung* 226.

### 6.6.3. Voiced aspirates

IE **bh* is found in *alpā-* "cloud" (nom. sg. *al-pa-as* (OH etc.), *al-pa-a-as* Bo 3092 Vs. 7 (*HW*$^2$, *HED*)) = [albā-] < **albhó-* {2.6.2.}. IE **dh* is attested in *antuwahhas* "human being" (nom. sg. *an-tu-wa-ah-ha-as* (NH), *an-tuh-wa-ah-ha-as* (MH+), *an-tu-u-wa-ah-ha-as* (NH), gen. sg.? (pl.?) *an-du-uh-sa-as* (OH) dat.-loc. (MH, MH+), dat.-loc. pl. *an-tu-us-sa-as* (OH+), *an-tu-uh-sa-as* (MH), gen. pl. *an-tu-uh-sa-an* (MH+)) = [andwahas], [anduhsa-] from **en-dhweh*$_2$*-os* : **en-dhuh*$_2$*-s-es-* "having spirit or breath within" {3.7.4.2.}.

There are two examples of **ĝh*: *pānku* adj. "all", noun "assembly" (nom. sg. c. *pa-an-ku-us* (OH etc.), *pa-a-an-ku-us* KUB XXIV 1 IV 18 (Pre-NH), acc. sg. *pa-a-an-ku-un* KUB XIX 11 I 6 (NH), *pa-an-ku-un* Bo 2833 L. 13 (Goetze, AM 240), adj. oblique stem *pa-an-ga-u-(wa)-*, *pa-an-qa-u-*) = [bāngu-], [bangaw-] < **bhónĝh-u-*, **bhn̥ĝh-ów-* {5.3.1.}; *parku-* "high" (acc. sg. c. *par-ku-un* KUB XXIV 7 II 10 (NH), nom.-acc.sg. n. *par-ku* e.g. KBo IV 4 IV 7 (NH), oblique stem *par-ga-u-*, acc. pl. c. *par-ga-mu-us*, MH etc.) = [bargu-] < **bhr̥ĝh-ú-* {5.3.1.}.

## 6.7. Conditioned changes affecting dentals

Čop, *Linguistica* 9/1 (1969) 46; Eichner, *Gds Kronasser* 26 n. 52; Friedrich, *HE* 29–30; Goetze, *Madd.* 126 w. n. 1–5; Joseph, *Sprache* 30 (1984); Kronasser, *VLFH* 61–2; *EHS* 52–4; Mayrhofer, *Idg. Gr.* I/2, 110–11; Milewski, *IH* 9; Pedersen, *Hitt.* 126–7, 175; Sturtevant, *CGr*$^1$ 126, 129, *Language* 9 (1933) 6–7, *CGr2* 60–1, 62–3.

### 6.7.1. Dental plus dental

#### 6.7.1.1. Dental stop plus dental stop

A sequence of dental stop plus dental stop produced an affricate [tˢt] that is written with signs of the Z-series followed by dental stop or by *s* plus dental stop in both Hittite and Cuneiform Luvian. Spellings in °Z-T/D° seem to be earlier than those in -ZA-AS-T/D°. The rule by which dental stop plus dental stop yields an affricate goes back to IE (see Mayrhofer, *loc. cit.*), but the affricate is retained intact only in Anatolian. Therefore, Anatolian [tˢt] corresponds regularly to Skt. *tt*, Av. *st*, Gk. στ, Lat. *ss*, Gmc. *ss*, Celt. *ss*, Balt. *st*, and Slav. *st*.

*ēd-* "eat": 3 sg. pret. *e-ez-ta* e.g. KBo III 60 II 18 (OH+) = [ētˢta] < Pre-Hitt. */éd-t/*; 3 sg. imp. *e-ez-du* e.g. KUB XLIII 23 Vs 9 (OH?/MH?), *e-ez-za-as-du* KBo VIII 35 II 20 (MH) = [ētˢtu] < */éd-tu/*; 2 pl. pres. *az-za-as-te-ni* KUB I 16 III 34, 48 (OH+), *e-ez-za-at-te-ni* KUB XIII 4 IV 44 (MH(?)+), *e-ez-za-at-te-ni* KUB XIII 5 II 20 (MH+); 2 pl. pret. and imp. *e-ez-te-en* KUB XLIII 23 Vs 9, *e-za-at-te-en* e.g. KUB IV 1 II 4 (MH), *e-*

*ez-za-ten* KBo XVI 25 I 25 (MH), *e-ez-za-as-te-en* e. g. KBo VII 28 Vs 26 (MH), *e-ez-za-at-te-en* (OH+, NH) = [at$^{s}$téni], [ēt$^{s}$ten(i)] < */ad-téni/, */éd-ten/.

*hāt-* "dry up, be dry": 3 sg. pret. *ha-a-az-ta* (MH), *ha-az-za-as-ta* (NH), *ha-az-ta* (NH) = [hāt$^{s}$ta] < */hád-t/; 3 sg. imp. *ha-az-za-du* Bo 2153 Vs? I 6 (U) = [hāt$^{s}$tu] from */hád-tu/.

Note also *ha-a-du* KUB XVII 28 II 44 (OH+) with analogical dental stop.

In *isparz-, ispart-* "escape, slip away", (+ *sarā*) "leap up", the affricate is regular in forms with endings beginning in dental stops: 3 sg. pret. *is-par-za-as-ta* e. g. KBo XXII 2 Rs 8 (OH; also MH etc.) = [spart$^{s}$ta] < */spard-t/, 3 sg. imp. *is-par-za-as-du* KBo XII 126 I 21 (MH+) = [spart$^{s}$tu] < */spard-tu/ : **sperdh-*, **spṛdh-* in Arm. *sprdem* "I escape", Skt. *spardhate* "contends, rivals", aor. 3 pl. midd. *aspṛdhran.* The stem [spart$^{s}$t-] was, however, extended to other forms of the paradigm: e. g. 3 sg. pret. *is-par-za-ah-hu-un* KUB XXV 21 III 14 (NH), 3 pl. pret. act. *is-par-ze-er* e. g. KUB I 6 II 8 (NH), ptcp. nom.-acc. sg. n. *is-par-za-an* KBo VI 28 Vs 15 (NH).

Examples *HED* 2, 447–50; for *ispartye-* = [spardyē-] < **spṛdh-yé-* {6.7.4.}.

In the second person plural middle present *hu-e-ez-ta* "draws, pulls" KUB XVII 10 IV 1, 2 (MH) beside *huēttiya-* "draw, pull" a root-final **h₂* has been lost between the two dental stops, i. e. **h₂wédh₂-th₂e* > [hwēt$^{s}$ta] {2.10.1., 10.10.1.}.

The verb *mazz-* "resist, stand fast, endure" is considered a dental stem by Friedrich, *HW* 139, *HE* 81–2 and Oettinger, *Stammbildung* 208–9, and its stem final *zz* is derived by them from a sequence of two dental stops. Hoffner-Güterbock, however, *CHD* 3, 213–14, question the readings of 3 pl. pret. *ma-tḫe-er* KBo II 13 Vs 18 (OH+) and 3 sg. imp. *ma-du* KUB XXX 10 Rs 6 (MH), suggesting instead that the stem is *mazz-*.

See also Tischler, *HEG* 6, 163–4.

### 6.7.1.2. Dental stop plus /tṣ/ < **ti*

In the third person singular present of athematic *mi*-verbs with stems in final dentals a synchronic sequence /d-tṣ/ resulted in a sound written with °Z° or °Z-Z, e. g. 3 sg. pres. *e-za-az-zi* KUB VII 1 II 10 (Pre-NH), *ḛ-ez-za-i* KUB VIII 64 L. 10 (MH+), *e-ez-za-a-i* KUB XIII 4 I 53, IV 5 (MH(?)+) = /ḗd-tṣi/ : *ēd-* "eat"; *is-par-za-i* e. g. KUB VI 7 IV 4 (NH), *is-par-za-zi* e. g. KBo XVI 47 Vs. 11 (MH), *iṣ-paṛ-zạ-az-zị* KBo V 4 Vs 10 (NH), *is-pa-ar-zi-zi* e. g. KUB IV 72 Rs 5 (OH?/MH?), *is-par-za-iz-zi* 112/u L. 6 (HED) = /spard-tṣi/ : *ispart-, isparzz-* "escape". Spellings with °Z-T/D° or °Z-AŠ-T/D° comparable to those for the third person singular preterit, the second person plural present, preterit and imperative and the third person singular imperative do not occur, suggesting that /d-tṣ/ resulted in a sound different from the outcome of a sequence of two dental stops, perhaps an affricate cluster [t$^{s}$tts], i. e. [ēt$^{s}$ttṣi], [spart$^{s}$-ttṣi] (cf. Pedersen, *Hitt.* 126–7).

### 6.7.1.3. *st* plus dental stop or affricate

A possible example in a morphologically isolated word is *tāiszi-* "shed, warehouse" (OH *ta-i-is-zi*) from **dāist-ti-* or **dāist-tyo-*, derivative of *taistāi-* "load" (3 sg. pres. *ta-a-is-ta-i,* OH+), which could be either [dāist$^{s}$ti-] or [dāistṣi-]. See Joseph, *Sprache* 30 (1984) 7–8, who posits **dāist-ti-* > **[dāist$^{s}$ttṣi] with simplification of the affricate cluster. For the etymology see {4.9.1.}.

A synchronic sequence /sdtṣ/ or /sdt/ results in a sound spelled °Š- Z° in forms of *sesd-* "grow, flourish": e. g. 3 sg. pres. *se-es-zi* KBo III 7 I 7 (OH+), 3 sg. imp. *se-is-du* KUB XXIV 3 III 39 (MH+), *si-is-du* KBo VII 28 Vs. 15 (MH), KUB XII 49 L. 2 (U), KUB XXIV 2 Rs18 (Pre-NH); for the stem /sesd-/ cf. vbl. n. *si-is-du-wa-ar* KUB XV 34 II 23 (MH?). Although the historically regular outcome of **sesd-* plus an ending in initial dental stop would have been *[set$^{s}$t], it is possible that the phonologically regular forms were restructured as /sēsd-tṣi/ and /sēsd-tu/ and that these were realized as [sēstṣi] and [sēstu] with loss of the middle stop {6.12.2.}.

Cf. Eichner, *Gds Kronasser* 26 w. n. 52, who posits blocking of the rule that produced [t$^{s}$t] from dental stop plus dental stop or affricate as a possible explanation.

### 6.7.1.4. /tṣ/ plus cluster with initial *s*

A cluster Z-Š-C°= /tṣsC/ is reduced to °Z-C° = [tṣC] in ablatives in *-az* followed by the third person plural personal pronoun *-smit:* e. g. *is-sa-az-mi-it* "their mouth" StBoT 25, 3 I 18 = 4 I 13 = /issatṣ-smit/ → [issatṣmit]; *kar-ta-az-mi-it* "their heart" (sic) StBoT 25, 7 IV 6 = /kardatṣ-smit/ → [kardatṣmit]. Similarly, combinations of the reflexive particle *-z(a), -(V)z* = [tṣ] plus the particle *-ssan* are written -ZA-AN = /tṣ-san/ → [-tṣan].

## 6.7.2. Assibilation

### 6.7.2.1. Assibilation of **ty*

IE **t* became an affricate /tṣ/ spelled with signs of the Z-series before **y* or **i*. The assibliation of **ty* was PA since it also occured in Lycian.

Assibilation occurred in adjectives made with the suffix **-tyo-*: *hantezziya-* "first" (e. g. nom. sg. c. *ha-an-te-ez-zi-ya-as,* OH) = [hantetṣya-] < **h₂ṇtéi-tyo-*; *appezziya-* "last" (e. g. nom. sg. c. *ap-pe-ez-zi-ya-as-s,* OH) = [apetṣya-] < **h₁opeityo-*, or remodeled from *[apitsya-] < **h₁opityo-* {4.3.2.2.}; *sarāzziya-* "upper" (e. g. acc. sg. c. *sa-ra-az-zi-ya-an,* MH) = [srātṣiya-] < PA **srō-tyo-*. The suffix **-tyo-* also shows assibilation in the Lycian adjectives *hrzze/i-* "above" (*Lyc. Lex.*$^{2}$ 29) derived from PA **srṓ* ( cf. Hitt. *sarā* "upwards" and *sarāzziya-*); *przze/i-* "foremost" (*Lyc. Lex.*$^{2}$ 57) from PA **pṛṓ*; and in *prñnezze/i-* "(pertaining to a) household" (*Lyc. Lex.*$^{2}$ 56) from PA **pərn-* < **pṛn-* (cf. Hitt. **pēr, parn-* "house").

*hazziya-* "strike, stab, pierce, meet" (e. g. of an arrow hitting a target), "write" (i. e. "engrave, scratch"): 3 sg. pres. *ha-az-zi-ez-zi* KBo III 34 II 33 (OH+), 3 pl. *ha-az-zi-an-zi* StBoT 25, 33 I 8, 19 (OH), KBo XI 34 I 4, 6 (OH+), 1 sg. pret. *ha-az-zi-ya-nu-un* KBo IV 10 II 22 (NH), 3 sg. *ha-az-zi-e-et* KBo VII 14 + KUB XXXVI 100 Vs. 3 (OH), KUB XXXI 64 III 4 (OH+), *ha-zi-et* KBo III 36 Vs. 8 (OH+), *ha-az-zi-et* KUB XXXI 64 I 18, 3 pl. imp. *ha-az-zi-e-e[d-du* KBo III 22 Rs 51 (OH), ptcp. nom.-acc. sg. n. *ha-az-zi-an* KBo XXII 1 Rs 23 (OH) = [hatsyē/a-] < **h₂ét-ye/o-* (stem *ha-az-zi-e-(eC)* with analogical [-yē-]) beside *hatta-* (med. tant.) "strike, hew", **h₂et-o-*, it. *hattannai-*, and Lyc. χttadi "strikes" (< **h₂étteh₂-ye-ti*).

Cognates outside Anatolian (e.g. Arm. *hat-* "cut") are uncertain. The etymology is that of Čop, *Linguistica* 3 (1958) 52–68, *Linguistica* 5 (1963) 30 n. 16; see also Tischler, *HEG* 2, 215–17 and 231–2 w. refs., Puhvel, *HED* 3, 248–5, and Oettinger, *MSS* 34 (1976) 124–6. The reconstruction of **h₂* is based on Lyc. *χttadi* "strikes" and *χttaba* "damage".

*kistanziya-* "starve": 3 sg. midd. pret. *ki-is-ta-an-zi-at-ta-at* (OH) = [Kistāntsya-] from the extended stem *kistant-* = [Kistānt-] "hungry" < **Kestént-* beside **Kóst-* in *kāsza* "hunger".{2.6.3.}.

### 6.7.2.2. Assibilation of **ti*

As Luvian and Palaic cognates show, assibilation of **t* before vocalic **i* was confined to Hittite. In final syllables **ti* became [ts] with loss of the **i* {3.8.1.}.

Locative *hānza* "in front" (*ha-a-an-za* (OH+)) = [hāntsa] < **h₂énti* with assibilation and later loss of the final **-i* {3.8.1.}; reflexive particle *z(a), Vz* (e.g. *ta-az, nu-uz*) = [-ts] < PA **ti* : CLuv., HLuv. *-ti*, Lyc. *-ti; mi*-conjugation third person singular present ending *-zi, -zzi* = [-tsi] from PA and IE **-ti;* third person plural present ending *-(a)nzi* = [-(a)ntsi] from PA and IE **-énti, *-n̥ti.*

The final *-i* of *-(z)zi* and *-(a)nzi* is analogical {3.8.1.}.

The nominal suffix *-uzzi* = [-utsi] of several deverbative nouns that refer to instruments, e.g. *ishuzzi* "belt" : *ishai-* "bind", *luzzi-* "corvée, feudal service" < **lh₁-uti, kattaluzzi-* "cord" : *katta-lu-* = preverb *katta* "down" + **lh₁-* "loosen", *intaluzzi-* "shovel", probably reflects a conglomerate suffix **-u-ti* (cf. Melchert, *SHHP* 166).

The ablative singular endings, thematic *-Vz* and athematic *-za* also have [-ts] from **tsi.* Athematic *-z(a)* = [-ts] is found in the adverbs *a-pe-e-ez* "from there" (e.g. KBo V 3 III 38, IV 32 (Supp. I+), KUB XXIV 9 II 26 (MH+), *a-pe-ez-za* e.g. KBo XXI 76 L. 20 (NH) = [abētsa]), original ablative of the demonstrative pronoun *apā-* and *ke-e-ez* "from here" (e.g. *ke-e-ez-z°* KBo V 13 I 29 (NH) = [kētsa]), original ablative of the demonstrative pronoun *kā-* and as an archaism in consonant stems, e.g. *É-er-za* StBoT 25, 12 II 18, StBoT 25, 1 Vs 16, KUB VIII 50 II 6 (NH) = [pērtsa] : **pēr* (*É-er*) "house"; *a-ra-ah-za* "away", e.g. StBoT 25, 3 II 30, StBoT 25, 4 III 42 = [arhtsa], original ablative of *arhā-* "border, rim"; *ne-e-pi-is-za* KUB XLIII 23 Rs 15 (OH/MH?) = [nēbistsa] : *nēpis* "heaven", *ta-pu-us-za* "beside, alongside", e.g. StBoT 25, 19 Rs. 66 = [dābustsa] from the ablative of *tāpuwas* "side"; and in the ablative ending *-anza* = [-antsa], which arose via resegmentation from *-an-za* = [-an-ts] (from loc. *-an* plus particle **-ti*) in verbal nouns in *-ātar*, e.g. *pa-ap-ra-(a)-an-na-az* : *paprātar* "impurity" (Jasanoff, *MSS* 31 (1973) 123–8). In productive paradigms, the athematic ablative ending *-z(a)* was eventually replaced by *-az* = [-a-ts] from consonant stems with full-grade [-ats] (e.g. *tu-uk-ka-az* (MH) : *twēkka-* "body, self") and from the *a*-stems (cf. e.g. *ne-pi-sa-az* KBo XVII 61 Rs 7 (MH+) = [nēbisats] for earlier *nēpisza*). The Luvian languages show reflexes of a generalized thematic formation **-ādi* with a voiced dental stop: Lyc. *-edi* (e.g. *esbedi* "horse, cavalry"), *-adi* (e.g. *kumazadi* "priest"); HLuv. *-ati/-ari*, CLuv. *-ati,* often with plene writing *-a-a-ti*. The origin of the Anatolian ablative is not entirely clear. Melchert, *Ablative and Instrumental* 457, suggests that it is ultimately from an adverbial formation in **-ti* (see also Neu, *Heth. u. Idg.* 186). The reconstruction with an original voiceless stop is supported by Hittite athematic [-ts] since neither **dhi* nor non-initial **di* were assibilated to [ts(i)]. If the dental stop



was originally voiceless, then the /d/ of PLuv. **-adi* should be the result of PA voicing, and it has at least two possible sources: it may reflect unaccented **-oti* > ** -odi,* originating in thematic (*o*-stem) nouns and adjectives with root accent (the type represented in Hittite by *nēwa-* "new" < **néwo-* or *pēda-* "place" < **pédo-*) with PA voicing in an unaccented syllable; or it may represent **-ā́-ti* > **-ā́-di*, generalized from *-eh₂*-stems, with voicing after the long accented vowel. Given the frequency of plene writing in Cuneiform Luvian, the latter alternative seems the more likely.

Assibilation also took place in the reflexive particle *-za, -az* = [ts] from a homophonous PA **ti* also in Pal. *-ti,* CLuv. and HLuv. *-ti,* Lyc. *-ti* (*-di*), and probably Lyd. *i* {3.8.1.}. For the third person singular and plural present present endings *-za* = [-ts] and *-anza* = [-antsa] < **-ti* and **-(V)nti* beside *-(z)zi* = [tsi] and *-(V)nzi* = [-(V)ntsi] with analogical *-i* see {3.8.1.}.

### 6.7.2.3. Assibilation of PA **tʸu*

The assibilation in *zīk,* nominative of the second person singular pronoun (e.g. *zi-i-ik* StBoT 25, 112 I 5, 12, 13, 17 etc., *zi-ik* e.g. StBoT 25, 109 II 6, 9, 11 etc.) can be explained by the developments outlined by Melchert, *MSS* 42 (1983) 151–65. Melchert starts with a PA nominative **tū* (perhaps from an IE **tuh₂*) which underwent palatalization, becoming **tʸū* and eventually **tī,* the form preserved directly in Palaic *tī,* CLuv. *tī* (*CLuv. Lex.* 225, Starke, *StBoT* 31, 195 n. 637) and HLuv. *ti.* In Pre-Hittite, however, **tī* underwent shortening, becoming **ti,* and then assibilation to **tsi.* The plene writing in OH *zi-i-ik* can reflect later lengthening of accented **í.* The final velar is from the first person nominative singular *ūk.*

### 6.7.2.4. Assibilation blocked

Assibilation is apparently blocked in a sequence **sti.* Joseph discusses this and related problems, and provides parallels from other languages.

*dalugasti-* "length": *da-lu-ga-as-ti* KUB XXV 37 III 23 (NH); *parqasti-* "height": *par-qa-as-ti* e.g. KUB XXXVIII I Vs. I 12, Rs. IV 10 (NH), KUB XXXVIII 3 I 3 (NH); *palhasti-* "breadth": nom.-acc. sg. *pal-ha-a-as-ti* KUB VIII 57 L. 8 (NH), nom. sg. c. *pal-ha-as-ti-is* KUB XXXIII 106 I 21 (NH). The suffix *-asti-* may continue an earlier **-osti-*, comparable to the Slavic suffix in e.g. OCS *-ostĭ* in *ǫzostĭ* "narrowness", or PSlav. **dlŭgostĭ* "length" (> Pol. *długość*). Joseph (3–4) points out various possible non-phonological explanations for the lack of assibilation in these nouns, but the evidence that Joseph himself adduces makes a phonological explanation more likely.

Benveniste, *HIE* 89–95, reconstructed **-os-ti-*, deriving these from neuter *es*-stems, while Melchert, *SHHP* 90 n. 25, suggests that they are abstracts in **-i-* to adjectives in **-os-to-*, comparable to the type represented in Latin by *angustus* "narrow". In either case, the Hittite and Slavic formations can reflect parallel development.

The sequence *szi* = [stsi] of the third person singular present of *mi*-verbs with stem-final /s/ (e.g. *e-es-zi* "is" = [ēstsi], *se-(e)-es-zi* "sleeps" = [sēstsi], *pa-as-zi* "takes a swallow" = [pāstsi], *ga-ni-es-zi* "recognizes" = [gnēstsi], *te-(e)-pa-u-e-es-zi* "diminishes" = [dēbawēstsi]) should be analogical for **-s-t(i).* As Joseph (11 w. n. 24) suggests, by regular phonological development *mi*-conjugation third person singular presents would have had the allomorphs **-ti* (or perhaps **-t* with syncope) after stems in final

/s/ beside *-z(a)* (= [-tṣ] < **-ti*) in stems with final vowel or other final consonant. The attested ending *-zi* = [-tṣi] has *-i* by analogy to other forms of the paradigm, and it is likely that *e-es-za* "is" in OH KBo VI 2 IV 54 (= *e-es-zi* in MH dupl. KBo VI 3 IV 53) reflects an intermediate stage in the generalization of *-zi* in which stems in final /s/ had the allomorph [-tṣ] with assibilation, but the final *-i* had not yet been extended to the third person singular present.

The interpretation of *da-ma-as-ti* KBo V 9 II 26 (NH), *se-es-ti* KBo XIII 58 II 16 (MH?) and *e-es-ti* KUB XXXVI 98c. L. 5 (OH+) as third person singular present forms with phonologically regular *-sti* is very uncertain. See Joseph (5 w. refs.) for various alternative explanations. The assibilation in *nēpisza,* archaic ablative of *nēpis-* "heaven", and *tapusza* "alongside", from the ablative of *tāpuwas* "side", is also presumably analogical. Similarly, *parsza* adv. "backwards", need not represent the phonologically regular outcome of a **pérs-ti,* ablative of an unattested **pars* "back"(?) (see Joseph 6–7).

Dative-locative singulars of substantives with roots in final /t/ and *-nt*-stems do not show assibilation before the ending *-i;* e. g. *ú-i-it-ti* KUB XXIX 32 L. 2 (OH) : *wītt-* (*wētt-*) "year"; *ka-ra-it-ti* StBoT 25, 140 Rs 18 : *karaitt-* "flood"; *hu-u-ma-an-t[i* KBo VI 2 II 59 (OH) : *hūmant-* "all". If the dative-locative singular ending continues the IE dative **-ei,* the lack of assibilation would be regular before **ei* or its reflex (cf. *hantezziya-* "first" < **h₂n̥téi-tyo-* {4.3.2.2.}). Hittite, however, clearly inherited the locative in **-i* to judge from *hānza* = [hānts] "in front" < loc. **h₂ént-i,* and it is equally possible to explain the retention of /t/ before /i/ from a locative ending **-i* by analogy to the other forms of the paradigm.

Assibilation was also blocked in the sequence **tHi/y* in *tīya-* "step, take one's stand" < **th₂-yé/ó-* : **steh₂-* "stand", suggesting that **h₂* was not lost until after assibilation had ceased being productive (Pedersen, *Hitt.* 90, 175, Melchert, *SHHP* 88 n. 16, 99 n. 31, Joseph, *Sprache* 30 (1984) 1 n. 1). **ti* was not assibilated in reduplicating syllables in *tītha-* "thunder" (*ti-it-ha-* (OH), *te-e-et-ha-* (MH) = [tītha-] < **títh₂-o-* {2.4.4.1.} and *tittiya-* "establish" and *tit(ta)nu-* "settle" from **ti-th₂-* : **(s)teh₂-* "stand" {10.7.2.}.

### 6.7.2.5. **tē*

Assibilation of **tē* to *zi* = [tṣi] has been postulated by Sturtevant, *CGr*[1] 126, *CGr*[2] 61, Pedersen, *Hitt.* 175, Kronasser, *VLFH* 62, *EHS* 54 (with reservations), van Brock, *BSL* 61 (1966) 211, and Schmidt, *Pers. Pro.* 121–2. The examples cited probably have other explanations, however, although there appear to be no clear counterexamples showing what did happen to **t* before inherited **ē* (cf. Melchert, *SHHP* 120 who calls this change "extremely dubious"). The second person singular personal pronoun *zīk,* which has been derived from **tē-ge,* and compared with Lat. acc. sg. *tē,* is better explained as the reflex of a pre-Hitt. **tʸū(k)* {6.7.2.3.}. The nominal suffix *-zzil* in e. g. *tayazzil* "theft" and *sarnikzzil* "compensation" has been derived from **-tēl* as in Lat. *tutēla* "guardianship", but it shows consistent *i*-vocalism in OH (e. g. nom.-acc. sg. *t[a-ya-az-zi-il* KBo VI 2 II 55, gen. *ta-ya-az-zi-la-as* KBo VI 2 + KBo XIX 1 III 45; nom.-acc. sg. *sar-ni-ik-zi-il* KBo VI 2 II 28, 53; see Melchert, *SHHP* 119–20). While the etymology of *-zzil* is unclear, since **ē* became OH /ē/ {2.5.3.} and unaccented **ē* became /ĕ/ {2.7.2.}, the OH *i*-vocalism rules out **-tēl.*

See Eichner, *MSS* 331 (1973) 85 n. 6 and Melchert, *loc. cit.*, for alternative etymologies.

### 6.7.2.6. Assibilation of dental plus **w* or **u*

The assibilation of **tw* to *z* posited by Jensen and by Georgiev, *KZ* 92 (1978) 94–5, probably will not work, although there seem to be no counterexamples from morphologically isolated forms. Inherited **tw* shows up as [tw] in *tuēkka-* "body, self" < **twéko-* {2.4.3.} and in the genitive of the second person singular personal pronoun *tuēl* < **tw-él,* though both paradigms originally had forms with **tu,* which could have supplied a source for restoration of a dental stop in **z* < **tw.* There is (*pace* Georgiev) no evidence to support reading *tuēkka-* and *tuēl* with [tuē].

Barton, *JAOS* 113 (1993) 551–61, posits assibilation of dental stop plus **u* or **w* to *z* in *zinni/a-* "end", which he derives from **dhue-n-h₁i-ti* : Lat. *finis,* OE *dwinan* "dwindle" (IE **dheu-* "dwindle, waste away"), *zēna-* "autumn" to the same root, the nominative singular of the first person personal pronoun *zīk,* which he derives from a vocative **tu-i, zahh-as* "beat, strike" : Gk. σάω "I sift" and Lith. *tvoti* "whip" (n.), and **zankil* "recompense" : OSax. *thwingan,* OHG *dwingan* (> NHG *zwingen*). Assibilation of dental stop plus **u,* however, is contradicted by morphologically isolated words with good etymologies. An example of **dhu-* occurs in *tuhhā(i)-* "gasp, pant", denominative from a noun **dhuh₂-éh₂-* or **dhuh₂-ó-,* and the related *tuhhima-* "gasp" < **dhuh₂-émo-* : IE **dheuh₂-* "smoke, mist" {10.4.2.1.} (a full-grade **dheuh₂-V-* would have become ***tūha-* = ***[dūḫV-], cf. *tūhusiya-* "keep quiet, keep silent" = [tūḫusiya-] < **téuh₂s-ye/o-* {3.9.4., 4.6.1}); **tu* occurs in *tuskaratt-* "joy" with [tusk-] < PA **tus-ske/ó-,* primary formation in **-ske/o-* from **tus-* also in Skt. *tuṣyati* "is pleased" and *toṣaḥ* "joy" {11.6.4.}. Sequences of **dw* also remained except when the following vowel was **o* or *ō,* cf. LÚ*duyanalli-* "second man" = [dwiyanalli-] with **dwi-* "two" {9.3.1.3.}, *dān* "second(ly)" (*da-a-an,* MH etc., *ta-a-an,* OH) = [dān] < **dwoyóm* : Ved. *dvayá-* "two-fold" {9.3.1.1., 9.5.2.1.}, *dā-* in *dāyugas* "two-year-old" and *ta-a* UD-*ti* = **tā siwatti* "on the second day" {9.5.2.1.}, and *idālu-* "evil"= [idālu] < Pre-Hitt. **edwólu-* {2.8.1.1., 9.5.2.1.}.

## 6.7.3. **dy, *di*

Benveniste, *HIE* 8–9; Eichner, *MSS* 31 (1973) 99 n. 79; Georgiev, *Sprache* 19 (1973) 142–3; Jensen, *Act. Or.* 26 (1961) 133–42; Kronasser, *VLFH* 62; Kuryłowicz, *PICL* 8, 223; Laroche, *RHA* 46 (1945–47) 15–17, *JCS* 21 (1967) 177; Neu, *StBoT* 18 123 w. n. 295; Pedersen, *MS* 72–3, *Hitt.* 175–6; Polomé, *Oriens* 9 (1956) 109; Puhvel, *JAOS* 94 (1975) 295 w. n. 35 = *AnIE* 265–6 w. n. 35, *InLing.* 2 (1975) 129–34; Rosenkranz, *Vgl. Unters.* 42; van Brock, *Glotta* 46 (1968) 118 n. 3, 120 n. 3; Weitenberg, *u*-Stämme 175–9.

An IE sequence **dy* or **di* occurs in *sīus, siun-* "god" (nom. sg. *si-i-us* KBo III 22 Rs. 47 (OH), *si-ú-s*° ib. Vs. 41, and perhaps *ṣi-i-ú-us* StBoT 25, 137 III 4) and *sīwatt-* "day" (e. g. nom. sg. *ṣi-i-wa-az* StBoT 25, 27 Rs.! 19, loc. *si-i-wa-at* StBoT 25, 17 L. 1, KUB XX 4 VI 1 (OH+), dat.-loc. *si-wa-a[t-ti* StBoT 25, 52 II 13, *si-wa-at-[ti* KBo III 22 Rs. 60 (OH)). The former word clearly is derived from the name of the IE god of the shining sky **d(i)yḗus* or **d(i)yḗus* in Skt. *dyáuḥ,* Gk. Ζεύς, OE *Tīw* and OIcl. *Týr.* The latter has its closest correspondent within Anatolian in the name of the sungod CLuv. *Tiwaz* and Pal. *Tiyaz* and continues an earlier **díwot-.*

Because there are no other indisputable sequences of **dy* or **di* in Anatolian or Hittite, the details of the phonological development of these words remain obscure. There are two main possibilities. The assibilation may perhaps be described as **dy-V-* > [sy-V-] in nom. sg. **dyḗus* (**dyḗus*) and PA oblique stem **dyu-n-* (from acc. sg. **dyḗun* for IE **dyḗm*) or, starting with a Lindeman variant **diyḗus* (or **diyḗus*) > [siy-V-] with retention of the glide *[(i)y] (Laroche, Oettinger, *Stammbildung* 350, cf. Eichner, who describes this change as **di* > [si]). Alternatively, the development may have been **dy* or **diy* > /s/ and/or **di* > /s/ with loss of the vowel or glide (Pedersen, van Brock, cf. Puhvel (294–5 = 265–6) who posits **dy* > [z], [dz] or [ž], and Neu, who proposes **dyēu* > [seu-] with assibilation and shortening of the diphthong). This would imply that *īu* = [īu] was the reflex of the diphthong. Since other evidence suggests that **eu* was monophthongized unconditionally, the nominative *sīus* would have to be from **d(i)yḗus* with a long diphthong. If **ēu* is also continued in *karū* "previously" < loc. **Kr-ḗu*, then **ēu* would have been monophthongized in absolute final position but would have become [īu] in the closed syllable of **d(i)yḗus* {4.8.3.}.

Given the uncertainty about the source and phonological development of *sīus*, *siun-* and *sīwatt-*, other proposed examples of assibilation of **dy* or **di* remain uncertain. The derivation **dy* > *s* proposed for *siyāri* "gush, spurt" (glossed as "appears" by Pedersen and Kronasser) is incorrect.

### 6.7.4. **dhy*

**dh* was not assibilated before **y*, cf. *ispartiya-* "escape, slip away" (3 sg. pres. *is-par-ti-i-e-ez-zi* KBo XI 14 II 20 (OH+), 3 sg. imp. *is-par-ti-ed-du* KBo XI 14 II 21) = [spardyē-] < present **spṛdh-yé-* beside aorist **sperdh-* or **spṛdh-* in *isparz-*, cf. e.g. Skt. aor. *aspṛdhran* "they hasten", pres. *spardhate, spurdhati, spṛdh-* (f.) "contest" = Av. *spərəd-* (f.) "haste", Goth. *spaúrds*, OE *spyrd* "race, race course", Gk. σπυρθίζω "kick up", and Arm. *sprdem* "I slip away, escape".

Examples, etymological discussions *HEG* 3, 418–9, *HED* 2, 447–50, Eichner, *Fl. u. Wb.* 84, *Stammbildung* 195. For *isparzz-* see {6.7.1.1.}.

Similarly, **tit(t)iya-* "suckle" in it. *tittisk-* and *tittisalli-* "suckling" can show **dhi* > [di], but assibilation is blocked analogically in reduplicated forms in initial **ti*, cf. *tītha-* "thunder" < **ti-th₂o-* {2.4.4.1.}.

Unless the /d/ of *ispartiya-* was restored analogically from *ispart-* = [spard-] (e.g. in 3 pl. pret. *is-par-te-er* KUB XXIII 72 Vs. 43, MH, *is-pạr-tẹ-er* KUB XIV 1 Vs 52, MH), proposed examples of **dhy* > /s/ are suspect, e.g. *sēhur* "urine" : CLuv. *dūr* < **dhyew-* (Puhvel, *Fs Laroche* 301–2 = *AnIE* 369–70, Josephson, *Heth. u. Idg.* 101); *sākuwa* "eyes" and *sakuis* "spring", *sakuni-* "fountain" and *sakuniya-* "well up" : CLuv. *dāwīs* (*da-a-u-i-is*) "eye" and derived from PA **dhyag$^{w}$i-* : IE **dhyog$^{w}$h-* or **dhag$^{w}$h-* (Puhvel, *JAOS* 94 (1975) 295 w. n. 35 = *AnIE* 265–6 w. n. 35, *InLing.* 2).

For the latter word, Szemerényi, *Fs Pulgram* 27 and Melchert, *Gds Cowgill* 188 n. 17, have proposed a derivation from IE **eu-* "pay friendly attention to" in e.g. Lat. *tueor.*



## 6.8. Conditioned changes affecting velars

### 6.8.1. Assimilation to *h*

Adrados, *RHA* 28 (1970) 11–12; Eichner *Heth. u. Idg.* 55 n. 42, *Lautgesch. u. Etym.* 129 n. 41, *Laryngaltheorie* 143–4; Melchert, *SHHP* 90, 95 w. n. 91, *AHP* 164, 170; Oettinger, *Stammbildung* 219 n. 84, 367 n. 224, 548; Polomé, *Language* 28 (1952) 448; Puhvel, *EFL* 84 = *AnIE* 130, *IF* 83 (1978) 141 = *AnIE* 376, *HED* 3, 280–1; Sturtevant, *CGr$^{1}$* 72.

Sturtevant, Puhvel (*EFL*) and Eichner point out examples of apparent alternations between velar stops and *h*, suggesting that they indicate a velar articulation for the laryngeal. Adrados derives *hh* from an IE voiceless aspirate **kh* in the ethnic name *Ahhiyawa* : 'Αχαι(ϝ)οί and *hahhars-* "laugh" : Gk. καρχαρόδων, κάρχαρος and Skt. *kakhati* "laughs". But if *Ahhiyawa* can be identified with 'Αχαι(ϝ)οί, the Hittite spelling would be an attempt to render a foreign sound. The words meaning "laugh" are clearly onomatopoetic. The identification of $^{É}$KI-LAM-*ni* with $^{É}$*hilamar* "gatehouse" (Sturtevant, Kronasser, Puhvel, *EFL*) is mistaken (Polomé).

Eichner and Oettinger (*Stammbildung* 367, 548) posit assimilation *h ... k* > *h ... h* and Puhvel (*IF* 83, *HED*) notes a tendency for *sk* to become *sh*. Oettinger (*Stammbildung* 219) notes variation between *k* and *h* in the vicinity of *s*. There is some evidence for these changes (cf. also the dissimilation of *h ... h* to *h ... k* in *hameshkant-* for *hameshant-* "spring" {10.10.3.}).

*ishahru* "tear(s)" (e.g. nom.-acc. sg./pl. *is-ha-ah-ru* KBo XV 10 I 6 (MH)) = [shahru-] < **s* + **h₂ék̂ru-* with *s* mobile beside **h₂ék̂ru-* in Skt. *áśru-* "tear", Av. *asrū* id., Toch. A *ākär* id. (Eichner, *Heth. u. Idg.*, Oettinger) {10.1.1.3.}.

$^{SAL}$*hazhara-* "female musician, percussionist" (or sim.): *ha-az-ha-<ra>-ya-za* KUB XII 2 I 4 (NH), *ha-az-ha-ra-ya[* ib. I 7, *ha-az-ha-ra-a-i* KUB XLII 92 II 7 (NH), *]ha-az-ha-ra-a-i[* ib. IV 6, beside $^{SAL.MEŠ}$*ha-az-qa-ra-(a)-, ha-az-ga-ra-(a)-i, ha-az-ka-ra-ya-* and *ha-zi-ik-qa-ra-(a)-* = [hatsharā-] < [hatskarā-] < *[hatsikarā-], a derivative of *hazzikē-*, iterative of *hatt-* "strike". It is not clear whether this is an example of assimilation of *h ... k* to *h ... h* (Oettinger, *Stammbildung* 367) or of *sk* to *sh* (Puhvel, *HED* 3, 280–1).

Two other words show [sk] (from **sgh* = *[zgh]) occasionally becoming [sh]: 3 pl. pres. *is-hu-na-a-an-zi* KBo VI 26 II 19 (OH+) = OH *i]s$^{!}$-hu-na-an-[zi* KUB XXIX 29 Rs. 3 from *iskunāi-* "stain, defile"; 1 pl. pret. *is-hu-na-ah-hu-u-en* KUB XXIII 13 Vs. 4 (U) from factitive *iskunahh-* = [iskun°] < **isghun-* : Gk. αἰσχύνω {4.5.1.3.}; abl. *is-hi-sa-za* "back" KUB XXXIII 112 IV 14 (NH) for *is-ki-sa-za* = [iskīsaṭs] < **isghís-* = *[izghís-] : Gk. ἰσχίον "hip(s)" {2.4.4.1.} (Puhvel, *IF* 83, cf. Eichner, *Laryngaltheorie* and Puhvel, *EFL*).

A change *ks* > *hs* is found in 1 sg. pres. midd. *tah-is-ha* KBo III 34 III 14 (OH+) and 3 sg. *ta-ah-sa-at-ta-ri* (StBoT 5, 161) for *tak-is-ha, tak-sa-at-ta-ri* : *taks-, takkis-* "put together" (Oettinger, *Stammbildung* 219).

### 6.8.2. Velar plus **u* or **w*

Goetze, *Language* 30 (1954) 403–5; Hamp-Güterbock, *RHA* 58 (1956) 22–5; Josephson, *Heth. u. Idg.* 93–5; Melchert, *MSS* 50 (1989) 97–101; Puhvel, *JAOS* 94 (1974) 292 = *AnIE* 263; Solta, *IF* 70 (1965) 314 n. 170; Sturtevant, *Language* 6 (1930) 213–28, *CGr$^{1}$* 119–24, *CGr$^{2}$* 55; Whitman, *Glossa* 3/1 (1969) 24–5.

Sturtevant's claim that Hittite (or PA) reflects a stage in Indo-Hittite in which labiovelars did not yet exist as independent phonemes but were phonemically sequences of velar plus labial is contradicted by the different treatments in Lycian of **k̂w* (> *sb* in *esbe-* "horse" < PLuv. **azwa-* < **éḱwo-*) and **kʷ* (> *t* in rel. pro. *ti* < PA and IE **kʷi-*) {6.1.2.}.

Puhvel assumes merger of labiovelars and velar plus **w* or **u* in prevocalic position, but evidence from Luvian suggests that this is not correct, at least for PA. Note CLuv. *papparkuwā(i)-* "clean, purify" : PA **be-bərǧ-* < IE **bhr̥ǧ-* with retained velar beside **gʷ* > *w* in e.g. *wana(tti-)* "woman" < IE **gʷen-(eh₂-)* and **gʷh* > *w* in CLuv. and HLuv. *uwa-* "drink" < IE **h₁egʷh-* {6.4.3.4.} and CLuv. *"winal* "stick, staff, pole" < **gʷhēn-* {6.2.1.3.}.

Goetze, Hamp-Güterbock, Solta and Whitman posit a satəm-like treatment **k̂* > /s/ or /š/ before **u* or **w*, but this is contradicted by Hitt. *kūwas, kuwan-* "dog" in LÚ*kuwan-* "dog-man", which shows up in two parallel texts, KUB X 66 and KBo VII 48 (cth 653; pre-NH): nom. sg. LÚ*ku-wa-as-sa* KBo VII 48 L. 10, acc. sg. LÚ*ku-wa-na-an-na* KUB X 66 VI 3, gen. sg. LÚ*k]u-ú-na-as-sa* KBo VII 48 L. 12; these should continue nom. sg. [kwās] or [kuwās] < IE **k̂wṓ* or **k̂uwṓ* "dog" plus PA animimate nominative singular suffix **-s* : Skt. *śu(u)vā́*, Gk. κύων, acc. sg. [kwānan] = Skt. *śvā́nam* < **k̂wón-m̥*, gen. [kūnas] : Skt. *śúnaḥ*, Gk. κυνός < **k̂unos*.

The etymology and identification are those of Melchert, *MSS* 50; cf. also HLuv. *zuwani-*, perhaps from accuative stem **k̂wón-*. Melchert suggests that the plene writing in gen. sg. *ku-ú-na-as-s* could reflect accent retraction similar to that seen in Skt. *śúnaḥ*.

Hitt. *āssu-* "horse" in LÚ*āssu-ssanni-* "horse-trainer" is a loanword, probably transmitted via Hurrian, from Indic. The sibilant of HLuv. *zuwani-* "dog" and *zurna-* "horn" is the regular Luvian reflex of IE **k̂* { 6.1.2.}, but does not indicate a satəm treatment.

There is no basis for Whitman's claim (*Glossa* 3/1 (1969) 24–5) that **ĝh* became /s/ before **u* or for any other sort of palatalization of IE voiced or voiced aspirated plain or palatal velars before **u* or **w*. IE **gw* occurs in *dankuīs, dankuwa(i)-* "dark" [dangwī-], [dangwā(y)-] < **dhn̥g-w-ih₂-*, cf. e.g. **dheng-wo-* in ON *dǫkkr* "dark", OFr. *diunk* "dark", W. *dew* (m.) "cloud, smoke". PA **gw* occurs in *parkuī-, parkuwa(i)-* "clean, pure, bright" [bargwī-], [bargwā(y)-] < PA **bərg-w-ih₂-* < **bhr̥ĝh-w-ih₂-* (after PA **dəng-w-ih₂* "dark" with **ən* from **n̥*) : IE **bher(H)ĝ-* in e.g. Goth. *bairhts* "bright" and OE *beorht* id.

Pre-Hittite **gu* probably occurs in *ekuna-* "cold" (adj.) and *ekunima-* "cold(ness)": nom. sg. c. *e-ku-na-sa-as* KUB I 16 II 7 (OH+), acc. sg. c. *i-ku-na-an* KBo IV 9 V 7 (OH+ ), dat. loc. sg. *e-ku-ni* KUB VIII 35 Rs 11, 14 (U), *i-ku-ni* KUB XXIX 41 L. 4, 7, 10 (MH), *e-ku-ni-mi* KBo III 23 Vs 6 (OH+) = [ēgun-]. These words are clearly related to *eka-* "ice" [ēga-] < **yégo-* {6.4.2.3., 9.2.1.1.}, but their formation is obscure. They may represent derivatives of an otherwise unattested *r/n*-stem **ēgur/*ēgun-* < IE **yéǧwr̥, *yégun-* with ablaut as in *mēhur*. This analysis implies a verbal base **yeg-* "freeze", perhaps preserved in *egā(i)-, igā(i)-* "freeze, cool" = [egā(i)-] if this is deverbative and not simply a denominative from *eka-* "ice". Alternatively, *ekuna-* could be from a *u*-stem **ēgu-* "cold" (adj.) or noun "cold(ness), ice" and the *-n-* might result from analogical extension of the *-n* of the original acc. sg. c. **ēgun* (< **yégu-m*) as in *siun-*, oblique stem of *sīus* "god".



Examples *HED* 2, 258. For **yéǧwr̥, *yégun-* see Kimball, *PW* 437 n. 84. For a discussion of the forms with *-n-* see also Weitenberg, *u*-Stämme 112–13 and 281, who reconstructs a PA *u*-stem **igu* (i.e. **égu-*). There is no basis for reading [egʷna-] with Oettinger, *Stammbildung* 375.

**ghw* is found in *sankuwāi-* "fingernail" = [sangwāi], [sangw(i)ya-] < PA **sóngwōi-*, refashioned from < **s* + **[h₃onghwo-]*, cf. **[h₃onghu-]* in e.g. Gk. ὄνυξ "fingernail", Lat. *unguis* id. {10.1.1.3.}.

### 6.8.3. Palatalization before *a*

Josephson's claim (*Heth. u. Idg.* 93–5) that **k̂* is palatalized to *s* before *a* is not supported by good etymologies.

## 6.9. Conditioned changes affecting labiovelars

Benveniste, *BSL* 33 (1932) 136–8; Čop, *RHA* 57 (1955) 63–4, *Linguistica* 6 (1964) 69; Kronasser, *VLFL* 66–7; Melchert, *AHP* 61; Pedersen, *Hitt.* 174; Petersen, *Language* 9 (1933) 20–1; Pedersen, *Hitt.* 174; Puhvel, *JAOS* 94 (1974) 291–5 = *AnIE* 262–6; Milewski, *IH* 3 n. 2; Seebold, *KZ* 96 (1982) 33–49; Sturtevant, *Language* 6 (1930) 218–28, *Language* 11 (1935) 39, *CGr*$^{1}$ 119–24.

### 6.9.1. Delabialization

Sturtevant (*Language* 6, *CGr*$^{1}$ 122) and Puhvel posit delabialization of initial **gʷ* before vowels, Puhvel posits delabialization of **gʷ* before **r*, Čop claims delabialization of all labiovelars before **o*, Milewski posits unconditioned delabialization of **gʷ*, and Seebold (36–9, 43, 49) is skeptical of delabialization of **gʷ*. None of the examples provided of these changes is convincing, however.

*kist-* "extinguish, perish" (3 sg. pres. *ki-is-ta-(a)-ri,* OH+, MH+, imp. *ki-is-ta-(a)-ru,* OH+, MH+ etc.) is connected with **gʷest-* in Goth. *qistjan* "to perish", OHG *quist* "Verderben", and **zgʷes-* in Gk. σβέννυμι, aor. ἔσβην, ἔσβεσα, ζείναμεν · σβέννυμεν (Hesych.) and ἄσβεστος "unquenchable" by Sturtevant (*Language* 6) and Puhvel (cf. also Seebold 36–8). Although semantically the etymology looks convincing, **gʷ* was not delabialized before **e* if *kwelwana-* "basin"(?) is from **gʷel-* "drip" {6.3.4.2.}. Other potential cognates, Skt. *jasate* "is exhausted", Lith. *gęstù, gèsti* "go out", OCS *ugasnǫti* "extinguish" and Toch. B inf. *kasti* (trans.) "to extinguish", intrans. *kseti* = A *kässi* "be extinguished", can be either from **gʷes-* or from **ges-*, suggesting that [gistāri] is from **gest-ó-ri.*

*karāp-* "devour, fressen" is derived by Čop, *Linguistica* 5 (1964) 42 and Puhvel (292 = 263) from **gʷr̥-ebh-* also in Gk. βράπτειν · ἐσθίειν, κρύπτειν, ἀφανίζω, τῷ στόματι ἕλκειν, ἢ στενάζειν (Hesych.) and Lith. *gróbas* "gut, rib skeleton" (beside **gʷerh₃-* in e.g. Skt. *girati* "devours" and Gk. βιβρώσκω "I swallow"). However, an alternative etymology, connecting *karāp-* with Skt. *agrabham* aor. "I seized" and Lith. *grebiù, grèbti,* id., OCS *grebǫ, greti* id. < IE **ghrebh-* (Sturtevant, *Language* 8 (1932) 130, *CGr*$^{1}$ 76, Tischler, *HEG* 4, 496–8 w. refs.) is more plausible.

*karussiya-* "fall silent, acquiesce" (*ka-ru-ú-us-s*° and *kāriya-* "stop, rest, quarter troops" are compared by Čop, *Linguistica* 6 (1964) 69 and Puhvel (292 = 263) to Lith.

*gùrstu, gùrti* "subside, die down, make weak", Toch. A *kur-*, B *kwär-* "become feeble, age", Goth. *qairrus* "gentle", Arm. aor. *koreay* "die out", implying an IE **g$^{w}$er-, *g$^{w}$ṛ-* (cf. also Seebold, 39, who reconstructs **g$^{w}$ṛs-* with delabialization before **ṛ*). *kāriya-*, however, can be from **ĝhór-ye/o-* : **ĝher-* "enclose". For alternative etymologies for *karussiya-* see Tischler, *HEG* 4, 529–30.

Čop, *Linguistica* 2 (1956) 19–36, argued for delabialization of labiovelars before **o* in *kāriya-* "cover, quarter" < **k$^{w}$or-* : **k$^{w}$er-* "cut" and *kars-* "cut" < **k$^{w}$ors-* beside **k$^{w}$er-* "cut". The [k$^{w}$] of *kuwat* "what" < **k$^{w}$ód* and *kuwāpi* "wherever" < **k$^{w}$óbhi* would be analogical. Čop views delabialization here as part of a more general loss of **w* between obstruent and **o*. Other evidence, however, shows that labiovelars did not merge with sequences of consonant plus **w* {6.8.2.}.

Delabialization in non-initial syllables has been suggested for several words, e.g. *huēkzi* "recites a spell" < **wék$^{w}$-ti* : **wek$^{w}$-* in e.g. Skt. *vacati* "speaks", Gk. aor. εἶπον "speak, say", and *sākki* "knows" < **sék$^{w}$-ti* : **sek$^{w}$-* in Goth. *saiƕan* "to see" (Pedersen, Kronasser, *VLFH* 66). Čop (*RHA* 57) derived *huēk-* "recite a spell" from **eweg$^{w}$h-* : Lat. *voveō* and Skt. *vāghat-, huēkzi* "slaughters, strikes" from **Hwég$^{w}$h-ti* : OPers. *a-vajam* "I strike", and *uttar* "word, thing, matter" from **uk$^{w}$tṛ*. Other evidence, however, suggests that preconsonantal labiovelars were retained, cf. e.g. *tekkussiya-* "show, point out" = [dek$^{w}$s-] < **dék$^{w}$s-* and *nekuz* "night" = [neg$^{w}$ts] < **ńég$^{w}$t-s* {6.5.1.} and *ekuzi* "drinks" = [ēg$^{w}$tṣi] < **h$_1$ég$^{w}$h-ti* {6.4.3.4.}. Although *huēk-* "strike" is probably cognate with OPers. *avajam,* the Hittite word rules out a labiovelar {4.7.5.}.

Pedersen, *Hitt.* 174, and Kronasser, *VLFL* 66, 148, derive the final velar of the indefinite pronouns *kuiski* "whoever" and *kuwāpik(k)i* "wherever" from the IE conjunction **k$^{w}$e* "and", and view the variation in its spelling (e.g. nom. sg. *ku-is-ki,* acc. *ku-in-ki,* dat. *ku-e-da-ni-ik-ki,* and *ku-wa-a-pi-(ik)-ki,* but gen. sg. regularly *ku-el-ka, ku-el-qa*) as an attempt to represent final [k] from **k$^{w}$e* with syncope and delabialization. However, **k$^{w}$e* is clearly continued in *takku* "if" < **to-k$^{w}$e* (Wagner, *MSS* 20 (1967) 68–9), *ni(k)ku* "nor" < **ne(y)-k$^{w}$e, apiyakku* "even then", *immaku* "definitely", and in the enclitic conditionals *-(k)ku ... -(k)ku* "either ... or" and in *aku ... aku* (Wagner, *op. cit.* 75, Eichner, *MSS* 29 (1971) 27–43) and in the meaning "and" in e.g. *nukku*: *nu-uk-ku* KBo XII 128 L 6). Melchert, *Lyc. Lex.*$^{2}$ 76 w. refs., notes that the Lycian indefinite pronoun *tise,* which should be equivalent to Hitt. nom. sg. c. *kuiski* or acc. sg. c. *kuinki,* points to a particle **k̂(e)* (with **k̂* > PLuv. **z* > Lyc. *s* {6.1.2.}), ultimately from the demonstrative pronoun **ko-/ki-* as in Hitt. *kā-* "this", cf. Lat. *hi-c, hae-c, ho-c* etc. for a similar formation.

MH *ku-is-ku* in KBo VI 3 III 12, as Eichner (37–8) notes, is likely to be a fortuitous collocation of rel.-int. *kuis* plus *-(k)ku* "and".

The muliplicative suffix *-anki* in e.g. II-*anki* should not (with Pedersen, *Hitt.* 174) be derived from **-nk$^{w}$i* (see *HED* 1, 73).

### 6.9.2. Develarization

Milewski, Sturtevant, *Language* 6 (1930) 218–28, *CGr*$^{1}$ 119–23, and Seebold, *KZ* 96 (1982/3) 33–49, claim that **g$^{w}$* shows up as *w* at least in some environments. Sturtevant, who did not distinguish labiovelars from sequences of velar plus **w* in



*CGr*$^{1}$, posited this development for initial position only and later retracted it (*Language* 11, *CGr*$^{2}$ 57). Seebold claims it as a conditioned change before **ṛ, *ṇ* and **ṃ* (note, however, *gurta-* "citadel, acropolis" if from **g$^{w}$ṛto-* {5.4.1.1.}). Kronasser, *VLFL* 67, cites this change with skepticism and Benveniste, *BSL* 33 (1932) 136–8, provides cogent arguments against it, pointing out, the words cited as evidence to support **g$^{w}$* > *w* usually can be derived roots with IE **w* or some other source of Hittite *w*.

*we/wa-* "come", derived by Milewski and Sturtevant (*CGr*$^{1}$ 122) from **g$^{w}$eh$_2$-* "go" in Skt. *agāt* "went", Gk. ἔβην "I went" etc., is a compound of PA **(o)u-* "to" plus **h$_1$ei-* "go" {4.3.2.3.}; *wemiya-* "find", derived by Milewski, Sturtevant, and Seebold (39) from **g$^{w}$em-, *g$^{w}$ṃ-* in Gk. βαίνω, Lat. *veniō* etc., is a compound of **(o)u-* "to" plus **em-* < IE **h$_1$em-* in Lat. *emō* "I take". The final *h* of *walh-* "strike" rules out the connection made by Sturtevant, Kronasser and Seebold with Gk. βάλλω "I strike", aor. ἔβαλον etc. < **g$^{w}$elh$_1$-* (for loss of **h$_1$* {10.2.2.}). The verb *wen(t)-* "rape", which was derived by Sturtevant (*Language* 6) from **g$^{w}$en(eh$_2$-)* "woman", is more likely to be from **wend(h)-* "strike" (in e.g. Goth. *wunds* "wound") or from **wen-* "desire" plus a dental extension {3.2.2.1., 7.8.1.}. The verb *warsiya-* "be content" < **g$^{w}$ṛs-*, connected with Goth. *quairrus* "gentle" by Seebold (39–40) should be form **wers-, *wars-* (Oettinger, *Stammbildung* 429), while *weriya-* "calls on, invokes" : Skt. *gṛṇā́ti* "praises" (Sturtevant, *CGr*$^{1}$ 122) is from **wérh$_1$-ye/o-* {2.4.3.}.

The development **g$^{w}$h* > *w* posited by Milewski, Sturtevant (*Language* 6, 222–3) and Kronasser (*VLFL* 66–7), is not supported by good etymologies. *wēnzi* "rapes", which Sturtevant derived from **g$^{w}$hénti* "strikes, kills", is more likely to be from **wend(h)-* "strike" or from **wen-* "desire" plus a dental extention {3.2.2.1., 7.8.1.}. *ur-, war-* "burn" : **wor-* (hap. leg. *wa-a-ra-ni* "sets on fire" KUB XVII 27 II 26, MH), 3 sg. pres. midd. *u-ra-a-ni, wa-ra-a-ni* "is burning", derived by Sturtevant, Kronasser, and Seebold (*KZ* 96 (1982) 34–5, 49) from **g$^{w}$hṛ-n(e)u-* : **g$^{w}$her-* in Skt. *gharmaḥ* "warm", Gk. θερμός id., and Lat. *formus* id., is from **wer-* "burn, be hot" {3.7.4.2.}.

### 6.9.3. Other

Seebold (40–42) claims **g$^{w}$* > *hw* as the unmarked reflex, citing *huiss-* "live" : **g$^{w}$eih$_3$-* in Gk. βίος "life" etc.; *huitār* "fauna" : OIr. *beithir* "wild animal, bear" < **g$^{w}$it-r-*; *huēlpi-* adj. "fresh, young", noun "young animal, first fruits" < **g$^{w}$elbh-* : Gk. δελφύς "womb" and *hwahhurti-* "windpipe, throat" < **g$^{w}$er-* "swallow"; *huiss-* and *huitār,* however, are better derived from **h$_2$wes-, *h$_2$wed-* {11.5.3.2.}., and, while the other words do not have reliable etymologies, the evidence suggests that **g$^{w}$* probably remained.

Melchert (*AHP* 61 w. refs.) posits weakening of medial **k$^{w}$* to **g$^{w}$* exept before **s*, connecting Hitt. *tarku-* "dance" with CLuv. *taru-,* Hitt. *sākua-* "eye" with CLuv. *tāwa/i-,* HLuv. *tawa/i-* and Lyc. **tewe-* id. (< PA **sok$^{w}$o-*).

## 6.10. Assimilation

Čop, *Linguistica* 5 (1964) 38–9; Eichner, *Sprache* 27 (1981) 64; Friedrich, *ZDMG* 76 (1922) 162 n. 2, *ZA. NF* 5 (1930) 61–2; Georgiev, *Orbis* 27 (1978/9) 48; Kronasser, *VLFH* 73, *EHS* 101; Pedersen, *Hitt.* 173; Oettinger, *KZ* 92 (1978) 80; Puhvel, *KZ* 86 (1972) 111–2 = *AnIE* 220–1; Rosenkranz, *Vgl. Unters.* 42; Starke, *StBoT* 31, 441; Sturtevant, *CGr*$^{1}$ 134, *Language* 16 (1940) 85, *CGr*$^{2}$ 43.

### 6.10.1. Dental plus nasal

#### 6.10.1.1. **tn*

A sequence of IE **t* plus **n* regularly assimilated to [nn] in oblique case forms of *r/n*-stems in *-ātar/-ānna-* and in the infinitive in *-ānna-*, which is from the directive of a verbal noun in *-ātar*. Examples from other morphological categories are not readily apparent: e.g. *agātar* "death", gen. sg. *ak-kan-[na]-as* IBoT I 33 L. 111 (U), dat. *ak-kan-ni* ib. L. 7; *akuwātar* "drink(ing)", gen. *a-ku-wa-an-na-as* KUB XLIII 58 I 21 (MH), inf. *a-ku-an-na* "to drink" StBoT 25, 26 Vs? I 1, 17, StBoT 25, 63 r.col. 4, KUB XIV 1 Rs 53 (MH); *appātar* "capture, seizure", gen. *ap-pa-an-na-as* KUB XII 58 I 33 (MH+), inf. *a-da-a-an-na* "to eat" KUB XIV 1 Rs 53, *a-dḫa-an-na* StBoT 25, 61 Vs? II 5. This change in Hittite only, cf. e.g. CLuv. abl. *ha-ra-at-na-[a-ti* (StBoT 31, 443), gen. adj. *ha-ra-at-na-as-si* : *ha-(a)-ra-(at)-tar* "offense" (Hitt. *harātar*).

Apparent exceptions with retained dental stop have been variously explained as showing analogical restoration of the dental stop, as loanwords and as Luvicisms. Analogical restoration is possible in e.g. *i-ya-at-na-as* (e.g. KUB XIII 33 II 5 (NH)), gen. sg. of *iyātar* "growth, fertility, prosperity", in *hu-et-na-as*, gen. sg. of *huitār* "fauna" or in e.g. *hatnu-* "cause to dry up" : *hāt-* "dry up, be dry". The second element of the place name *Kizzuwatna* (< **kēz watna* "across the water") may well be of Luvian origin. In at least one morphologically isolated word, *udnē* "land, country(side)", oblique stem *udniya-* < hysterokinetic **ud-néi* : **udn(i)y-* {4.8.1.}, however, the dental stop cannot be analogical, since it was in contact with the nasal throughout the paradigm. The lack of assimilation in *udnē* may suggest that only **tn* underwent assimilation and that the suffix of the nouns in *-ātar* was PA **-áh₂t-no-* > **-ā́tno-*, without PA voicing, > Hitt. [-ānna-].

*Pace* Starke, the tendency to write the dental stop single in CLuv. abstracts need not point to [dn], since the voicelessness of preconsonantal stops is not always indicated {1.10.2.1}, and sporadic spellings with doubling, such as the *gul-za-at-ta-na* Starke cites, should show that the oblique stem retained /t/ in Luvian. As Oettinger notes, this sound change also occurred in Palaic, cf. Pal. $^{D}$*Gulzannikes* "Fate goddesses" with stem [kultsann-] < **kulzātn-*.

#### 6.10.1.2. **dm*

A sequence of **dm* assimilated to [mm]. The geminate, however, is not consistently noted. The clearest example is *kam(m)ars-* "excrete": 3 sg. pres. *ka-mar-as-zi-*476/e II 12 (*Stammbildung* 198); it. 3 pl. pres. *kạ-mar-si-es-kan-zi* KUB XVIII 41 II 8 (U), 3 sg. imp. *ka-mar-si-es-ke-ed-du* KUB XVII 27 III 13 (OH+), verbal noun gen. sg. *ka-ma-ar-su-wa-as* KUB XXXI 100 II 8 (U), *ga-ma-ar-su-wa-an-za* IBoT I 36 I 43 (MH), with stem [gammars-], denominative to an unattested noun **gammars* "excrement" < **ĝhód-mr̥* plus PA animate nominative singular suffix **-s* : Toch. B *kenmer* "excrement" < IE **ĝhód-mr̥* : **ĝhed-* "excrete" in Skt. *hadati* and Gk. χέζω. The sigmatic stem is also found in the Cuneiform Luvian denominative verb verb *katmarsi-* "excrete" (3 sg. pres. *kat-mar-si-it-ti*, *CLuv. Lex.* 103) with retention of [dm]. For the etymology, see Tischler, *HEG* 4, 473–5 w. refs. Another example might be *ummiyant-* (hap. leg.) "adult, grown up"(?) < **ud-miyant-* {5.4.1.3.}.



The adverb *imma* "moreover, indeed, even, nevertheless, really" (*im-ma*) derived from **id-moh₂* : Lat. *immō* by Melchert, *KZ* 98 (1985), should instead be from **im-moh₂* with dem. pro. acc. sg. m. **im* (cf. Ved. *īm*), in view of CLuv. *imma* and HLuv. *ima* (*CLuv. Lex.* 88) with *m(m)* rather than *dm* (cf. Eichner, *Sprache* 27). For **-mo₂* in *imma* and Lyc. particle *me*, cf. Gk. μά < **me₂* or **m₂* (A. Garrett, personal communication).

### 6.10.2. Velar plus dental

Čop, *RHA* 13/71 (1955), *Linguistica* 5 (1964) 39 w. n. 44; Georgiev, *Orbis* 27 (1978/9) 48; Kronasser, *VLFH* 73–4, 134, *EHS* 102–3; Puhvel, *KZ* 86 (1972) 112–5 = *AnIE* 221–4; Sturtevant, *CGr*$^{1}$ 126, *CGr*$^{2}$ 71.

Assimilation of **kt* to *tt* is proposed by Sturtevant, Čop, Kronasser, Puhvel and Georgiev in *uttar* "word, thing" < **uk̂tr̥* : **weḱ-ti-* "thing" in Goth. *waíhts* "thing, affair", OE *nāwiht* "nothing" OHG *niwiht* id., OCS *věštĭ* "thing" and by Sturtevant, Čop, Kronasser, and Puhvel in *luttāi-* "window" < **luk-to-* : **leuk-* "shine, be bright". An inherited cluster **kt* is preserved, however, in *sāktā(i)-* "take care of a sick person", denominative from a **sākta-* "sickness" < **sókto-* : OIr. *socht* "sickness, stupor" {2.4.1.}. Both *luttāi-* and *uttar* also have other possible etymologies {10.7.1.}.

Cf. also Zinko, *Vertretung* 46 n. 48, for arguments against these etymologies.

### 6.10.3. Following laryngeal

A postvocalic laryngeal dropped causing lengthening of the preceding vowel, and this in turn caused voicing of a prevocalic voiceless stop; e.g. abstract suffix *-ātar, -ānna-* = [-ādar], [-ānna-] < PA **-ā́dər, -ā́tno-* < **-áh₂-tr̥, *-áh₂t-no-* {6.4.4.3., 6.10.1.1.}; *hūta-* "haste" = [hūdā-] < **h₂uh₁-tó-* {6.4.4.3. }; **[mūdā-] < *muh₁-tó-* in *mūdā(i)-* "root in the ground, remove evils" {6.4.4.3.}. Laryngeal plus voiced stop occurs in *wāk-* "bite" (3 sg. pres. *wa-a-ki*, OH etc.) = [wāgi] < **wóh₂g-e(i)* {10.5.2.3.}.

The double dental stop in CLuv. $^{SAL/F}$*duttariya/i-* (also *duttariyatiya-*, *duttaryatta-* in Hittite contexts) < PA **dugəter-* < IE **dhugh₂-ter-* {10.2.5.} suggests that an interconsonantal laryngeal vocalized without causing voicing of a following stop. The noun *sāgā(i)-* "omen" and verb *sākiya-* "make known", which Eichner, *MSS* 31 (1973) 71, and Oettinger, *Stammbildung* 13 n. 34, reconstruct with zero-grade **sh₂g-* : **seh₂g-* in Lat. *sāgīre*, Goth. *sokjan* "seek", can have full-grade **seh₂g-* {10.9.1.2.}.

The voicing of the stop after a postvocalic laryngeal in *-ātar, hūta-* and **mūta-* and the single stop of *wāk-* indicate that previously suggested derivations of doubled stop from laryngeal plus stop after full-grade vowel will not work, e.g. *sākk-* "know" < **seh₂g-* (Oettinger, *Stammbildung* 412–13, Kimball, *PW* 821–5); *pakkuss-* "trample, pulverize" < **peh₂g-* (as in Gk. πήγνυμι "fix, attach, set") or **peh₂k-* (Oettinger, *ib.* 212) and *lāpp-* "glow" (3 sg. pret. *la-a-ap-ta* (OH?), *CHD* 39) < **leh₂p-* (Oettinger, *ib.* 443). The latter verb can be reconstructed as **lap-*, and cognates (Gk. λάμπω "shine, glow", λαμπάς "torch", Lith. *lópė́*, Latv. *lāpa*, OPruss. *lopis* < Balt. **lōp-*, which can continue IE **lāp-* as well as **lōp-*, and OIr. *lassaím* "flame" < **laps-*) do not provide decisive evidence for a laryngeal.

### 6.10.4. Labial plus *s

The apparent alternation between *ps* and *ss* in $^{GIŠ}$*hapsālli-* "birth stool": nom.-acc. sg./pl. *ha-ap-sa-a-al-li* KBo XXV 72 L. 13 (OH+), KBo XX 83 I 10 (OH?/MH?), *ha-ap-sa-al-li* KBo VIII 121 L. 9 (OH+), KUB X 24 I 24 (OH+; dup. KUB X 54 V 7 has *ha-as-sa-al-li*), *ha-ap-sa-li* KUB I 17 II 10 (OH+, at edge), gen. sg. *ha-ap-sa-al-li-as* KUB XLII 59 Rs? 22 (NH), *ha-ap-sa-al-li-ya-as* KUB XXXIX 14 IV 8 (OH+), *ha-ap-sa-li-ya-as* KUB XXX 15 I 9 (OH+), but $^{GIŠ}$*hassalli-*: nom. sg. *ha-as-sa-al-li-* KUB XXXIII 102 I 23 (NH), gen. sg./pl. *ha-as-sa-li-ya-as* KUB XXX 24 II 16 (OH+) probably reflects remodeling by folk etymology to *hās-, hass-* "give birth" of an original *hapsālli-* rather than assimilation of *ps* to *ss* with Tischler, *HEG* 2, 167, 197.

See Beckman, *StBoT* 29, 25–6. Puhvel, *HED* 3, 128–9 suggests that *ss* and *ps* are dialectal outcomes of **ham(p)s-alli-* "birther" with anaptyctic [p], but the regular outcome of inherited **ms* seems to have been [nss] {7.8.4.}.

Inherited **ps* probably remains in *tepsu-* (nom. sg. c. *te-ep-su-us* KUB XVII 10 III 17 (MH)) if this word means "dry" and can be derived from **tépsu-*, a denominative *u*-stem beside IE **tepos, *tep-es-* n. "hot" in Skt. *tápas-* "heat" etc.

Examples, etymological discussion Weitenberg, *u*-Stämme 200–1.

### 6.10.5. Other

The assimilation *ht* > *tt* proposed by Kronasser (*VLFH* 74, *EHS* 103) and Georgiev (*Orbis* 27 (1978/9) 48) in the second person singular present *idalawatti* "you treat badly" (*i-da-la-wa-at-ti* KBo V 13 IV 5, NH) for *idalawahti* is unlikely. This appears to be the only example, and it looks like a mistake (note *i-da-la-wa-ah-ti* ib. IV 5). *galattar* "appeasement" (*ga-la-at-tar-r°* KUB XV 34 I 33, MH?) cited by Čop, *Linguistica* 5 (1964) 38 w. n. 44, Kronasser, and Kammenhuber, *MIO* 2 (1954) 418, can be read [glatar] and may show loss of the /k/ in a cluster of three consonants followed by nasal loss, i.e. [glaŋktar] > [glaŋtar] > [glatar] {6.12.2.}. The spelling *wa-ag-ga-an-t°* "fat" for *wa-ar-ga-an-t°* (Georgiev, *Orbis* 27 (1987/9) 48) may have loss of preconsonantal /r/ {8.8.2.}. There is no basis for reconstructing **kuwapit-ki* > *kuwapikki* with Georgiev, *Orbis* 27 (1978/9) 40. The *(k)k* of *zi(k)k-* = [tsik-], iterative of *dāi-* "put", did not result from assimilation of the cluster **tsk* (*pace* Georviev, ib.3 48).

## 6.11. Devoicing

Čop, *Linguistica* 5 (1964) 27, 29, 37; Oettinger, *Stammbildung* 403; Sturtevant, *CGr*$^{1}$ 83.

### 6.11.1. Before *s

Evidence for devoicing of voiced velar and labiovelar stops before /s/ is found in paradigms in which a double stop occurs in iterative and/or *hi*-conjugation third person singular preterit forms beside a single stop elsewhere in the paradigm. In paradigms with an underlying voiced velar, devoicing is followed by a rule inserting epenthetic /i/ between the velar and /s/, i.e. /gs/ → /ks/ → [kis] {3.9.3.}.



*hukkisk-* "strike": 3 sg. pres. *hu-uk-ki-is-ke-ez-zi* KBo XVII 62 I 10, (MH+), 2 sg. imp. *hu-uk-ki-is-ki* KUB VII 1 II 30 (Pre-NH) = /hug-sk-/; for the voiced velar, cf. 3 pl. pres. *hu-kan-zi* and ptcp. *hu-ga-a-an-t°* = [hugantṣi], [hugānt-].

*akkusk-* "drink": e.g. 2 sg. pres. *ak-ku-us-ke-e-si* StBoT 25 110 II 16, *ak-ku-us-ke-si* ib. I 9 (*ak-ku-]us-ke-si*) ib. I 2, 1 pl. pres. *ak-ku-us-ke-e-wa-ni* StBoT 25, 140 Rs. 7 = /ag$^{w}$-sk-/ → [ak$^{w}$sk-]; for the voiced velar cf. 3 pl. pres. *a-ku-(wa)-an-zi* = [ag$^{w}$antṣi].

*wa-ak-ki-is* "bit" KUB XXIIII 120 I 25 (NH); /wāg-s/ → [wākis], cf. also *wa-a-ki-is* 963/u. L. 4 (*Stammbildung* 445, NH) with voicelessness left unindicated and it. 3 sg. pres. *wa-ak-ki-i[s-ke-ez-zi* KBo III 40b Vs. 17 (OH+) with /wag-sk-/ → [wakisk-], for the voiced velar cf. 3 sg. pres. *wa-a-ki* = [wāgi]; *a-ak-ki-is* "died" (e.g. KBo VI 2 IV 3 (OH) = /āg-s/ → [ākis] with the full-grade root of the strong stem; for the voiced velar cf. 3 sg. pres. *a-ki* = [āgi]). The *kk* = [k] of the iterative *ak-ki-is-k°* would be regular without devoicing, since the weak stem had a voiceless stop, cf. 3 pl. pres. *ak-kan-zi* = [akantṣi].

The third person singular preterits *wa-qa-as* KUB XVIII 11 Rs. 9 (NH) and *ag-ga-as* (VBoT 1 Vs 24 (MH)) should be [wāks] and [āks] with regular *hi*-conjugation ending *-s* restored analogically (cf. Oettinger, *Stammbildung* 403).

The spelling of the final dental stops with -ZA- or -ZA-AS- in iteratives from stems in original voiced dental probably indicates devoicing, e.g. *ma-al-za-(as)-k°* = [maltsk-] : *māld-* "vow" < **móld[h]; is-pa-an-za-(as)-k°, si-pa-an-za-(as)-k°* = [spantsk-] : *ispānt-/sipānd-* "make a libation"; and with anaptyxis, *az-zi-(ik)-k°* = [atsik-] : *ēd-* "eat" or *ha-az-zi-k°* = [hatsik-] : *hatt-* "strike". The initial dental was apparently devoiced in *zi(k)k-* = [tsik-], iterative of *dāi-* "put" < **tsk-* with epenthesis < PA **d-sk-* {3.9.3.}.

In other forms and paradigms devoicing is not regularly indicated. It is possible that the iteratives *hu-ki-si-k°* : *huēk-* "recite a spell" and *ú-e-ki-is-k°* : *wēk-, wēkk-* "ask" have a voiced velar restored analogically (i.e. [hugisk-], [wēgisk-]). The spelling *e-ku-us-si* KUB I 16 III 29 (OH+), second person singular present of *eku-* = [ēg$^{w}$-] "drink", may be taken as morphophonemic for phonetic [ēk$^{w}$ssi].

Voiced stops and voiced aspirates appear to have merged with voiceless stops after **s*, since there is no distinction in spelling, e.g. *hasduēr* "twigs, brush" (nom.-acc. pl.-coll.: *ha-as-du-e-er,* OH+), *ha-as-du-er,* OH+) = [hastwēr] < *[h$_2$ozdwḗr] = */h$_2$e-sd-wḗr/ {11.5.1.2.} (the lack of spellings with °S-T° seems purely accidental); *iskīs-* "back" (*is-ki-(i)-s°*) = [iskīs-] < *[izghís-] {11.5.1.2.}; *iskunā(i)-, iskunahh-* "disfigure, stain" (*is-ku-n°*) = [iskun-] < *[izgh-], cf. [st] < **st* spelled °S-D° in e.g. *ha-as-da-i* "bone(s) = [hastāi] < **h$_2$est[H]ói* {4.8.}.

### 6.11.2. Before other voiceless consonants

There is no orthographic evidence for devoicing before other voiceless sounds. Spellings such as *e-ku-ut-ta,* third person singular of *eku-* "drink", could conceivably be morphophonemic for [ēk$^{w}$ta] with devoicing of the stem-final [g$^{w}$] before the [t] of the ending, but the consistent single KU of *nekuz* "night" (*ne-ku-(uz)-za*) seems to argue against devoicing in morphologically isolated contexts and may well indicate [neg$^{w}$ts] < **nég$^{w}$ts* without devoicing. There seems to be no independent evidence for Oettinger's assertion (*Stammbildung* 87 n. 10) that the spelling *e-ku-zi* with single °Z° indicates regressive assimilation /ēgw-t$^{s}$i/ → [ēgwd$^{z}$i].

### 6.11.3. Of final stops

Evidence for devoicing of final stops can perhaps be found in sporadic doubling of the final dental stops of nominative-accusative singular neuter forms of demonstrative and relative-interogative pronouns before enclitics with initial vowels, e.g. *a-pa-at-ta-a[n]* StBoT 25, 3 I 31 = [abātan] from *apāt* "this" plus locatival particle *-an,* pointing to *a-pa-a-at* = [abāt] < **h₁obhód* with pronominal nominative-accusative singular ending [-d] as in e.g. Lat. *quod,* Goth. *hva,* OE *hwæt* (Sturtevant, Čop 27; *apātta* "and that" and *kuitta* "and which", however, have geminating *-a-* "and" < **h₂o* {10.8.}).

Similarly, devoicing of final **g* may be indicated by the double velar of *zi-ik-ka-wa* KBo XXII 1 Rs. 21 = [tṣīkwa] with graphic vowel °A° = second person singular pronoun *zīk* (= [tṣīk]) < Pre-Hitt. **tṣíǵ* (with final velar from *ūk* "I") < PA **tʸū*) plus quotative particle *-wa* {6.7.2.3.}.

### 6.11.4. In reduplication

Oettinger, *Stammbildung* 230–1, 347 n. 178, and *MSS* 34 (1976) 129, claims that doubling of the root-initial stop in several Hittite reduplicated verbs from roots with initial voiced stop points to "fortisization" of initial stops in reduplication. There is one plausible example of doubled stop for IE voiced aspirate in a reduplicated form. This is *dudduwarant-* "stiff, lame" (*dudduwarant-* Bo 1020, HW, 231), *dudduwaress-* "make lame" in 3 sg. pret. *du-ud-dụ-wạ-rẹ-es-ta* KUB XIV 15 II 6, NH), which seems to belong with ON pret. *dó* "become numb (of limbs)", NNorw. *daana* "become stiff, lame (of limbs)", ON *dā* "faintness", OSw. *dāna* "fall in a faint" (for the etymology cf. Neumann, KZ *75* (1958) 225). However, at least four of the verbs that Oettinger cites have alternative etymologies or explanations. *kikkis-,* reduplicated form of *kīs-* "become", which Oettinger derives from a middle **géis-o-* : NHG *kehren* or from **ges-* (also in Lat. *gerere*), can be from **keis-* as in Skt. *ceṣṭati* "moves", *ceṣṭā-* "movement" {4.3.1.1.}. The verb **tittiya-* "suckle" (attested in it. *tittisk-*) can be from **dhi-dhh₁y-,* reduplicated form of **dheh₁y-* (> Hitt. **dāi-* "suckle", cf. Skt. *dhayati* "suckles") with gemination of the stop before **h₁* {6.7.4.}. *tittiya-* "install" and *tit(ta)nu-* "establish, settle", which Oettinger derives from **dheh₁-* "put", are more likely to be from **ti-th₂y-,* a reduplicated form of **teh₂-* (> Hitt. **tāi-*) : **(s)teh₂-* "stand" (cf. weak stem **th₂y-* in *tiya-* "step, take a stand"). *dudduu-* "have mercy, be merciful", which Oettinger connects with *dudduwarant-* "stiff, lame", can instead be from **teu-* "pay friendly attention to" in e.g. Lat. *tuēri, tūtus* "certain", Goth. *þiuþ* (noun) "good", ON *þýðr* "mild, friendly", *þýða* "friendship".

### 6.11.5. Of **gi* and **di*

Devoicing of Pre-Hitt. **d* and **g* before front vowels (**de* > *te, *di* > *ti,* and **gi* > *ki, ggi* > *kki*) is proposed by Eichner, *MSS* 31 (1973) 97 n. 69, 70, *Lautgesch. u. Etym.* 149 n. 73 and Oettinger, *Stammbildung* 450, 552–3 (initial **gi* > *ki* only), e.g. in *te-e-eh-hi* "I put", *ti-(ya)-an-zi* "they put" < **dheh₁y-, *dhh₁y-* and *ki-is-sa-ri* "hand" (dat. sg.) < **ĝhesr-ei.* Accepting these changes, however, depends upon the assumption that the signs TE, TI and KI are to be read only with voiceless stops, and this is not likely {1.9.}.

### 6.11.6. Other

Oettinger, *Stammbildung* 458, *MSS* 40 (1981) 143.

Oettinger (*Stammbildung*) posits devoicing of **d* before **ṛ* to explain the double *tt* of *uttar* "word, thing", deriving it from Pre-Hitt **ut-ṛ* (for **h₂ut-ṛ* : **h₂wed-* "speak" as in Gk. αὐδή "voice" etc.), but this seems unlikely in view of the single dental of e.g. *itar* "road, way" < PA **étṛ* < **(h₁)éi-tṛ* with PA voicing or the single dental of the neuters in *-ātar* < **-ā́dər* < **-ā́tṛ* < **-áh₂-tṛ* {6.4.4.2., 7.5.4.3.}. The "Verschärfung" of pretonic **dn* to *tn* in **ud-n-ós,* oblique stem of *uttar* "word, thing" > *uttanas* (*MSS* 40) is contradicted by *udnē* "land, countryside" < **udnéi* {4.8.1.}.

## 6.12. Loss

### 6.12.1. Final

Kronasser, *VLFH* 61; Sturtevant, *CGr*[1] 125, *CGr*[2] 60.

Final **t* is lost after *n.* Clear examples are the nominative-accusative singulars of *nt*-stem adjectives and present participles, e.g. *hu-u-ma-an* : *hūmant-* "all" (cf. gen. sg. *hu-u-ma-an-ta/da-as*); *ap-pa-a-an* : *āppant-,* participle of *ēpp-* "seize, take" (cf. e.g. nom. pl. c. *ap-pa-a-an-te-es*).

In other combinations of consonant plus final stop the stop is usually preserved, although most examples occur in productive paradigms and the preservation of the final stop could be analogical: e.g. *kar-ap* = [karp] IBoT II 109 II 25 (MH+) 2 sg. imp. of *kar(a)pp-* "lift, undertake". Note especially *har-ak* = [hark], 2 sg. imp. of *har(k)-* "have, hold" with /k/ retained and not lost as it was before consonants in this verb {6.12.3.}. In third person singular preterit forms of *mi*-conjugation verbs with root-final consonant an anaptytic vowel develops after the ending, perhaps protecting it from loss, e.g. *e-ep-ta* = [ēpta] < PA **ép-t* {3.9.1.}. The *hi*-conjugation third person singular preterit ending *-s* has been derived from a third person singular sigmatic aorist ending in **-st* > *-s* with loss of the final **-t;* e.g. 3 sg. pret. *nāis* "(s)he turned" = Skt. 3 sg. *s*-aor. inj. *naiṣ* "led" < **néi-s-t.* There are no examples of the treatment of **-st* in synchronically isolated forms, however, showing that the stop was lost in this environment.

Final postvocalic stops were retained, e.g. *si-i-wa-at* = [sīwat], locative singular of *siwatt-* "day"; *ku-id* = [kʷīd], nominative-accusative singular of the relative-interrogative pronoun; *ganut* (MH) = [ganut], instrumental singular of *gēnu-* "knee". In Luvian, by contrast, all final dental stops were lost, e.g. abstract suffix *-ahi* : stem *-ahid-;* rel./int. pro. nom.-acc. sg. n. *ku-i* : Hitt. *ku-id,* nom.-acc. sg. *ma-al-li* "honey" beside inst. *ma-al-li-(i)-ta-a-ti.*

Eichner, *MSS* 31 (1973) 78, *Fl. u. Wb.* 84, Oettinger, *Stammbildung* 344 and Neu, *Fs Neumann* 224, derive the particle of indirect speech (prevocalic) *-war,* (preconsonantal) *-wa* from a root aorist injunctive **wert* "said" (with lowering of **e* before resonant plus consonant in an enclitic), cf. the Palaic athematic present *wērti* "says" < **wḗr(h₁)-ti*; but an alternative derivation is possible {8.8.1.}.

It is unlikely that nom.-acc. sg. *ker* (*ke-er*) = [kēr] "heart" beside stem [kard-], e. g. in abl. *kar-ta-az* and the OH loc. *kar-di,* shows loss of final **-d.* The lack of Osthoff's Law shortening in Gk. nom.-acc. sg. κῆρ suggests that the IE nominative-accusative singular was **ḱḗr*, not **ḱḗrd.*

See Szemerényi, *Fs Stang* 513–33 = *Scripta Minora* I 172–90, who reconstructs early IE **ḱér-d* > **ḱérr* > **ḱḗr* with compensatory lengthening.

### 6.12.2. In clusters

In some clusters of three consonants a medial stop is lost: *sesd-* "prosper, flourish": 3 sg. pres. *se-es-zi* = [sēsṭsi] < [sēsd-ṭsi], 3 sg. imp. *se-es-du* < /sēsd-tu/ {6.7.1.3.}; perhaps *ga-la-at-tar-r°* "appeasement" KUB XV 34 I 33 (MH?) from [glaŋktar] > [glaŋtar] > [glatar] : *galank-* "appease" {6.10.5.}.

The compound *hatalkisna-* "hawthorn" can be derived from **h₂ed(h)-* "hawthorn" {6.4.4.6.} plus *alkistan-* "branch" > *-alkisna* with loss of the medial /t/ (Čop, *Linguistica* 3 (1958) 54–5, cf. Neumann, *IF* 71 (1961) 79 and Hoffner, *Or.* 35 (1966) 381–2).

Loss of the first consonant in an initial cluster of three consonants is found in *istanza(n)-* "soul, spirit, mind, will" (nom. sg. *is-ta-an-za-as*) = [stānts] < **pstḗn* "breast" plus PA animate nominative singular ending **-s* {3.5.2.} and in *ispant-* "night" (nom. sg. *is-pa-an-za,* acc. *is-pa-an-ta-an, is-pa-an-da-an* = [spānt-] < **k*$^{w}$*spént-*, cf. Skt. *kṣap-* "night", Av. *xšapar-* id.; {3.2.2.2.}. Another example showing loss of an initial stop in a three-consonant cluster with *s* is *iskē/a-* (*iskiya-*) "smear, daub, salve, annoint": 1 sg. pres. *is-ke-mi* KUB XXIX 55 I 14 (MH), 3 sg. *is-ke-ez-zi*, e. g. KBo V 1 III 6 (Pre-NH), 3 pl. *is-kan-zi,* e. g. KBo XXI 34 I 22 (MH), KUB XXIX 40 II 7 (MH), KUB XXIX 51 I 3 (MH), 3 sg. pret. *is-ke-et* KUB IX 34 III 34 (MH+), 3 pl. *is-ke-er* KUB XXIX 54 IV 18 (MH), 2 sg. imp. *is-ki* KBo III 22 Vs. 4 (OH+), 3 sg. *is-ke-ed-du* KUB XVII 10 II 23 (MH), ptcp. nom. pl. c. *is-kan-ti-is* KUB XXIX 15 IV 2 (OH+) = [skē/a-] < **ps-ḱḗ/ó-*, iterative of *pes-* "rub" (Melchert, *SHHP* 110), also in *ishaskant-* "bloodsmeared" {1.15.3.5.}.

Examples *HED* 2, 420–4. *iskē/a-* was reinterpreted as a non-iterative, since a stem *iskiya-* also occurs, as does an iterative *iskiskē/a-*.

### 6.12.3. *har(k)-*

The *k* of *har(k)-* "have, hold" (IE **h₂erk-* : Lat. *arcēre* "hold in, hold off") is regularly lost before endings beginning with consonants: 1 sg. pres. *har-mi* e. g. StBoT 25, 3 I 7, III 24, 28, IV 27, 3 sg. *har-si* e. g. StBoT 25, 110 II 21, *har-zi* e. g. KBo VI 2 II 25, 38, 43 (OH), StBoT 25, 3 I 33, II 421 pl. *har-wa-ni* StBoT 25, 3 I 22 = 4 I 17, *har-ú-e-ni* e. g. KBo VI 34 II 45 (MH+), *har-u-e-ni* KUB XIV 16 III 33 (NH), 2 pl. *har-te-ni-i* KBo XXII 1 Rs. 31 (OH), *har-te-e-ni* KUB XIV 12 Rs.11 (NH), *har-te-ni* KUB XIII 4 III 64, IV 37 (MH(?)+); pret. 2 sg. *har-ta* KUB V 1 III 54 (NH), 3 sg. *har-ta* e. g. KBo V 8 III 5 (NH) 1 pl. *har-u-e-en,* 2 pl. = 2 pl. imp. *har-te-en* e. g. KUB XXVI 20 L. 5 (MH), 3 sg. imp. *har-du* StBoT 25, 104 Rs. 10, but 3 pl. pres. *har-kan-zi* (OH etc.), 1 sg. pret. *har-ku-un* (OH *har-k[u-un²]* KUB XXXVI 108 Vs. 8) and in later texts), 3 pl. pret. *har-ke-er* or *har-ker,* 3 pl. imp. *har-kan-du;* note also 2 sg. imp. *har-ak* e. g. KUB XIV 1 Rs. 16 (MH) with *k* preserved in absolute final position. Since velar stops are not lost in verbs of similar structure (cf. e. g. *har-ak-zi* : *hark-* "abscond, perish" or *is-tar-ak-zi* : *istarkk-* "be sick"), the loss of the velar in *har(k)-* must be the result of some special conditioning factor. A number of explanations have been proposed, but the most plausible is probably that of Cowgill (*apud* Eichner, *Fl. u. Wb.* 90; see also Oettinger, *Stammbildung* 190 w. n. 16.) that loss is due to the use of *har(k)-* as an auxiliary in the periphrastic perfect where presumably it was enclitic.

Paradigms and examples: Friedrich, *HE* 50, Kimball, *IF* 91 (1986) 84–8, Puhvel, *HED* 3, 145–57. For other explanations, see the refs. given by Tischler, *HEG* 1, 173–5. The missing velar in *is-tar-zi* KUB VIII 38 + XLIV 63 III 9 (NH) is probably a mistake.

# Chapter Seven

# Nasals

## 7.1. System inherited from IE

Mayrhofer, *Idg. Gr.* I/2, 158–9.

IE had two nasal continuants **m* and **n* with syllabic allophones **[m̥]* and **[n̥]*. IE **n* was probably realized as **[ŋ]* before velars and labiovelars.

## 7.2. Initial

Kronasser, *VLFH* 70–1; Sturtevant, *CGr*$^{1}$ 133, 136; *CGr*$^{2}$ 43, 44.

Initial **n* and **m* were retained under most circumstances.

### 7.2.1. **n*

IE initial **n* remained: *nēpis-* "heaven" = [nēbis-] < **nébhes-* {2.6.3.}; *nekuz* "night" = [negʷts] < **négʷts* {6.5.1.}; *nēwa-* "new" = [nēwa-] < **néwo-* {2.4.3.}.

### 7.2.2. **m*

IE initial **m* remained: *milit* "honey" for OH **[mēlit]* < **mélit* {8.4.1.1.}; *mīū-* "mild, soft" = [miyū-] < **mih₁ú-* {2.4.4.2.}; *mēhur* "time" = [mēḫur] < **méh₂wr̥* {2.9.5.1., 10.4.2.2.}. The variation in spelling in *ma-li-id-du* (MH), *mi-li-id-du* (MH), *mJe*$^{1}$*-li-id-du* (OH+) "sweet" and *ma-li-is-ku* (MH etc.), *mi-li-is-ku* (NH) "soft" probably points to an initial cluster [ml]; i.e. [mlitu-] < **mlitu-* and [mlisku-] < **mlisku-* {1.16.6.1.}.

### 7.2.3. *n* : *d/l*

On a general *n* : *l* alternation in other Middle Eastern languages and in IE and Pre-IE see Friedrich, *AfO* 11 (1936) 77 n. 71, and Kronasser, *VLFH* 228–9, *EHS* 58–61, 65; on Hitt. *l* : Luv. *t/d* < **n* see Neumann, *Gds Güntert* 280.

The negative particle *le-e* (OH etc.) = [lē] can be derived from a second person singular aorist injunctive **leh₁* "let (go)" instead of from **nē(i)* as in CLuv. *nis,* HLuv. *ni(s),* and Lyc. *ni.*

See Oettinger, *Stammbildung* 497 n. 1, 501 n. 13, and Tischler, *HEG* 5, 50–2 w. refs.



## 7.3. Intervocalic

Čop, *Linguistica* 6 (1964) 42–3, 46, 48, 50–2, 53–4, 65–6, 68; Eichner, *MSS* 31 (1973) 100 n. 88, *Heth. u. Idg.* 59 n. 58, *Lautgesch. u. Etym.* 163–4; Kimball, *PW* 385–6, 869; Oettinger, *Stammbildung* 118, 123, *KZ* 94 (1980) 52 n. 27, *Fs Neumann* 238 w. n. 35, *Gds Kronasser* 167; Watkins, *Fl. u. Wb.* 376.

### 7.3.1. After short accented vowel

Eichner posits doubling of nasals after short accented vowels as part of a more general development of continuants to fortis continuants before and after short accented vowels. Oettinger (*Stammbildung* 118) suggests that the NH stem *kuenna-* for OH and NH *kuēn-* "kill" shows doubling after /ĕ/ . The regular reflexes, however, are clearly single /n/ and /m/, and the accented vowel was lengthened (see Čop 45, 46, 50, Kimball 385, and Oettinger, *Gds Kronasser,* for single *n* and *m* after **é*). Single *n* appears to be the reflex too after PA **ŏ* > OH /ā/. Clear examples of the treatment after **ă,* **ĭ* or **ŭ* are lacking, although *anna-* "mother" and *hanna-* "grandmother" show hypercoristic gemination after **ă.*

#### 7.3.1.1. **n*

Suffix *-ēn-* in *-r/n-*, *-wen-* and *men*-stem nouns from full-grade **-en-*: e.g. *ú-i-te-e-ni* KBo V 2 II 12 etc. (MH+) = [widēni], dat.-loc. sg. of *wātar* "water"; *pa-ah-hu-e-ni* (OH etc.) = [pahwēni], dat.-loc. sg. of *pahhur* "fire"; with *e*-grade suffix [-ēni] from IE loc. **-éni* (Kimball). The locative suffix was eventually extended to all oblique stem forms of each paradigm; cf. e.g. abl. *ú-e-te-na-za* (MH?), inst. *ú-wi-te-ni-it* (MH+), *ú-e-te-ni-it* (MH+); abl. *pa-ah-hu-e-na-az* (MH?), inst. *pa-ah-hu-e-ni-it-t°* (MH?).

Examples *PW* 391–2 (*witēn-*), 262–3 (*pahhuen-*).

*kutruwēn-* : *kutruwan-* "witness": nom. pl. *ku-ut-ru-ú-e-ni-es* (MH), *ku-ut-ru-e-ni-es* (MH), *ku-ut-ru-u-e-ni-i[s]* (MH+), *ku]-ut-ru-e-ni-is* (MH) with [-wēn-] < **-wén-* beside nom. sg. *ku-ut-ru-(wa)-as* (NH) with *-was* < **-wén-s* (Oettinger, *Gds Kronasser* 164–5, 173).

*mēna/i-* "face": e.g. nom.-acc. sg. *me-e-ni-im-me-et* (= *mēni*=met "my face") KBo III 22 Rs. 52 (OH) = [mēna/i-] and in *mēnahhanta* "opposite, against, facing" (*me-(e)-na-ah-ha-an-ta,* OH etc., *me-(e)-na-ah-ha-an-da,* OH etc.) = [mēnahanta] from *mēna-* "face" plus *hanta* (*handa*), directive of *hant-* "front, face, forehead"; the IE pre-form was **méni-*, **méno-* : IE **men-* "project, jut out, be prominent" in e.g. Lat. *mentum* "chin".

Examples *CHD* 3, 289–90 (*mēna/i-*), 274–88 (*mēnahhanta*); for the etymology see Čop, *Linguistica* 6 (1964), 42 and Melchert, *SHHP* 88 n. 17.

*gēnu-* "knee": nom.-acc. sg. *ge-e-nu* KBo X 37 II 33 (OH+), *ge-nu* e.g. KUB XLIII 53 I 14 (OH+), nom.-acc. sg.?/pl.? *ge-Je-nu-us-se-et* = [gēnu-sset] KBo XV 10 I 25 (MH), dat.-loc. pl. e.g. *ge-e-nu-wa-as* KBo X 37 I 35, *ge-nu-wa-as* e.g. StBoT 25, 40 L. 3 (also Post-OH) = [gēnu-] < **ǵénu-* : Lat. *genū,* Gk. γόνυ, Skt. *jānu* (Čop 42, Kimball).

Examples Weitenberg, *u*-Stämme 38–40.

First person singular preterit ending *-skēnun* (e. g. *us-ke-nu-un* "I saw" KUB II I 45, NH) = [-skēnun] < Pre-Hitt. **-ské-nun* = IE **-ské-* plus Hitt. first person singular preterit ending *-nun; -yenun* (e. g. *ha-ap-pa-ri-e-nu-un* "I handed over" KBo III 22 Vs. 2, OH) = [-yēnun] < **-yé-nun* = denominative suffix **-yé-* plus Hitt. *-nun*).

First person plural present ending *-weni* (e. g. *da-as-ke-u-e-e-n[i* "we keep taking" KBo XXII 2 Vs. 19, OH, *sa-su-e-ni* "we sleep" StBoT 25, 3 II 29) = [-wēni] < PA **-wéni; -mēni* (e. g. *tu-me-e-ni* "we take" StBoT 25, 3 IV 25 ) = [-mēni], from 1 sg. pret. **duwén* {9.7.3.}; second person plural preterit ending *-ttēni* (e. g. *da-at-te-e-ni* "you take" KUB XXXVI 106 Vs. 8, OH) = [-tēni] < Pre-Hitt. **-téni* (Čop 42).

For the reconstruction with deictic **-i* see Melchert, *SHHP* 91, 97, and for the accent see also Oettinger, *Stammbildung* 451, 566, *Gds Kronasser* 166–7, Kimball, *PW* 409–11.

Pre-Hittite **ónV* occurs in *ishimān-*, oblique stem of $^{(KUŠ)}$*ishimān(a)-* "rope, cord, strap". OH spellings with plene writing point to the location of the accent: nom. pl. *is-hi-ma-a-ne-es* StBoT 25, 27 Rs! 10, acc. pl. *is[-hi-ma-a-nu-us* ib. Rs! 7, cf. also acc. sg. *is-hi-ma-na-an* KBo XX 40 V 9 (MH+), abl. *is-hi-ma-na-az* KUB XXXVI 55 II 16 (NH), inst. *is-hi-ma-a[n-ta* KUB XVII 5 I 15 (OH+), *is-hi-ma-an-da* KUB XVII 28 I 31 (OH+) = [shimān-V-] < **sh₂i-món-V-*. Watkins suggests that the OH nominative plural in *-mānes* is from **-món-es,* but the Germanic cognates, OE and OFris. *sīma* (m.) "cord" and OHG *sīmi* (m.) id., suggest holokinetic or proterokinetic inflection, as does the ending of the nominative singular *ishimās* (*is-hi-ma-a-as* StBoT 25, 27 Rs! 11) which must continue **-mō* plus animate nominative suffix **-s* (see Melchert, *Sprache* 29 (1983) 6, 10). A holokinetic or proterokinetic nominative singular **sh₂éi-mō* should probably have become ***shīmă(s)* or **shēmă(s),* but it is possible that the zero-grade root was generalized throughout the paradigm in PA as in Germanic and that this in turn provoked a shift of the accent from root to suffix in the strong cases, i. e. nom. sg. **sh₂éi-mō* → **sh₂i-mṓ(-s),* nom. pl. **sh₂éi-mon-es* → **sh₂i-món-es;* compare Gk. nom. sg. χθών "earth", acc. χθόνα, (gen. χθονός) for IE nom. **dhéĝh-ōm,* acc. **dhéĝh-om-ṃ,* (gen. **dhĝhm-és*). The accusative singular forms, *i]s-hi-me-na-an* 988/u L. 7 (Oettinger, *Gds Kronasser* 165, NH), *is-ha-mi-na-an* KUB XVII 27 II 31, 34 (OH+), and nom. sg. *is-hi-mi-na-as* (KUB LVIII 109 Vs. 14 = KUB LII 107 I 3 (NH), can show analogical generalization of a proterokinetic locative **sh₂i-mén-i* (> **shimēni*) or they can be analogical on the model of the *kutruwēn-* type.

Examples *HED* 3, 399–400, Oettinger, *Gds Kronasser* 165–6 (with dating). Oettinger (173–6) noting the position of the pre-Hittite accent, reconstructs a hysterokinetic paradigm: nom. sg. **sh₂i-mén,* acc. **sh₂i-mén-ṃ,* gen. **sh₂i-mn-és/ós,* but the PA nominative **sh₂i-mén-s* would have become ***ishimānza* with secondary **ns* > [nts] {7.8.3.}, and **sh₂i-mé-s* would have become ***ishimēs.*

*kāni*, archaic adverb "here": e. g. *ka-a-ni* KBo XXII 2 Vs. 9 (OH), KBo XXIII 23 Vs. 27 (MH), *ka-a-n(a-at)* KUB XLI 23 II 20 (OH+)) = [kāni] < **kón-i* : demonstrative pronoun **ko-* (cf. Neu, *Lok.* 51–2 w. refs.).

*kānint-* "thirst": dat.-loc. sg. *ka-a-ni-in-ti* KUB XIX 37 III 54 (NH), *ka-ni[-* KUB XIV 15 III 45 (NH), *ka-ni-i[n]-ti* ib. III 46. Oettinger, *MSS* 40 (1981) 143–53 and *Fs Neumann* 236, derives *kānint-* and *kanerwant-* "thirsty" (nom. sg. *ka-ni-ru-wa-an-za* KBo X 45 IV 11, MH+, dat. *k]a-ni-ri-wa-an-t[i-ma* KUB XXXV 157 L. 3, H+) as well as *ganenant-* "bent" (OH gen. sg. *ga-ne-na-an-da-as* StBoT 25, 42 II 10 = *ga-ne-na-an-*



*ta-as* StBoT 25, 43 I 9) and *kaniniya-* "bend, bow" (3 pl. pret. *ka]-ni-ni-e-er* KUB XXXVI 19 L.11, Pre-NH, vbl. noun *ka-ni-ni-ya-u-wa-ar* KBo I 42 II 43, 45, NH, vocab.) from a heteroclitic paradigm with nom.-acc. sg. **ĝn-ér* "das sich durstig Niederbeugen", loc. **ĝon-én-i* from a root **ĝen-* "bend, curve" also in **ĝónu, *ĝénu* "knee" (Hitt. *gēnu* etc.) and Gk. γουνός "angle". *kanint-* and *kanerwant-* could, however, also be from a heteroclitic derivative of **ken-* "empty" in Gk. **κενεϝος* (Hmc. κενεός, Cyp. κενευϝος) and **κενϝος* (Ion. κεινός = Att. κενός) and Arm. *sin* "empty", gen. *sn-oy,* reflecting nom.-acc. **kn-ér* and loc. **k(o)n-én-*. In either case, OH *ganenant-* should continue a form with accented **é* (PA **Kn-én-*), while the plene writing in *kānint-* points to **Kón-en-(t)-*.

#### 7.3.1.2. **m*

*giemi* dat.-loc. "in winter" (*gi-e-mi* KUB XIII 1 IV 12, MH, KUB XXX 37 I 9, 11, U) perhaps = [gyēmi] < loc. **ĝhy-ém-i* : Lat. *hiems* "winter", *hieme* "in winter", from an IE *m*-stem **ĝhéy-ōm* "winter" or root noun **ĝhéyō(m)* (Čop 43, Eichner, Kimball, Melchert, *SHHP* 127 n. 90, Oettinger, *Fs Neumann* 236–8).

*ge-mi* IBoT II 66 Rs 10 (U) would be a defective spelling for *gi-e-mi*.

Iterative first person singular present ending *-skēmi* (e. g. *da-as-ke-e-mi* "I keep taking" StBoT 25, 4 3 IV 10) = [-skēmi] < IE **-ské-mi;* denominative suffix *-(y)emi* (e. g. *hu-la-a-li-e-mi* "I wind" StBoT 25, 4 IV 23) = [-yēmi] < **-yé-mi.*

### 7.3.2. After long accented vowel or diphthong

Reflexes of **n* and **m* show up as single *n* after reflexes of PA long vowels and diphthongs (Čop 46, 50).

*eni* "the aforementioned": *e-ni* KUB XXIX 4 III 29 (NH), KUB XXII 70 Vs. 19 etc. (NH), *i-ni* KUB XXIX 1 I 35 (OH+) = [ēni] < **én-i* : Gk. ἦν, ἠνίδε "behold", Lat. *en* (Čop, for the etymology see also Pedersen, *Hitt.* 62 and Melchert, *SHHP* 92, 97).

*i-e-ni* in KUB I 16 III 40 (OH+) looks like an attempt at indicating an initial long vowel, but normally hyperplene spellings in #$V_1$-$V_1$-CV (i. e. **e-e-ni*) were avoided {1.4.}.

$^{LÚ}$*gaina-* "kinsman, in-law" (e. g. acc. sg. *ga-i-na-as-sa-an* (= /gāinan-ssan/ with 3 sg. poss. pro.) KUB XXXVI 104 Vs. 15, OH) < **kóino-* {4.4.2.}.

*māni-* "pus": nom. sg. *ma-ni-is* KBo I 51 Rs 18 (NH, vocab.), inst. *ma-a-ni-it* KBo I 39 Vs. 4 (NH, vocab.) = [māni-] < **mắni-* : Lat. *mānāre* "flow" (Čop 48; see also *CHD* 3, 163, Tischler, *HEG* 6, 119 w. refs.).

The stem *giman-* = ([gīman-]?) "winter" in acc. sg. *g]i-ma-an* 1729/u (Oettinger, *Fs Neumann* 237) and *gimaniya-* "spend the winter": 3 sg. pret. *gi-ma-ni-e-et* KBo III 53 + KBo XIX 90 L. 7 (OH+), KBo III 54 L. 7 (OH+), *gi-ma-ni-et* KBo III 46 Vs. 36 (OH+) can be from **ĝhéimon-* : Gk. χειμών, Alb. *dimën* (Oettinger, Kimball) or **ĝhéimn̥* : Gk. χεῖμα, Skt. loc. sg. *heman* "in winter" (Melchert, Kimball).

See Tischler, HEG 3, 571–3 for etymological refs. For the IE paradigm see Schindler, *Sprache* 13 (1967) 200–4, and Darms, *Schwäher* 380–3.

### 7.3.3. Before accented vowel

Watkins points out two examples that suggest doubling of **n* before accented vowels: *kūnna-* "right" : Ved. adv. *śunám* "happily", and the ordinal suffix *-anna-*, which he compares with the Germanic participle suffix **-ana-* < **-onó-*. Eichner (*MSS* 31, 81, 100 n. 88, *Lautgesch. u. Etym.*) posits doubling of nasals before accented vowels as part of a more general doubling of continuants before and after short accented vowels that resulted in fortis continuants, citing *kūnna-* < **ḱunó-* (see also Oettinger, *Stammbildung, Fs Neumann*). Kimball (869) suggests that resonants, including nasals, were doubled when followed by an accented syllable or at least not immediately preceded by one. Oettinger (*Gds Kronasser*) points out counterexamples to a treatment **VmV́ > VmmV* (e.g. the nominal suffix *-mēn-* < **-mén-*), noting that in earlier texts double spellings are not common, although they do occur in later texts.

In some words, doubling of °M° seems to be confined to texts written in the NH period (NH compositions and copies of OH and MH originals) and can be considered graphic only {1.12.2.}. While there is some evidence for doubling of inherited pretonic **n*, the evidence for doubling of **m* is less clear. Sequences of *ānV̄* from **n̥nV* via Lindeman's Law; e.g. gen. sg. *ishāni* "blood" < IE **sh₂n̥n-ós* {5.6.} do not show doubling.

#### 7.3.3.1. **n*

*ma(n)ni(n)kwa-* "near, short, low close" (as adjective only nom. pl. c. (?) *ma-ni$^{l}$-in-ku-e-es[* KUB XXIII 55 IV 8, U, *CHD* 3, 170 and Neu, *IF* 85 (1980) 81) and in various derivatives. Early texts have spellings both with single °N° and with double °N-N°. In texts written down after the MH period the spelling with °N-N° is the more frequent; with °N°: *ma-ni-eṇ-k[u-* KUB XXXVI 104 Rs. 9 (OH), *ma-ni-k[u-an-da-ah-ten* KUB XII 63 Vs. 24 (MH), *ma-ni-ku-an-da-ah-ten* ib. Vs. 25 (2 pl. imp. of *man(n)i(n)kwandahh-* "make short"), *ma-ni-ku-an-du-sa* ib. Vs. 25, *ma-ni-ku-wa-an-du-sa* ib. Vs. 30 (acc. pl. of *ma(n)ninkuwānt-* "short, low close"); with °N-N°: *ma(n)ninku(w)an* adv. "near": *ma-an-ni-ku-an* KBo VI 2 I 48 (OH), *ma-an-ni-in-ku-wa-an* KUB XIV 1 Vs. 18 (MH), *ma-an-ni-[in-k]u-wa-an* ib. Vs. 26, *ma-an-ni-ku-wa-an* IBoT I 36 I 17 (MH); *ma(n)ninkuwahh-* "draw near, approach, shorten": 3 sg. pres. *ma-an-ni-in-ku-wa-ah-hi* IBot I 36 III 72. Note also *m[a$^{l}$-ni-ku-wa-an-te-es* or *ma-a]n$^{l}$-ni-ku-wa-an-te-es* StBoT 25, 137 II 13 (StBoT 26, 117). The stem [manniŋkʷa-] is from **man-énkʷo-* = **man-* "hand" (cf. e.g. Lat. *manus* "hand") plus suffix **-énkʷo-*. For the suffix, cf. e.g. Skt. *pratyáñc-* "facing, towards" or Lat. *propinquus* "near". For the position of the accent see Čop, *Linguistica* 6 (1964), 64. For raising of **e* before [ŋK] see {3.2.1.2.}. CLuv. *mannakuna/i-* "short" (*CLuv. Lex.* 136) may continue a parallel **man-enkʷ-no-*.

Examples *CHD* 3, 170–4. See also Neu, *IF* 85 (1980) 81–9 and Tischler, *HEG* 6, 123–5. For the chronology of spelling variants see Neu 85 w. notes 17–22. Sporadic examples with plene writing and single °N°, none of which is early (e.g. *ma-a-ni-in-ku-wa-an* KUB XL 2 Vs 30 (NH, 13th c.), *ma-a-ni-en-ku-wa-ah-hu-wa-ar* KUB XLIII 72 II 10 (NH, 13th c.)) or with plene writing and °N-N° (e.g. *ma-a-an-ni-in-ku-wa-an-ṭe-es* KUB XXIV 5 Vs 22 + KUB IX 13 L. 23 (NH) beside *ma-an-ni-i̯n-ku-wa-an-te-es* ib. 22 + L. 10) may indicate partial analogical remodeling after *māniyahh-* "divide, distribute, administer."



In other examples, the position of the accent is not confirmed by plene writing.

Ordinal suffix *-anna* in *te-ri-[ya-an-na* "third" KBo III 18 Rs. 7 (OH+), *te-ri-ya-an-na* KBo XX 40 V 8 (MH+), *3-an-na* KBo V 2 II 60 (MH+); also in *2-an-na* "second" ib. II 59, *4-an-na-za-kan* "fourth" KUB XVII 1 II 4 (NH), *5-an-na-za-kan* "fifth" KBo V 2. II 7, *6-an-na-za-kan* "sixth" ib. II 9, *7-an-na-za-kan* "seventh" ib. II 11. The suffix *-anna* is connected by Watkins, *Int. Journal Slav. Ling. and Poetics* 4 (1961) 7–12, and *Fl. u. Wb.*, with the verbal adjective suffix **-e/onó-*, which functions as a past participle suffix in Slavic and Germanic (OCS *-enŭ*, Gmc. **-ena-* in e.g. ON *bundenn* "bound", **-ana-* in e.g. Goth. *bundans* id.). The Hittite suffix would correspond to the Germanic form in **-ana-* < **-onó-* with oxytone accentuation.

The identification of *x[-ra-a-an-ni* MU.KAM-*ti* in KUB XXVI 91 Vs. 5 (NH) as "in the tenth year"(?) is uncertain; see Sommer, *AU* 271–2 w. refs. and Hagenbucher, *Korrespondenz* chpt. 20 n. 219.

The adjectival suffix **-onó-* may also occur in *siwanna-* "divine": nom. sg. c. *si-wa-an-na-as* KBo II 13 Vs. 23 (NH), *si-wa-[an-n]a-as* KBo II 7 Rs. 26 (NH), nom. pl. *si-wa-an-ni-e-es* KBo XX 73 IV 8 (MH), KUB XXV 146 III 8 (NH), *si-i-ú-wa-an-ni-e-es* KUB IX 4 III 9 = *si-wa-an-ni-es* in dup. KUB IX 34 III 45 (both MH+); [siwannā-] < **diw-onó-*?

For examples and discussion see Laroche, *JCS* 21 (1967) 175, and Watkins, *Gds Güntert* 105. The spelling *si-i-ú-wa-an-n* is probably analogical after *si-i-us* "god".

$^{NA_4}$*kunnana-*, *kuwannana-* "copper": acc. sg. *ku-un-na-an* (NH), *ku-wa-an-na-an* (OH+), gen. sg. *ku-un-na-na-as* (MH, NH), gen. *k]u-wa-an-na-na-as* KUB XXIX 12 II 7. The source is akin to Gk. κύανος "copper". The accusative singular *ku-wa-an-na* KUB XXIV 12 III 12 (NH) may continue a collective **kuan-á* > [kuwannā-] with doubling of the nasal and glide insertion [ua] > [uwa]. The stem *kunnana-*, although occurring in MH, would be derived from this by syncope {3.7.4.1.}.

Other examples are problematic. For *kuinna-* "woman" (??) see {6.3.4.2}.

*dannatta-* "empty, deserted", *dannant-* id.: acc. sg. c. *dan-na-at-ta-an* KBo VI 11 I 10 (OH+), *d]an-na-at-ta-an* KUB I 1 II 12 (NH), nom.-acc. pl. n. *da]n-na-at-ta* KBo VI 34 III 29 (MH+), *"dan-na-at-ta* KUB I1 II 63 (NH), dat.-loc. pl. *ta-an-na-at-ta-as* KUB XIX 11 IV 27 (NH); also in *dannattahh-* "depopulate" (1 sg. pret. *dan-na-at-ta-ah-hu-un* KBo III 4 III 44, 65, NH); *dannatēss-* "be empty" (ptcp. nom. pl. c. *dan-na-ti-es-sa-an-te-es* KUB XXIV 8 + XXXVI 60 II 17 (OH+), *dannattessar* "emptiness" (nom.-acc. sg. *da-an-na-at-te-es-sar* KBo I 36 I 8, NH, vocab.), and *dannant-* "empty" in *dannantē-* "be empty, deserted" (3 sg. pres. *ta-na-an-te-ez-zi* (sic) KBo XIII 34 III 18, OH+), cf. CLuv. *dannanta/i-* "desolate, empty" (*CLuv. Lex.* 205) and HLuv. *tanant(i)-* id. The base might be [dannāta-] < **dhonó-t-* beside **dhon-(o)ro-* in *dannara-* "empty" : **dhen-* "palm of the hand, flat, uncultivated area" e.g. in Skt. *dhánvan-* "desert, dry shore", OLat. *danea* "area", OHG *tenni* (NHG *Tenne*) "even, level area", OE *denn* "wild animal's lair" (NE *den*). Alternatively, the *nn* can be from *dannara-* if this is [dannrā-] < **dhon-ró-* {7.6.1.}.

For the etymology see Lühr, *Stud. z. idg. Wortschatz* 67–71. Other references are given by Tischler, *HEG* 8, 97–102.

A demonstrative pronoun *anna-, anni-* is perhaps attested as an independent pronominal in nom. sg. c. *an-ni-is* KBo I 42 III 33 (NH vocab.; but see Kammenhuber, *HW*$^2$ 81, who doubts the existence of this word). The only form that is genuinely old is *ani-* in *ani-siwat* (loc. *a-ni-si-wa-at* KBo III 45 Vs. 12, OH+) with single °N°. An *a*-stem *anna-* can be inferred from the adverb *annaz* "formerly" (*an-na-za* e.g. KUB XIII 35 III 1 (NH), KUB XXII 40 II 3, 34 (NH), *an-na-az* KBo XIV 12 IV 27 (NH), KBo XVIII 32 L. 3 (NH), KBo XVIII 83 L. 11 (NH), KUB XX 54 VI 5 (U), KUB XXXVI 32 L. 9 (NH)) from an ablative *annaz,* and from derivatives such as the conjunction *annisan* "formerly, once upon a time" (*an-ni-sa-an* e.g. KBo III 3 + I 3, 4 (NH), KBo V 13 I 12 (NH), KUB I 4 III 40 (NH), KUB I 1 IV 7, (NH), KUB XIV 15 IV 23 (NH)). The derivative *annal(l)a-, annal(l)i-* "former, old" occurs only in texts written down in the NH period (see Kammenhuber, *HW*$^2$ 74–6 and see {8.5.}). The obvious source is the IE pronominal stem **ono-* seen also in the Vedic defective demonstrative pronoun *ana-,* YAv. *ana,* O.Pers. inst. *ana* and in OCS *onŭ,* Lith. *anàs* beside **eno-* in e.g. Gk. ἔνη "on the next day" and Lat. *enim.* In Vedic the accent is on the second syllable (note inst. sg. m. n. *anéna, aná,* f., gen.-loc. du. *anáyoḥ*). This might suggest **onó-* > Hitt. [annā-], but the accent is not confirmed by plene writing. It is possible that the single °N° of OH+ *anisiwat* shows that the initial syllable of this word was accented, but the word is hapax, and the spelling may be defective. There may also be indirect confirmation of the accent in the single °S° of *annisan.* Although it seems unlikely that *annisan* directly continues **oní-son,* it is possible that it reflects [annī-] < **oní-* plus particle *-san* with lack of doubling of the initial consonant of the enclitic after long vowel as opposed to *enissan* = [ēnissan] and *apenissan* = [abēnissan] with normal doubling after short vowel (Eichner, Melchert). Note, however, *kissan* "thus", which seems to have a short vowel as opposed to nom.-acc. sg. n. *ki-i* [kī] "this". It is also possible that *anna-* was borrowed from Luvian, in which case it could continue **éno-* > *anna-* with Čop's Law doubling beside **óni-* > Hitt. **āni-* in *anisiwat,* but the stem *anna-* is not attested independently in any of the Luvian languages and does not show up in Luvian contexts in Hittite

Examples *HW*$^2$ 81 (*annaz*), 74–6 (*annalla/i-*), *HED* 1, 51–5; see *HED, HEG* 1, 25, 29–30 and Mayrhofer, *KEWA* I 32 for etymological refs.

*kūnna-* "right" (direction), also "fitting, agreeable": nom. sg. c. *ku-un-na-as* KUB XVII 10 IV 34 (MH), nom.-acc. sg. n. *ku-u-un-na-an* KBo XIX 136 + I 9 (NH), *ku-un-na-an* ib. IV 8, *ku-un-na-an* KUB XXIV 4 Vs. 9 (MH), dat.-loc. *ku-un-ni* StBoT 25, 105 L. 4, 8, KUB XXVII 67 I 35, II 35 (NH), abl. *ku-uṇ-ṇa-a[z?* StBoT 25, 43 IV 1, *ku-un-na-az* KBo XIX 136 + IV 18, *ku-un-na-az* KBo III 22 Rs 79 (as adv.) (OH), inst. *ku-un-ni-t* StBoT 25, 78 R. col. 5, nom.-acc. pl. n. *ku-u-un-na* KUB XXIX 37 L. 76 (OH+), KUB XII 63 Vs. 23 (MH), *ku-un-na* KUB XXX 24 II 1 (OH+); factitive *kunnahh-* in verbal noun gen. sg. *ku-un-na-ah-hu-wa-as* KUB XX 60 L. 5 (Pre-NH). Watkins reconstructs **ḱunó-* : Skt. *śuná-* (n.) success, prosperity", acc. sg. **ḱunóm* in Ved. adv. *śunám* "happily", cf. **ḱweno-* in Lith. *šveñtas* "holy" etc., implying [kunnā-]. The occasional spelling with plene writing of the root vowel, however, is difficult to reconcile with the orthotone accent Watkins proposes.

See *HEG* 3, 631–2 and Mayrhofer, *KEWA* III 355–6 for refs.

The single *n* of *kunanzi* "they kill" and inf. *kunānna* is presumably analogical from full-grade forms such as 3 pl. pres. *ku-e-nir* (MH) = [gwēner] < Pre-Hitt. **g$^{w}$én-ēr.*

### 7.3.3.2. **m*

One word, the first person singular pronoun, acc.-dat. *ammuk,* gen. *ammēl,* abl. *ammētaz* = [ammu-], [ammē-] < PA **amú-, *amé-* < **h$_1$móu-, *h$_1$mé-* shows doubling, while another, *ishimās, ishimān-* "rope, cord" < Pre-Hitt. **sh$_2$i-mṓ(s), *sh$_2$i-món-* {7.3.1.1.} shows single °M° consistently. If the Hieroglyphic and Lycian first person pronouns (HLuv. *amu,* Lyc. *ẽmu*) have the reflex of PA **mm,* then it is possible that doubling was PA and *ishimās, ishimān-* was remodeled from **sh$_2$éi-mō, *sh$_2$éi-mon-* only after the rule doubling pretonic nasals had ceased being productive. It is possible that lack of doubling in early texts in *sumānza-* "cord" (nom. sg. *su-ma-an-za,* Pre-NH, gen. sg. *su-ma-a-an-za-[na-as]* StBoT 25, OH, dat.-loc. sg. *su-ma-an-za-ni,* OH) with stem [sūmānts-] generalized from **sūmḗns* {3.5.2., 10.5.1.} is due to the long vowel of the initial syllable. The NH nominative singular *su-um-ma-an-za-a-as* (KBo X 45 II 29, MH+) would show NH °M-M° for earlier °M°. In *hamesha(nt)-* "spring", however, the normal spelling is with °M° in texts of all periods (see *HED* 3, 69–75 for examples), and the *e*-vocalism of OH *ha-m]e-es-hi* StBoT 25, 18 Rs? 1 (for the restoration see StBoT 26) suggests that the second syllable was originally accented, but this word is not necessarily IE {10.10.2.}. For NH *ha-am-me-es-h*° see {1.12.2.}.

For the position of the accent in *ammuk, ammē-* see also Eichner, *KZ* 99 (1987) 219.

Three other examples have consistent °M-M°, but it is not clear that this can only reflect doubling before an accented vowel.

*gimmant-* "winter": nom. sg. *gi-im-ma-an-za* e.g. KUB XIX 37 II 11 (NH), KUB XXVII 16 I 11 (NH), *gi-i[m-ma-a]n-za* e.g. KBo II 5 IV 2 (NH), acc. *ki-im-ma-an-tin* KUB IV 4 Vs. 3 (NH), gen. *gi-im-ma-an-da-as* KUB XIII 2 IV 24 (MH?), *gi-im-ma-an-ta-as* KUB XXIV 1 II 4 (Pre-NH); also in *gimmandariya-* "spend the winter" (NH only, e.g. 1 sg. pret. *gi-im-ma-an-da-ri-ya-nu-un* KBo III 4 III 38) = [gimmānt-] ? beside **gīman* "winter" in acc. sg. *gi-ma-an* and *gimaniya-* "spend the winter" {7.3.2.}. The *mm* is connected with accent by Eichner, *Lautgesch. u. Etym.* 163–4 (**ĝheimón-t-* > PA **ghēmánt-* > *ghĕmánt-* > **g(h)emmánt-* > *gi-im-ma-an-t*°) and Oettinger, *Fs Neumann* 236–8 (IE **ĝheim-ón-t-* with *t*-extension beside **ĝhéimōn* in **gīman, gimaniya-* = Gk. χειμών "winter", Alb. *dimën* id.). However, Melchert's reconstructions (*SHHP* 70, 146–7) **ĝheimn-ónt-* (with **ĝheimn-,* oblique stem of PA **gīman* "winter") or **ĝhimn-ónt-* with **mn* > *mm* are also possible.

Kimball, *PW* 384–6, compares Skt. *hemantáḥ* and suggests that the gemination occurred in an unaccented syllable, but this is incorrect.

*gimmi* dat.-loc. "in winter" (*gi-im-mi* KUB XIII 2 IV 23, MH?, KBo XIII 169 L. col. x + 1 (OH+), KBo XV 32 I 4, MH) is explained by Kimball, *PW* 384–6, and Oettinger, *Fs Neumann* 238, as perhaps from **ĝhim-éi,* dative singular of an *m*-stem **ĝhéyōm* "winter" (Kimball) or root noun (Oettinger) beside locative **ĝhyémi* > [gyēmi] in *gi-e-mi* (MH etc. {7.3.1.2.}). Again, Melchert's reconstruction (*SHHP* 127 n. 90) **ĝh(e)i-mn-éi,* dative of **gīman* "winter" < **ĝhéimn̥* is also possible.

*himma-* "model" : nom. sg. *hi-im-ma-as* (OH+, NH), gen. *hi-im-ma-as* (MH etc.), nom. pl. *hi-im-mi-e-es* (OH+) = [himmā-]? could be from **h₂imó-*. Alternatively, **h₂imnó-* > [himmā-] is also possible {2.8.3.2., 10.2.3.}.

### 7.3.4. In unaccented syllable

The reflex of **n* in unaccented syllables is written as single °N°. There are no certain examples of **m*.

*hāranan-*, stem of *hāras* "eagle" (acc. sg. *ha-(a)-ra-na-an,* OH etc., nom. pl. *ha-a-ra-ni-is,* MH?) = [ [hāran-V-] < gen. **h₃ér-on-os,* nom. pl. **h₃ér-on-es* {8.4.1.2., 10.2.3.}.

$^{NA_4}$*pēruna-* "cliff, stone" (dat.-loc. pl. *pe-e-ru-na-as* e. g. StBoT 24, 4 III 45, dat. sg. *pe-e-ru-ni* e. g. StBoT 25, 140 Rs 16) = [pēruna-], thematized from **pérun-*, oblique stem of a **pérwr̥* = Gk. πεῖραρ "end", cf. Skt. *parvan-, parvuṣ-* "node, knot", *parvata-* "mountain", Hitt. *u*-stem *pēru* "cliff, stone" < **péru-* (Weitenberg, *u*-Stämme 169–71).

*mēhun-*, oblique stem of *mēhur* "time": gen. sg. (pl.?) *me-hu-na-as* e. g. KUB XIII 2 II 43 (MH?), *me-e-hu-na-as* KBo VIII 114 Vs. 10 (NH), dat.-loc. sg. *me-e-hu-n[i]* KBo III 22 Vs. 19 (OH), *me-e-hu-ni* e. g. KBo III 13 Vs. 8, Rs. 8 (OH+), KBo VI 26 I 32 (OH+), *me-hu-ni* KUB XIII 2 II 44; and *sēhun-*, oblique stem of *sēhur* "urine": e. g. gen. *se-e-[h]u-na-as-s*° IBoT I 36 I 46 (MH), dat.-loc. *se-e-hu-ni* KUB XXXV 132 III 7 (NH), dir. *se-e-hu-na* IBoT I 36 I 44, *se-hu-na* ib. I 45 = [mēḫun-V-] < **mḗh₂un-* and [sēḫun-V-] < **sḗh₂un-* with lengthened grade after the nominative-accusative singulars **mḗh₂wr̥* and **mḗh₂wr̥* {2.9.5.1.}.

The oblique stem in **-un-* may be a replacement for preconsontantal **-wn̥-* (e. g. gen. sg. **meh₂wn̥s*); see Eichner, *MSS* 31 (1973) 69.

## 7.4. Nasal plus stop or affricate

### 7.4.1. Retention

In general **n* was retained before dentals and velars in OH, but there is ample evidence for variable loss in the post OH period. From OH on °N° is often omitted in writing clusters of three consonants beginning with [ŋ] plus velar {1.12.1.}.

#### 7.4.1.1. **n*

Participle suffix *-ānt-* < **-ónt-*, e. g. nom. sg. c. $^{LÚ}$*ap-pa-a-an-za* "captive" KBo XVI 27 IV 19 (MH) = [apānts]; acc. sg. c. *hu-ga-a-an-ta-an* "slaughtered, stricken" StBoT 25, 71 II 7 = [hugāntan]; adverb *ha-a-an-za* "in front" KUB IX 28 II 12 (OH+) = [hāntṣ] < loc. **h₂énti* {2.8.1.2., 6.7.2.2.}; *ispānt/d-* (OH), *sipānt/d-* (OH etc.) "pour a libation" (strong stem *is-pa-a-an-t*°, *si-pa-a-an-d*°) = [spānd-] < **spónd-* {11.3.2.1.}.

#### 7.4.1.2. **m*

Several words with a sequence *m* plus labial stop occur, but none has an entirely secure IE etymology.



*impa-* (MH, MH+), *aimpa-* (NH) "load, burden", *aimpanu-* "to burden down, load down" (examples and refs. *HED* 1, 14–15, *HEG* 1, 6); *alumpahzi-, alumpazzi-*, a technical term in bird omens (of Hurrian origin? See *HEG* 1, 23, *HED* 1, 43); *ambassi-* "cult gear", ultimately of Hurrian origin. (*HED* 1, 49–51); *ampura-*, a bread name, perhaps of Hurrian origin (*HEG* 1, 23, *HED* 1, 51); $^{GIŠ}$*arimpa-* (*a-ri-im-pa-* or *a-re-em-pa-*) "wooden object used in rituals" (OH etc.; *HEG* 1, 57, *HED* 1, 139, Neu, *IF* 82 (1977) 272); *kurimpa-* "sediment, dregs" (nom. sg. *ku-ri-im-pa-as* or *ku-re-em-pa-as* KBo V 1 III 23, 40, Pre-NH; *HW* 117, *HEG* 4, 647, probably not related to *kurimma-* "orphan"). The identification of $^{UTUL}$*sampukki-*, an herb, perhaps "elder(flower)", is based on the resemblance to Lat. *sambūcus* (*HW* 181 w. refs.).

*dampu-:* nom.-acc. sg. n. *dam-pu* in moon omens KUB VIII 6 II 2, 3, 5, 7 (OH+), KUB XXIX 11 II 2, 4, 5, 8 (OH+), fientive: *ta-am-pu-e-es-s* KUB XXXIII 63 I 4, 6 (OH+). The meaning is disputed, and it occurs only with its apparent antonym *alpu-*, another word of disputed meaning. In KUB XXIX 11 *dampu-* appears to alternate with Akk. *eddu* "pointed" (used of the horn of the moon), while *alpu-* appears to correspond to Akk. *kepū* "blunt". Güterbock, *Gds Sachs* 168–170, however, argues that the scribe reversed the meanings. Interpreting the meaning of *dampu-* as "blunt" Popko, *JCS* 26 (1974) 182, proposed a connection with OCS *tǫpŭ,* Pol. *tępy,* Russ. *tupój* "blunt, dull, obtuse" < **tompu-*. Puhvel (*RHA* 33 (1975) 59–62 = *AnIE* 345–8, *JAOS* 97 (1977) 599) accepted this etymology, but interpreted the meaning as "prickly, sharp" and proposed a semantic development **"in a natural state" > "dull, uncouth, obtuse" (as in Slavic and in Hitt. *dampūpi-* "barbaric") or > "rough, primitive, prickly, sharp", but neither the meaning nor the etymology is confirmed.

For summaries of the problems connected with this word and its antonym *alpu-* see Weitenberg, *u*-Stämme 87–8 w. refs., Tischler, *HEG* 1, 39–40, *HEG* 8, 86–8, and Puhvel, *HED* 1 sub *alpu-* (39–41).

*dampūpi-* "common, negligible, barbaric" is connected by Puhvel (*RHA* 33 (1975) 59–62 = *AnIE* 345–8, *JAOS* 97 (1977) 599) with *dampu-* and is also perhaps ultimately from **tompu-*: acc. sg. c. *dam-pu-pi-en* KBo VI 10 III 22 (OH+), *dam-pu-u-pi-in* KBo VI 26 II 29 (OH+), nom.-acc. sg. n. *dam-pu-u-pi* KBo V 3 III 32 (Supp. I+). Puhvel proposes a semantic development **"in an natural state" > "dull, blunt, obtuse".

See Weitenberg, *u*-Stämme 87–8 and Tischler, *HEG* 8, 88–9 for etymological references.

### 7.4.2. [ŋ] plus velar

The nasal was retained in OH. The omission of °N° in clusters of nasal plus velar stop plus consonant appears to be graphic only {1.12.1.}. Raising of inherited **e* before clusters of *n* plus velar suggests that the nasal was phonetically [ŋ] {3.2.1.2.}.

*kānk-* "hang" (strong stem *ka-a-an-k*°, *ga-(a)-an-k*°/*g*°) = [kāŋk-] < **kónk-* {2.4.1.}.

*henkan, hinkan* "death, plague": nom.-acc. sg. *he-en-kan* e. g. KBo III 28 II 15 (OH+), *hi-en-ka-an* e. g. KBo XVIII 151 Vs. 12 (MH), *[hi-i]n-kan* e. g. KUB XIV 1 Vs. 81 (MH), *hi-in-ga-an* e. g. KUB XV 34 II 47 (MH?), *hi-in-ga-n(a)* KUB XXX 10 Vs. 30 (MH), gen. *hi-in-ga-na-as* KBo III 21 II 25 (OH+), dat.-loc. sg. *he-en-ga-ni* KBo XXII 2 Rs. 5 (OH) = *hi-in-ga-ni* in NH dup. KBo III 38 Rs. 21 = [heŋg-] < **"fate, portion" : *hink-* "divide, allocate" < **h₂o-h₁enk̂-* also in *hink-* "bow" {4.9.1.}.

Examples *HEG* 2, 296–301.

*lingāi-* "oath" (*li-in-ga-(a)-i*) = [liŋgāi-] : **h₁lengh-* in Gk. ἐλέγχω "blame, refute, prove" (3.2.1.2., 10.3.1.3.).

*man(n)inkuwānt-* "short, near, low, close" (*ma-(an)-ni-(in)ku-wa-(a)-an-t°*) = [manniŋkʷan(t)-], extended form of an adjective *manninkuwa-* from **manénkʷo-* {3.2.1.2., 7.3.3.1.}.

## 7.4.3. Loss of nasal

Carter, *JAOS* 99 (1979) 93–6; Friedrich, *HE* 34; Goetze, *NBr* 5–6; Justeson and Stephens, *JAOS* 101 (1981) 367–70; Kronasser, *VLFH* 74, *EHS* 89–90; Melchert, *AHP* 123–4; Oettinger, *Stammbildung* 135–7; Scherer, *Fs Pisani* 891–901; Sommer, *HuH* 15, 71–2, 81, 99; Sturtevant, *CGr*[1] 69, *CGr*[2] 24–5.

There is ample evidence for variable loss of /n/ before dental and velar stops and the affricate *z* = /ts/ in the form of spellings in which an expected °N° has been omitted. The vast majority of examples show loss before dental stops and /ts/, but this may merely reflect the relative frequency of these sequences, since loss is found before velar stops too. Sequences of /m/ plus labial stop are much rarer than sequences of /n/ plus dental or velar but a few words (mostly of uncertain etymology) may show variable loss of /m/ before labials or assimilation of the consonant cluster. Only one example, which has loss of [ŋ] before [kʷ], is citable from OH texts (*ma-a]n-[i]ni-ku-wa-an-te-es* "short, close" StBoT 25, 137 II 13) suggesting that the phenomenon, especially as it involves loss of /n/ before dentals, is basically MH and later, and that it can be separated from the graphic omission of nasals in spelling clusters of [ŋKC] as in OH *li-ik-zi* "swears" = [liŋgtsi] etc. {1.12.1.}. Although Carter claims that loss is graphic only, the evidence suggests that it is a real phonological phenomenon. There are too many examples of loss to attribute the omission of VN signs before stops to scribal error, in some examples the nasalless spelling is produced by changing a sign sequence normally used, indicating that the phenomenon involves more than simple omission of a sign with °N°, and sporadic "reverse spellings" with °N° in syllables where it would not be expected on etymological grounds occur. Parallels from the other Anatolian languages and from languages spoken later in Anatolian and the Eastern Mediterranean suggest that the loss of nasals before stops nasals is an areal feature. Scherer posited neutralization of **nt* and **nd* as **nd* and later loss of the nasal as a result of weak articulation, citing evidence from Lycian and Greek transliterations of Lycian names as evidence. Spellings in which the sequences -VT-T° or VD-D° = [Vt] are substituted for expected -VN-T/D°, however, suggest that neutralization in voicing did not occur in Hittite.

Most commonly the sign AN is omitted, although omission of EN and IN also occurs. Examples involve suffixes, endings, and stems, and loss seems to have occurred both in unaccented syllables (e.g. *ú-e-sa-at-ta* for *ú-e-sa*-AN-*ta* "they wore", *me-mi-ya-u-wa-zi* for inf. *me-mi-ya-u-wa*-AN-*zi* "to speak") and in accented ones (e.g. *hi-kan-ni* for *hi*-IN-*kan-ni* or *hi*-EN-*kan-ni*, dat. sg. of *henkan-* "death" or *is-pa-ta-za* for *is-pa*-AN-*ta-za* "night").



### 7.4.3.1. Loss before dental stop or /ts/

Some examples show a change in signs. With -KAT-T° for -KAN-T°: 3 pl. pres. midd. *s]a-a-hi-is-kat-ta-ri* KUB XXXI 86 II 31 (MH+) for *sa-an-hi-is*-KAN-*ta-ri* (cf. *sa-a-hi-es-kan-ta-ri* in MH+ dup. KUB XXXI 89 II 19) and *sa-hi-is-kan-du* in KUB XIII 2 II 3 (MH?) : *sanh-* "rinse, flush"; with -AT-T° for -AN-T°: 3 pl. pres. midd. *ú-e-si-ya-at-ta-ri* KUB XXVI 19 II 33 (MH) for *ú-e-si-ya*-AN-TA-*ri* (cf. *ú-e-si-ya-a[n-d]a-ri* ib. II 19) : *wesiya-* "graze"; with -ED-D° for -EN-D° : *sa-me-ed-du* 394/d r. col. 3 (Oettinger, *MSS* 35 (1976) 99) for *sa-me*-EN-*du;* with TA for AN: nom. sg. *is-pa-ta-za* KBo III 13 II 3 (OH+) for *is-pa*-AN-*za* "night"; with -AZ for -AN-ZA-: ptcp. nom. sg. c. *li-li-wa-az* "swift" KUB XXXIII 24 I 26 (MH+) for *li-li-wa-an-za*.

Omission of AN, EN, or IN is found in third person plural active and middle forms: *er-ha-a-zi* KUB XV 34 IV 40 (MH?) for *er-ha-a*-AN-*zi* "make a circle"; *is-dam-ma-as-sa-zi* KUB XXXVI 89 Rs. 38 (NH) for *is-dam-ma-as-sa*-AN-*zi* " hear"; *ma-al-la-zi* KUB XVII 35 I 4 (NH) for *ma-al-la*-AN-*zi* "grind"; *ta-ni-nu-wa-zi* KBo II 13 Rs. 8 (NH) for *ta-ni-nu-wa*-AN-*zi* "establish, organize" as in ib. Vs 4, 12, 20, Rs. 5; 3 pl. pres. midd. *ki-ya-ta* KBo X 24 IV 24 (OH+) for *ki-ya*-AN-*ta* "lie, be lying"; *ú-e-es-sa-ta* HT 1 I 30 (MH?) for *ú-e-sa*-AN-*ta* "wear" as in dup. KUB IX 31 I 37 (MH?+); 3 pl. pret. midd. *ha-an-na-ta-ti* KUB XII 26 II 2 (NH) for *ha-an-na*-AN-*ta-ti* "quarrel, litigate, judge"; similarly, from participles, adjectives and nouns in *-ānt-* or *-wānt-*: acc. sg. c. *a-pe-e-ni-es-su-u-wa-da-an* KUB XIII 9 II 2 (MH+?) for *a-pe-e-ni-es-su-u-wa*-AN-*da-an* "thus"; abl. sg. *hu-u-ma-da-az* KUB XIII 2 III 35 (MH?), *hu-u-ma-ta-za* KUB XXIII 55 L. 5 (U), dat.-loc. pl. *hu-u-ma-da-as* KUB VI 46 III 67 (NH; cf. *hu-u-ma-an-da-as* in dup. KUB VI 45 III 27), *hu-u-ma-ta-as* KUB II 1 IV 31 (OH+; cf. *hu-[u-m]a-an-da-as* ib. III 3, *hu-u-ma-an-ta-as* ib. IV 1, *hu-u-ma-an-te-es* ib. IV 7) for *hu-u-ma*-AN-*t°/d°* "all"; nom. sg. c. *ne-e-a-za* KUB IX 7 Vs. 13 (NH) for *ne-e-a*-AN-*za* "turned"; nom.-acc. pl. n. *sa-an-hu-ta* KBo IV 2 I 62 (OH+; cf. *sa-a-an-hu-wa-an-ta* ib. II 29), for *sa-a-an-hu-(wa)*-AN-*ta* "roasted" {3.7.4.1.}; nom. sg. c. *ta-as-wa-za* KUB XII 62 Rs. 12 (Pre-NH) for *ta-as-wa*-AN-*za* "blind" as in Rs. 1, 2; nom. sg. c. *wa-tar-na-ah-ha-za* KUB XVII 35 IV 6 (NH) for *wa-tar-na-ah-ha*-AN-*za* "reported"; abl. sg. *ze-e-ya-da-za* KUB LI 65 Rs. 3 (NH), for *ze-e-ya*-AN-*da-za* "cooked"; nom. sg. c. TUKU.TUKU-*u-za* KBo IX 151 L. col. 1 (U) for TUKU.TUKU-*u*-AN-*za* "angry"; acc. pl. *hu-u-wa-du-us* "winds" (for nom. pl.) KUB XXIV 2 Rs. 17 (Pre-NH), *hu-u-wa-ta-as-sa-as-si* (*huwa(n)tass-a-ssi*) KUB XXVIII 4 Vs. 20b (sic), (NH), for *hu-u-wa*-AN-*d°/t°*; infinitive in *-anzi, -manzi*: *ar-nu-ma-zi* KBo XXIII 110 Rs. 10 (NH) for *ar-nu-ma*-AN-*zi* "to bring"; *me-mi-ya-u-wa-zi* HT 1 I 35 (MH?) for *me-mi-ya-u-wa*-AN-*zi* "to speak."

Loss is also attested in stems and in other suffixes: *al-wa-za-tar* Tunn. II 58 (MH+), *al-wa-za-tar* ib. III 4, 9 40, for *al-wa*-AN-*za-(a)-tar* "witchcraft", as in ib. III 36); similarly, *alwanzena-* adj. "practicing witchcraft", noun "sorcerer": gen. *al-wa-ze-na-as* Tunn. II 11, KBo XXII 127 I 6 (U), abl. *al-wa-ze-na-az* KUB XII 57 I 6 (NH), acc. pl. c. *al-wa-ze-nu-us* Tunn. II 16; *ar-si-ta-at-hi-in* KUB V 11 IV 35 (NH) beside *ar-si*-IN-*ta-at-h°* (an oracle bird); nom. pl. *hu-ul-pa-zi-e-ni-es* KBo XXX 20 III 6 (OH+), *hu-ul-pa-ze-ni-es* ib. III 12 for *hu-ul-pa*-AN-*ze/zi-ni-es* "humps"; *hu-wa-hu-es-sar* KUB XXXIII 24 I 28 (MH) for *hu-wa*-AN-*hu-e-es-sar* "wave"; *is-pa-tu-zi* KUB V 1 I 38 (NH), *is-pa-tu-zi-as-sa* KBo XXX 54 I 10 (OH+) for *is-pa*-AN-*tu-(uz)-zi-as-sar* "libation vessel"; acc. pl. LÚ.MEŠ*is-pa-tu-uz-zi-e-la-as* (sic) KUB XIV 11 IV 9 (Pre-NH) for *is-pa-*

AN-*tu-uz-zi-e-la-as, -ya-la-as* "libation-bearers"; 3 sg. pret. *is-ta-ta-a-it* KUB XXII 70 Vs. 44, *is-ta-ta-a-it* ib. Rs. 4, 6 (NH) for *is-ta*-AN-*da-(a)-it* "hesitated"; nom. sg. *is-ta-za-na-as* KUB XLI 23 II 19, 21 (OH+, cf. *is-ta-an-za-na-as* ib. II 23, 24, acc. *is-ta-an-za-na-as* ib. II 15), KBo XVIII 151 Rs. 14 (MH) for *is-ta*-AN-*za-as* "soul, wish"; *gi-zu-wa-as* KUB XLIII 54 I 11 (NH) for *gi*-E/IN-*zu-wa-as* "lap" (?), cf. *gi-en-zu-uz* ib. I 11; *ki-it-pa-da-la-az* KBo III 1 II 34 (OH+) for *ki-it-pa*-AN-*da-la-az* "from now on"; nom.-acc. sg. n. *ma-ya-ta-tar* KUB XXIX 1 II 37 (OH+) for *ma-ya*-AN-*ta-tar* "youth"; *ma-ya-te-es-se-er* KUB XXIV 8 III 17 (OH+) for *ma-ya*-AN-*te-es-sar* "they became young"; *me-na-ah-ha-da* KBo IV 4 IV 18 (NH) for *me-na-ah-ha*-AN-*da* "opposite"; *da-ga-zi-pa-as-s*° KBo III 38 Vs. 3 (OH+), *da-ga-zi-pa-as* KUB VI 46 I 37 (NH), *da-a-ga-zi-pa-as(-sa)* (sic) KUB XXXI 127 I 2 (MH+) for *da-ga-(a)*-AN-*zi-pa-as-sa* "earth"; *tar-sa-zi-pi* KBo IV 13 III 24, (OH+) for *tar-sa*-AN-*zi-pi* "arena" (cf. *tar-s[a-a]n-zi-pi* ib. V 8); $^{URU}$*Zi-ip-la-ta* KBo II 12 II 7 (OH+), for $^{URU}$*Zi-(ip)-pa-la-an-ta/da; zi-za-pu-si* for *zi*-IN-*za-pu-us-si* "*zinzapu*-bird festival".

### 7.4.3.2. Loss before velars

Examples are less common than those showing loss before dentals, but this may be a function of the greater frequency of nasal plus dental stop: dat. sg. *hi-kan-ni* "death, plague" KBo III 36 I 9 (OH+) for *hi*-IN/EN-*kan-ni; ma-an-ni-ku-wa-an* "short, near" (MH, OH), and *ma-an-ni-ku-wa-ah-(h°)* (MH+, NH), *ma-a]n-ni-ku-wa-an-te-es* KUB XXII 117 Rs.! 5 (U), *ma-ni-ku-an-du-s(a)* KUB XII 63 Vs. 25 (MH), *ma-ni-ku-wa-an-du-s(a)* ib. Vs. 30, but *ma-an-ni*-IN-*ku-(wa)-an* (OH, MH etc.) {3.2.1.2., 7.3.3.1.}; gen. sg. *pa-ga-u-wa-as* "all" KUB XXIV 13 III 23 (NH) for *pa*-AN-*ga-u-wa-as;* dat. sg. $^{LÚ}$*sa-ku-un-ni* "priest" for $^{LÚ}$*sa*-AN-*ku-un-ni; za-ki-la-tar* "recompense" KUB XXII 4 L. 3 (U), *za-ki-la-tar-ra-k[an* KUB XXII 60 II 4 (U) for *za*-AN-*ki-la-tar.*

### 7.4.3.3. Nasal loss as variable, intrusive nasals

Traditionally, spellings with omission of a nasal have been viewed as reflecting weakening or reduction of nasals before stops or before consonants in general (Friedrich, Kronasser, Sommer, Sturtevant). Sturtevant (*CGr*$^2$) suggests that omission is "relatively frequent in certain texts that betray a popular character", but it seems impossible to pin the spellings down to texts of particular genres. Loss is probably better viewed as a variable phonological process that is occasionally reflected in scribes' spellings (Justeson and Stephens). Support for loss as a genuine phonological phenomenon comes from a few examples of "back spellings" (reverse spellings) with unetymological nasal, considered by Justeson and Stephens (367–8) examples of "orthographic or linguistic hypercorrection". However, (pace Justeson and Stephens 368 n. 7) most examples have a nasal somewhere else in the word and possible graphic anticipation or phonological distance assimilation cannot be dismissed entirely: abl. sg. *ha*-AN-*te-es-na-az* KUB XVII 5 I 6 (OH+) for *ha-at-te-es-na-az* "hole" (cf. *ha-at[-* in dup. KUB XVII 6 I 1); 3 pl. pres. midd. *ha-an-da-an-da* KUB XXIV 9 IV 12 (MH+) for *ha-ad-da-an-da* "dig"; 3 sg. pret. *li-in*-KAN-*ta* KUB XIII 35 I 9 (NH) for *li-in*-KAT-*ta* = [liŋkta] : *link-* "swear an oath"; 3 sg. pres. *ma*-AN-*za-az-zi* KUB XXXIII 120 I 21 (NH) for *ma-za-az-zi* "withstands, resists"; acc. sg. *na-ah-sar*-AN-*ta-an* ib. I 41 for *na-ah-sar-at-ta-an;* $^{NINDA}$*mu-u-la*-AN-*ti-in* KUB XXV 46 II 8 (U) for *mu-u-la-a-ti-in* (*CHD* 3, 327–8); *ta-na*-AN-*tę-ez-zi* "is/becomes empty" KBo XIII 34 III 18 (OH+), cf. *ta-na-at-te-es es-si* ib. IV 13 (see also Watkins, *MSS* 45 (1986) 252). These examples should not be confused with the spreading nasalization in sequences of /VnVK/ described in {3.10}.

### 7.4.3.4. Loss and assimilation before labial stop

An apparent alternation between °M-P° and °P-P° or °P° occurs in two words. $^{GIŠ}$*irimpi-* "cedar wood": nom.-acc. sg. (pl.?) n. *i-ri-im-pi* KBo V 1 II 14, 20, 21 (Pre-NH), beside nom. sg. c. *e-ri-pi-s* KUB X 92 I 7, 11 (U), nom.-acc. pl. n. *i-ri-ip-pi-da* ABot 17 II 5, *i-ri-i]p-pi-da* ib. II16 (MH+). The word is a loanword (perhaps via Hurrian with Hurr. suffix. *-pi-*), from Akk. *erinnu,* Sum. *erin* "cedar" (*HED* 3, 284–5 w. refs., *HEG* 2, 284–5).

*lumpasti-, luppasti-* "regret" (nom. sg. *["l]u-um-pa-as-ti-is* KUB XXI 38 Rs. 11 (NH), acc. sg. "*lu-um-pa-as-ti-in* ib. Rs. 13, "*lu-um-pa-as-ti-i]n* ib. Rs. 12, beside *]lu-pa-as-ti-in* ib. Vs. 65, and nom. sg. *lu-up-pa-as-ti-is* KUB XXXVI 97 IV? 1 (NH), acc. sg. "*l]u-up-pa-as-ti-in* ib. IV? 2) is probably of Luvian origin (*CLuv. Lex.* 129, *CHD* 3, 85, *HEG* 5, 76–7).

An alternation between °M-P°, °M-M° and °N-P° occurs in $^{GIŠ}$*huimpa-, huimma-* (*huinpa-*), wooden part of a house: nom. sg. *hu-im-pa-as* KUB VII 41 Vs. 20 (MH) = KBo X 45 I 11 (MH+), acc. sg. *hu-im-pa-an* KUB II 2 III 2 (OH+), gen. *hu-im-pa-as* KUB V 6 IV 4 (NH), abl. *hu-im-pa-az* KBo XXIV 45 Vs. 22 (MH?), KBo XXIV 93 III 27 (NH) = *hu-im-pa-za* in HT 40 Vs. 5, erg. *hu-im-pa-an-za* KBo XXV 184 III 67 (OH+) beside °M-M° in nom. sg. *hu-im-ma-as* KUB VII 13 Vs. 19 (U), abl. *hu-im-ma-za* KBo XXIV 93 III 18 and °N-P° in acc. sg. *hu-in-pa-an* KUB XXXIII 36 III 4 (MH+). To judge from the relative chronology of these examples [mm] results from assimilation of /mp/; the [np] of *huinpan* suggests dissimilation. CLuv. *hum(m)at-* "base, stand, pedestal" and HLuv. *humati-* id., if related as zero-grade **H$_{2/3}$ump/bh-* beside **H$_{2/3}$wemp/bh-*, would also show assimilation (Puhvel, *HED* 3, 359–60 w. refs.).

## 7.5. Nasal plus nasal

Bernabé, *REL* 3/2 (1973) 438, 447; Čop, *Linguistica* 4 (1961), 60; Friedrich, *StaatsV* II 146, Georgiev, *Orbis* 27/1 (1978/9) 47–8; Ivanov *Xettitskij Jazyk* 80; Kammenhuber, *Fs Sommer* 102; Kronasser, *VLFL* 73, *EHS* 102; Melchert, *SHHP* 107, 127 n. 90, *Sprache* 29/1 (1983) 3, 4–6, 12 n. 28, 14–19, HS 101 (1988) 212; Oettinger, *Stammbildung* 145, 486 n. 73, *Gds Kronasser* 172 n. 72; Otten-Souček, *StBoT* 8, 58; Pedersen, *Hitt.* 40, 45; Sturtevant, *CGr*$^1$ 133–4, *CGr*$^2$ 43.

A cluster of nasal plus nasal, including **ən-m* from **n̥-m,* resulted in a geminate nasal, although the geminate is not consistently indicated; [nn] from **n-n* is not spelled as a geminate in the one example attested in OH, and [mm] from **n-m* is not attested in OH but is often spelled °M° in MH texts. Inherited **mn* became **mmn* in PA, assimilating to a geminate **mm* which is retained in non-ablauting paradigms. In paradigms in which [mm] from **mn* alternated with full-grade [mVn] the /n/ tended to be restored analogically, giving [mmn] spelled °M-MA-N° or with graphic simplification -MA-N°. The latter changes apparently followed vocalization of **m̥,* since **m̥n* became [ammn].

### 7.5.1. **n* plus **n* and **m* plus **m*

**n* plus **n* resulted in [nn] in derivatives of **innara-* "strong" (OH *i-na-ra-*, MH etc. *in-na-ra-*) = [innara-] < PA **en-nor-o-* < **en-nh₂or-o-*; cf. CLuv. *ānnari-* "forcefulness, virility", *ānnara/i-* "forceful, virile" and derivatives (*CLuv. Lex.* 14–16). An example of [mm] from **m* plus **m* is seen in *imma* "moreover, indeed" < **im-moh₂* {6.10.1.2.}.

### 7.5.2. **n* plus **m*

**n* assimilated to a following **m*, and the resulting geminate [mm] often remained unsimplified (Sturtevant, Kronasser, Georgiev).

*am(m)iyant-* "small, weak, immature"; with °M-M°: e.g. nom. sg. c. *am-mi-ya-an-za* KUB XXX 16 I 3 (OH+), *am-mi-an-za* KUB XXVIII 6 Vs. r. 15b, (NH), acc. sg. c. *am-me-ya-an-ta-an* KUB XLV 20 II 10, nom.-acc. sg. n. *am-mi̯-an* KBo XIV 109 L. 5 (U), *am-mi-ya-an* KUB XLIII 59 I 9 (NH), nom. pl. c. *am-mi-ya-an-te-es* KBo XX 82 III 15 (OH+), acc. pl. c. *a-am-mi-ya-an-tu-us* KBo III 34 II 28 (OH+), *a[m-me-ya-[a]n-du-us* KBo XII 112 Vs. 16 (U), dat.-loc. pl. *a-am-mi-ya-an-da-as* KBo VIII 107 L. 7 (NH); with single °M°: nom. sg. c. *a-mi-ya-an-za* KUB XVII 10 I 38 (MH), gen. sg. *a-mi-an-ta-as* Bo 2689 III 27 (*HW²*, *HED*), nom. pl. c. *a-mi-ya-an-te-es* KUB XXXIII 66 III 13 (MH?), acc. pl. c. *a-mi-ya-an-du-us* KBo XII 89 III 12 (MH), nom.-acc. pl. n. *a-mi-ya-an-da* KUB XXXIII 5 II 13 (MH), *a-mi-ya-an-ta* KUB XVII 10 I 38, dat.-loc. pl. *a-mi-ya-an-ta-as* KUB XXXII 123 III 24 (NH) = [ammyant-] < **n̥-mih₁-ónt-* "not grown" = privative **n̥-* plus the participle of *māi-/miya-* "grow, prosper, flourish".

Examples *HW²* 66–7; *HED* 1, 478.

For *i(m)miya-* "mix, mingle" a spelling I-M-M°, which suggests an accented initial syllable, is found in several texts: 1 sg. pres. *i-im-mi-ya-am-mi* (sic) KUB XXIV 15 Vs. 10 (NH), 3 pl. *i-im-mi-an-zi* KUB XXIX 48 Rs. 16 (MH), ptcp. inst. sg. *i-im-mi-ya-an-ti-it* KUB XV 34 I 15 (MH?); (cf. *i-im-mi-ya-an-zi* (sic) as inst. ib. III 30), nom.-acc. pl. n. *i-im-mi-ya-an-da* ib. I 25 (beside *i]m-mi-ya-an-ta* ib. II 42); IM-M° occurs in NH and in copies of OH and MH texts: e.g. 1 sg. pres. *im-mi-ya-mi* KUB XXIV 14 I 10 (NH), 2 sg. *im-me-ya-si* KBo XXI 20 Rs. 17 (NH), 3 sg. *im-mi-ya-zi* e.g. KUB XI 20 I 10 (OH+), *im-mi-ya-az-zi* VBoT 120 II 3 (MH+), 3 pl. *im-mi-an-zi* e.g. KBo III 5 + IBoT II 136 IV 65 (MH+), *im-mi-ya-an-zi* e.g. KBo VI 34 I 32 (MH+), *im-mi-ya-an-du* KUB XXXVI 12 III 3 (NH), ptcp. nom.-acc. sg. n. *im-mi-ya-an* KUB XXIV 14 I 15; also midd. e.g. 3 sg. pres. *im-mi-ya-ad-da-ri* KUB XXIX 8 II 21 (MH), 3 sg. imp. *im-me-ya-at-ta-ru* KUB XLIII 38 Rs. 20 (NH). Spellings with single °M° are sporadic and sometimes occur beside °M-M° in a single text: e.g. 1 sg. pres. *i-mi-ya-mi* KUB XXIV 14 I 4 (cf. *im-mi-ya-mi* ib. I 10), 3 pl. *i-mi-ya-an-zi* KUB XXIX 4 IV 26 (NH), KBo VI 34 II 22, 1 sg. pret. *i-me-e-nu-un* KBo III 46 Vs. 13 (OH+), 1 pl. *i-mi-ya-u-en* KUB XLIII 74 Vs.? 13 (MH), 3 sg. pres. midd. *i-mi-ya-at-ta-ri* KUB XXXII 135 IV 8 (NH). This verb is ultimately from the root **mei-* "mix, exchange" also in Skt. *mayate* "exchanges" and Latv. *mĩju, mit* "exchange", and with velar extension in e.g. Gk. μείγνυμι "I mix", Lat. *miscēre* id. (Sturtevant, *CGr²* 117, Oettinger, *StBoT* 22, 56). The preform is difficult to establish. Zinko, *Vertretung* 97, reconstructs **em-mey-yé/ó-*, and Melchert, *SHHP* 133, reconstructs **en-my-e-*. Puhvel, *HED* 2, 165, suggests that



the verb was either secondarily thematized via reanalysis of an athematic third person plural present **miyanzi* < **miy-n̥ti*, or that the active is based on the middle (perhaps **én-my-o-* > [īmmya-]).

Examples and etymological references *HEG* 2, 356–7, *HED* 2, 361–5.

### 7.5.3. **m* plus **n*

#### 7.5.3.1. Assimilation to *mm*

A sequence **mn* from IE **mn* or from **m̥n* became **mmn* which regularly assimilated to [mm] (Bernabé, Oettinger, *Stammbildung* 145, Melchert, *Sprache* 29, *AHP* 152–3). This change was PA, since it is seen also in Luvian and Palaic (e.g. participles in CLuv. *-mma/i-*, Lyc. *-m̃m-*, Pal. *-mma/i-*; see Starke, *StBoT* 30, 243–7).

The geminate is consistently noted in *mimma-* "refuse, reject": 3 sg. pres. *mi-im-ma-i* e.g. KBo VI 2 + XIX 1 20, 25, *m]i-im-ma-<i>* ib. II 16 (OH), KBo VI 3 II 10, 14 etc. (MH, also OH+ etc.), 3 pl. *mi-im-ma-an-zi* KBo VI 2 III 18 (also NH), 3 sg. pret. *mi-im-ma-as* e.g. KUB XVII 10 I 8, 9 (MH; also NH), 1 pl. *mi-im-mi-ú-en* KBo XVI 59 Rs. 4 (NH); spellings with ME-EM-M° occur from MH on: 3 sg. pres. *me-em-ma-i* e.g. KUB XII 62 Vs. 13 (2x), 14, Rs. 5 (2x), 6 (2x) (Pre-NH), *me-ma-i* ib. Rs. 15, 3 pl. *me-em-ma-an-zi* KBo VI 3 III 21 (MH), 1 sg. pret. *me-em-ma-ah-hu-un* KUB XXXVI 35 I 11 (NH), 3 sg. *me-em-ma-as* e.g. KUB XXXIII 24 I 7 (OH+; also NH) = [mimm-] < **mí-mn-*, present with *i*-reduplication : Gk. μίμνω "stay, tarry". The original PA paradigm would have been athematic (e.g. 3 sg. pres. **mímnei* > **mimmi*), but the thematic stem *mimma-* can have been derived via resegmentation from the third person plural present and participle

Examples *CHD* 3, 263–5. The spelling *me-ma-i* in KBo VI 5 IV 5 (OH+) and KUB XII 62 Vs. 15 (Pre-NH) results from confusion with *mēma-* "speak". The etymology is that of Sturtevant, *CGr¹* 133 (see also *HEG* 6, 211–12 for further etymological refs.); see Melchert, *SHHP* 98 w. n. 53, 54, for a discussion of the morphology.

*gimmi* dat.-loc. "in winter" (*gi-im-mi*, MH etc.) can be [gimmī] from **ǵhimn-éi* : dat. sg. of **ǵhéimn̥* > PA **gīman* (in *gimaniya-* "spend the winter"), cf. Gk. χεῖμα "winter". See Melchert, *SHHP* 127 n. 90, and cf. Georgiev, *Orbis* 27/1 (1978/9) 47, who reconstructs **ǵhéimn-i*. Similarly, Melchert, *SHHP* 70, 146–7, derives *gimmant-* "winter" (MH (+?)) etc. and *gimmandariya-* "spend the winter" (NH) from **ĝhimn-ónt-* or **ǵheimn-ont-* (with **ǵheimn-*, oblique stem of **ǵhéimn̥* "winter") {7.3.3.2.}.

#### 7.5.3.2. Simplification of *mm* to *m*

Unlike other descendants of nasal infix presents with root-final velar, two nasal infix verbs with radical **m*, *hamink-* "bind" (IE **h₂emǵh-* "be narrow, constricted") and *tamink-* "attach, cling" (IE **temk-* "stick together") have an infix [iŋ] rather than [niŋ]: e.g. 3 pl. pres. *ha-mi-in-k[an]-zi* (OH+), imp. *ha-mi-in-kan-du*, ptcp. nom. sg. c. *ha-mi-in-kan-<za>* (OH) = [hamiŋg-]; 3 sg. pres. act. *da-mi-ni-ik-zi* (NH), *ta-me-ek-zi* (NH), 3 pl. pret. act. *da-me-in-ker* (MH+), *ta-me-en-kan-za* (OH+), acc. sg. c. *ta-mi-in-kan-ta-a[n* (MH) = [tamiŋk-]. The nasalization spreading which produced the suffix [niŋ] < **-nē-* < **-né-* of nasal infix verbs like *sarnink-* "make recompense" {3.10.} must have occurred

in *hamink-* and *tamink-* too. Both show [iŋ] with the nasal immediately before the root-final velar, and the *i*-vocalism of OH *ha-mi-in-k°* indicates raising of **e* before [ŋ] plus velar. The divergent spellings of these two verbs can be explained, however, by assuming that gemination and assimilation **mmn* > **mm* occurred after the vocalization of **m̥* but the geminate was later simplified; ie. **tm̥-né-k-* > **tammnēk-* with vocalization and gemination of the first nasal > **tammnēŋk-* with nasalization spreading > **tammẽŋk-* with assimilation > **tamẽŋk-* with simplification > [tamiŋk-] with raising of **e* and **h₂m̥-né-ĝh-* > **hammnēg-* > **hammnēŋg-* > **hammẽŋg-* > **hamẽŋg-* > [hamiŋg-].

Simplification of the geminate was probably phonological and not merely graphic, because spellings with -AM-M° are infrequent and seem to be confined to texts written down in the NH period where sporadic spellings with °M-M° occur for earlier non-geminate °M° in other words.

### 7.5.3.3. Analogical restoration of *n*

Melchert (*Sprache* 29, 3 and *AHP* 152–3) notes that in ablauting paradigms where [mm] from **mmn* alternated with [mVn] /n/ was freqently restored by analogy, giving [mmn], which was spelled °M-MA-AN-, or -MA-AN-. Spellings with °M-MA-AN- are, therefore, indicative of original ablaut.

Third person plural imperative *sa-am-na-an-zi* StBoT 25, 19 Rs. 52 "they pass in review" = [sa(m)mnantsi] < **sm̥n-ént(i)* {5.3.3.}.

The odd-looking third person plural imperative *sa-am-me-na-an-du* of KBo X 37 II 10 (NH) probably resulted from graphic confusion of full-grade [smen-] spelled *sa-me-en-* with expected **[sa(m)mnantu] spelled **sa-am-na-an-du.*

É*karimna-, karimmi-* "temple": nom.-acc. sg. *ka-ri-im-mi,* gen. *ka-ri-im-na-as* KUB XV 34 II 13 (MH?), dat.-loc. *kạ-rị-iṃ-mẹ* KUB XIII 4 III 37 (MH(?)+), dat.-loc. pl. *ka-ri-im-ma-na-as* KUB XXX 31 IV 30 (MH+); title LÚ*karimnala-* (nom. pl. LÚ]Ú*ka-ri-im-na-a-li-is* KUB XXVII 51 L.6, NH) = [garimmna-], [garimmi-] from the oblique stem of a **gori-man-*, "that which is located in the **gori-*enclosure" < **ĝhóri-* with locatival suffix *-man-, -mn-* : IE **ĝher-* "enclose" as in Gk. χόρτος "enclosure, court", Lat. *hortus* "garden", cf. **gari-* also in *kāriya-* "cover" (cf. Melchert 3, 11–12). Melchert suggests that the nominative-accusative singular *karimmi* is originally from a plural-collective (in Pre-Hitt. terms **gorimn-i-*). He also (ib. 12) derives *ka-ru-u-um-mi* in KUB XXXI 88 II 7 (MH) from **gar-umn-*, with locatival suffix *-umn-*.

*lamn-,* oblique stem of *lāman* "name": e.g. gen. sg. *la-am-na-as* Bo 5698 L. 5 (CHD), *lam-na-as* ib. L. 8, dat.-loc. *lam-ni* KUB XXX 11 Rs. 16 (MH), *lam-ni* (MH?), inst. *lam-ni-it* (MH+, OH+), dat.-loc. pl. *lam-na-as* (Pre-NH) and in *lamniya-* "name, call by name": *lam-ni-(ya)-* (MH etc.), *lam-ma-ni-* in e.g. 1 pl. pres. *lam-ma-ni-i-e-u-e-ni* KBo XVI 50 L. 17 (MH) = [lammn-] with suffix [-mmn-] < **-mn-* beside nom.-acc. sg. [-man] < **-mn̥* (Melchert 3).

Examples *CHD* 3, 31–6, 37–9.

*samnā(i)-* "create, build": e.g. 2 sg. pret. *sa-am-na-a-es* (MH), 3 sg. *sa-am-na-a-it* (NH), *samniya-* id.: 3 pl. pret. *sa-am-ni-er* KUB VIII 57 I 4 (NH), ptcp. acc. sg. c. *sa-am-ni-ya-an-ta-an* ib. I 3, beside *sa-am-ma-an* in 3 pl. midd. imp. *sa-am-ma-ni-ya-an-ta-ru* KUB I 15 II 9 (Pre-NH) = [sammn-] < **sh₁mn-*, oblique stem of **sēman* "foundation" < **seh₁-mn̥* {10.9.1.1.}.



É*hilamm-, hilamn-*, oblique stem of *hilammar* "gatehouse, portal, entry hall": gen. sg. *hi-lam-ma-na-as* KUB XXX 31 IV 30 (MH+), *hi-lam-na-as* e.g. KUB XLI 8 II 35 (MH+), *hi-lam-na-as-sa* KUB XIII 2 II 21 (MH?), dat.-loc. *hi-lam-ni* e.g. StBoT 25, 27 Rs! 12, KBo XXI 34 II 6 (MH?), dir. *hi-lam-[na]* StBoT 25 3, II 28, *hi-lam-na,* e.g. KUB X 3 I 15 (OH+), abl. *hi-lam-na-az,* e.g. StBoT 25, 4 III 44, IBoT I 36 I 50 (MH). Melchert (3, 12–13) suggests that *hilammar,* a derivative of *hīla-* "courtyard", has a locatival suffix with oblique stem **-mn-* > [-mmn-] beside nom.-acc. sg. *-mar* < *-*mr̥.*

The /n/ is not regularly restored in derivatives, e.g. LÚ*hilammi-*: nom. sg. *hi-lam-mi-is* KBo XV 33 III 24 (MH), KBo XVII 55 I 11 (MH); LÚ*hilammat(t)a-*: nom. pl. *hi-lam-ma-ti-es* KUB XXXVIII 12 I 3, 4, 6, 11, IV 11, 16 (NH), *hi-lam-ma-at-ti-es* ib. I 17, both terms for functionaries (*HED* 3, 307–11 w. refs.).

In *sarām(m)a-, sarāmna-* "located above" (adj.), nominal "palace, citadel", the /n/ is usually restored: gen. sg. *sa-ra-am-na-as* e.g. StBoT 25, 15 Vs.? I 7, abl. *sa-ra-am-na-az* KBo III 4 II 69 (NH), *sa-ra-a-am-na-az* KBo V 2 I 19 (MH+), inst. *sa-ra-am-ni-it* KUB XIII 2 II 12 (MH?), originally from a stem *saraman-, saramn-* (Melchert 2–3). The bread name NINDA*sarām(m)a-* "top bread" (in a sandwich) is also derived from *sarāman-, sarāmn-* (i.e. "bread which is located on top"), but restoration of /n/, attested from OH on, is less thorough; with *-(m)ma-*: nom.-acc. "pl". *sa-ra-a-ma* e.g. StBoT 25, 14 III 12, StBoT 25, 23 Rs. 1, 2, KUB XXIXX 13 III 43 (OH+); *sa-ra-ma* StBoT 25, 59 I 6, II 2, *sa-ra-am-ma* KBo IV 9 I 22 (OH+), "gen. pl." ŠA I NINDA*sa-ra-a-ma* StBoT 25, 50 L. 2, StBoT 25, 75 III 1, loc.? pl. *sa-ra-a-ma-as* StBoT 25, 48 Rs.? 10, *sa-ra-am-ma-as* KUB XXV 6 + II 6; with [-mmn-]: *sa-ra-a-am-na* 365/i L. 12 (Hoffner, *Alimenta*), *sa-ra-am-na* e.g. IBoT I 29 Vs 55 (OH+), loc. sg. NINDA*sa-ra-am-ni* Bo 5118 I 5, IV 3, gen.? or loc.? pl. *sạ-ra-am-nạ-ạs* StBoT 25, 106 L. 9, gen. *sa-ra-am-na-as* StBoT 25, 106 L. 9, loc.? "pl."?, e.g. *sa-ra-am-na-as* KBo IV 9 I 24, IV 20, *sa-ra-am-ma-na-as* ib. IV 13, 48, 159/f II 3 (Hoffner). For *-man-* cf. nom.-acc. sg. *sa-ra-a-ma-an* 2/i L.12, 13 (Hoffner).

Examples and discussion Hoffner, *Alimenta* 179–80, Melchert (2–3).

An instrumental suffix *-mar* with oblique stem [-man-] beside [-mmn-] (Melchert 14–19) is found in *tiyam(m)ar* "rope, cord", inst. *ti-ya-am-ma-an-ta,* and *harnammar* "leavening" (vbl. noun of *harna-* "foment, stir up"), oblique stem **harnamn-* in the denominative *harnamniya-* "foment, stir up" (2 sg. pres. *har-nam-ni-ya-si* KBo IV 14 III 66, NH, 3 sg. *har-nam-ni-ya-az-zi* KUB VIII 38 + XLIV 63 III 17, NH, *har-nam-ni-ya-zi* KUB XLI 8 II 35, MH+); similarly, *miummar* "kindness" (inst. *mi-ú-um-ni-it* KUB XXXIII 62 II 10, 20, MH?).

The gentilic-ethnic suffix *-umna-* had an oblique stem [-ummn-] from **-u-mn-* (Melchert 4–6) beside nom. sg. **-u-mō* (plus animate nominative suffix **-s* > Hitt. *-umas*) and strong stem **-u-mon-* in accusative singular *-uman*: e.g. *arumnuana-* "maritime": nom. pl. c. *a-ru-nu-ma-ni-e-es* KUB VIII 14 I 14 (OH+); LÚ*histumna-*: functionary pertaining to the É*histā-*: nom. sg. *hi-is-tu-um-ma-as* KBo XXI 80 I 17 (OH+), *hi-is-tu-u-ma-as* KBo XXIII 99 I 19 (OH+), *he-es-tu-um-na-as* Bo 4363 Rs. 7 (HED), *he-es-tu-u-ma-as-sa* KUB LVIII 50 IV 14 (NH), dat.-loc. *he-es-tu-u-um-ni* ib. IV 15, nom. pl. *he-es-tu-um-ni-es* KBo XXV 171 II 7 (OH+).

Examples *HED* 3, 321.

#### 7.5.3.4. Synchronic treatment

In productive paradigms at internal morpheme boundaries the first nasal is normally lost (Friedrich, Kronasser, Melchert, *SHHP* 107, *AHP* 168; Oettinger, *Stammbildung* 118, Otten-Souček, Sturtevant 134, 43).

1 sg. pres. *ku-e-mi* KBo XVI 47 Vs. 10 (MH) = /gwēn-mi/ → [gʷēmi] : *kuēn-* "kill". Kronasser (*EHS*) views the spelling with single °M° as an indication of [kwemmi] or [kwemi] with nasal reduction. Oettinger reconstructs **gʷén-mi* > **gʷémmi* = [gʷémi]? with lenition after short accented vowel. However, simplification occurs after an unaccented vowel in *saminu-*, causative of *samen-* "disappear, pass in review" (e.g. 2 sg. pres. *sa-me-nu-si* KBo V 3 II 35, Supp I+, 3 sg. *sa-me-nu-uz-zi* KBo VI 26 II 21 (OH+), 3 pl. *sa-mi-nu-an-zi* StBoT 25, 19 Vs. 15 (2x, *sa-mi-nu-an-zi, sa!-mi-nu-an-zi*), 16), for /smen-nu-/. The OH spelling with MI may point to a suffix accent, i.e. **smen-nú-* > [sminū-].

See Goetze *apud* Friedrich and Melchert.

Final /n/ is assimilated to the initial /m/ of a following enclitic pronoun or the optative particle *man*. Spellings showing the assimilation are most common in OH and MH texts and in NH copies or adaptions of earlier material; both °M-M° and (with simplification) °M° are found. Assimilation occurred both after short vowels in historically unaccented syllables and after long vowels in historically accented syllables.

*mān* "like, as, if, while" plus enclitic: *ma-a-am-ma-an* = /mān-man/ KUB XXX 10 Vs. 18, 22 (MH), *ma-am-ma-an-za-kan* = /mān-man-tṣ-kan/ ABoT 65 Rs. 5 (MH); with °M-M°: *a-ra-am-ma-an* = /arān-man/ "my friend" (acc. sg.) KUB XXIX 1 I 34 (OH+), *ad-dam-ma-an* = /attan-man/ "my father" (acc. sg.) KBo III 44 L. 9 (OH+), *pe-e-ra-am-mi-it* = /pēran-mit/ "in front of me" KBo III 22 Rs. 79 (OH) = *pe-ra-a-[a]m-[m]i-it* in NH dup. KUB XXXVI 98b Rs. 6, *tu-ek-kam-ma-an* = /twēkan-man/ "my body" (acc. sg.) KUB XXX 10 Vs. 14 (MH), ÌR$^{MEŠ}$-*am-ma-an* "my slaves" (gen. pl.) KBo III 27 L. 10, 15 (OH+); with °M°: *at-ta-ma-an* = /attan-man/ "my father" (acc. sg.) StBoT 25, 1 I 6, *ha-at-ta-a-da-mi-it-ta* = /hatadānn-mitt-a/ "and my wisdom" KUB I 16 II 56 (OH+), *hu-uh-ha-ma-an* = /huhhan-man/ "my grandfather" (acc. sg.) ib. III 50, *is-ta-an-za-an-ma-an* = /stāntsan-man/ "my wish" ib. III 26, *la-a-am-ma-a-mi-it* = /lāman-mit/ "my name" (with anomalous plene writing in the second syllable and anomalous *mm* for the root-final nasal) ib. III 13, *pe-e-da-mi-it* = /pēdan-mit/ "my place" (acc. sg.) KUB XXXI 130 Rs. 5 (MH), KUB XXXVI 75 III 20 (MH), *sa-ah-ha-[m]e-et* = /sahan-met/ "my *sahhan*" (acc. sg.) KBo VI 2 + KBo XIX 1 II 24 (OH) = *sa-ah-ha-mi-it* in MH dupl. KBo VI 3 II 38, *sa-a-a[k-l]i-ma-an* = /sāklin-man/ "my rite" KUB XXX 10 Rs. 24 (MH), *tu-uz-zi-ma-an* /tutṣin-man/ "my army" KUB XXIII 11 II 22 (MH+), DUMU-*la-ma-an* (DUMU-*lan-man*) "my son" KUB I 16 II 4.

Etymological spellings with restored °N-M° are attested from the MH period on, e.g. LÚ*ha-lu-ga-tal-la-an-mi-in* (*halugattalan-min*) "my wagon-driver" VBoT 1 L. 12 (MH).

The [-n-m-] arising from final /n/ plus the enclitic conjunction *-ma* apparently was not assimilated, cf. e.g. *ma-ah-ha-an-m[a* StBoT 25, 87 L. 7, *ma-ah-ha-an-ma* IBoT I 36 IV 12 (MH) (examples *CHD* 3, 91–9).



## 7.6. Nasal plus liquid

Gemination of medial /mr/ and /nr/ to [mmr] and [nnr] is sometimes indicated by spellings with a dummy vowel °A°, i.e. -VM-MA-RV- beside -VM-RV-. This gemination was probably PA, because similar spellings are seen in Cuneiform Luvian.

### 7.6.1. **nr*

*dannara-* "empty": e.g. nom. sg. c. KBo II 4 II 7 (Pre-NH), *dan-na-ri-is* Tunn. I 14 (MH+), acc. sg. c. *dan-na-ra-an* ib. II 52; *dannarant-* id.: acc. sg. c. *dan-na-ra-an-da-an* KUB XX 85 I 11 (OH+), dat.-loc. sg. *ta-an-na-ra-an-ti* KUB XXIX 8 II 19 (MH), acc. pl. c. *dan-na-ra-an-du-us* KUB VIII 65 I 17 (MH+), KUB XVII 18 I 16 (NH); cf. *dannaressar* "empty space", armpit" and CLuv. *tannarant(i)-* "bare, naked". The spellings with doubled nasal may represent [dannra-], [dannrant-] from **dhon-ró-* or, with syncope from **dhon-oró-*, cf. OHG *tenra-* (f.), Bav. *tener* "palm of the hand" < Gmc. **ðen-rō-*, OHG *tenar* (m.), id., Gk. (Pindar) θέναρ "depression in the top of an altar, into which offerings are poured".

For etymological discussions see Lühr, ***Stud. z. idg. Wortschatz* 67–71** and Tischler, ***HEG* 8**, 97–9.

### 7.6.2. **mr*

*gim(ma)ra-* "open field, steppe": nom. sg. *gi-im-ma-r[a-as]* KBo VI 3 III 10 (MH), *gi-im-ra-as* KBo VI 2 III 8, 9 (OH dup. of KBo VI 3), acc. *gi-im-ra-an* KUB VIII 56 L. 9 (NH), gen. *gi-im-ra-as* StBoT 25, 109 II 12, StBoT 25 111 II 4 (both OH), dat. *gi-im-ri* KUB XVII 10 I 11 (MH), dir. *gi-im-ra* ib. III 17, KUB XVII 5 I 23 (OH+) (= *gi-im-[ra* in OH+ dup. KUB XVII 6 I 18), dat. or dir. *gi-im-ma-[* KUB XVII 8 IV 3 (MH+) = [gimmrā-], [gimmrī], along with CLuv. gen. adj. *im-ra-as-sa-*, *im-ma-ra-as-sa-* (*CLuv. Lex.* 89) can be derived from PA **gemmro-* from **dhĝhm-* > **ĝhm-* with simplification of the initial cluster within IE plus nominal suffix **-ro-* : **dhéĝhōm* "earth" (Kimball, *IF* 99 (1994) 77–8).

See also Tischler, *HEG* 3, 573–5 for refs.

*lammar* "moment": nom.-acc. sg. ***lam-mar*, loc. *lam-mar, lam-mar ... lam-mar*** = [lammar] < **nómr̥* beside oblique stem **[lammn-] e.g. in dat. *lam-ni-(i)*** (MH etc.) {7.10.1.}.

## 7.7. Nasal plus glide

Čop, *Linguistica* 6 (1964) 61, **69–70**; **Georgiev, *Orbis* 27 (1978[9]) 45–6**; Kronasser, ***VLFH* 74**; Oettinger, *Stammbildung* 118; **Pedersen, *Hitt.* 126**; Sturtevant, ***CGr*$^1$ 134**; Puhvel, ***HED* 1, 55.**

### 7.7.1. Nasal plus **y*

Gemination of nasals before **y* is proposed by Georgiev and implied by Puhvel in his derivation of the demonstrative pronoun *anni-, anna-* from **onyo-* : Skt. dem.

pro. *anya-* (*HED*). But the regular reflex seems to be single nasal plus /y/ (Čop 69–70, Melchert, *AHP* 159); cf. e.g. *māniyahh-* "distribute, administrate" (*ma-(a)-ni-ya-ah-h°*, OH etc.), *wemiya-* "find" (*ú-e-mi-eC-*, OH etc., *ú-e-mi-e-eC-*, OH+ etc., *ú-e-mi-ya-*, OH etc.).

*aniya-* "work, do" is often cited as *an(n)iya-* or *anniya-*, but, while doubling is consistent in the iterative *annisk-* (*an-ni-is-k°* OH etc.) < **anHi-sk-* with gemination before a laryngeal {7.9.1.}, non-iterative forms consistently have single °N° (examples *HW*² 81–8, *HED* 1, 66–71).

### 7.7.2. Nasal plus **w*

The historical treatment is **nw* > [nw], e.g. *unuwā(i)-* "decorate" (Sturtevant, Čop 61).

The /n/ is lost synchronically at a morpheme boundary in 1 sg. pret. *ku-e-u-en* KBo XVI 47 Vs. 15 (MH) : *kuēn-* "kill" = /gʷēn-wen/ → [gʷēwen] (cf. Pedersen, Kronasser, Oettinger).

Oettinger's derivation, **g*ʷ*én-wen* > **g*ʷ*éwwen* > [gʷénwen] with lenition, presupposes doubling of **n* after **é* and is, therefore, not necessary.

Similarly, /n/ was lost in *māwa* beside *mānwa* = *mān* "like, as, if, while" plus quotative particle *-wa(r)*: e.g. *ma-a-u-ʃwa* KBo XXV 151 L. 3 (MH+?), *ma-a-u-wa* ib. + KBo XXVI 136 V 13, R 2, *ma-a-u-wa* KBo XXII 118 r. col. 7 (NH), *ma-u-wʃa* KBo XIII 94 L. 1 (OH+), KUB XII 63 Vs 11, 21, Rs 7 (MH), *ma-a-wa()* KBo III 7 I 25, IV 9 and dup. KUB XVII 6 I 18, 21 IV 6 (both OH+, cf. *mʃa-an-wa* in OH+ dup. KUB XII 66 IV 12), KUB XVII 9 I 4 (NH), KUB XXXVI 45 L. 2 (OH+), cf. with /n/ preserved: *ma-a-an-wa* KBo III 7 III 10, KUB XII 66 IV 9, 12, KUB XIV 1 Rs 46 (MH) and passim in NH texts.

## 7.8. Nasal plus **s*

Brosman, *Language* 39 (1969) 617–9, *JAOS* 92 (1972) 104–7; Čop, *Sprache* 6 (1960) 3 n. 7; Eichner, *MSS* 28 (1970) 17–18 n. 23, *MSS* 31 (1973) n. 14, 75; n. 34, 98 n. 78, *Heth. u. Idg.* 57–8. w. n. 52, 53, 54, *Gds Kronasser* 26 n. 52; Forrer, *ZDMG. NF* 1, (1922) 205; Friedrich, *HE* 35; Georgiev, *Orbis* 27 (1978) 48; Jensen, *Act. Or.* 26 (1961) 134; Justeson and Stephens, *JAOS* 101 (1981) 369; Kammenhuber, *HW*² 41a; Kimball, *PW* 236–7, 297 n. 167; Kronasser, *VLFH* 53, 69, 73, 122; Laroche, *RHA* 45 (1945/6) 3–11; Melchert, *SHHP* 12 w. n. 21, *Sprache* 29 (1983) 6–10, *HS* 101 (1988) 212–14, *AHP* 153, 163, 164, 168; Neu, *Heth. u. Idg.* 192 w. n. 48, 49, 50; Oettinger, *StBoT* 22, 24 n. 8; *IncLi* 3 (1977) 131, *KZ* 92 (1980) 80, *Stammbildung* 121, 193, 311 n. 110, 321, 437, 439–40, 550, *KZ* 94 (1980) 45–6, 59; *Gds Kronasser* 173 n. 50; Otten-Souček, *StBoT* 8, 57–8; Pedersen, *Hitt.* 28–9, 43, 45, 46, 49, 126; Polomé, *Language* 28 (1952) 453; Puhvel, *HED* 1, 63–4, 206, *Gds Kerns* 238–40; Sturtevant, *CGr*¹ 85, 134, *CGr*² 40, *RHA* 3 (1931) 86–7; Szemerényi, *Glotta* 33 (1954) 259–60 n. 1; Weitenberg, *u*-Stämme 145–6, 159–62, 180–83, 375–6, 449–50 (n. 813), Zinko, *Vertretung* 103.

Before vowels, inherited **ns* became [ss] while *nz* = [nts] resulted from later **ns* arising from several sources. The assimilation of intervocalic **ns* to [ss] is, it is now clear, PA, cf. CLuv. **tassu(i)-* "heavy" : Hittite *dāssu-* "strong" (< **dé/ónsu-*) in PN



*Hantidassui-* (e.g. ᴰ*Ha-an-te-da-as-su-is* KBo I 1 Rs. 48 (Supp.I, in Akkadian) and in derivatives such as *tassiyamman* "heaviness" from a denominative **tassi(ya)-* "be/make difficult" (Starke, *StBoT* 30, 252–3 w. refs. and Melchert, *CLuv. Lex.* 220). As Melchert (*AHP* 163, 288) notes, however, the preserved *h* < **s* in Lyc. *χahba-* "grandchild" < PA **h₂onsu-*, indicates that this change was not PA. Before consonants and word finally, a development of **ns* to /s/ is widely accepted. Synchronic sequences of /n/ plus /s(s)/ are usually reduced to [s(s)] with loss of the nasal. Contrary to received opinion, inherited **ms* is likely to have become [nss].

### 7.8.1. Preconsonantal **ns* and **ms*

The nasal is lost and both **ns* and **ms* result in /s/ before consonant or word boundary. There is no evidence for compensatory lengthening of the preceding vowel.

One example is the genitive singular ending *-was* of verbal nouns (*-wa-as, -u-wa-as*) = [-was-] < **-wen-s*; similarly, *-umas* (*-u-ma-as*) = [-umas] < **-u-wens* in verbal nouns from verbs with stems in *-u* or **-H* and from **-umen-s* in the ethnic/gentilic suffix *-umna-* (Melchert, *SHHP* 23, *Sprache* 29, 9 n. 23 and *AHP* 180, cf. Eichner, *MSS* 31, 92 n. 34, who derives the suffix from **-won-s*).

Animate accusative plural ending *-us* < Pre-Hitt. **-u-ns*. Benveniste, *HIE* 69, 71–3, suggested that the *-u-* is ultimately of pronominal origin (see also Neu, *Heth. u. Idg.* 192 w. n. 48, 49, 50). Alternatively, Weitenberg, *u*-Stämme 375, notes that the expected ending **-u-ns* of proterodynamic *u*-stems should have yielded Hittite *-us*. While proterodynamic *u*-stems cannot have been very numerous in Pre-Hittite, they may have provided one source from which the ending *-us* was generalized to pronominal and other substantival paradigms (cf. the nom. pl. c. ending *-ēs* from the *i*-stem suffix and ending **-ey-es* {9.3.1.1.}). There is no solid evidence to support **-m̥-s* > **-ums* > *-us* with Oettinger (*IncLi*) {5.4.3.}.

*ishaskant-* "bloodshot, bloodsmeared": acc. pl. c. *is-ha-as-kan-tu-us* StBoT 25, 4 II 7, nom.-acc. pl. n. *is-ha-as-kan-ta* StBoT 25, 3 I 24 = *ʃis-hʃa-as-kan-ta* StBoT 25, 4 I 19 = [shaskant-], perhaps originally **sh₂an-skant-* from **sh₂n̥n-*, oblique stem of *ēshar* "blood" plus **skānt-* < **ps-skónt-*, participle of *iskē/a-* < **ps-ské/ó-*, iterative of *pess-* "rub, smear" (Melchert, *SHHP* 110 {1.15.3.5.}). The *ē* of *ēshaskant-* (nom. sg. c. *e-es-ha-as-kan-za* KUB VII 41 Vs 15, MH, acc. sg. c. *ʃes-ha-as-ga-an-ta-an* StBoT 25, 147 Vs? 8) is no doubt analogical from *ēshar* {1.6.3.8.}.

Eichner (*MSS* 28), derives *ishaskant-* from **eshaniskant-*, participle of a denominative **eshaniya-*, which became **eshanskant-* with syncope. As Oettinger, however, notes (*Stammbildung* 324) there is no independent evidence for an **eshaniya-* or for syncope here.

There seem to be at least two chronological layers of archaic iteratives from stems in final **n*. In the most archaic forms loss of the nasal is preceded by anaptyxis: *hassi(k)k-* : *hanna-* "judge" in 3 sg. pret. *ha-si-ke-et* KUB XLVIII 106 L. 18 (U), 2 pl. pret. act. *ha-as-si-ke-et-te-en* 112/c + II 18 (*HED*), 2 pl. pret. midd. *ha-as-si-ik-ke-su-ma-at* ib. I 32/5, presupposes PA **H₂/₃anH-sk̂-* > **hansk-* > **hansik-* > *hassi(k)k-* = [hassik-] (cf. Oettinger, *Stammbildung* 321, 322 n. 131). *tarsik-*, archaic iterative of *tarna-* "release", attested in 3 sg. pret. *tar-si-ke-eʃt-ten* KUB XXIII 72 Rs. 41 (MH),

can imply PA **tr̥nh₂-sk̂-* > **tərnsik-* with vocalization of the syllabic resonant anaptytic /i/ between nasal and **s* plus consonant {3.9.3} > *tarsik-* = [tarsik-] with loss of the nasal or **tr̥nh₂-sk̂-* > **t(ə)rn-sk̂-* > **tarsk-* > [tarsik-] with anaptyxis between **r* and **sC* {3.9.3} (cf. Oettinger, *Stammbildung* 311 n. 110, 323, Eichner, *MSS* 28 (1970) 17–18 n. 23 and *Gds Kronasser* 26 n. 52, and Kimball, *MSS* 53 (1992) 91–2).

Eichner, *MSS* 28 (1970) 9–18, derives *hassik-* from **hanask-* > **hansk-* with syncope > *hassik-* with epenthesis (cf. also *Gds Kronasser*), but *hannask-* is clearly secondary.

The iterative of *kuēn-* "kill", *kuwask-* (*ku-wa-as-k,* MH? etc.), was apparently formed somewhat later, after the anaptyxis rule had ceased being productive, i.e. **gʷensk-* > **gʷansk-* > [gʷask-]. Melchert (*Sprache* 29, 8 n. 21) notes that a zero-grade **gʷhn̥sk̂-* (PA **gʷn̥sk-*) would give ***kusk-* = ***[gusk-] with vocalization of the labiovelar before the syllabic resonant (cf. also Eichner, *MSS* 28, n. 23 and Oettinger, *Stammbildung* 321) {5.3.5.}.

*uwansik-,* iterative of *wen(T)-* "rape": (3 pl. pres. *ú-wa-an-si-kan-zi* KUB XXXI 64 I 7, OH+, 1 pl. pret. *ú-wa-an-si-ke-u-en* KBo III 60 II 13, OH+) = [wansik-] shows both anaptyxis and analogical restoration of the nasal (Oettinger, *Stammbildung* 321). Like *kuask-* it must be derived from a full-grade stem (i.e. **wen-sk-*) since **wn̥sk-* would have become ***unsk-*.

The iterative of *tuwarniya-* "damage" is attested as *du-wa-ar-a[s²]-ke-ez-zi* in KBo II 3 II 41 (MH+); otherwise the stem is the expected *du-wa-ar-ni-es-k°, du-wa-ar-ni-is-k°* (in OH terms perhaps **du-wa-ar-ni-is-k°* = [dwarnisk-] with stem final [-isk-] < **-e-yé-sk-* {3.11.1.2.}. The sign restored as A[S?] is heavily damaged and, therefore, the restoration is not certain. However, if this reading is correct, then *duwarsk-* can probably be explained as analogical after *kuwask-* "kill".

*dasuwant-* "blind" (nom. sg. c. *ta-su-wa-an-za,* U) and derivatives may be from **te/omH₂ₛ-went-* "having darkness" to the root of Skt. *tamisrāḥ* "darkness" and Lat. *tenebrae* id. (cf. Oettinger, *Stammbildung* 550, who reconstructs **te/omh₂s-went-*). This etymology presupposes that loss of the laryngeal preceded reduction of preconsonantal **ms* to /s/. {10.10.1.}. Weitenberg's derivation of *dāssu-* "strong" < **dómsu* or **dn̥su-* : Skt. *dáṃsaḥ* "wonderful power" < **dems-os* (*u*-Stämme 199–200) will not work if inherited prevocalic **ms* became [nss] {8.7.4.}.

*wasta-* "sin": 3 sg. pres. *wa]-as-ta-i* KBo IX 73 Vs. 6 (OH, and later), *wa-as-da-a-i* KUB XXIII 68+ Vs. 28 (MH), *ú-wa-as-ta-i* KBo III 28 II 10 (OH+), 3 pl. *wa-as-ta-an-zi* KBo XVI 47 I 8 (MH), 2 pl. pret. *wa-as-ta-at-te-en-na* (with *-(y)a-* "and") KBo XVI 27 I 23 (MH+?) = [wasta-] is perhaps a denominative from a PA noun **wasto-* attested in Luvian forms in Hittite context (acc. pl. *"wa-as-ta-an-za* KUB XXII 70 Vs. 49, NH, *"wa-as-da-an-za* KUB XXIII 13 L. 4, NH, *CLuv. Lex.* 265). A possible source for PA **wasta-* is **womsto-* : **wems-* in ON *vinstri* "left", OE *win(e)stre* id., OFr. *winster* id., OS, OHG *winistar* id. and as unextended **wem-* in Skt. *vāma-* id., if the original meaning were something akin to "unpropitious, unlucky".

See Oettinger, *Stammbildung* 504 w. n. 20, 21, 22. For *ustul, wastul* "sin" see {5.4.1.3}. Puhvel, *HS* 105, 1992 4–8, notes that the meaning of *wasta-* is more precisely "failure, fault, error" and compares Gk. ἀάομαι and ἄτη (< **ἀϝατᾱ*) and Lat. *vānus* "empty", Skt. *ūná-* "lacking" and Gk. εὐνις "bereft". The latter words, however, belong with *wannumiya-* "orphaned, widowed" {7.11.}.



## 7.8.2. Inherited prevocalic **ns*

Various explanations have been given for the split of **ns* into *ss* or *nz* = [nts]. Forrer, Pedersen, Čop, Jensen, and Weitenberg regard *nz* as the unmarked reflex of prevocalic **ns*. Laroche suggests that **ns* became *nz* with emphatic /s̱/. Kronasser (*VLFH*) posits both **ns* > *nz* and **ns* > *ss*. Eichner, Oettinger, and Kimball explain the differing reflexes as the result of accent. Eichner posits **ns* > *ss* before and after accented vowels but **ns* > *nz* between unaccented vowels (*Heth. u. Idg.* 57–8 w. n. 52, 53, 54,) and secondary **ns* > *nz(a)* (*MSS* 31, 86 n. 14). Oettinger (*StBoT* 22, *Stammbildung* 439–40) claims that **ns* and **ms* became *ss* after accented vowels but **ns* became *nz* elsewhere. Kimball claims that **ns* became *ss* after accented vowels but **nsV́* and **n̥sV́* merged in *nzV̄*.

The most convincing arguments, however, are those of Melchert (*Sprache* 29, 7–8, *HS* 101, 212–4 and *AHP* 121, 163) who argues that inherited **ns* resulted in *ss* regardless of accent. According to Melchert, once inherited **ns* had been reduced to *ss,* later sequences of **ns* arising from **n̥s* with vocalization of the syllabic nasal and from **ns* arising though compounding or syncope became *nz* = [nts]. In support of this claim, Melchert cites *nz* from **ns* after accented syllable in *dagānzipa-* (OH) "(deified) earth" < **dagán-sepa-*. He also notes that there is independent evidence that the vocalization of syllabic resonants was fairly late.

*dāssu-* "strong, mighty, important" gives a clear example of the treatment after an accented short vowel: nom. sg. c. *da-as-su-us,* KBo XXIII 41 Rs.? 11 (U), *ta-as-su-us* KBo II 5 II 19 (NH), acc. sg. c. *da-as-su-un* KUB XXX 45 III 10 (NH), nom.-acc. sg. n. *da-a-as-su* KBo XXII 260 Vs. 18 (U), KUB XXXI 127 I 19 (MH+), *ta-as-su* KUB XXIII 72 Rs. 54 (MH), dat.-loc. sg. *ta-as-sa-<u>-i* KBo III 8 III 10 (Pre-NH), nom. pl. c. *da-as-sa-u-e-[es* KUB XXXVI 106 Vs. 9 (OH), acc. pl. c. *da-as-sa-mu-u[s* e.g. KBo XVI 25 IV 9 (MH), nom.-acc. pl. n. *da-as-su* KUB XXXI 141 Vs. 4 (NH) = [dāssu-] < **dénsu-* or **dónsu-* : CLuv. **tassu(i)-*, Lat. *dēnsus* "thick" (< **déns-* or **dn̥s-*), Gk. δασύς id. < **dn̥sus* (Oettinger, *StBoT* 22, 24 n. 8, Melchert, *Sprache* 29, 7).

See also Weitenberg, *u*-Stämme 142–5 for examples, references and discussion.

*āss(iya-)* "be favored, be dear": 3 sg. midd. pres. *āssāri* Bo 3182 (*HED*), *a-as-si-ya-at-ta-ri* KUB XXIV 7 IV 37 (NH), 3 pl. *a-as-sa-an-ta-ri* KBo XXII 126 Vs. 4 (U), 3 sg. pret. *a-as-si-ya-at* KUB XXXIII 121 II 9 (NH), ptcp. nom. sg. c. *a-as-si-an-za* KUB VIII 63 I 8 (NH), *a-as-si-ya-an-za* e.g. KBo XXII 126 Vs. 6, KUB XLIII 58 III 7 (dup. of KBo XXII 126), nom.-acc. sg. n. *a-as-si-ya-an* e.g. KUB XV 34 II 29 (MH?), dat.-loc. sg. *a-as-si-ya-an-ti* e.g. KBo III 21 III 20, 21, 24 (OH+), nom. pl. c. *a-as-si-ya-an-te-es* KUB XV 34 II 31 = [āss-]. The source is an acrostatic middle **áns-o-* (extended with **-ye/o-*), cf. HLuv. *asi-* "love", ptcp. *asimi-* : IE **ans-* "favor" also in e.g. Goth. *ansts* "favor, grace", OE *ēst,* id., OHG *anst* id.

Examples *HED* 1, 189–91; etymological refs. ib. 206, *HEG* 1, 81–3.

*hassu-* "king": nom. sg. *ha-as-[s]u-us* KUB XXXI 100 Rs. 9 (U), *[ha-as]su-us* ib. Rs 10, gen. sg. *ha-as-s[a-wa-as]* KBo XIII 165 II 6 (U), dat. sg. *ha-as-su-u-ú-i* (sic) KUB VII 7 L. 8 (U); also in *hassuē-* "be king": 3 sg. pret. *ha-as-su-u-e-et* KBo III 1 + I 12 (OH+) = [hāssu-] > **h₂é/ónsu-*, cf. Gmc. **ansu-* "spirit, demon" in ON *áss* "god", OE *ōs*

id., **n̥su-* in Av. *ahū-* and **n̥suro-* in Skt. *ásura-*, Av. *ahura-* "spirit". The lack of plene writing for the root vowel is presumably accidental, since the word is not usually spelled out syllabically.

Examples, etymological references *u*-Stämme 158–63, *HED* 3, 240–6; see also *HEG* 2, 207–10.

$^{NA_4}$*passu-* "stone base, pedestal": dat.-loc. sg. *pa-as-su-u-i* KUB XXXIII 84 + IV 20 (MH+), *pa-as-su-ú-i* e. g. KUB XXII 25 Vs. 15 (NH), Bo 2710 Vs. 5 (*u*-Stämme), *pa-as-su-i* e. g. KUB II 7 I 17 (OH+), KUB VII 24 I 4 (NH), KUB XV 34 III 48 (MH?), KUB XXIV 7 IV 18 (NH), *pa-as-su-wi* KUB XVIII 56 III 12, 14 (NH), also *pis-su-u-i* KUB XXV 23 edge a.1 (NH); $^{NA_4}$*passilu-* "gravel": acc. sg. *pa-as-si-lu-un* KUB XV 31 I 61 = 32 I 62 (both MH+) = [pāssu-], [pāssilu-] perhaps from **pḗns-u-* : Skt. *pā́ṁsu-*, Av. *pąsnu-* (both from I.-Ir. **paṁs-nu-*), OCS *pěsŭkŭ* "sand".

Cf. Weitenberg, *u*-Stämme 197–9 w. refs. The Indo-Iranian and Slavic cognates can have **pēns-* as well as **pēms-*, however.

### 7.8.3. Secondary **ns*

Sequences of **ns* that arose after PA **ns* became **ss* result in *nz*, probably [nts] with epenthetic [t] (cf. the NE pronunciation of *mince* as [mɪnts]). This treatment occurs both medially and finally. Syllabic resonants apparently vocalized after inherited **ns* had become *ss*, since **n̥s* became *anz* with vocalization of **n̥* and the regular treatment of secondary **ns;* e. g. *anze/ā-* "our" < **n̥s-é/ó-* {5.3.4.} (Brossman, Melchert, *Sprache* 29, *AHP* 121).

Compounds in *n-zipas* (< **n-sepas*) from *n*-stems were apparently formed after inherited **ns* had become *ss*: e. g. $^{(D)}$*daganzipa-* "(deified) earth", nom. sg. *da-ga-an-zi-pa-as* KUB XXIV 9 II 25 (MH+), acc. sg. *da-ga-an-zi-pa-an-n°* KUB XXXIIII 106 III 41 (NH), gen. sg. *ta-ga-ạ-ạn-zị-pa-aṣ* StBoT 25, 30 III 5, acc. pl. *da-ga-an-zi-pu-us* e. g. KUB IX 15 III 6 ( NH), KUB IX 21 II 38 (OH+) = [dagantsiba-] from *tagān,* locative of *tēkan* "earth", plus [siba-] from **-seba-* with raising of unaccented **e;* similarly $^{D}$*Miyatanzipa-* "(deified) growth, abundance": nom. $^{D}$*M[i-y]a-[t]a-an-z[e-pa-as* StBoT 25, 118 IV 2, dat. *mi-ya-ta-an-ze-pi* ib. IV 1 = [miyadāntsiba-] from *miyatān(n)-,* oblique stem of *miyātar* "growth, abundance" and Pre-Hitt. **-seba-*.

$^{SAL}$*Siunzanna-* "mother of the god" (a priestess): nom. sg. $^{SAL}$*si-un-za-an-na-as* StBoT 25, 13 IV 22; Post-OH *siwanzanna-*, e. g. *si-wa-an-za-an-na* IBoT I 29 Vs. 58 (OH+), *si-wa-an-z[a-an-na* ib. Rs.12, nom. pl. $^{SAL.MEŠ}$*si-wa-an-za-an-ni-is* KUB XIII 2 II 32 (MH+?) = [syuntsanna-], [siwantsanna-]. The first element is probably from **syun-os,* genitive of *sius* "god" by syncope (i. e. **syunos-anna,* cf. Laroche, *JCS* 21 (1967) 126, Neu, *StBoT* 18, 124, *Heth. u. Idg.* 186 n. 22, *StBoT* 26, n. 501 and see the references provided by Weitenberg, *u*-Stämme 79); the second element is clearly *anna-* "mother", cf. $^{SAL.MEŠ}$AMA.DINGIR in KUB XIII 2 II 27. The treatment of **ns* as secondary **ns* > *nz* here argues against Watkins' suggestion (*Gds Güntert* 104–5) that *siunz-* continues an archaic "closed" genitive **siun-s.*

For other examples of NH *uwa* for older *u* see 3.7.4.3.; for the syncope see 3.7.1.

The treatment **ns* > *nz* is also found in nominative singulars of animate *n*-stems such as *sumānza* "cord" < PA **sumḗn-s* from IE **suh₁-mḗn* plus PA animate suffix **-s* (Eichner, *MSS* 31, 98, Melchert, *Sprache* 29, 7–8, Oettinger, *KZ* 94) {10.5.1.}.

Čop, *Linguistica* 10 (1970) 95–6, derives *hanzana-* as "black" from **h₂n̥s-(o)no-* : **h₂n̥s-i-* in Gk. ἄσις "mud" and **h₂ams-* in Germ. *Amsel* "blackbird". However, the word probably meant "thread"; see Puhvel, *HED* 3, 112.

### 7.8.4. **ms*

The standard assumption is that prevocalic **ms* merged with **ns* (Eichner, *MSS* 31, 99 n. 79, *Heth. u. Idg.*, Oettinger, *StBoT* 22, *Stammbildung* 437, 439, 550, *KZ* 94, 45, Puhvel *HED* 1, 63–4), cf., however, Weitenberg, *u*-Stämme 160–3, who posits **ns* > *nz* but **ms* > *ss*. In part, this assumption is based on an apparent connection between **hās-, hass-* "give birth, produce, beget", *hāssa-* "offspring, descendant", *hanzāssa-* "grandchild" (in the bound phrase *hāssa- hanzāssa-* "children and grandchildren") and CLuv. *hamsa/i-* "grandchild", *hamsu(k)kala-* "great grandchild" (*CLuv. Lex.* 50), HLuv. NEPOS *ha-m(a)-su-ka-la-*, NEPOS.REL-*la* (= **hamskwala-* with metathesis) and Pal. *hamsukala-* id. (Carruba, *StBoT* 10). This comparison has suggested **amsV* > *assV* for Hittite as opposed to **amsV* > *amsV* for Luvian (Eichner, Oettinger, Puhvel). However, as Melchert (*HS* 101 and *AHP* 164–5) points out, the connection of *hās-, hass-, hāssa-* and *hanzāssa-* with the Luvian words is problematic phonologically and semantically. Luvian also had a **has(s)-* "give birth" etc.; cf. Hluv. *hasa-* "beget", *hasmi-* "family". If Hittite and Luvian *has(s)-* are to be derived from **H₂/₃e/oms-*, then presumably prevocalic **ms* yielded **ss* in PA, and the *ms* of Luvian *hamsa-* must be explained otherwise. Oettinger, *Stammbildung* 439, and Eichner (*Heth. u. Idg.*) suggest as an alternative explanation that the Luvian and Palaic words had PA **ns* and show dissimilation to *ms.* However, CLuv. **tassu(i)-* "heavy" : Hitt. *dāssu-* "strong" and **tassyi(ya)-* "be or make difficult" in *tassiyamman* "heaviness" (Starke, *StBoT* 30, 252–3) contradict this idea. See also Melchert, *AHP* 164.

There are also two plausible etymologies that suggest a treatment **Vms* > PA **mss* with gemination of **s* after a resonant and further development to [Vnss] for Hittite with assimilation of the nasal to the dental **s* but retention as [mss] or [mmss] in Luvian. The Hittite sound change presumably occurred after inherited **ns* had become *ss* and secondary **ns* had become *nz*.

*anassa-*, a part of the back: gen. sg.?/pl.? *a-na-as-sa-as* hap. leg. KUB XXXV 148 III 24 (OH+) = [anssas-] < IE **ōmso-* "shoulder", cf. Skt. *āṁsa-*, Arm. *us,* Gk. ὠμός, Umb. *onse,* Lat. *umerus* (< **omes-os* with anaptyxis). See Melchert, *HS* 101, 212 and Puhvel, *HED* 1. 63–4. There is, however, no justification for assuming with Puhvel that the second °A° is a genuine anaptyctic vowel.

*āns-* "wipe": 3 sg. pres. *a-an-si* e. g. KBo XIX 128 I 19, 36, VI 9 (MH+), *ạ-an-ṣi* KBo XXII 189 II 15 (OH+), *a-a-an-si* KUB XXX 41 I 14 (OH+), *a-an-as-zi* KUB VIII 38 + III 21 (NH), 3 pl. *a-an-sa-an-zi* e. g. KBo IV 9 II 19, VI 23 (OH+), KBo V 1 IV 4 (Pre-NH), KUB X 54 II 19 (OH+), KBo XXII 189 Rs. V 13, 1 sg. pret. *a-an-su-un* e. g. KUB XLI 19 Rs. 10, 11, 12, 14 ( MH+, = KUB XXIV 13 III 19 with *an-su-un*), 2 sg. imp. *a-a-n[a-as* KUB XXXIIII 5 II 7 (MH), 3 sg. *a-an-as-du* KBo III 8 II 34 (Pre-NH),

ptcp. nom. sg. c. *a-an-sa-an-za* KBo XVI 97 Vs. 35 (MH) *an-sa-an-za* KBo VIII 55 L. 30 (U), also *ānsiya-* (*a-na-as-si-ya-*) = [ānss-]. Melchert (*HS* 101) identifies 3 pl. pret. *"am-ma-as-sa-an-da* in KUB XII 26 II 8 (NH) as the Cuneiform Luvian cognate with stem [ammss-] (for other examples, see *CLuv. Lex.* 11). The two verbs should, then, continue a PA **ámss-* from **áms-* with doubling of the resonant before **s(s)*.

Non-Anatolian cognates, unfortunately, are uncertain. Melchert himself suggests (212 n. 130) that PA **ams-* is from **amh₁s-* beside **amh₁-* in Gk. ἀμάω "mow, reap" and **meh₁-* in OE *māwan* "to mow", OHG *māwen, māen* id. etc. (cf. *warsiya-* "reap, harvest", also "wipe" from **w(e)rs-* "wipe, sweep" for the semantics). In *AHP* 165, however, he reconstructs PA **óms-*.

Etymologies implying **Vms* > *Vss* are problematic. *hās-, hass-* "give birth" and Luv. *hass-* continue a PA strong stem **h₂áns-* > **h₂áss-*, and the single /s/ of the Hittite 3 sg. pres. *ha-a-si* should be analogical. The Hittite stem *hass-* (e.g. in 3 pl. pres. *ha-as-sa-an-zi*) suggests that the strong stem was extended throughout the paradigm before accented long vowels were lengthened {11.4.3.}.

The derivative *hassātar* "family" is spelled once with °N-S° (gen. sg. *ha-an-sa-an-na-as* HT 6 + KBo IX 125 Vs. 16 MH+). However, since backspellings with "unetymological" nasal do occur, especially in syllables preceding or following syllables with *n* {7.4.3.3.}, this one spelling alone does not suffice to establish the nasal.

The Indo-Iranian and Slavic cognates of *passu-* "base, pedestal", *passila-* "gravel", Skt. *pāṁsu-* "chaff, dust", Av. *pānsu-* id., and OCS *pěsŭkŭ* "sand", which Weitenberg, *op. cit.* 197–9, derives from **pēms-*, can be from **pēns-* {7.8.2.}.

Neu, *RO* 41/2 (1980/1) 84–5, describes the alternation between [ms] and [ps] in LÚ*damsatalli-, tapsatalli-* "preparer of sacrificial meat" as non-IE. If, however, the word can be derived from *tamess-* "press, oppress" with syncope, then [ms] would be secondary and [dapsadalli-] would show [ms] > [mps] with epenthesis > [ps] with loss of the nasal or [ms] > [ps] with dissimilation.

## 7.8.5. Synchronic treatment of *ns*

The synchronic treatment of sequences of /ns/ arising through inflection, derivation, and sandhi is straightforward. The nasal was lost and the *s* remained single before consonants but was doubled elsewhere. Loss of the nasal occurs in synchronically (and historically) accented and unaccented syllables.

### 7.8.5.1. *ns* in sandhi

Preconsonantal /ns/ was realized as [s] in Old Hittite (Friedrich, Georgiev, Kammenhuber, Kimball, *PW* 237, Kronasser, Otten-Souček, Sturtevant, *CGr¹* 85).

Final /n/ plus third person plural neuter nominative-accusative singular and ablative-instrument possessive pronoun *-smet, -smit*: e.g. *e-er-ma-as-me-et* "their affliction" StBoT 25, 3 III 11 = *e-er-ma-aṣ-mẹ-eṭ* in StBoT 25, 4 III 11 = /ērman-smet/; *ha-tu-ka-as-me-et* "their fright" StBoT 25, 3 III 12 = *ha-tu-ga-a[s-me-e]t* in 4 III 12 = /hadūgan-smet/; *pe-e-da-as-me-et* "their place" StBoT 25, 25 I 4 = /pēdan-smet/; similarly with second and third person plural nominative-accusative neuter personal pronoun *-smit*: *pe-e-ra-as-mi-i[t]* "in front of them" StBoT 25, 56 I 11, III 18 = /pēran-smit/; with second and third person plural dative-accusative personal pronoun



*-smas*: *er-ma-as-ma-as-kan* "their affliction" StBoT 25, 4 I 17 = /ērman-smas-kan/; *d[a]-a-ah-hu-us-ma-a[(s-t)]a* StBoT 25, 3 IV 39 /dāhhun-sma-asta/ (= first person singular preterit of *dā-* "take" plus directive third person plural possessive pronoun plus particle *-asta;* see StBoT 26, 182). The spelling *pe-e-ra-az-mi-it* in StBoT 25, 4 III 44 = /pēran-smit/ "in front of them" suggests a variant pronunciation [pērantsmit] with anaptyctic /t/ (Justeson-Stephens).

Prevocalic /ns/ was normally realized as [ss] after a short vowel that was historically unaccented in historical terms and presumably remained unaccented: with sentence particle *-ssan*, e.g. *na-as-sa-an* StBoT 25, 26 IV 5, 8, 12, 13 = /nu-an-san/ (sentence connective *nu* plus enclitic third person singular personal pronoun, acc. sg. c. *-an* plus *-ssan*); with third person singular possessive pronoun nom.-acc. sg. n. and abl.-inst. *-sset* (*-ssit*): *ku-us-sa-as-se-et* "its price" KUB XXIX 30 Vs. 13, 14 etc. (OH) = /kussan-set/, *ku-us-sa-as-se-et-ta* "and its price" KBo VI 2 IV 5 (OH) = /kussan-ssett-a/; with third person singular possessive pronoun acc. sg. c. *-ssan*: *ad-da-as-sa-an* "his father" KUB XI 5 Vs. 10 (OH+) = /attan-san/; *is-ta-ma-as-sa-an* "his ear": KBo VI 3 I 37, 39 (MH) = /staman-ssan/; with third person singular personal pronoun *-sset*: *pe-e-ra-as-se-et* "in front of him" StBoT 25, 3 I 33, *pe-e-ra-as-si-it* StBoT 25, 4 I 26 /pēran-sit/.

In Post-OH texts the nasal may be restored, e.g. *na-an-si (pāi)* "and gives it to him" KBo VI 3 II 65 (MH).

The spelling *na-an-sa-an* in KUB XXIII 11 III 11 (MH+) is a mistaken etymological spelling for *na-as-sa-an* = sentence connective *nu* plus the nominative of the third person singular personal pronoun *-as-* "he" plus particle *-ssan*, i.e. /nu-as-ssan/ (Friedrich, *HE*).

Final /n/ plus third person singular personal pronoun *-si*: *ma-a-as-si* KBo XVII 65 Rs. 15 (MH), cf. *ma-a-an-si*, e.g. KUB XVII 6 IV 2 and on dup. KBo III 7 III 23 (both OH+).

In *hu-u-ma-as-sa-an* KBo V 1 III 29 (Pre-NH), *hu-ma-as-sa-an* ib. III 16 = nom.-acc. sg. n. *hūman* "all" plus particle *-ssan*, the underlying final /t/ was apparently deleted and the resulting /ns/ was treated in the same way as underlying /ns/, i.e. /hūmant-ssan/ → /hūman-ssan/ → [hūmassan].

The phonological process by which synchronic /VnsV/ became [VssV] is not completely clear. If °Š-Š° is a geminate resulting from assimilation (e.g. Sturtevant, *CGr¹* 85), the treatment would parallel the historical treatment of inherited **ns*. However, the initial /s/ of enclitics is usually doubled after synchronically short (and historically unaccented) vowels (cf. e.g. *pe-e-di-is-si* "in his place" = [pēdi-ssi] < **pédo-* or *ge-nu-us-si-it* "his knee" (nom.-acc. sg. = [gēnu-ssit] < **ǧénu-*) and it is possible that the synchronic treatment was simple loss of the nasal before geminate [ss].

### 7.8.5.2. *ns* at internal morpheme boundary

There is only one example, but its analysis seems clear: *ku-e-si*, second person singular present of *kuēn-* "strike, kill" KUB XLIII 37 II 5 (MH) = /gʷēn-si/ → [gʷēsi] (IE **gʷhén-si*); for the Hittite long vowel cf. 3 sg. pres. *ku-e-en-zi* = [gʷēntsi] < **gʷhén-ti*. The loss of the nasal is probably real and not an artifact of the writing system, since ***[gʷēnsi] could be written ***ku-(e)-en-si* without difficulty.

By the NH period, the *mi*-conjugation form was replaced by *hi*-conjugation 2 sg. pres. *ku-e-ti* = [g$^{w}$ēdi] (e. g. KBo III 17 + 18 + 19 II 16, OH+) (Pedersen, Kronasser, Oettinger, *Stammbildung* 118 w. refs.).

## 7.9. Nasal plus laryngeal

Eichner, *MSS* 31 (1973) 78 n. 17; Kimball, *PW* 770, 800, *IF* 91 (1986) 97 w. n. 31, *MSS* 53 (1992) 88–92; Oettinger, *Stammbildung* 487 w. n. 74, *Gds Kronasser* 173 n. 45.

### 7.9.1. Inherited

Prevocalic nasal plus laryngeal resulted in a geminate nasal.

*zinni/a-* "finish, end" (*zi-in-ni-*, OH etc., *zi-in-na-*, OH etc.) = [zinn-] or [tṣinn-] < **si-n-h$_1$-?* {10.8.5.}; *mūnnā(i)-* "hide" (*mu-un-na-a-(i)-*, MH etc., *m-ú-na-a-(i)-*, OH+) = [munnā(i)-], ultimately from **mu-n-h$_1$-* {10.8.5.}; *hanna-* "judge, litigate, quarrel" (*ha-an-na,* MH etc.) = [hanna-] < **h$_2$énh$_2$-o-* {10.8.6.}; *sanna-* "hide, conceal" (*sa-an-na-*, MH etc.) = [sanna-] < **sn̥-n-h$_2$-* {10.8.6.}; *sunna-* "fill" (*su-un-na-*, OH etc.) = [sunna-] < **su-n-h$_3$-* {10.8.7.}; durative suffix *-anna-* < **-enh$_2$i-* (Melchert, *AHP* 79 w. refs.). The gemination in *annisk-*, iterative of *aniya-* "work, do", can be explained if it continues earlier **anHi-sk-* > [annisk-] beside **anHyé-* > [anyē-] (Melchert, *AHP* 79). Inherited **mh$_2$* occurs in *dammishā-* "oppression" < **demh$_2$es-sh$_2$ó-* {10.8.8.}.

### 7.9.2. Secondary and synchronic *nh*

Since consonantal **n* plus laryngeal yielded geminate *nn* before vowels and laryngeals were lost between **n* and a following consonant {10.10.1.}, the synchronic sequence *nh* should not directly continue inherited **nH$_{2/3}$*. Instead, it either reflects secondary [nh] arising through compounding or analogy or it is from **n̥H$_{2/3}$*. Several words show sporadic loss of /n/ before *(h)h*, and in *sāh-* "flush, cleanse" beside *sanh-* and *sāh-* "seek" beside *sanh-*, occasional plene writing of the root vowel suggests that loss of the nasal was accompanied by compensatory lengthening.

#### 7.9.2.1. With consistent *nh*

*ūnh-* (meaning unknown): 3 pl. pres. *u-un-ha-an-zi* StBoT 25, 61 II 3, KUB XXX 40 I 18 (NH), *u-un-ha-a[n-zi* KUB XXXIX 57 I 9 (OH+), pret. *u-un-hi-ir* KUB XLII 20 L. 9 (U), 3 pl. imp. *u-un-ha-an-du* Bo 69/326 L. 3 (*Stammbildung*). The stem [ūnh-] should be from **wn̥H$_{2/3}$-* > **unH-* with vocalization of **wn̥* to *un*. The plene writing suggests that the stem of the singular, **únh-* > **ūnh-*, was generalized {5.4.1.4.}.

Examples *Stammbildung* 183. Neither the meaning nor the etymology is clear. Košak, *T.Heth.* 10, 242, points out that the meaning "suck" is unlikely (cf. *StBoT* 26, 204). Oettinger, *loc. cit.*, reconstructs **H$_2$/$_3$wenh$_2$-ti* : **H$_2$/$_3$unh$_2$-enti,* but initial **h$_3$* should have been retained. Eichner, *Laryngaltheorie* 143 n. 67, reconstructs a nasal infix present **u-né-h$_2$-* : **u-n-h$_2$-*. There are no obvious non-Anatolian cognates. Since prevocalic **nH$_{2/3}$* became *nn,* the root-final laryngeal should be analogical from 1 pl. pres. *[unhwanzi] and 1 pl. pret. *[unhwen] with regular preservation of the sequence [Rhw].



*hanhaniya-* "be displeased" (vel sim.): 3 sg. pres. *"ha-an-ha-ni-y[]a-i* KUB XIII 4 I 27, *"ha-an-ha-ni-ya-i* ib. III 63 (MH(?)+). The Glossenkeil and reduplication suggest Luvian provenance; Melchert, *CLuv. Lex.* 51, glosses "be malicious", cf. also *"ha-an-ha-ma-an,* perhaps a Luvian participle from the same stem in KUB XXXIIII 89 + III 7 (NH) and HLuv. (MALUS$_2$)*ha-ha-ní-wa/i-za.* Van Brock, *RHA* 22 (1964) 139–41, suggests that this reduplicated verb is probably to be related to Gk. ὄνομαι "blame, find fault with" (IE **h$_2$enh$_2$-* also in *hanna-* "quarrel, litigate, judge" {10.8.6.}).

For other etymological suggestions see Puhvel, *HED* 148–9.

#### 7.9.2.2. With loss of the nasal

Beside *sanh-* "rinse, cleanse, wet, flush": *sa-an-ah-(h°)* there are several examples of *sa-(a)-ah-* (e. g. 1 sg. pres. *sa-ah-mi* KBo XVII 61 Vs 13, 15, MH, 2 pl. imp. *[s]a-a-ah-ten* KUB XXIX 1 I 48, OH+, it. 1 sg. pres. act. *sa-ah-hi-is-ke-mi* KUB XII 58 III 2, MH+) which have a stem [sāḫ-] from *sanh-* with compensatory lengthening < **sn̥h$_2$-*, weak stem of the present **sné h$_2$-ti* : **sn̥h$_2$-énti* seen also in Skt. *snāti* "bathes" (Kimball, *MSS* 53).

For *sanh-* "seek" the usual spelling is *sa-an-hV-, sa-an-ah-* (examples *PW* 796–800), but several examples of a spelling *sa-(a)-ah-* in the meaning "search, seek out" are found in MH and later texts: 1 sg. pret. *sa-ah-hu-un* KBo V 9 I 20 (NH, cf. *sa-an-ah-hu-un* ib. I 14), 3 sg. pret. *sa-ah-ta* KUB XXXIII 10 Vs. 2 (MH), KUB VII 8 II 16, 17 (MH+), 2 sg. imp. *sa-a-ah* KUB XVII 10 I 25, 26 (2x, MH, cf. *sa-an-ha* ib. I 31, 35). Here the stem [sāḫ-] is either from [sanh-] < full-grade **senh$_2$-* or from [sanh-] < zero-grade **sn̥h$_2$-*. The verb is ultimately from a root aorist, cf. Skt. *asanat* "strove" with thematization (Kimball, *MSS* 53).

The conjunction *māhhan* "like, as" (*ma-a-ah-ha-an,* OH etc., *CHD* 3, 100–11) is from *mān* "like, as, how, if, when" plus *-hhan* from loc. **h$_2$ént* "front, face, forehead" (with loss of final **t* {6.12.1.}). A subordinating conjunction of very similar appearance and use, *ma-a-(an)-ha-an-da* "just as" (presumably *mān* + dir. *handa*), is found in OH and a few MH texts (*CHD* 3, 111); *mānhhanda*: e. g. *ma-a-an-ha-an-d[a]* StBoT 25, 112 II 14, *ma-a-an-ha-an-da* StBoT 25, 13 II 24, KBo XXII 1 L. 22 (OH); and as two words *ma-a-an ha-an-da* KBo XVI 45 Vs. 7 (MH); without *n*: *ma-a-ah-ha-an-da* KBo VI 2 + XXII 62 III 19 (OH), *ma-ah-ha-an* in MH dup. KBo VI 3 III 22, *[m]a-a-ah-ha-an-ta* KUB XXXIIII 59 IV 7 (MH). The lack of plene writing in the second element of *māhhan* (cf. *ha-a-an-za* "in front < loc. **h$_2$énti* {3.8.1., 6.7.2.2.}) suggests that it was formed as **mán̥han(t)* before the lengthening of short accented vowels.

For the equation of the first element of *māhhan* with the conjunction *mān* see Carruba, *StBoT* 2, 31–4, Mittelberger, *Kratylos* 12 (1967) 159, Laroche, *Annuaire du college de France* 81 (1980–1) 490, for *mān* plus *hhanda* see Neu, *StBoT* 18, 61 n. 84, and for other etymological suggestions see Tischler, *HEG* 5, 86–9.

$^{UZU}$*dā(n)hasti* "doublebone, twinbone" is attested as *da-ha-as-ti* in KBo XI 40 I 19 (OH+) beside *da-a-an-ha-as-ti* ib. I 5 and as *ta-an-ha-as-ti* in KUB XXXIII 55 I 14 (OH+) and is a compound of *dān* < **dwoyóm* (adj.) "two" {2.2.1., 9.3.1.1., 9.5.2.1.} and **hasti-* "bone" (< sg. **h$_2$ést[H]i-* or du. **h$_2$ést[H]-ih$_1$*) beside collective **h$_2$ést[H]-ōi* in *hastāi* "bone(s)" {2.8.2.2.}.

See Puhvel, *KZ* 92 (1978) 100 = *AnIE* 391 for the etymology, and see Starke, *StBoT* 31, 29, 123 for **hasti-* as an inherited dual.

*istamahura-* "earring": e.g. acc. pl. *is-ta-ma-hu-ru-us* KUB XII 1 IV 38 (NH); *is-t/a-ma-hu-ru-us* KUB XLII 69 Vs. 16 (U), *is-dam-ma-hu-ru-us* KBo XVIII 192 Vs.! 6 (NH) = [stamaḫura-] from *istaman* "ear" plus an element *-hura-* that is perhaps connected with $^{SÍG}$*ehurati* "(woollen) earplug" and *ehuradā(i)-* "stop up, plug". The spelling **ista(m)manhura* does not occur, but the word is not well attested and the lack of spellings with °N-H° could be accidental.

Examples *HED* 2, 452; for the etymology see Puhvel, *loc. cit.*, Eichner, *MSS* 31 (1973) 87–8 n. 17 w. refs. and Oettinger, *Gds Kronasser* 173 n. 45.

In *ista(n)hh-* "taste" the nasal occurs only in the iterative third person singular preterit *is-ta-an-hi-is-ke-et* KBo VIII 41 L. 12 (OH+); otherwise the stem is *istah(h)-*: 2 pl. pres. act. *is-tah-te-ni* KBo X 45 III 40 (MH+) = KUB XLI 8 III 31 (MH+), 3 pl. *is-tah-ha-an-zi* KUB XXXIII 89 + III 14 (NH), 3 sg. pret. *is-tah-ta* KBo III 38 Vs. 5 (OH+), KUB XXXIII 84 L. 6 (MH+), it. 3 sg. pres. *is-ta-ah-hi-is-ke-ez-zi* 701/z L. 8 (*HED*). The etymology is uncertain. Oettinger, *Stammbildung* 177–8, reconstructs **stenh₂-*, Puhvel, *HED* 2, 464, reconstructs **stem-H-*, comparing *istamma-* "ear" and *istammas-* "hear", and Eichner, *Laryngaltheorie* 143 w. n. 67, reconstructs **stenh₂-*. It is possible too that the stem should be **steh₂-* and that the °N° of *istanhiskeszzi* is unetymological, but no etymology is readily apparent.

Examples and etymological refs. *HEG* 3, 420–1, *HED* 2, 463–4.

## 7.10. Dissimilation

Hrozný, *JA* 218 (1931) 316–7; Kammenhuber, *HdO* 286; Kronasser, *VLFH* 73; *EHS* 60–1; Melchert, *AHP* 82, 171; Oettinger, *Stammbildung* 352, 526; Sturtevant, *CGr*$^1$ 94, 133; *CGr*$^2$ 43.

### 7.10.1. Of **n ... m* to *l ... m*

A sequence **n ... m* was dissimilated to *l ... m*.

*lāman* "name" (nom.-acc. sg. *la-a-ma-an*, MH etc.) = [lāman] < **h₁néh₃-mn̥* {10.3.1.3., 10.5.3.}.

Luvian shows an independent dissimilation **n ... m* > *d ... m* comparable to that in CLuv. *tapass-*, HLuv. *tipas-* "heaven" < **nébhis-* in HLuv. nom.-acc. pl. *atama(n)za*, dat. sg. *atamani* and perhaps Lyc. *adaña* "name"(?) (or *alaña* (?), *Lyc. Lex.*$^2$, Starke, *StBoT* 31, 240 n. 986) with **[adammn-] generalized from the PA oblique stem **anam-* < **h₁n̥h₂mn-* (with **an-* < **n̥*).

*lammar* "instant, moment": nom.-acc. sg. *lam-mar*$^!$ KBo XIX 128 VI 23 (OH+), and as adv. "instantly, immediately", *lam-mar lam-mar* "constantly": KUB XXI 27 III 46–47 (NH), gen. *lam-na-as* KBo IX 106 II 1 (MH+), dat.-loc. and adv. "instantly, immediately" *lam-ni-i* eg. KBo V 3 II 35 (Supp. I+), *la-am-ni-i* KUB XXXV 145 Rs. 4 (NH), *la-am-ni* KUB XVII 15 III 15 (U) = [lammar], [lammn-] < **nóm-r̥, *nóm-n-* : IE **nem-* "divide, distribute, take", with doubling of *m* before resonant {7.6.2.}; cf. Lat. *numerus* "number", OLat. adv. *numerō* "exactly, at a particular point in time"



Examples *CHD* 3, 36–7; etymological references *HEG* 5, 29–31. See Nowicki, *KZ* 95 (1981) 253–4, for HLuv. *lam-ni-i*, dative of a word referring to time, vs. Hitt. *lammar*.

**lam-* "be mixed, sich vermengen(?)" (KUB XLI 23 II 19, 22; cf StBoT 5, 106 and HW 126) and **$^{DUG}$lammaya-*, a copper vessel (KUB VII 37 L. 9), derived by Oettinger, *Stammbildung* 525–6 from IE **nem-* "distribute", are perhaps to be read as *kulam-* and *galamma-* (*CHD* 3, 30).

### 7.10.2. Of **m ... n* to *m ... l*

Oettinger (352) suggests that *armaliya-, ermaliya-* "become ill, afflict with illness" (e.g. 3 sg. pret. midd. *er-ma-al-li-ya-at-ta-at* KBo V 9 I 15, NH, *er-ma-li-ya-at-ta-at* e.g. KBo III 4 I 6, 14, II 20, NH) can be from *armaniya-, ermaniya-* "be(come) ill" (e. g. 3 sg. pres. midd. *ar-ma-ni-ya-at-ta* KUB IV 72 Rs. 3, OH?/MH?, vbl. noun nom.-acc. sg. *er-ma-ni-ya-u-wa-ar* KBo I 42 IV 6, NH, vocab.) through dissimilation. It is possible, however, that *armaliya-* is directly from the adjective *armala-* (*ermala-*) "ill". Melchert, *AHP* 171 w. refs. adds *sargaliya-* for *sarganiya-* "ascend" (cf. Oettinger, *Stammbildung* 354), and *halmaswitt-* "throne" < Hatt. *hanwasuitt-*.

### 7.10.3. Of **n ... n* to *n ... m*

*nekumant-* "naked": nom. sg. c. *ne-ku-ma-an-za* KUB XIV 1 Vs. 51 (MH), KUB XIII 4 III 32 (MH(?)+), nom. pl. c. *ne-ku-ma-an-te-es* KUB XX 13 IV 11 (MH?), case unclear *n/e-ku-ma-/-* StBoT 25, 34 Vs. 3 = [neg$^w$mant-], probably extended form in *-ant-* from a **neg$^w$ma-*, dissimilated from IE **neg$^w$nó-* as in Skt. *nagná-* "naked".

See Mayrhofer, *Idg. Gr.* I/2, 108 w. refs., Oettinger, *IH* 22, and *HEG* 7, 307–9 w. refs.

## 7.11. Laryngeal plus nasal

Inherited **n* was apparently geminated after a laryngeal.

*wannumiya-* "orphaned, widowed", i.e. "deprived of the protection of an adult male": nom. sg. c. *wa-an-nu-um-mi-ya-as* KUB XII 63 II 7 (MH), KUB VII 12 L. 6 (OH+), KUB XXXIV 24 L. 6 (Supp. I), KUB XVII 4 L. 3, 13 (U), *w/a-an-nu-um-mi-ya-as* KBo XIV 12 IV 20 (NH), *wa-nu-um-mi-ya-as* KUB XVII 4 L. 6, cf. dup. KBo XXII 82 with *wa-an-nu-mi-y/a-* L. 4, acc. sg. c. *wa-an-nu-um-mi-ya-an* KUB XVII 4 L. 2, dat.-loc. pl. *wa-an-nu-mi-ya-as* KUB XIII 2 III 31 (MH?), *w/a-an-nu-mi-as* KUB XXXVI 75 + Bo 4696 L. 13 (MH) = [wannumya-] ([wānnumya-]?). The word is obviously related to Lat. *vānus* "vain, empty" < **h₁wehₓ-no-*, Skt. *vāyati* "disappear" (with full-grade **h₁wehₓ-*), Skt. *ūná-* "deficient, inferior" < **h₁uhₓ-nó-*, Arm. *ownayn* "empty" < **h₁uhₓ-ono-* and Gmc. **wana-* with secondary zero-grade **wă-* in Goth. *wans* "lacking", ON *vanr*, OE, OFr., OS *wan*, but the details of its formation are less than certain. The Hittite stem *wann-* seems to continue a full-grade **wehₓn-*. The suffix *-um(m)-* may be from **-umn-*, the oblique stem of the gentilic-ethnic suffix *-uman-*, which would have become *-umm-* with assimilation of the nasals, **wann-umm-* "in a state of bereavement", to which the adjectival suffix *-iya-* (< **-yo-*) has been added.

For forms and discussion see Hoffner, *Fs Otten*[2] 151; for the etymology see Čop, *Linguistica* 4 (1961) 53 w. n. 93 and Laroche, *RHA* 9/49 (1948/9) 14–15, and see Bammesberger, *Nomen* 246 on the Germanic words and Peters, *Unters.* 51–2 on Gk. εὔνις "bereft", which also belongs here.

## 7.12. Final

Kronasser, *VLFH* 70–1; Pedersen, *Hitt.* 90; Sturtevant, *CGr*[1] 135, 136, *CGr*[2] 45.

### 7.12.1. **n*

Final **n* remained in the supine in *-wan* (*-wa-an, -u-wa-an*) = [-wan] < endingless locative **-wen* (Melchert, *SHHP* 24 n. 47, 103 w. refs.)

### 7.12.2. **m*

Final **m* became /n/, e.g. *tuwān* "from here ... "from there" = [dwān] < IE **dwā́m* {2.1.6.}; *a*-stem accusative singular animate and nominative-accusative singular neuter ending *-an* < IE *o*-stem ending **-o-m* and **eh₂*-stem ending **-am* < **-ām* {2.1.6.}; OH genitive plural ending *-an* (*-ān*) and pronominal genitive plural ending *-nzan* with *-an* < IE **-ōm* or **-ŏm*.

Melchert, *JAC* 8 (1993) 105–13, posits metathesis of absolute final **-Crom* to **-Corm* and a further development to **-Cor* (ultimately *-Car*) with loss of the nasal. According to Melchert, this change lies behind several neuter *r*-stems, such as *sāwātar* "horn", for which he reconstructs an instrumental noun in **-tro-* with nominative-accusative singular neuter **sóuh₁etrom* > PA **sówedrom* (with PA voicing) > *sāwdar* with lowering of posttonic **e* to /a/ in an open syllable. The resulting *sāwdar* was later remodeled as a neuter *r*-stem (cf. gen. sg. *sāwataras*). Forms with a long second vowel (e.g. *sa-a-wa-a-tar* KUB XXXV 163 III 18, OH+ *sa-ú-wa-a-tar* KUB XLV 53 IV 7) are explained as analogical to *r/n*-stems. This rule will also explain Cuneiform Luvian instrumental nouns in *-tar-* (e.g. *istar-* "seat, throne" < **h₁ēst-tro-m*) and Hittite and Luvian substantivized neuter nouns in *-ar* from adjectives in **-ro-* (e.g. Hitt. *nahsar-* "fear" < **neh₂sro-*). If final **-Csrom* became **-Corsm* > **-Cors* (> *-Car*), then, as Melchert suggests, animate *r*-stems in *-ssar* such as HLuv. *kuttasara/i-* "orthostat" and Hitt. *ispanduzziassar-* "libation vessel" can be explained as reflecting earlier animate accusative singulars in **-sro-m,* though the reduction of **-Cors* to **-Cor* must have preceded the development of final secondary **-rs* to [-rts(a)] in *hasterza* "star" < **h₂stērt-s* {8.6.5.4.}. Melchert also suggests that a parallel development of final **-Clom* > **Colm* > **-Col* > **-Cal* will explain animate *l*-stems such as *siyat(t)al* "missile, spear" < **sh₁yo-tlo-m.*

Deriving *sāwātar* directly from **sówedor(m)* depends on a change of unaccented posttonic **e* to /a/, but this change is uncertain {2.6.3}, and the second /ā/, which was long, can be due to the influence of **r/n*-stems in *-ātar,* i.e. **sāwidar* → [sāwādar]; *siyat(t)tal* is presumably from *siyē-* "shoot, spurt" and should continue **h₁syo-tlo-m* {see 10.3.1.4.}.

# Chapter Eight

# Liquids

## 8.1. System inherited from IE

Mayrhofer, *Idg. Gr.* I/2, 158–9.

IE had two liquids, **l* and **r*, with **syllabic allophones *[l̥] and *[r̥].**

## 8.2. IE to PA and Pre-Hittite

In the languages written with the cuneiform syllabary, the single or double writing of intervocalic liquids was at least partially dependent on the quality of the preceding vowel and the position of the accent, and this difference in writing seems to reflect a consistent difference in pronunciation. As Čop, *IF* 75 (1970) 85–6, has demonstrated, the treatment of resonants after PA **ĕ* was different in Hittite and Cuneiform Luvian. While Hittite shows a treatment **ĕRV* > *ēRV,* Cuneiform Luvian cognates show **ĕRV* > *aRRV.* The quantity of the preceding vowel in Cuneiform Luvian is not known. Examples include CLuv. *ma-al-li-(i)-t* : Hitt. **mēlit* (*mi-li-it*) "honey" < IE **mélit,* CLuv. *par-ra-an* : Hitt. *pēran* "in front" (*pe-(e)-ra-an*) < **pérom,* CLuv. *sa-ar-ri* "above" < **sér-i* : Hitt. *sēr* id. (*se-(e)-er*) < **sér(i).*

It is not (*pace* Starke, *StBoT* 31,192) clear that Čop's Law doubling occurred after any short accented vowel. Indeed, CLuv. *ta-a-ru* "wood, tree" < IE **dóru* suggests that the regular reflex of **r* after **ó* was single *r.* After reflexes of long vowels, liquids are written single in Cuneiform Luvian, e.g. *ādduwāli-* "evil" < PA **édwōl-, āra/i-* "time" < **yṓr-o-,* cf. Gk. ὥρα "time, season" < **yōr-eh₂-* and **yēr-o-* in Goth. *jēr* "year" and OE *ġear* id.

For a discussion and examples of Čop's Law and Luvian liquids, see also Melchert, *AHP* 74–5, 236–9, 248, 259–60. Although Melchert posits a limited version of Čop's Law for PA (*AHP* 62, 63, 74–5) affecting initial syllables, he does not cite examples with liquids.

## 8.3. Initial

Friedrich, *Heth.* 26, *HE* 33; Hrozný, *SH* 188 n. 6, 193; Kammenhuber, *HdO* 267, *KZ* 77 (1961) 57–8; Kretschmer, *Glotta* 28 (1940) 115; Kronasser, *VLFH* 72, *EHS* 66; Melchert, *AHP* 67; Pedersen, *LH* 41; Petersen, *Mel. Pedersen* 475–6; Rosenkranz, *Vgl. Unt.* 42; Sommer, *HuH* 71, 81; Sturtevant, *CGr*[1] 136, 138, *CGr*[2] 25, 45, 46; Tischler, *KZ* 86 (1972) 267–86.

### 8.3.1. *l

Initial *l remained: *less-* "gather" = [lēss-], *līsā(i)-* id. = [lēsā(i)-] < IE **les-*, **lēs-* {11.4.1.1.}; *lāk-* "knock out, turn", midd. "fall" (3 sg. pres. act. *la-a-ki*, midd. *la-ga-a-ri*) = [lāgi], [lagāri] < IE **logh-* : **legh-* "lie" {2.4.1.}; *luk(k)-* "grow bright, dawn" = [luk-], *lukke/a-* "set on fire" = [lukē/a-] : IE **leuk-*, **louk-*, **luk-* "light, be light" {3.11.1.2., 4.6.2.}.

### 8.3.2. *r

Hittite and the other Anatolian languages lack initial *r*, though there is little general agreement about whether it is an innovation or an inheritance. It has been claimed that IE initial **r* became *ar* with prothetic vowel (Kretschmer, Tischler), but the etymologies cited to support this claim are not convincing, often depending on syncope of a full-grade vowel that cannot be verified, or the words in question can be reconstructed with initial **h₁r̥* or **h₁Vr*.

*arhā-* "border, rim, limit", *erhā-* id. and *erhā(i)-* "circle, make a circuit" < **rHe-* : Lat. *re-* "back again" (Tischler 273–4) are better derived from **h₁r̥H₂/₃-ó-* and **h₁ērH₂/₃-ó-* {3.2.2.3.}.

*ārk-* "cut, cut off, mark off" : **er(e)k-*/**rek-* "divide" in e. g. Lith. *rankà, ràkti* "poke" (Tischler 275). The third person singular present *a-ar-ki* (e. g. KBo VI 2 II 41, 47, OH, *a-ar-gi* e. g. KBo VI 11 I 16 , OH+) = [ārgi], however, points to an *o*-grade **h₁órgh-*.

For the root, cf. Gk. ὄρχατος "garden", ἔρχατος · φραγμός (Hes.), and see Puhvel, *HED* 1, 140–2 w. refs.

*argatiya-* "come to violence" in 3 pl. pret. *ar-ga-ti-x[ ]e-er* hap. leg. KBo III 7 I 10 (OH+) = *argat-iya-* with /a-rg-t-/ = [a-rk-t-] < **reĝ-t-* with prothetic vowel and syncope of the root vowel : Gk. ὀρέγω "reach, stretch out", etc. (Tischler 275–6). The Hittite cognate of ὀρέγω etc. is *harg(a)nau-* "palm, sole", however, with retention of **h₃* {10.3.3.2.}, and *argatiya-* is more likely to be a compound *arga-tiya-*, lit. "step, stoop to rage or violence" with first member **arga-* cognate with Ved. *ragha-* "anger, rage", *r̥ghayate* "rages, is impetuous", Gk. ὀρχέομαι "dance, make lascivious motions", and Russ. *jërzájet* "fidgets, wriggles, moves in coitus", forms which point to a root **h₁ergh-*, **h₁orgh-*, **h₁r̥gh-* (cf. **h₁orgh-* also in *arkiyēs* "testicles").

Puhvel, *HED* 1, 147–8 w. refs.

*ārrira-* "scratch, scrape" < **ri-ir-* : **rei-*, cf. Skt. *likhati* "scratches, scrapes", Gk. ἐρείκω "break, tear" (Tischler 275). The Greek verb points to **h₁rei-k-*, but its meaning is not close and the Hittite verb looks onomatopoetic (Puhvel, *HED* 1, 139–40).

GIŠ/NA4*armizzi-* "bridge" < **rem(H)-* "rest, support" also in e. g. OHG *rama* "prop, support", NNorw. *rand* "crossbeam" (Tischler 277) (cf. also Lith. *remiù, remti* "support"). If these words belong with e. g. Skt. *ramate* "is at rest", *ramati* "quiets", *īrma-* "quiet", Lith. *rimti* "become peaceful" and Gk. ἠρέμα "quietly", then the root might be **h₁r̥h₁em-* "rest, rest on, support", although the initial long vowel of the Greek word is difficult (cf. *IEW* 864, Mayrhofer, *KEWA* III 43–4, and see Darms, *Schwäher* 112–13 w. refs. for various explanations). The Hittite word would have a zero-grade **h₁r̥h₁m-*, cf. Puhvel, *HED* 1, 160–3.



Tischler, *HEG* 1, 63–4, however, suggests that *armizzi-* is a cultureword, borrowed via Hurrian, and compares NeoBab. *arammu* "earthen dam" (cf. *CAD* 227–7 *arammu* "wharf, embankment of a canal, ramp, causeway").

*arandalliya-* "growl"(?) (NH only, *HW*² 250 w. refs.) : Skt. *rana-* "fight", OCS *retiti* "to contend" (Tischler 273); both the meaning and the etymology are uncertain.

*arpā-* "confusion, tumult, strife" (Hitt. & Luv.): nom. sg. "*ar-pa-as* KBo XXII 260 Vs. 12 (U), *a]r-pa-a-as* ib. Vs 14, acc. sg. *ar-pa-an* KUB V 1 III 46, 49, 67 (NH), KBo XXIII 117 I 8 (U), abl. *ar-pa-za* KBo XXII 260 Vs 12, gen. "*ar-pa-as* KBo XXIII 117 I 9 (*CLuv. Lex.* 30) is connected with Ved. *raphita-* "overcome, wretched", *rapas* "infirmity" by Tischler, *HEG* 1, 65–6, Puhvel, *HED* 1, 168–70, and Weitenberg, *u*-Stämme 89–90. This connection depends in part on understanding the meaning of *arpā-* as "bad luck", but it may be closer to "strife" (see Melchert, *CLuv. Lex.* 30). It is possible that *arpā-* belongs with the words given by Pokorny, *IEW* 865 (**rep-* "an sich reißen, raffen") and that these should be divided into two roots, **rep(H)-* "injure, damage, punish" (cf. e. g. the Germanic neuter *s*-stem **rafis-* = Skt. *rapas-* in ON *refsa* "punish", OHG *refsen* id., OE *refsen, respen,* OSax *respian* < Gmc. denom. **refis-jan* "to punish") and **rep-* "seize" (cf. e. g. Lat. *rapere* "snatch, seize", Lith. *aprépti* "seize") or that the divergence in meaning points to semantic differentiation "seize" > "seize in punishment" > "punish" > "damage" within IE. Gk. ἐρέπτομαι "feed on", usually of herbivores, i. e. "crop, graze", if it belongs here, points to **h₁rep(H)-* with **h₁*. A Lycian cognate is *erbbe* "battle, defeat" (Melchert, *Lyc. Lex.*² 18). The plene writing in the second syllable of *arpā* suggests **(h₁)orpó-* with result noun accentuation > [arpā-].

It is possible that the lack of initial *r* in Anatolian is an inheritance from IE (see Lehmann, *Language* 27 (1951) 13–17 and Beekes, *Laryngaltheorie* 60). Greek and Armenian also have no examples of inherited initial **r*, and many instances of initial prothetic vowel plus **r* in these languages that correspond to **r-* in the other IE languages can be explained as showing vocalization of an initial laryngeal, e. g. Gk. ἐρυθρός "red", ἐρεύθρω "make red" : Skt. *rudhira-* "red", Lat. *rūber* id., OE *rēad* id., Lith. *raũdas* id. < IE **h₁reudh-*, **h₁roudh-*, **h₁rudh-*. Lack of initial *r* in Anatolian has also been considered the result of substratum influence (see especially Friedrich, *Heth.*, Petersen and Sommer) and it has been cited as a persistent areal feature, since non-IE languages of Anatolia (Hurrian, Hattic, Turkish) also lack initial *r* (Kronasser, Sommer).

## 8.4. Intervocalic

Čop, *Linguistica* 6 (1964) 37–76 (esp. 44–5, 54, 66, 68); Bernabé Pajares, *REL* 3/2 (1973) 415–56 (esp. 448–53); Eichner, *MSS* 31 (1973) 100 n. 88, *Etym. u. Lautgesch.* 147 n. 71; Kimball, *PW* 868–9.

### 8.4.1. After short accented vowel

Čop posits single liquid after short accented vowels with sporadic and irregular doubling after **ĕ* (44–5, 54), and Eichner posits doubling after all short accented vowels. Numerous clear examples with solid etymologies, however, show that the

usual reflexes are single /l/ and single /r/ after all accented vowels, which are lengthened (Kimball). For examples of variation between single and double spellings see {8.5.}.

#### 8.4.1.1. **l*

**mēlit* "honey": nom.-acc. sg. *mi-li-it* KUB XXX 36 II 1 (MH+), KUB XXXIII 76 L. 15 (MH+), KUB XXXVI 89 Rs. 59 (NH), gen. sg. *mi-li-it-ta-as,* dat. *mi-li-it-ti* (Starke, *StBoT* 31 142–3 n. 627) = [mēlit-] with post-OH °I° for OH */ē/ and analogical /t/ {6.4.4.5.} < IE **mélit-* : Gk. μέλι, gen. μέλιτος "honey" etc.

Examples *CHD* 3, 250–2.

*mālā(i)-* (and *hi*-verb *mālai-*) "approve (of)": 2 sg. pres. *ma-a-la-a-si* KUB XL Rs.! 21 (NH), *ma-la-(a-)si* (NH), 3 sg. pres. *ma-a-la-i* KUB XVII 16 I 9 (NH), *ma-l[a]-a-i* (NH), 3 pl. *ma-a-la-an-zi* KUB XLI 54 III 14 (NH), ptcp. nom. sg. c. *ma-la-a-an-za* e.g. KUB XXI 38 Vs. 26 etc. (NH), nom.-acc. sg. n. *ma-a-la-an* e.g. KBo XXIII 118 II 8 (NH), *ma-la-a-an* e.g. KUB XXII 70 Vs. 50 Rs. 5 (NH), *ma-la-an* e.g. KBo XXIV 118 I 16, II 15 (NH), KUB XXII 70 Rs. 53, 62 (NH) = [mālā(i)-], probably denominative from a **māla-* "good" < **mólo-* : **mel-* in e.g. Lat. *melior* "better".

Examples *CHD* 3, 126–7. For the etymology see *HEG* 6, 102–3 and Oettinger, *Stammbildung* 376–7; the /ā/ of the first syllable reflects the accent of the original adjective, however {1.3.3.5.}.

*hāli-* "fold, corral, ring around the sun or moon": nom.-acc. sg. *ha-a-li* KBo VI 26 II 21 (OH+), *h]a-a-li* KUB VIII 3 Rs. 5 (OH+), gen. *ha-li-ya-as* ib. Rs. 10, dat.-loc. sg. *h]a-a-li* KUB XIII 5 II 21 (MH(?)+), *ha-a-li* KBo VI 34 IV 14 (MH+), dir. *ha-a-li-ya* KUB XII 58 IV 14 (MH+), *ha-[a?-l]i-ya* ib. IV 9, inst. *ha-a-li-it* ib. IV 9, abl. *ha-a-li-az* KUB XXX 10 Vs. 15 (MH), *ha-a-li-ya-az* KUB XXX 13 Vs. 6 (Pre-NH), *ha-li-ya-az* KUB XIII 4 IV 59 (MH(?)+), nom.-acc. pl. *ha-a-li-ya* KUB XXX 13 Vs. 37 = *h]a-a-li-ya[* KUB XXIV 3 II 13 (MH+), dat.-loc. pl. *ha-a-li-e-as* KBo VI 2 + III 48 (OH) = *ha-a-li-ya-as* = [hāli-] < **h₂é/ól-i-*, cf. *hīla-* "court(yard)" < **h₂élo-* lit. "of the enclosure" {2.8.5.2, 8.4.2.1.} : **h₂el-* "protect, enclose", probably also in Gk. ἄλσος "sacred grove" (< *"enclosed space"), ἄλμα id. beside extended **h₂lek-, *h₂elk-* in Skt. *rakṣati* "protects", Gk. ἀλέξω "I ward off, defend", Goth. *alhs* "temple", Lith. *alkas* (*elkas*) "sacred grove", both < *"enclosure" (Melchert, *SHHP* 111–2) {10.3.2.1.}.

Examples *HED* 3, 26–8.

#### 8.4.1.2. **r*

*āra-* "right, proper concern, due" (nom.-acc. pl. n. *a-a-ra,* OH etc.) = [āra-] < **áro-* {2.4.2.}.

*tāru* "tree" (nom.-acc. sg. *ta-a-ru,* OH), abl. sg. *[ta/da]-a-ru-az,* OH+) = [dāru-] < **dóru-* {2.4.1.}; similarly, *sāru-* "booty" (nom.-acc. sg. *sa-a-ru,* NH, dat.-loc. sg. *sa-a-ru-(ú)-i,* NH) = [sāru-] < **sóru-* {2.4.1.}.

*hāran-* "eagle": nom. sg. *ha-a-ra-as* (OH etc.), acc. sg. *ha-(a)-ra-na-an* (OH etc.), gen. sg. *ha-(a)-ra-na-as* (MH etc.), nom. pl. *ha-a-ra-ni-is* KUB XXXIII 62 II 3 (MH?) = [hāras] < **h₃órō* plus PA animate nominative singular ending **-s,* oblique stem [hāran-] < **h₃óron-* {2.8.1.3., 10.2.3.}.



Third person singular present middle ending *-(t)āri*: *-Ca-a-ri, -a-ri, (°t)-ta-a-ri* = [-(t)āri] < **-(t)óri*; imp. *-(t)āru*: *-Ca-a-ru, -a-ru, (°t)-ta-a-ru* = [-(t)āru] < **-tóru.*

A.ŠÀ *kuera-* "field": dat.-loc.sg. *ku-e-ri* KBo III 4 III 81 (NH) = [kʷēra-] < **kʷéro-* : **kʷer-* "cut, shape" in *kuēr-* "cut" etc. (Tischler, *HEG* 4, 611).

*pēran* "in front of" (*pe-(e)-ra-an,* OH etc.) = [pēran] < **pér-o-m.*

$^{NA4}$*pēru-, pēruna-* "rock": nom.-acc. sg. *pe-e-ru* e.g. KBo XV 10 II 5, III 51 (MH), KUB XXXIII 61 I 5 (OH+), dat.-loc. sg. *pe-e-ru-ni* StBoT 25, 140 Rs. 16, dat.-loc. pl. *pe-e-ru-na-as* StBoT 25, 4 III 45 = [pēru-], [pēruna-] < **péru-, *péru-no-*; cf. Skt. *parvata-* "mountain" (Weitenberg, *u*-Stämme 169–171 w. refs.).

*kisseran,* accusative singular of *kissar* "hand": *[ki-i]s-se-ra-an* StBoT 25, 141 L. 5, *ḳ[i-i]s-se-ra-an* KBo XVII 75 I 3 (OH+), *ke-es-si-ra-an* KBo XIX 132 Vs.? 3 (OH+) = [gissēran] < PA **ges-ér-əm* for IE **ĝhés-or-m̥.* The first syllable, with raising of unaccented **e* to OH /i/ {2.6.3.}, and the *e*-vocalism of the suffix in OH suggest a Pre-Hittite suffix accent. The model for the inflection of *kisser* may in part have been provided by the word for "star", attested in the place name $^{URU}$*Haster-*: acc. sg. $^{URU}$*Ha-as-te-ra-an* (NH), *Ha-as-ti-ir-ra-an* (NH), gen. $^{URU}$*Ha-as-ti-ra-as* = [hastēran] [hastēras] < **h₂stér-m̥, *h₂stér-os* : IE **h₂stḗr* "star" {10.3.2.4.}.

For the original inflection of the word for "hand" see Schindler, *IF* 72 (1967) 243–9 and Neu, *StBoT* 26 n. 354.

*sissūra-* "irrigation" (gen. sg. *si-is-su-ú-ra-as,* OH+, *se-(e)-su-ra-as,* NH) = [sissūra-] < **sesúro-* {11.4.3.}; $^{DUG}$*isnūri-, isnūra-* "dough bowl" (nom. sg. *is-nu-ra-as,* MH+, *is-nu-u-ri-is,* MH+, acc. sg. *is-nu-u-ra-an,* MH+, dat.-loc. *is-nu-u-ri,* MH+) = [isnūri-], [isnūra-] < **yesnúri-, *yesnúro-* {2.4.4.2.}.

### 8.4.2. After long accented vowel, diphthong

Inherited **l* and **r* show up as single /l/ and /r/ **after long vowels and diphthongs** (Čop, Eichner, Kimball).

#### 8.4.2.1. **l*

*idālu-* "evil" (*i-da-a-lu,* OH etc.) = [idālu-] < Pre-Hitt. **edwólu-* (with accent after PA **ósu-* "good") remade from PA **edwōl* as in CLuv. *ādduwāl(i)* "evil", ultimately from IE **h₁ed-* "bite, eat" {2.8.1.1.}.

*hīla-* "courtyard" : nom. sg. *hi-i-la-as* KUB VII 41 Vs. 21 (MH) = *hi-la-as* KBo X 45 I 12 (MH+), acc. sg. *hi-i-la-an* e.g. IBoT I 36 I 6 (MH), *hi-la-an* e.g. KBo XXIII 23 Vs. 63 (MH), gen. sg. *hi-i-la-as* e.g. IBoT 1 36 I 4, KUB XX 10 IV 8 (OH+), dat. sg. *hi-i-li* e.g. StBoT 25, 56 IV 17, KUB VII 41 Vs 22, IBoT I 36 I 9, IV 29, 32, abl. *hi-i-la-az* e.g. IBoT I 36 I 74, dir. *hi-i-la* e.g. KBo XXI 90 Vs. 15, 21 (MH), KBo XXV 48 III 10 (OH+/MH+) = [hīla-] < Pre-Hitt. **hḯla-* < **h₂élo-* "enclosure" < *"of the enclosure", vṛddhi formation to **h₂el-* "enclose" {2.8.5.2, 10.3.2.1.}.

*auli-* "windpipe, throat, carotid artery (or sim.)" (*a-ú-li-,* MH etc.) = [āuli-] < **áu-li-* {4.7.2.}.

#### 8.4.2.2. **r*

*auri-* "watchtower": nom. sg. *a-ú-ri-is* e. g. KBo XVI 42 Vs 20 (NH) = [āuri-] < **áu-ri-* : *au(s)-/u-* "look, see" < IE **au-* plus nominal suffix **-ri-* {3.7.4.4.}.

### 8.4.3. Before accented vowel

There are no clear examples of **l* in this position. The normal reflex of **VrV́* seems to be [VrV̄] with single /r/.

LÚ/SAL*arā-* "friend, companion": nom. sg. *a-ra-a-as* (OH+), acc. sg. *a-ra-a-an* KUB XVIII 5 III 19 (U) = [arā-] < **aró-* {2.6.2.}.

DUG*urā-*, a vessel, perhaps "big vessel", GIŠ*urā-*, a wooden object: acc. sg. GIŠ*ú-ra-a-a[n* KBo VIII 72 Vs? 7 (NH), nom. pl. 2 DUG.HI.A*u-ra-a-as* KUB XI 26 V 5 (OH+) = [urā-] < **h₁wr̥H-ó-* or **h₁ur-ó-* : Luv. *ura/i-* "great", Skt. *uru-* "wide", Gk. εὐρύ "wide, broad" etc.

For the identification of Luv. *ura/i-* with GAL "big, great" see Laroche, *RHA* 52 (1950) 43–5, and Melchert, *CLuv. Lex.* 243; for the IE reconstruction of εὐρύ see Peters, *Unters.* 52–3.

*innarā* "forcefully, purposely" (*in-na-ra-a,* MH etc.) = [innarā] < **en-[h₂]norə́* {3.2.1.3., 10.10.1.}.

### 8.4.4. In unaccented syllable

Čop, *Linguistica* 6 (1964) 66, 68, notes that the normal reflexes are single /l/ and single /r/, but there seem to be no clear examples of **r.*

*mēmal* "ground meal": gen. sg. *me-ma-la-as* KUB II 4 V 10 (OH+), KUB XLI 10 Rs. 2 (U), *me-ma-al-as* KBo XI 52 V 4 (OH+), inst. *me-ma-li-it* KUB II 8 I 34 (OH+) = [mēmal-V-] < **mémol-V-* : **melh₂-* "grind" with regular loss of the laryngeal after **o* plus resonant. A zero-grade ***memḷh₂-* should have given ***memalh-*. The double /ll/ of, e. g. gen. sg. *me-ma-al-la-as* KUB VII 5 II 29 (MH+), KUB XII 58 III 23 (MH+), inst. *me-ma-al-li-it* KBo XXI 72 I 9 (OH?+), KBo II 29 Vs 15 (NH), could be analogical from the verb *malla-* "grind".

Examples *CHD* 3, 265–8; etymological refs. *HEG* 6, 191–2. For the position of the accent, note OH nom.-acc. sg. *me-e-ma-a[l]* StBoT 25, 27 Rs! 14.

## 8.5. Geminates not from assimilation

### 8.5.1. °L° and °L-L°

Rarely, the texts have examples of °L-L° for expected single °L°: e. g. dat. *hi-e-e[l]-li* KBo XIX 145 III 44 (U) for *hi-i-li* "courtyard" {8.4.2.1.}; gen. *is-hi-ḫú-ul-la-as* "treaty" KUB XXI 5 II 15 (NH; cf. *is-hi-ú-la-as* ib. II 16), *is-hi-ú-ul-la-ah-hu-un* KBo IV 4 III 68 (NH), otherwise normally *is-hi-ul-V-*.

It does not yet seem possible to account for all of the examples of regular doubled °L-L° that are not geminates resulting from assimilation. Although sporadic spellings with double °R-R° may represent attempts to indicate a trill or spirant, this is



hardly likely as an explanation for all examples of °L-L°. Some are clearly onomatopoetic, e. g. *alla(p)pahh-* "spit" or *kallikalli-* "falcon". Luvian influence may explain some examples of °L-L° in the spelling of individual lexical items and loanwords. One example is perhaps *anna(l)la/i-* "former, earlier, old", which first shows up in NH texts (see *HW²* 74–8) and may have been borrowed from CLuv. The word is declined as both an *i*-stem and as an *a*-stem and is spelled both with -AL-L° and with °L°, e. g.: nom. sg. c. *an-na-al-la-as* e. g. KUB XVIII 26 II 5, 12 (NH), acc. sg. *an-na-al-la-an* KBo II 1 III 14, IV 12 (NH) (*annalan* ib. I 34 etc.), gen. sg. *an-na-al-la-as* KUB XXXVIII 12 I 5, 7 (NH), abl. *an-na-al-la-az* KUB XII 27 L. 13 (NH), KUB XVIII 26 II 5, 12, 17, *an-na-al-la-za* KUB XXXVI 89 Rs 12 (NH), nom.-acc. pl. n. *an-na-al-la* KUB XXXIIII 106 III 50 (NH), gen. pl. *an-na-al-la-as* ib. II 20 (NH); *annalli-*: nom. sg. c. *an-na-al-li-is* KUB XXI 27 I 7 (NH), acc. sg. c. *an-na-al-li-in* e. g. KBo II 7 Vs 7 (NH), nom.-acc. sg. n. *an-na-al-li* IBoT I 33 L. 81 (U; *annalis* ib. L. 11), acc. pl. c. *an-na-al-li-us* e. g. KUB XXXVIII 34 L. 7 (NH), nom.-acc. pl. n. *an-na-al-li* KUB XXXVIII 12 II 16; *a-* or *i*-stem dat.-loc. *an-na-al-li* e. g. KBo XXI 37 Rs 17 (U), nom. pl. c. *an-na-al-li-es* KUB XXXVIII 12 I 4, IV 15 (NH), *an-na-al-li-is* e. g. KBo II 8 I 16 (NH); *annala-*: acc. sg. c. *an-na-la-an* KBo II 1 I 34, II 11, 23, 34, 40, III 2, gen. *an-na-la-as* KUB XXVIII 1 IV 46 (OH+), abl. *an-na-la-az* KUB XLII 103 III 13 (NH), *an-na-la-za* e. g. KUB VII 24 Vs. 1 (NH), *an-na-la-az-za* KUB XXV 20 IV 10 (OH+), nom. pl. c. *an-na-la-as* KUB XXXVIII 23 L. 8 (NH); *annali-*: nom. sg. c. *an-na-li-is* IBoT I 33 L. 11, acc. sg. c. *an-na-li-en* KUB XVIII 32 L. 2 (U), acc. pl. c. *an-na-li-us* e. g. KUB XXI 29 I 16 (NH). The stem *anna-*, if Luvian, would be regular by Čop's Law from an *e*-grade demonstrative stem **éno-* {7.3.3.1.}, cf. Hitt. *a-ni-si-wa-at* "today" KBo III 45 Vs 12 (OH+) with the Hittite treatment **ónV-* > *an-*. However, a demonstrative **anna-* has yet to be recognized in any of the Luvian languages.

Oettinger, *KZ* 99 (1986) 43–4, who derives the agent noun suffix *-(t)talla-* by reanalysis from dental stems plus suffix *-ala-*, i. e. *(°t)t-ala-* → *(°t)ta(l)la-*, considers °L-L° in these largely the result of Luvian influence, but *-ttalla-* occurs in OH, before the period of widespread Luvian influence (e. g. LÚ.MEŠ*pal-wa-at-ta-al-le-es* "criers" StBoT 25, 31 II 5, *ú-na-at-ta-al-la-an* "merchant" KBo VI 2 I 6). Starke, *StBoT* 31 300–1, distinguishes between *-alla-* from **-élo-* in Luvian words with the agent noun suffix *-alli-* used in Hittite texts and *-āla-* in an earlier, more or less nativized layer of pre-historic borrowings from Luvian, but *-alli-* also occurs from OH (e. g. LÚ.MEŠ*na-an-sa-al-l[i-*, a functionary, StBoT 25, 75 II 3). Similarly the instrumental suffix *-ulli-*, which cannot have *ll* by Čop's Law, occurs from OH on (e. g. *is-tap-pu-ul-li* "cover" StBoT 25, 4 IV 32. *par-su-ul-li* "bread crumbs", e. g. StBoT 25, 16 Rs.? 4, StBoT 25, 25 I 53, 54).

### 8.5.2. °R° and °R-R°

While the reflex of intervocalic **r* is usually spelled with single °R° regardless of the length or accent of the surrounding vowels, there are also sporadic spellings with °R-R° that appear to be post-OH and that are somewhat more frequent than spellings with °L-L° for °L°. No word shows consistent °R-R° after an accented vowel, but variation between °R° and °R-R° is found in this environment. Since the spelling

with single °R° is by far the more common, and most words with **r* after accented vowel show single °R° without variation, it is possible that the spellings with °R-R° are attempts to indicate a trill or spirant, cf. Čop, *Linguistica* 6 (1964) 44, and *Linguistica* 8 (1966/8) 56–7.

*ku-er-ri* KUB XXIV 12 III 19 (NH), *hi*-conj. 3 sg. pres. of *kuēr-* "cut" (< **k$^{w}$ér-* {6.3.4.1.}; single °R° is otherwise normal in this paradigm, cf. 1 sg. pret. *ku-e-ru-un* 315/u L. 6 (*Stammbildung* 119), 3 pl. pret. *ku-e-re-er* KUB XXXIIII 106 III 42 (NH).

*kate(r)ra-* "lower"; with °R°-: e. g. dat. sg. *kat-te-ri* KBo IV 2 I 30, 35, 43 (OH+), abl. sg. *kat-te-ra-az* KUB X 17 III 10 (OH+), nom. pl. c. *kat-te-re-es* KUB XXXIV 90 L. 3 (U), nom-acc. pl. n. *kat-te-ra* IBoT I 36 IV 15 (MH), dat.-loc. pl. *kat-te-ra-as* KUB XXX 11 Vs 2 + KUB XXXI 135 Vs 8 (MH), KUB XXXI 127 + XXXVI 79 I 41 (MH+); with °R-R°: nom. sg. c. *kat-te-er-ra-as* KUB XVII 14 IV 17 (NH), dat. sg. *kat-te-er-ri-ma* KBo X 24 IV 31 (OH+), abl. *kat-ti-ir-ra-az* KBo X 24 IV 20, *kat-te-er-ra-az* KBo IV 9 IV 34 (OH+), dir. *kat-te-er-ra-(ya)* (*katterra* + *ya* "and") KBo VI 29 II 12 (NH), *kat-te-er-ra* KUB X 3 II 23 (OH+), nom.-acc. pl. n. (?) *kat-te-er-ra-(ma) (hanessar)* KUB XIII 20 I 35, (MH+) acc. pl. c. (as nom.) *kat-te-er-ru-us* KUB XVII 14 II 21; also *kat-te-ra-ah-h°*, *kat-te-er-ra-ah-h°* "make lower": e. g. 1 sg. pres. *kat-te-ra-ah-hi* KUB XIII 2 III 27 (MH(+?)); *kat-te-er-ra-an-te-ni* KUB XIII 20 I 34, perhaps [katēra-] < **kat(a)-éro-* {3.11.1.2.}.

*iskār-* "stab, stick, pierce": °R-R° occurs only in 3 sg. pret. *is-qa-ar-ri-et* KBo III 16 +II 12 (OH+) and durative *iskarranniya-* (3 pl. imp. *is-kar-ra-an-ni-ya-an-[du]* KBo VIII 53 II 21, MH) beside 3 sg. pres. *is-ka-a-ri* StBoT 25, 68 Rs. 11, *[i]s-ga-a-ri* KBo XV 10 + III 28 (MH), *is-qa-a-ri* ib., I 38, 3 pl. *is-ga-ra-an-zi* (OH etc.), ptcp. *is-g/ka-ra-an-t °/d°-* (OH etc.) = [skāri], [skrănțsi] < **skórei* : **skr-énti.*

*ispa(r)r-* "strew, spread, scatter, shatter"; the earliest spellings have single °R° and occur in OH: 3 pl. pres. *is-pa-ra-an-zi* StBoT 25, 31 III 10, *is-pa-ra-a[n-zi* StBoT 25, 48 Rs.? 3. The third person singular present is not well attested, but it appears to have been *ispāri* with single °R°, the normal reflex of **r* after *ó*: e. g. *is-pa-a-ri* KBo X 45 II 20 (MH+), KUB XX 46 III 8 (OH+). The spelling *is-par-r°* occurs in late MH in third person plural present *is-par-ra-an-zi* KUB XXIX 45 I 14 and is also found in OH+, MH+ and NH texts in other forms of the paradigm: e. g. 2 sg. pres. *is-par-ra-at-ti* KUB XXI 27 III 30 (NH), 3 sg. *is-par-ra-an-zi* KBo XX 32 II 3 (OH+), KBo XXI 10 L. 12 (MH+), KUB IX 31 III 62 = KUB IX 32 Vs. 38, Rs. 27 (MH+) = *is-par-ra-an-[zi]* KUB XLI 17 III 11 (MH+), 1 sg. pret. *is-par-ra-ah-hu-un* KUB VII 60 II 27 (NH), KUB XVII 27 II 12 (OH+), 3 sg. *is-par-re-er* KUB XXXIII 114 IV 12 (NH), *is-par-ra-an-du* KBo VI 34 IV 12 (MH+), ptcp. nom. sg. c. *is-par-ra-an-za* KBo XV 2 IV 2 (NH), KBo XVII 61 Vs. 17 (MH+), KUB XVII 31 I 24 (NH), nom.-acc. sg. n. *is-pa-ra-ra-an* KUB IX 28 I 15 (OH+), *is-par-ra-an-da* KBo XV 2 I 10 = KUB XVIII 15 IV 4 (NH), *is-par-ra-an-da-as* KUB XXX 15 + XXIX 11 Vs. 49 (OH+), with °R-R°, cf. also *isparriya-* "spread(?), fly(?)", 3 sg. pres. *is-par-ri-ez-zi* KUB XIV 1 Rs. 91 (MH). These forms are perhaps [spāri], [spăranțsi] < Pre-Hitt. **spór-ei*, **spr-énti* beside **sp̥-ye/o-* in *isparriya-*, if the latter was not formed secondarily within Hittite; cf. Gk. σπείρω "I scatter, sow", Arm. *spṙem* "I scatter", RV. *sphurati* "darts, bounds, kicks".

As Puhvel, *HED* 2, 441–1, notes, attempts to separate *ispar-* and *isparr-* as **spor-* and **sperH-* will not work, since both spellings occur with the same meanings.



*mē(r)r-* "disappear" has single °R° in 3 pl. pret. *me-re-er* KBo XXII 2 Vs 13 (OH), but other forms (attested only in texts written down in the NH period) have prevocalic °R-R°: midd. 3 pl. imp. *me-er-ra-an-t[a-ru* KBo X 37 II 12 (OH+), *me-er-ra-a-an-ta-ru* ib. II 14; ptcp. nom. sg. c. *me-er-ra-an-za* (CHD), nom.-acc. pl. n. *me-er-ra-an-da* VBoT 24 III 27, 30 (MH+). It is possible that these have analogical *e*-grade. However, Barton, *KZ* 98 (1985) 13–19, noting that the spellings with °R-R° occur in what should be weak stem forms, suggests that *me-er-r°* continues zero-grade **mr-* with graphic or real anaptyxis (i. e. *me-er-ra-an-t°* = [mrant-] < **mr-ént-* or [merant-] < **m$_{e}$r-ént-*). Given that the regular reflex of pretonic **r* seems to be single *r* otherwise {8.4.3}, this might explain the doubling. However, it is not possible to find conclusive evidence for anaptyxis in other initial clusters with **r* {1.16.6.1., 3.9.2.}.

Examples *CHD* 3, 293–5.

## 8.6. Preconsonantal

### 8.6.1. **l*

Preconsonantal **l* remained, except before **n* {8.6.4.}.

*māld-* "recite, vow" (3 sg. pres. *ma-(a)-al-di*, OH etc., *ma-(a)-al-ti*, OH etc.) = [māld-] < **móld[h]-* {2.4.1.}; *alpā-* "cloud" (nom. sg. *al-pa-(a)-as*, OH etc.) = [albā-] < **albhó-* {2.6.2.}; $^{GIŠ}$*ēlzi-* "scale(s)" (nom.-acc. *(e)-el-zi*, OH, etc.) = [ēlțsi] perhaps from dual **h$_1$élt-ih$_1$* {10.11.1.}.

### 8.6.2. **r*

Generally, preconsonantal **r* remained: e. g. *wawarkema-* "door hinge" (*wa-wa-ar-ke-ma(-)*, MH etc.) : **h$_2$worĝ-* "turn" {10.1.1.2.}; *parsina-*, *parsēna-* "upper thigh, buttock" (*par-si-na-*, *par-se-(e)-na-*, MH, OH+ etc.) < **persneh$_2$* or **persno-* {3.2.2.1., 3.9.3.}; *kūrka-* "foal" (*ku-u-ur-ka-*, OH) < **kúrko-* {2.4.4.2.}. For sporadic loss see {8.8.2.}.

### 8.6.3. Liquid plus **y*

Čop, *Linguistica* 6 (1964) 71–3; Georgiev, *Orbis* 27 (1978/9) 45.

Although Georgiev suggests that liquids were geminated before **y*, this change cannot be regular. There is little evidence for such gemination of **l*, and a distinction between [ly] and [lly] is maintained virtually consistently in *mi*-verbs in *-iya-*, substantives in *-iya-* and in words in which [lya] or [lly] is morphologically isolated, e. g., with *ly*: *ilaliya-* "bury", *ermaliya-* "be ill", *haliya-* "kneel", $^{LÚ}$*haliyami-*, a cult functionary, $^{LÚ}$*haliyatalla-*, a cult functionary, *hulāliya-* "wind, spin" (cf. *hulāli-* "spindle"), *kaleliya-* "surround", *pittuliya-* "anxiety", *tuggaliya-* "besiege", *tūliya-* (c.) "council"; with *lly*: $^{LÚ}$*halliyari-*, a cult functionary, *talliya-* "call on the gods". A number of words show consistent [ry], which seems to be the regular treatment after an accented vowel: e. g. *ariya-* "investigate using divination", *hāriya-* "dig", *kāriya-* "cover",

*kariya-* "stop, rest", *dāriya-* "become tired", *tūriya-* "harness", *weriya-* "call on", *wisūriya-* "oppress, stiffle, suffocate". Čop, who considers single [ly] and [ry] the regular treatment, notes that words with geminate liquid plus *y* are usually derivatives of bases with geminates, e. g. *hulliya-* "fight" (OH+, NH) for earlier *hulle/a-* or *marriya-* "melt, disolve" (active OH etc.?) beside *marra-* (MH etc.). In denominative verbs in *-iya-* the spelling of the liquid usually parallels that of the base noun or adjective.

A handful of words shows variation between [ry] and [rry]. However, since most of the words in which /r/ is followed by /y/ usually show spellings in single °R° without variation (e. g. *mi*-verbs in *-iya-* with root or stem in final /r/) the forms with double °R-R° are probably best explained as showing sporadic doubling comparable to that occurring between vowels {8.5.2.}. In some cases doubling may be a by-product of the scribes' using CVC signs, but spellings with doubling also occur without CVC signs.

*nahsa(r)riya-* "fear": with °R°: 3 sg. pres. act. *na-ah-sa-ri-ya-az-zi* (NH), 3 pl. *na-ah-sar-ya-an-zi* (MH), *na-ah-sa-ri-ya-an-zi* (NH), midd. stem *na-ah-sar-i-ya-* (NH), *na-ah-sa-ri-ya-* (OH+, NH), 3 pl. pret. *nja-ah-sa-ri-an-ta-ti* KUB XXXVI 100 Rs. 4 (OH), it. stem *na-ah-sa-ri-is-k°* (NH); with °R-R°: 2 pl. pret. act. *na-ah-sar-ri-ya-an-da-ri* KBo V 6 II 6 (NH), 3 sg. pret. *na-ah-sar-r[i-ya-a(t-ta-at)]* KBo XVI 1 IV 23 (NH), 3 pl. *na-ah-sar-ri-ya-an-ta-at* e. g. KUB XIX 13 I 49 (NH), it. stem *na-ah-sar-ri-is-k°* (NH).

Examples *CHD* 3, 345–6.

*antūr(r)iya-* "inside, interior": nom. s.g. c. *an-tu-u-ri-ya-as* KUB VIII 75 I 16 (NH), *an-du-u-ri-ya-as* KUB XLIII 38 Rs. 22 (OH+), *an-dur-ya-as* e. g. KBo IV 14 II 27 (NH), KUB VIII 75 I 12 (NH), KUB XLII 16 IV 7 (NH), but °R-R° in: *an-dur-ri-ya-as* KUB XXXI 65 Rs. 6 (U), *an-du-ur-ri-ya-as* KUB VI1 Vs. 8 (NH).

### 8.6.4. Assimilation of **ln* to *ll*

Georgiev, *Orbis* 27 (1978/9) 45; Kimball, *PW* 330–1 w. refs.; Melchert, *AHP* 65–6, 81–2; Puhvel, *KZ* 83 (1969) 65–6, 68 = *AnIE* 211–2, 214; *HS* 100 (1987) 241; Stefanini, *Paideia* 29 (1975) 257–67; Weitenberg, *u*-Stämme 182–3, n. 463.

Assimilation of **ln* to [ll] seems likely. There are no convincing counter examples (synchronic sequences of [ln] can all be secondary) and at least one word, *wēllu-* "meadow" may show this treatment. Other words cited as examples, however, do not have convincing etymologies.

*wēllu-* "meadow": nom. sg. *ú-e-el-lu-us* e. g. KBo VI 34 IV 13 (MH+), dat. sg. *ú-e-el-lu-i* KUB XVII 10 I 12 (MH), KUB XXXIII 10 Rs. 4 (MH), nom.-acc. pl. n. *ú-e-el-lu-w[a]* (= *wēllu* + *-(y)a-* "and") StBoT 25 109 II 16, *ú-e-el-lu* VBoT 58 I 10 (MH+) = [wēllu-] < **wél-nu-* beside Gmc. **wal-þu-* < IE **wol-tu-* in ON *vǫllr* "meadow" and IE **wel-tu-* in W. *gwelt* "grass", Corn. *gwels* id. (Puhvel, *KZ* 83 = *AnIE* 211–2). The root etymology is undoubtedly correct, and the geminate should probably result from assimilation, since **l* became single [l] after a short accented vowel {8.4.1.1.}. As Puhvel notes, a nominal suffix **-nu-* is found also in e. g. *sēknu-* "cloak" (< **sék-nu-* : IE **sek-* "cut"). Other proposed reconstructions can probably be ruled out; **wel-su-* (cf. Puhvel's derivation of ORuss. *Volosŭ* "cattle god" (lit. "deified pasture") < **wol-su-*) is impossible if **ls* shows up as [ls] in **als-* "give allegiance to" and *palsa-* "way, time" {11.6.2.}, and **wel-tu-* as in Celtic can probably also be ruled out (cf. e. g. *halhaltūmar* "corner" with **lt* > [lt]).



Examples and discussion Kimball, *PW* 329–30; Weitenberg, *u*-Stämme 181–4. Puhvel's connection of Gk. Ἠλύσιον (πεδίον) as **wl̥-nu-* is uncertain, however (see instead Burkert, *Glotta* 59 (1960) 208–14), as is Georgiev's connection (*Orbis* 27 (1978/9) 45) of Lat. *vallis* "valley" < **wal-ni-* and Gk. Ἦλις (*Fᾶλις*) (place name Elis). There is no support for either of Čop's reconstructions **wes-lu-* or **wen-dhlu-* (*Linguistica* 6 (1964) 44 n. 65c, *Linguistica* 8 (1966/8) 55). Melchert, *SHHP* 50 n. 95, reconstructs **welHw-*, but this should have become **walla-* with lowering of **e* before **rH* {3.2.2.3.}.

Puhvel's connection (*HS* 100, 241) of *hallanniya-* "lay waste, ravage" as **hall(a)-* "destroy" (*vel sim.*) plus durative suffix *-nniya-* and *halluwai-* "violence, fight, brawl" with Gk. ὄλλυμι "destroy, kill" is attractive semantically, but the derivations he proposes will not work phonologically. The Greek aorist ὤλεσα shows that the root of the latter must have been **h₃elh₁-*. The strong stem of a nasal infix verb from this root **h₃l̥-ne-h₁-* would presumably have become **halné-* (> **hallē-*), and there is no evidence supporting the vocalization of the root-final **h₁* to /u/ (**h₃l̥-n-h₁-* > **hallu-*) in this environment that Puhvel assumes for the weak stem. It is possible, however, that **halla-* reflects a weak stem **h₃l̥-n-h₁-* > **haln(n)(a)-* > **hall(a)-*.

**wallu-* "praise" in iterative *wallusk-* < **wal-n(e)u-* (Čop, *Linguistica* 8 (1966/8) 54) can be explained as **walh₁-* with vocalization of **h₁* after **l* {10.9.2.}. The connection of *hulle/a-* "fight" with Gk. ὄλλυμι "destroy, kill" and derivation from a nasal present **h₃l̥-ne-h₁-* proposed by Szemerényi, *KZ* 73 (1956) 73–4, will not work, since **h₃l̥-* did not result in *hull-* with vocalization of the syllabic resonant to /u/ {5.4.3.}.

Synchronic sequences of [ln] seem to be secondary. *sallanu-* "raise, rear, lit. "make big" (*sal-la-nu-*, OH etc.) was probably pronounced [sallnu-], but the *nu*-verb was clearly related productively to its base *salli-* "big" and [lln] can be analogical. The stem of *wīlna-*, *wilnā-* "clay" (gen. sg. *ú-i-il-na-as*, OH, *ú-il-na-a-as*, OH) also shows up as *wilān-* in acc. pl. *ú-i-la-a-nu-us* StBoT 25, 137 II 6 and inst. sg. *ú-i-la-ni-it* KUB XIII 2 II 15 (MH?), and as *ulin-* in dat. sg. *ú-li-ni* KBo III 46 Vs 13 (OH+). The word does not seem to have a good etymology, and the allomorphy is difficult to explain (see Oettinger, *KZ* 94 (1980) 52 n. 29) but [ln] might have been restored analogically in the genitive singular if [wīln-] is original, or a stem [wīln-] might have arisen through syncope from **wílan-* {3.7.2.}.

### 8.6.5. **rs*

Benveniste, *BSL* 33 (1932) 139; Čop, *Linguistica* 8 (1966/8) 51–2; Goetze-Pedersen, *MS* 50; Kimball, *PW* 181–4, 735–6; Kronasser, *VLFH* 221; Melchert, *AHP* 163; Neu, *Fs Neumann* 206–7; Neumann, *KZ* 77 (1961) 79–81; Otten-Souček, *StBoT* 8, 58; Sturtevant, *Language* 11 (1935) 39–40.

At least one word, *ārra-* "arse" < **h₁órso-* : Gk. ὄρρος id. and Gmc. **arsa-* id., seems to show asimilation of **rs* to [rr] after an original short accented vowel. Other alleged examples of this treatment, however, are doubtful. The language also preserves many examples of synchronic [rs], suggesting that assimiliation occurred only after short accented vowels. Some examples of [ars] can continue zero-grade **r̥s* (Čop, Kimball, Melchert), and similarly, /kurs/ can continue **kʷr̥s-*, and /hurs/ can continue **H₂/₃wr̥s-* {5.4.1.1.}. In several words, plene writing suggests that precon-

sonantal **rs* was retained after an originally accented vowel. Preconsonantal **rs* may also have been retained in unaccented syllables. As Otten-Souček and Neu note, synchronic [rs] is retained in sandhi.

### 8.6.5.1. Prevocalic **rs* after short accented vowel

After an accented vowel prevocalic **rs* become [rr] and the preceding vowel was lengthened.

Although attempts have been made to explain $^{UZU}$*ārra-* "arse, anus, croup of a horse" as [arr(V)s] or [ar(V)s] with graphic or real anaptyxis (Benveniste, Neumann, Puhvel), the word probably shows a regular prevocalic treatment **ĺrsV* > *ĺrrV̄* (Kimball). It has plene writing in the ablative singular *a-ar-ra-az-ma-as-si-kan* (*ārraz-ma-ssi-kan*) KUB XXXV 148 + III 3 (OH+), cf. *ar-ra-az-ma-as-si-kan* ib. III 5, *a-ar-ra-az* KUB XLV 26 II 6 (U) = [ārra-] < **h₁órso-* : Gk. ὄρρος id., παλίνορσος "backasswards", Gmc. **arsaz* in OHG, ON *ars*, OE *ears*, OFris. *ers* (Čop, Kimball, cf. also Eichner, *MSS* 31 (1973) 54). *i*-stem forms occur also, although *a*-stem forms are more numerous, e.g.: nom. sg. *ar-ri-is-me-e[t* KBo X 37 II 24 (OH+), *[a]r-ri-is-sa* ib. III 49. But *ar-ru-us* KUB XXXI 71 III 34 (NH), which refers to the croup of a horse, can be construed as an *a*-stem accusative plural in form, though it is subjective complement in function (see *HW*²); Armenian *or* (from *i*-stem **h₁ors-i*) and Old Irish *err* "end" (probably from *a*-stem **h₁ers-eh₂-* with *e*-grade) suggest that the word was originally a root noun and that thematization was independent in the various languages. Clear evidence for retention of preconsonantal **rs*, however {8.6.5.2.}, suggests that *ārra-* reflects an *o*-stem comparable to the Greek and Germanic words and makes it unlikely that *arris* and *arrus* reflect an athematic nominative from IE **h₁órs* with epenthetic /i/ or epenthetic /u/.

Examples *HW*² 234, *HED* 1, 122.

*tarru-* (*tar-ru-u*, OH+), translated as "belly-down, prone" and derived from a locative **tors-séu* : OIr. *tarr* "hindpart", *torrach* "womb" and MW *torr* "belly" by Čop and Kimball (456–8), is uncertain, cf. Weitenberg, *u*-Stämme 141–2 w. refs., who translates "wide, spread out" and Starke, *StBoT* 31, 387, who translates "abundant"; *ārr-* "wash", connected with *ārs-* "flow" by Goetze-Pedersen and derived from **h₁ers-* by Kimball (182–3), is better derived from **h₁erH-* {10.8.9.}.

### 8.6.5.2. Preconsonantal **rs*

Before consonants **rs* was retained and a preceding vowel was lengthened if accented.

*ārs-* "flow": 1 sg. pres. *a-ar-as-mi*, 3 sg. *a-ar-as-zi*, *ar-as-zi*, *(a)-ar-zi* = [ārsmi], [ār(s)tsi] < pres. **h₁érsmi*, **h₁érsti* etc.; cf. Skt. *arṣati* "flows" (thematized); for **é* > /ā/ here see {3.2.2.1.}. The long vowel of the singular is also found in the derivatives *ārsanu-* n. "stream, flow" (nom.-acc. sg. *a-ar-sa-nu* KUB XXXVI 89 Rs. 19, NH), probably = [ārsnu-] (other examples *HW*² 345; *HED* 1, 172) and *ārsa(r)ssūr* "stream" (nom.-acc. sg. n. *(a)-ar-sar-su-(u)-r°*, MH etc.) = [ārsarssūr]. If prevocalic **rs* became [rr], then [rs] is analogical.

Examples *HW*² 345, *HED* 1, 172.



*hārs-* "break up earth, till": One example, 3 sg. pret. *ha-a-ar-as-ta* in 214/b 7f (*Stammbildung* 192) shows plene writing, suggesting a full-grade vowel, i.e. **[h₂árh₃s-t] > [hārsta], perhaps from a present with *s*-extension beside **h₂érh₃-* in e.g. *harrā-* "damage", Gk. ἄροτρον "plow", Lat. *arātrum*.

See Oettinger, *loc. cit.*, for etymological discussion.

In *kuērs-* (hap. leg., 1 sg. pret. *ku-e-er-su-un*) "I cut off (someone's head)" KBo X 2 II 48 (OH+) from a sigmatic aorist **k$^{w}$ērs-* "cut" {3.2.2.1.}, [rs] should be analogical from forms with endings in initial consonants, e.g. PA 3 sg. pret. **k$^{w}$érs-t* > **k$^{w}$ērsta*.

$^{GIŠ}$*parsdu-* "bud": nom. sg. *par-as-du-us* KUB XVII 10 I 16 (MH), KUB XXXIII 24 I 14 (MH+), KBo XXI 19 I 8 (U), *[p]ar-as-du-us* ib. I 9, *[pa]r-as-du-us* ib. I 10, acc. *par-as-du-un* KUB XII 44 II 30 (NH), KUB XXVIII 101 III 8 (OH+), KUB XLIV 53 II 18, 19 (NH) = [pārstu-] < **pórs-tu-* or **pérs-tu-* : Gk. πτόρθος "shoot", πτόρθος · πτόρθος, κλάδος, βλαστός (Hesych.), Arm. *ort'* "vine".

For the etymology see Hiersche, *KZ* 91 (1977) 51–3 and Weitenberg, *u*-Stämme 236 w. refs.

In *pars(i)na-* "upper thigh, buttock, cheek (of the face)" and *parsnā(i)-* "squat" there is no independent evidence for the position of the accent; **pérsnah₂-* > [pārs(ē)na-] or **persnáh₂-* > [pars(ē)nā-] are both possible analyses {3.2.2.1.}.

### 8.6.5.3. **rs* in unaccented syllable

It is likely that **rs* is also retained after unaccented vowels both before consonants and before vowels. One example is perhaps *warsa-* "dew", which does not have plene writing, although it is not very common and is not found in archaic texts: nom. sg. *wa-ar-sa-as* KUB V 1 IV 71 (NH), KUB IX 15 II 7 (NH) *wa-ar-sa-a[s]* ib. II 6, $^{D}$*u-wa-ar-sa-as* "deified dew" KUB XVI 37 IV 5 (NH), acc. *wa-ar-sa-an* KUB XXXIV 8 + L. 16 9 (OH+), *wa-ar-s[a-an]* ib. 18 = [warsa-], [warsā-] (?), cf. also HLuv. *warsa-*. *warsa-* is from an agent noun **h₂wors-ó-* = Skt. *varṣá-* "rain", or from **h₂wors-éh₂* (see also Oettinger, *IH* 19). For **h₂* note Cretan ἀέρσᾱ < PGk. **ἀϝερσᾱ* (Hmc. ἐέρση is from **ἐ(ϝ)έρση* with assimilation, as in ἐέδνα "wedding gifts" < **ἀϝεδνα* beside ἀνάεδνος "without wedding gifts"). The *o*-grade root is necessary to explain the lack of **h₂* in Anatolian, since **h₂Ro* became *Ro* in IE {10.1.1.2.}. Since *ārra-* "arse" < **h₁órso-* indicates a treatment **ĺrsV* > *ĺrrV*, the root vowel of *warsa-* was presumably unaccented. The lack of plene writing for the suffix vowel may be accidental, or it may indicate an analogical /-ă-/ from root-accented paradigms.

Neither *warsiya-* "pour" (*wa-ar-si-ya-*) nor the causative *warsanu-* (*wa-ar-sa-nu-*) shows plene writing. *warsūla-* "drop, aroma" has plene writing occasionally in the dative singular (used adverbially): *wa-ar-su-ú-li* KUB XX 99 III 21 (OH+), *[wa-a]r̥-[s]u-ú-li* KUB XXV 37 + XXV 13 I 42 (NH), beside *wa-ar-su-li* (10 ex.), nom. sg. *wa-ar-su-la-as* e.g. KUB XXIV 1 I 11 (Pre-NH), KUB XVII 10 II 7 (MH) (7 ex), acc. sg. *wa-ar-su-la-an* (3+ ex.), nom. pl. *wa-ar-su-lis* (2 ex.), gen. *wa-ar-s[u-la-as]* KUB XV 34 II 32 (MH?), suggesting a reading [wārsūl-V-] with single [l] after long vowel.

Another possible example is *tarsant-* "dried": nom-acc. sg. n. *tar-sa-an* (NH), nom.-acc. pl. n. *tar-sa-an-ta* (NH), perhaps [tarsant-] from an interative-causative **tors-éye/o-*, ptcp. **torséyont-*, cf. Lat. *torrēre* "dry up" {3.11.1.2 }.

For *wars-* "pluck, harvest" (*wa-ar-(as)-s°*, OH etc.) an acrostatic **h₂*-present **wór-sei* : **wérs̥ti* is reconstructed by Melchert, *SHHP* 10, 11 w. n. 7, and Jasanoff, *Heth.*

*u. Idg.* 79. If **órsV* regularly became *ārr-* in *ārra-* "arse", however, [rs] would have to be analogical from a zero-grade weak stem **wr̥s-* > ***urs-* (for the zero-grade in *h₂-* presents cf. weak stem [kănk-] "hang" < **k̂n̥k-* {5.3.4.}), and the full-grade of plural and participle forms would have to be secondary.

#### 8.6.5.4. *rz* from **rs*

A sequence of PA secondary **rs* became *rz* = [rts]? in *hasterza* "star" < PA **h₂stḗrs* from IE **h₂stḗr* "star" plus PA animate nominative singular ending **-s* (Melchert, *Sprache* 29 (1983) 8). Another example of this treatment may be *harzazu(ta)-* "bread mash" if, as Puhvel, *HED* 4, 206–9, suggests, this can be derived from a **harsan-suw-ant-* "bread-fill" with syncope. In several other words, *rz* beside *rs* may be a Luvicism, e.g. *marzasasta(r)ri-* "desecration, profanement, sacrilege" (from MH) beside *mars-astarri-* (*CHD* 3, 198–9, Tischler, *HEG* 6, 145–6, Starke, *StBoT* 31; *arziya-* "cultivated land" (from MH), beside Hitt. *ari-* "planting, cultivation", and *ārā(i)-*, *ārsiya-* "cultivate, plant" (Puhvel, *HED* 1, 187, Starke, *StBoT* 31, 393–6, Melchert, *CLuv. Lex.* 33). $^{É}$*arzana-* "inn, hostel, brothel" and derivatives beside $^{É}$*arsana-* may be a loanword from Sum. *ar.za.na* and Akk. *arzan(n)a* "barley(groats)" after the food typically served in such places (Puhvel, *HED* 1, 185–6 w. refs.).

### 8.6.6. Liquid plus laryngeal

Prevocalic sequences of liquid plus laryngeal became geminate liquids.

#### 8.6.6.1. **lH*

With **lh₁*: *huwallis* "firecone" (*hu-wa-al-l°*, *hu-ul-l°*) = [hwallis], [hŭllis] < **h₂wélh₁-es* {10.8.1.}; *walla-* "praise" (*wa-al-l°*) = [wall-] < **walh₁-* {10.8.1.}; *kalless-* "call on", invite" (*kal-le-es-s°*), perhaps [kallēss-], ultimately from **kalh₁-éh₁-* {10.8.1.}; with **lh₂*: *salli-* "big" (*sa-al°*, *sa-al-l°*) = [salli-] < **sélh₂-i-* {10.8.2.}; *malla-* "grind" (*ma-al-l°*) = [malla-] < **mélh₂-* {10.8.2.}; *iskallā-* "slice" (*is-kal-la-(a)-*, *is-gal-la-*) = [skallā-] < **skelH-* {10.8.9.}; with **lh₃*: *walh-* "strike" < **welh₃-* {3.2.2.3.}.

#### 8.6.6.2. **rH*

With **rh₂*: *tarra-* "be able" (*tar-ra-*) = [tarra-] < **térh₂-o-* {10.8.3}; with **rh₃*: *sarra-* "divide, transgress an oath" (*sar-ra-*) = [sarra-] < **sérh₃-o-* {10.8.4.}; *harra-* "damage" (*har-ra-(a)-*) = [harrā-] < **h₂erh₃-ó-* {10.8.4.}; with **rH*: *ārr-* "wash" (*a-ar-r°*) = [ārr-] < preconsonantal **h₁érH-* {10.8.9}.

## 8.7. Postconsonantal

### 8.7.1. **l*

Inherited postconsonantal **l* remained, e.g. *maklant-* "thin" (*ma-ak-la-an-t°/d°*, MH etc.) = [maklānt-] < PA or Pre-Hitt. **maklént-*, extended form of a **makla-* "thin" from **mak-lo-* or **mh₂k-lo-*, ultimately related to Lat. *macer* "thin, lean" (see *HEG* 6, 98–9).



In initial clusters **ml* probably remained as [ml] spelled MAL° or as MI-L°M, ME-L° with echo vowel in *malisku-*, *milisku-* "weak, light" (nom.-acc. sg. n. *ma-li-is-ku* KUB XXIII 72 Rs. 53, MH, abl. *ma-li-is-ku-wa-az* KBo III 13 Rs. 13, MH?, nom. sg. c. *mi-li-is-ku-us* KBo I 42 I 14, NH, vocab.) = [mlisku-] < **mlisku-* < IE **mlisḱu-*, cf. perhaps **melh₁-* in Gk. μαλακός "soft, weak", βλάξ id. (*HEG* 6, 104–5) and *maliddu-*, *miliddu-*, *meliddu-* "sweet" (nom.-acc. sg. n. *ma-li-id-du* KUB XVII 10 II 26, MH, *mi-li-id-du* ib. II 17, KUB XXXIII 62 II 16, MH?, *[m]e²-li-id-du* KUB XXXIII 75 II 14, OH+) = [mlitu-] < IE **mlitu-*, cf. Gk. βλίττω "rob bees of honey" < **mlit-ye/o-* (*HEG* 6, 209–10). For the spellings with echo vowel see {1.16.6.1., 3.9.2.}.

Some examples of medial postconsonantal /l/ arose through syncope {3.7.1.}: *kekla-* or *kikla-* "chickpeas" (*ke-ek-la-an* or *ki-ik-la-an*, NH) = [kēkla-]? or [kiklā-]? < **kékolo-* or **kekoló-*; *marlant-* "fool" (*mar-la-an-d°*, NH) and *marlātar* "foolishness, stupidity" (*mar-la-tar*, MH etc.) from **[mārla-]* or **[marlā-]* "foolish" < **mṓr-o-lo-* (**mṓr-e-lo-*) or **mōr-o-ló-* (**mōr-e-ló-*).

### 8.7.2. **r*

Postconsonantal **r* remained. Nasals and /s/ were apparently geminated before /r/, and occasionally this gemination is indicated with the help of graphic vowels, i.e. °C-CA-AR-: *paprātar* "sin, impurity" (*pa-ap-ra-a-tar*, OH etc.) = [paprādar] from a **papra-* "impure" {3.11.1.}; *gim(ma)ra-* "field" (*gi-im-r°*-, OH etc., *gi-im-ma-r°*, MH) = [gimmrā-] < **ĝhemró-* {7.6.2}; *kiss(a)r-* "hand" (e.g. dir. sg. *ki-is-ra-a*, dat. sg. *ki-is-ri-i*, *ki-is-sa-ri-(i)*, all OH) = [gissr-] < **ĝhesr-* {11.5.2.1.}.

Initial clusters of [Cr] are written CV-RV-, CAR-V(C) and sporadically as CAR-R°; for the interpretation of CE-RE- as [Cre] see {1.16.6.1.}.

*karaitt-* "flood" (nom. sg. *ka-ra-i-iz*, OH, *ge-re-ez*, OH+) = [grāits], [grēts] < **ĝróit-s* {4.8.2.}; *karāp-* "devour, fressen" (3 sg. pres. *ka-ra-a-pi*, OH etc., 3 sg. pret. *ka-ra-ap-ta*, OH?, 3 pl. pret. *ka-re-e-pe-er*, MH) = [grāb-], [grēb-] : **ghrebh-* {6.4.3.1.}; *terepp-* "plow" (*te-re-ep-p°*, MH etc.) = [trēp-] < **trép-* {6.4.1.1.}; gen. *te-ri-ya-as* "three", *te-ri-ya-an-na* "third", *te-ri-ya-al-la*, a drink, $^{LÚ}$*tar-ri-ya-na-al-li-* "third man", with [tri-] < **tri-*, **try-* "three" {3.9.2.}.

## 8.8. Loss of *r*

Benveniste, *BSL* 33 (1932) 139; Čop, *Linguistica* 8 (1966/8) 51–2; Eichner, *MSS* 31 (1973) 80 n. 78; Friedrich, *HE* 33; Goetze-Pedersen, *MS* 31–2; Hoffner, *JNES* 31 (1972) 35; Kammenhuber, *MIO* 3 (1955) 356, *Fs Sommer* 99; Kimball, *PW* 181–4, 735–6; Kronasser, *VLFH* 72, 221, *EHS* 66–70; Melchert, *Gds Kerns* 215–34, *HS* 101 (1988) 330 n. 24, *AHP* 87; Neu, *StBoT* 6, 140–2, *Fs Neumann* 205–25; Neumann, *KZ* 77 (1961) 79–81; Oettinger, *MSS* 34 (1976) 144 n. 22; Otten-Souček, *StBoT* 8, 58; Sturtevant, *Language* 11 (1935) 39–40; Watkins, *Heth. u. Idg.* 281 w. n. 19; Yoshida, *Mediopassive* 108–14.

Loss of final and medial /r/ is sporadic, but examples are common enough to indicate that *r*-loss was a genuine linguistic phenomenon and not simply a matter of omission of signs. In several instances, indications of loss involve change of signs, e.g. final ŠA for ŠAR and TA for TAR or medial *wa-ag-ga-an-t°* for *wa-ar-ga-an-t°*

"fat", also indicating that loss was linguistically real. The traditional view is that /r/ tended to be lost because it was weakly articulated (Friedrich, Kronasser, Goetze-Pedersen, Neu). Kimball posits variable loss as a synchronic phenomenon, while Eichner, Neu (*Fs Neumann*), Melchert and Yoshida posit conditioned change at a time somewhat earlier than the date of our earliest manuscripts with analogical restorations in some morphological contexts and/or etymological spellings Watkins, however, suggests that *r*-loss may be largely a characteristic of copies, reflecting the language of scribes speaking a dialect with *r*-loss. Neu and Melchert emphasize that the most certain examples of loss in final syllables occurred after /a/. Neu, Oettinger and Yoshida suggest that prehistoric loss of final **r* can explain the *r*-less middle endings (e.g. 3 sg. pres. *-a, -ta*, 3 pl. *-anta*), but Melchert's finding may suggest that loss was regular only after long unaccented vowels (or, specifically, after the reflex of **ō*), and if length rather than accent was the conditioning factor, the middle would have offered no context for the change.

In *AHP* 87 Melchert (following Yoshida) posits loss within PA after unaccented vowels.

## 8.8.1. Final

Loss of final /r/ has long been regarded as an archaism (Kammenhuber, Hoffner, Watkins, Neu, Melchert). There are at least three examples from OH originals and more from texts written in the MH period and from copies of OH and MH exemplars.

From OH originals: *tak-se-es-*<*sar*>*-se-ta* (sic) "arrangement": StBoT 25, 26 IV 1 (cf. *tak-se-es-sar-se-et-ta* StBoT 25, 75 I 60); $^{NINDA}$*wa-ge-es-sa*, a kind of bread, StBoT 25, 72 III 7 (cf. $^{NINDA}$*wa-ge-es-sar*, e.g. StBoT 25, 14 II 13, III 8); $^{LÚ}$ŠU.GI-*es-sa* "old age": KBo XXII 1 Vs 6 (for $^{LÚ}$ŠU.GI-*es-sar*).

A less certain example is $^{DUG}$*ha-ne-es-sa*, a vessel, attested as nom. pl. in 2 $^{DUG}$*ha-ne-es-sa* StBoT 25, 80 II 8 (cf. 2 $^{DUG}$*ha-ne-e-es-sa* in NH parallel text KUB XLII 107). Neu, *StBoT* 26 n. 343, considers this an example of *r*-loss on the basis of *ha-n]e-es-sar* in the NH dup. KBo XI 4 I 10 but notes that OH and later texts also have an *a*-stem $^{DUG}$*hanessa-, hanissā-* (e.g. nom. pl. 2 $^{DUG}$*ha-ni-is-sa-a-as* StBoT 25, 13 I 30, acc. *h]a-[a]-ne-es-sa-an* StBoT 25, 58 II 3, *ha]-ni-is-sa-an* StBoT 25, 33 I 22).

From MH originals and copies of OH texts: *ha-ne-es-sa* "judgment" KUB XXX 11 = KUB XXXI 135 Vs 11, 13 (cf. *ha-ne-es-sar* ib. Vs. 10); 3 $^{UZU}$*ha-ap-pe-es-sa* "three limbs" KBo XVI 78 IV 11 (MH?); *ha-at-ta-ta* "wisdom" KUB XXX 10 Vs. 11 (for *ha-at-ta-tar*), *ha-at-te-es-sa-as-se-e[t]* "hole" KBo XIII 13 Vs. 3 (for *hattatar=set*); *i-ya-a-ta* "movable wealth" KUB XII 63 Rs. 16, 29 (for *i-ya-a-tar*); *i-ya-u-wa* KUB XXX 10 Vs. 3, 8 (for *i-wa-u-wa-ar*, vbl. noun of *iya-* "go"); *is-hi-es-sa-mi-it-ta* "my mandate" KUB XXX 10 Vs. 7 (for *ishessar=mitt=a*); *is-he-es-sa-as-si-it* "his mandate" KBo XXI 22 Vs. 45 (for *ishessar=sit;* see Neu 208 and Melchert 219–20 for the meaning); *ku-us-du-wa-ta* "slander, calumny" KBo VII 28 + Rs. 48 (for *ku-us-du-wa-tar*); $^{GIŠ}$*lu-u-e-es-sa*, an incense-like substance of woody material, KBo XXIII 49 + I 9, II 14, III 32 (for *lu-e-es-sar*); *par-ta-u-wa* "wing" KBo XX 28 Vs? 20 (for *par-ta-u-wa-ar*), *par-ta-wa-as-se-et-wa* KUB XVII 10 I 38 (for *partāwar=set=wa*), *par-t]a-a-wa-as-si-it-wa* KUB XXXIII 5 II 13 (for *partāwar=ssit=wa*); *pa-at-ti-ya-ta-as-se-et* (meaning unclear) KBo XVI 78 I 7 (for *pattiyatar=sset?*).



From NH copies or adaptions of OH and MH exemplars and from undated texts: *al-wa-an-za-ta* "sorcery" KBo XIII 157 L. 7 (U), KUB XXIV 9 + I 39, 41, II 10, 23, 32 (Neu; cf. MH dup. KBo XXI 8 III 15 with *al-wa-an-za-a-tar*), KUB XXIV 11 II 29; $^{DUG}$*ha-ne-es-sa* Bo 3123 IV 8 (*HED*), *ha-ni-sa* KBo II 13 Vs. 6 (cf. OH $^{DUG}$*ha-ne-es-sa* above); *har-na-am-ma* "leavening agent" KUB VII 1 I 26 (Pre-NH, cf. *har-na-am-ma-ar* ib. I 25); *ha-ad-da-da* "wisdom" KUB XXXIX 101 II 9 (for *ha-ad-da-tar?* or *ha-ad-da-*<AN>*-da?*), *ha-at-ta-ta-su-me-et* KUB XXIV 4 Vs. 8 (cf. parallel KUB XXIV 3 II 18 with *ha-at-ta-tar-su-me-et*), *ha-at-ta-a-da-mi-it-ta* KUB I 16 II 56 (for *hattatar=mitt=a*), *ha-at-ta-*<*da*>*-me-et-ta* ib. III 58 (for *hattatar=mett=a*); *ha-at-ri-i-e-sa* "hole" KBo III 21 II 8 (for *ha-at-ri-i-es-sar*); *is-pa-a-ta* "spit, skewer" KUB IX 28 I 15 (for *is-pa-a-tar*); *is-pa-an-du-uz-zi-ya-as-sa* "libation vessel" KUB XXV 36 V 7 (for *is-pa-an-du-uz-zi-ya-as-sar*); *iyada tamēda* "(movable) wealth and abundance" (for *iyādar* **tamēdar*), *i-ya-da dam-me-da* KUB IV 4 Vs. 14b, *i-ya-ta da-me-e-ta* KUB II 2 III 28–29, *i-ya-ta ta-me-e-t]a* KBo XII 42 Rs. 4, *ji]-ya-ta ta-mi-e-ta* KUB VIII 22 III 3; *ku-us-du-wa-a-ta* "calumny" KUB I 16 II 35, 51, 55; *mi-ya-ta* "growth" KUB XXXIII 12 IV 19, *mi-i-ya-ta* KUB XXIV 1 III 12 (cf. *mi-ya-a-tar* in parallel KUB XXIV 2 Rs. 16); *pa-ap-ra-a-ta* "impurity" KUB XXIV 9 I II 10; *pa-ap-re-es-sa-as-sa*$^{!}$*-an* "sprinkling" KUB XLI 7 + I 8 (for *pappressar=ssan* sic); *si-im-ma-an-ta* "form, facial features" KBo I 44 + KBo XIII 1 IV 32 (vocab.; see Neu 216 for the dating); *ta-me-e-da* "abundance" KBo I 45 Rs! 15 (vocab.), *dam-me-e-da* KUB IV 5 Vs. 16; *ti-ya-am-ma* "cord" KUB XVII 28 IV 50 (for *ti-ya-am-ma-ar*); $^{NINDA}$*wa-ga-a-ta* (bread name) KUB XXV 32 + KUB XXVII 70 + 1628/u II 12, *wa-ga-ta* ib. II 35 (for *wa-ga-(a)-tar*); SIG$_7$.SIG$_7$-*ta* "yellowness" KUB XXIV 9 + I 47 (for **hahliyātar*).

Eichner posits a general loss of final /r/ after all unaccented vowels with partial analogical restoration in productive formations (e.g. **wód-r̥* > **wód-ar* > ***wāda* > *wātar*), explaining the lack of restoration in some forms as due to "prophylactic dissimilation". However, as Kronasser, Neu, and Melchert have noted, there are no secure examples of loss after any vowel except °A° (/ă/, /ā/). The one example of loss after a vowel other than °A° that Eichner cites, nom.-acc. **péruṛ* > **pérur* > *pēru* "rock, cliff" from an *r/n*-stem (cf. gen. *pērunas*) could have other explanations (Neu, Melchert, cf. also Weitenberg, *u*-Stämme 169–70, who derives *pēru* from an original *u*-stem). The analogical restoration needed to explain the presence of final *-r* in *-r/n*-stem paradigms where it did not follow an accented vowel is also poorly motivated. Since the oblique stems did not have **-r-* we would expect ***a-/n*-stems for many nouns, and analogical restoration would only have been strongly favored in those paradigms in which a root accented nominative-accusative singular was opposed to a suffix-accented collective, e.g. **wód-ă(r)* : coll. **wed-ŏr* (Kimball, Neu, Melchert).

Neu's and Melchert's discussions are thorough philological studies of extensive collections of examples. Neu's study confirms earlier observations that loss is regular only after °A° and that it is an archaism, occurring primarily in texts from an OH or MH archetype with sporadic fossilized spellings in NH texts; note especially that vocabulary texts, although written down in the NH period, conserve archaic and fossilized forms and spellings (Neu 216). Neu concludes that *r*-loss in the early texts is the late manifestation of a sound change that took place before the adoption of writing and that later spellings (presumably including examples like *wa-a-tar* OH etc.,

never **wa-a-ta*) are to a large extent etymological. He adduces parallels to conclude that older writing was likely to be closer to (broad) phonetic transcription than NH writing, which was apt to be etymological.

Melchert concurs with Neu's conclusion that *r*-loss is archaic, noting that the majority of examples can be analyzed as plural-collectives in **-ōr* and that all examples are from heteroclitic nouns with productive complex suffixes (*-ātar, -essar, -war*). These observations lead him to conclude that the forms with loss continue plurals in unaccented **-ōr*, though he observes that it is not clear whether the loss of **-r* was due to its position in an unaccented syllable or to its following a long vowel (note that the retained /r/ of plurals such as *witār* "water(s)", *uddār* "words, things", or *harsār* "heads" would have followed an accented long vowel, i.e. **-ór*). He suggests that either **r* was lost after unaccented long vowels as part of a general reduction of unaccented final syllables or that **r* was lost after any unaccented vowel in final syllables but the vocalization of final **-r̥* to *-ar* and of **-Cwr̥* later produced new sequences of *-ăr* and *-Cŭr*.

The quotative particle *-wa(r)-* (prevocalic *-wa-ar-*, preconsonantal and final *-wa(-)*) is derived from a form of **wer-* "speak, say" (cf. IE **werh₁-* in Pal. *wērti* "says", Hitt. *weriya-* "call out", and Gk. εἴρω, ϝρη- "speak") by Eichner, *MSS* 31 (1973) 78, *Fl. u. Wb.* 84, Oettinger, *Stammbildung* 344 and Neu 224. This derivation implies loss of the root-final **h₁* and loss of the verb ending as well as lowering of the root vowel before *RC* (cf. e.g. Oettinger, who reconstructs a third person singular aorist **werh₁-t* "(s)he said" > *-wa(r)*). Alternatively, Joseph, *KZ* 95 (1981) 93–8, and Joseph-Schroup, *KZ* 96 (1982) 56–8, relate *wa(r)-* to the postposition *iwar* "as like" and to Skt. *iva* id. Although the synchronic alternation between *-r* and zero in the Hittite word would probably not be explainable by phonological processes, if this etymology is correct, Melchert (225) notes an Anatolian parallel in Hitt. *-kku* "and" < **kʷe* beside Pal. *-kuar* "even" < **kʷe* plus particle **-r*.

The variant $^{NA}$*a-ku-ur* KUB XLIII 75 Rs. 2 (OH+) for *aku* "stone" (cf. *HED* 1, 24) might be explainable as showing "unetymological *r*" (cf. e.g. *idear* for *idea* in the speech of some New Englanders), but, since the context is not preserved, the meaning is not certain, and given the evidence that loss was regular only after °A°, this conclusion is by no means certain.

Melchert (*AHP*) following Yoshida, now posits general loss of final **-r* after unaccented vowels in PA in, for example, the middle endings (e.g. *kitta* < **kéitor*) and collective plurals of *r/n*-stems with fixed accent in *-essa* < **-ésōr* with analogical *-ss* from the weak stem *-essn* (e.g. *wagessa*). As he notes (224–5), forms such as Palaic *kittar* "lies" must come from pre-forms with an original final vowel.

## 8.8.2. Preconsonantal

Examples are sporadic and unlike examples of loss of final /r/ they seem to occur in texts of all periods. Neu (221 n. 75) sees little evidence for loss as a phonological process, noting that some apparent examples can be taken as mistakes with PA (  ) for PÁR (  ). But scribal error will not explain all occurrances, some of which involve loss after /u/: *is-ha-nu-wa-an-ti* dat.-loc. "bloodied" KUB XXXVI 89



Vs. 14 (NH) from *esharnu-, isharnu-* "make bloody"; *ku-la-mu-si-ya-*, a Hurrian ritual term, for *ku-la-mur-si-ya-* or *lu-la-mu-ur-si-ya* (*HEG* 4, 621–2); $^{GIŠ}$*la-ah-hu-wa-nu-u[z-zi* "foliage" KBo XXII 216 L. 4 (NH), cf. $^{GIŠ}$*la-ah-hu-ur-nu-(uz)-zi* (MH etc.), $^{GIŠ}$*la-ah-hur-nu-(uz)-zi* (OH+, MH+, NH); *pa-ap-pa-as-sa-an-ta*, ptcp. nom.-acc. pl. n. "sprinkled" KUB XVII 10 II 29 (MH) for *pa-ap-pa-ar-as-sa-an-t°*; $^{NINDA}$*pa-as-su-us* KBo XII 126 + KUB XXIV 9 + II 44 (MH+) = KUB XXIV 11 II 23 (MH+) beside $^{NINDA}$*par-su[-us* in dup. KUB XXIV 10 II 2 (MH+) (see Weitenberg, *u*-Stämme 449 n. 517); *wa-ag-ga-an-t°* "fat" HT 1 III 32 (MH+) for *wa-ar-ga-an-t°*, cf. *ú-wa-ar-ka[n-t°* KBo III 60 II 3 (OH+); *wa-pa-an-du-wa-an-zi* KUB XLIII 55 III 3 (OH+) for *wa-ar-pa-an-du-wa-an-zi* "to bathe" (see Oettinger, *Stammbildung* 234 n. 109 and cf. inf. *wa-ar-pu-u-wa-an-zi* ib. III 6).

In a few words, loss occurs following or preceding a syllable with preconsonantal /r/, and it may be dissimilatory in nature.

*artarti-, atarti-, artati-*, tree name: nom. sg. *a-tar-ti-is* Bo 5176 Vs. 9 (*HED*), nom. pl. *a-tar-ti-es* 139/d I 5. (ib.) beside acc. *ar-ta-ar-ti-in* KUB IX 4 III 30 (MH+), *ar-tar-ti-in* KUB XXIX 1 IV 22 (OH+), KBo XIX 142 II 18 (NH), *ar-ta-ti-in* KUB XXIV 7 II 50 (NH).

Examples *HED* 1, 177.

*ārsā(r)ssūr(a)-* "flowing, stream" nominal (n.) or adj.: nom.-acc.sg. n. *ar-sa-as-su-u-ur* KBo XXIII 9 I 12 (U), nom.-acc. pl. n. *ar-sa-a-as-sur-ri(?)°* KUB XXXVI 55 II 20 (OH+), beside *ar-sa-ar-su-u-ri* ib. II 26, dat.-loc. sg. *a-ar-sar-su-ri* KUB XVII 27 II 22 (OH+), acc. pl. c. *ar-sar-su-u-ru-us* KUB XXXIII 10 Vs. 10 (MH), nom.-acc. pl. n. *ar-sar-su-u-ra* KUB XXXIII 13 III 14 (MH+).

Examples *HED* 1, 172, *HW*$^2$ 345.

*e-es-ha-as-kan-za* "bloody": KUB VII 41 Vs. 15 (MH) (Goetze-Pedersen) is from **ēshan-skant-*, not from *e-es-har-as-k°*.

In *ki-is-sa-i* for *ki-is-sa-ri* = [gissrī] dat. "hand" KBo XIX 128 V 45 (MH+) the lack of postconsonantal °R° is probably a scribal mistake.

## 8.8.3. Intervocalic

Examples are quite rare (see Neu 221 n. 75). They do not seem to be confined to texts of a particular period or type, and it is difficult to determine whether they should be considered mistakes or evidence for a variable phonological process. For a possible parallel, cf. dialects of American Southern and Black English in which, e.g. *Carol* is homophonous with *Cal*.

Dat.-loc. *hu-up-pa-ti-ya* "pelvis" KUB IX 4 I 11 (MH+) = *hu-up-pa-ra-ti[°]* ib. (from *huppar* "bowl", Puhvel, *HED* 3, 392); $^{URU}$*Ha-at-ta-i-na* 784/v L. 3 (Neu n. 221, 75) = $^{URU}$*Ha-at-ta-ri-na;* $^{TUG}$*ku-e-es-sar*, a garment, Bo 1869 Rs 3 (*HEG* 4, 646) beside *k]u-re-es-sar* ib. L. 5; $^{HUR.SAG}$*Pis-ku-na* KUB L. 82 L. 11, 15 = $^{HUR.SAG}$*Pis-ku-ru-nu-wa* KUB XXII 27 IV 30 (both NH); *pu-u-ut* "mud" KBo VI I 16 L. 3 (OH+), for *pu-u-ru-ut*, cf. *pu-ru-ut* in dup. KUB XXIX 23 L. 13, 15 (OH+); $^{URU}$*T]a-a-ak-ka* KBo XXII 99 L. 7 (OH+) = $^{URU}$*Ta]-ru-ak-ki* KBo XII 84(+) XIII 84 Vs. 4 (OH+); $^{GIŠ}$*ze-ya-al-la-as* 158/o L. 11 (Neu) = $^{GIŠ}$*z]e-ri-ya-a[l-la-as* in dup. KUB XL 110 Rs. 4 (U).

In *hūruppi-*, a word referring in the singular to a dish or bowl and in the plural to a kind of bread, *r*-loss occurs several times and is attested from OH: note especially nom. sg. *hu-u-ru-pi-is* Bo 4999 IV 5 = *hu-u-up-pi-is* in dup. 69/d III 2 (HED), dat.-loc. *hu-u-up-pi* StBoT 25, 30 III 15, 17, *hu-u-up-pi* KBo XXI 33 III 9 (MH); with /r/: acc. sg. *hu-u-ru-up-pi-in* KUB XLVI 47 Vs. 13, Rs. 17 (Pre-NH), nom. pl. (sic) *hu-u-ru-pi-us-sa* KUB XLI 41 Rs.? V 18 (OH+), *hu-ru-pi-us* (sic) KUB XX 80 III 8 (MH+), acc. pl.(?) *hu-u-ru-pi-uṣ* KUB XLI 41 Rs. V? 20. This word is a loanword, via Hurrian, from Akkadian *huruppu*, a metal dish.

Examples, etymology Hoffner, *Alimenta* 163, Puhvel, *HED* 3, 407–8.

*pe-an* for *pe-ra-an* "in front", frequent in (NH) omen texts, may be an abbreviatory spelling (Kronasser, *EHS* 67, Neu 221 n. 75).

### 8.8.4. Unetymological *r*

A few examples of unetymological *R* have been cited. While it seems unlikely that /r/ is a hiatus-breaker or "parasitic" (Goetze-Pedersen, Kronasser, Neu 221 n. 75, *IF* 82 (1977) 272, 221 n. 75) in these, they might be instances of hypercorrection by scribes whose speech had variable loss of /r/.

*huwa(r)a-*, a bird name: *hu-u-wa-ra-as* KUB XVIII 12 Rs. 16, 17 (NH) otherwise: *hu-u-wa-a-as* KBo II 6 III 56 (NH), KUB XVI 52 L. 6 (NH), KUB XVI 77 Vs. 12, (NH), *hu-wa-as* IBoT I 32 Vs. 23 (NH), *hu-u-wa-as* KUB V 11 II 13 (NH).

Examples *HED* 3, 432.

$^{GIŠ}$*huhu(r)pal* "cymbal, clapper" also "cymbal-shaped chariot part" is onomatopoetic: with °R° only *hu-]u-wa-hur-pa-al* KBo XII 123 L. 10 (U) (as "chariot part"), cf. HLuv. *huhurpal(i)-* "chariot part": otherwise *hu-hu-(u)-pa-al*, nom.-acc. pl. *hu-hu-pa-(a)-la* (Melchert, *HS* **101**).

Two examples that have been cited may reflect a scribe's confusion with similar sounding words with /r/: *arimpa-* as "burden" is attested in acc. sg. *a-ri-im-pa-an* KBo XX 82 II 31 (OH+) beside *impa-* (MH, MH+) and *aimpa-* (NH); note that there is also a $^{GIŠ}$*arimpa-* (*HED* **1**, 139), a wooden object used in rituals (see also Neu, *IF* 82 (1977) 272); *sāwar* "anger" (e.g. *sa-a-u-wa-ar* KUB XVII 10 III 20, MH) should be the verbal noun of *sā(i)-* "be angry", but there is also a *sarāwar*, which occurs meaning "anger" in e.g. *sa-ra-a-u-wa-ar* KUB VII 13 Vs. 30 (Pre-NH), *sa-ra-u-wa-ar* KUB XXXIII 86 + KUB VIII 66 III 5 (MH+), *sa-a-ra-a-u-wa[-* Bo 7247 L. 3 (see Siegelová, *StBoT* 14, 75). There may have been another verb *sarā(i)-* "pull, tug" (cf. e.g. *sa-ra-an-t[a-* StBoT 25, 118 I 7 (form unclear, *HW* 184, Oettinger, *Stammbildung* 34, 437) for which the verbal noun should have been *sarāwar*, attested perhaps in *sa-ra-a-u-wa-ar* StBoT 25, 137 II 11, StBoT 25, 139 Rs. 4.

A few examples should be excluded from consideration because they rest on shaky or incorrect identifications: $^{NINDA}$*a-ra-an-te-et* KUB X 89 I 21 (OH+) for *a-a-an-t*° "warm" (Goetze-Pedersen, Kronasser) is the participle of *ar-* "stand" (Tischler, *HEG* 1, 107, Neu 221 n. 75); *marmarr(a)-*, a kind of terrain, perhaps marshy or woody: loc. sg. *mar-mar-ri* KUB XVII 10 I 12 (MH), loc. pl. *mar-mar-as* ib. I 12, *-m]ar-ra-as* KBo XXVI 127 Rs. 10 (MH?) was equated by Friedrich, *HW* 137, with $^{GIŠ}$*mam-*



*marra/i-*, referring to a woody tree or bush ($^{GIŠ}$*ma-am-mar-r/i* KUB XXXIII 13 II 29, MH+). Hoffner-Güterbock, *CHD* 192, do not rule the connection out, but they do note the the differences in spelling, context, and determiner.

Acc. sg. *hu-u-up-us-hi-in* KBo V 2 II 4 (Pre-NH): *hubrushi-*, a ritual vessel of Hurrian origin, looks like a mistake, cf. nom. sg. *hu-up-ru-us-hi-is* ib. III 26, acc. *hu-up-ru-us-hi-in* ib. II 10, 21, 32 etc., dat. *hu-up-ru-us-hi* ib. II 5, IV 6, 7.

## 8.9. Dissimilation

Friedrich, *HE* 111; Kronasser, *VLFH* 74, *EHS* 67, 103–4; Neu, *StBoT* 6, 20, 25; Sommer, *KIF* 1 (1927/30) 120–4; Sturtevant, *CGr*$^1$ 264, *CGr*$^2$ 146; Weitenberg, *u*-Stämme 170.

### 8.9.1. Of **r* ... *r* to *r* ... *n*

A sequence **r* ... *r* was dissimilated to *r* ... *n* in 3 sg. pres. midd. *urāni* "burns": OH *ú-ra-a-ni* StBoT 25, 4 III 44 (later *wa-ra-(a)-ni*) < **ur-ó-ri* (Sommer, Sturtevant, Friedrich, Neu); for Post-OH *warāni* (3.7.4.2.).

### 8.9.2. Of **l* ... *l* to *l*

Kronasser, *EHS* 67, suggests that *aliya-* beside *aliliya-*, name of an oracle bird, shows dissimilatory haplology; *meli-* and *miluli-*, referring to body parts or tissue, which Kronasser also cites, are probably two different words, however (*CHD* 3, 253, *HEG* 6, 184–5, 210–11).

### 8.9.3. Of **r* ... *l* to *r* ... *n*

Oettinger, *Stammbildung* 354, suggests that *sarganiya-* "elevate onseself" (3 sg. pret. midd. *sar-ga-ni-ya-at-ta-at* KUB XXXIII 114 I 17, NH) can be derived *via* dissimilation from *sargaliya-* id. (in 2 sg. pres. midd. *sar-ka-li-ya-tu-ma-ri* KUB I 16 II 49, OH+).

### 8.9.4. Of **r* ... *r* to *r*

It is possible that *kukkurs-* "mutilate" is from **kurkurs-* with "full reduplication" (cf. Kronasser, *EHS* 122).

### 8.9.5. Uncertain examples

Other proposed examples of dissimilation in sequences of liquids are uncertain.

Sturtevant's derivation (*CGr*$^1$ 137) of *kūrūr* "hostilities, war" from **krurur* : Lat. *cruor* "thick blood", *crūdus* "red, bloody" is unlikely; Skt. *kraviṣ-* "raw flesh" and Gk. κρέας "meat" suggest that the base of the Latin words was **kreuh₂-*, and the laryngeal should have been retained in Hittite (see Tischler, *HEG* 4, 665–7 w. refs.).

Eichner, *MSS* 31 (1973) 98 n. 78, suggests that *$^{NA}$*perulwa-* "cleared of stones"(?), implied by $^{NA}$*pe-ru-lu-u-wa-wa-ri* "clear (a field) of stones"(?) in VBoT 58 I 31 (MH+) is from **perurwa-*, a derivative of *pēru-* "stone" by dissimilation of **r* ... *r* to *r* ... *l*. However, as Weitenberg, *u*-Stämme 170 and 214, and Neu, *Fs Neumann* 206 n. 6, point out, there are problems with the derivation of *pēru* from **pērur*: the dissimilation involved is unparalleled, the genitive *perunas* need not come from an *r/n*-stem (cf. e.g. *šius* "god", obl. stem *siuna-*) and the interpretation of the passage in which *peruluwari* occurs is not certain.

Kronasser, *EHS* 67, suggests that *ti-e-wa-ar-ta-na* "three turns" in KUB I 11 IV 35 (MH+) beside *ti-e-ra-wa-ar-ta-na* shows dissimilatory loss of /r/ rather than omission of the sign RA.

## 8.10. Final

Final **l* was retained in the nominative-accusative singular of neuter nouns with suffixes in *-Vl*: e.g. *sūl*, *sūēl* "thread" (*su-ú-i-il*, NH, *su-ú-il*, MH, *su-u-e-el*, MH?), perhaps = [suwēl] from **suh$_1$-él* {**10.4.1.**}; verbal abstracts in *-zzil*: *tḫa-ya-az-zi-il* "theft" e.g. KBo VI 2 II 55 (OH), *sar-ni-ik-zi-il* "restitution" ib. I 47, II 28, *sar-ni-ik-zi-i-il* KBo VI 3 III 50 (MH), *sar-ni-ik-zi-il* ib. I 55, II 30 with [-tṣil], perhaps from PA **-ti-l*, cf. CLuv. *puwatil* "past", and see Melchert, *SHHP* 119–20 w. refs.

# Chapter Nine

# Glides

## 9.1. System inherited from IE

IE had two glides, **y* and **w*, consonantal allophones of **i* and **u*. After consonant clusters and in initial position they were variably realized as *[iy] and *[uw] by Sievers-Lindeman's Law (Mayrhofer, *Idg. Gr.* I/2, 160–8).

## 9.2. Initial

Melchert, *SHHP* 10–13, 14–21, 159, *AHP* 75, 129; Oettinger, *Stammbildung* 350 n. 188, 375; Pedersen, *Hitt.* 171; Starke, *StBoT* 30 116–7 w. n. 338, 339; Sturtevant, *CGr*$^1$ 111, 113, *CGr*$^2$ 34, 38; Sturtevant-Trager, *Lang.* 18 (1942) 259–79.

### 9.2.1. *y

Initial **y* was retained before the back vowels **a* and **u* but lost in PA before the front vowels **e*, **ē* (< IE **eh$_1$*) and perhaps **i*; note e.g. CLuv. *"aggatius* "hunting net" and Hitt. *ēkt-* id. < **yékt-* and CLuv. *āra/i-* "time" < **yḗr-* < IE **yéh$_1$-ro-* as in Goth. *jēr* "year" and OE *ġear* id. (Melchert 14–15, Starke). Inherited **h$_1$y-* and **y-* seem to have merged as **y-* early in PA and can be treated together.

#### 9.2.1.1. Loss before *e

*eka-* "ice": nom. sg. *e-ga-as* (OH+), acc. sg. *e-ka-an* (OH+), *e-kan* (MH(+?)) = [ēga-] < **yégo-* (Pedersen, Oettinger, Melchert, Starke) {6.4.2.3.}.

*e(u)wa-*, a cereal, probably "barley" : nom.-acc. sg. *e-wa-an* KBo IV 2 I 10 (OH+), *e-u-wa-an* KBo XXI 74 III 8 (U), *e-u-wa-an-n* KUB XXIX 1 III 9 (OH+); secondary *n*-stem *euwann-* in gen. sg. *e-u-wa-an-na-as* KBo X 34 I 13, 21 (MH) = [ēwa-] < **yéwH$_{1/3}$o-* : Skt. *yava-* "grain, barley", Av. *yava-* "grain", Gk. ζειαί "spelt", Lith. *javaĩ* "grain" (pl.) < **yowH$_{1/3}$o-* (Oettinger, Melchert 14, Puhvel, *HED* 320–1, Starke).

For the medial laryngeal see 4.2.1., 9.4.1.

*ēkt-* "hunting net": nom. sg. *e-ek-za* e.g. KBo XVII 61 Vs. 17 (MH), *ek-za* KBo III 21 II 16 (OH+), acc. sg. *e-ek-ta-an* e.g. KUB XXXI 68 Vs. 27 (NH), gen. sg. *ek-ta-as* KBo III 21 III 17 = [ēkt-] < **yékt-* : **yek-* in OHG *jagōn* "to hunt".

Examples *HED* 2, 259–69. The etymology was proposed by Hamp, *IF* 83 (1978) 119–20; see also Berman, ib. 123, Melchert, *SHHP* 14, w. n. 26, 76, 159, Tischler, *HEG* 2, 351–2 w. refs., and Starke. A Luvian cognate is preserved in *"aggat(i)-* "hunting net" (acc. pl. with Hittite ending *"ag-ga-ti-us* KUB VIII 56 L. 12 (NH), *CLuv. Lex.* 5 w. refs.), perhaps [akti-] with graphic vowel °A°. Puhvel's reconstruction **ayk-t-* to the root **(a)y-* of Lat. *ictus* "stroke", Gk. δίκτυον "catch net" and δίκω "throw" (HED) does not explain the Luvian initial **a*.

*is(sa)na-* "dough" = [issnā-] < **yes-nó-* or **yes-onó-* with initial /i/ < unaccented **e-* < **ye-* {2.4.4.2.}.

Loss of initial **y* may be sporadically attested in *iya-* "do, make", e.g. EZEN-*an e-et* "he performed a festival" KUB XXXVI 41 + I 5 (Hittite-Luvian text with archaisms). In early texts and copies, however, a spelling with I-E- is far more frequent: 1 sg. pres. *i-e-mi* e.g. StBoT 15, 3 III 21, *ĺi]-e-mi* ib., III 23, 2 sg. *i-e-si* e.g. KBo V 3 II 49 (Supp. I+), 3 sg. *i-e-zi* e.g. KBo VI 2 I 60 (OH), *i-ez-zi* ib. 50, 51, KBo IX 73 Vs. 6 (OH), *i-e-ez-zi* e.g. KBo VI 3 III (MH), 3 pl. *i-e-en-zi* e.g. KBo III 40 L. 18 (OH+), KUB XI 1 IV 11 (OH+), *i-en-zi* e.g. KUB XV 31 I 12 (MH+), 3 sg. pret. *i-e-et* KBo III 22 Vs. 9 (OH), 3 pl. *i-e-e[r]* KUB XXXVI 108 Vs. 2 (OH). The sequence I-E- is to be read as [yē-], but the initial /y/ can be explained as analogically restored from forms of the paradigm with [ya-] (e.g. 1 sg. pres. *i-ya-mi* StBoT 25, 4 II 13, 15, 2 sg. *i-ya-si* KUB XIV 1 Vs. 33 (MH), 3 sg. *ya-az-zi* KUB XXXVI 106 Vs. 9 (OH), KUB XXXVI 108 Vs. 12 (OH), 3 pl. *ya-an-zi* KUB XXXVI 106 Vs. 1 (OH), *i-an-zi* KUB XXXII 130 L. 24 (NH)); Post-OH texts usually have the spelling I-YA-. Compare the lack of analogical restoration in *eka-*, *euwa(n)-* and *ēkt-*, which are synchronically isolated.

The etymology and prehistory of *iya-* and its Anatolian cognates CLuv. *ā-/āya-*, HLuv. *a-* and Lyc. *a-* are uncertain. Hollifield, *JIES* 6 (1978) 77–8, and Oettinger, *Stammbildung* 349 w. refs., reconstruct thematic **h₁éy-e/o-*. Hollifield connects *iya-* with **h₁ei-* "go", reconstructing a middle preserved in Hitt. *iya-* "go", CLuv. *ā(y)a-* "make" and Ved. *ayate* "goes" and explaining the Hittite active forms as secondary. Oettinger's explanation depends on accepting primary active thematics for PA. Melchert, *SHHP* 14–16, 19, reconstructs **yéh₁-ti* : **yh₁-énti*, comparing Gk. ἵημι "I throw", and Toch. A *ya-* "make". He derives Hitt. *iya-* from a generalized weak stem, 3 pl. pres. **ih₁-enti* > [yantsi] and *yē-* (for **ē-*) from full-grade **yeh₁-* also in PLuv. **ā-*. He explains CLuv. *āya-* as ultimately from the weak stem **ih₁-*, e.g. 3 pl. **ih₁-énti* > **yanti*, which was replaced by **āy-anti* with **ā-* from the singular. PLuv. **āy-anti* was subsequently thematized by resegmentation as **āya-anti*. Later partial analogical extention of *āya-* to the singular explains forms like 3 sg. pret. *a-ya-ta* beside *a-a-ta*. This analysis also suffers from uncertainties. The semantics of the connection with ἵημι are difficult, and the Greek reduplicated present indicates that the root probably formed a root aorist rather than an athematic present in IE. See Tischler, *HEG* 2, 338–43, for additional refs.

### 9.2.1.2. Loss before **i*

Loss of initial **y* before **i* may be found in *piyē-* "send away" and *wiyē-* "send to": 1 sg. pres. *pi-i-e-mi* KBo V 3 II 78, 79 (Supp. I+), KUB XXXII 130 L. 12 (NH), *pi-i-ya-mi* KUB XXIII 77 L. 65 (MH), 2 sg. *pi-i-e-si* KUB XIV 1 I 32 (MH), 3 sg. *pi-i-e-zi* KUB XXXVI 106 Vs. 5 (OH), *pi-e-ya-zi* KUB XIII 9 III 5 (MH+), 3 sg. pret. *pi-i-e-et* KUB XXXVI 106 Vs. 5 (OH), *pi-e-ya-an-zi* KUB XIII 9 III 5 (MH+), 3 sg. pret. *pi-i-e-et* KUB XXXVI 106 Vs. 5 (OH), *pi-e-ya-zi* KUB XIII 9 III 5 (MH+), 3 pl. *pi-i-ẹ-e[r* KBo III 1 II 8 (OH+), KUB IX 34 III 36 (MH+), VBoT 58 I 21, 25 (MH+), 3 pl. *pi-i-ẹ-e[r* KBo III 1 II 25 (OH+), *pi-i-e-er* KBo IV 2 I 14 (OH+), ptcp. nom. sg. c. *pi-e-ya-an-za* IBoT I 36 I 12 (MH); *wīya-*: 1 sg. pres. *u-i-ya-mi* KUB XXI 1 + III 8 (NH), VBoT 24 IV 37 (MH+), 2 sg. *u-i-ya-si* KUB VI 41 II 8, 9 (NH), 3 sg. *u-i-ya-zi* KBo IV 14 III 73 (NH), KUB XVII 14 IV 14 (NH), 1 sg. pret. *u-i-e-nu-un* KBo VIII 36 Vs. 5 (U), VBoT 1 L. 11 (MH?), *u-i-ya-nu-un* e.g. KBo III 4 II 9, 74 etc. (NH), KUB XIV 3 I 9, 68, II 4, *u-ya-nu-un* ib. II 59, 2 sg. *u-i-e-es* KBo XI 72 II 29, III 26 (NH), 3 sg. *u-i-ya-at* e.g. KBo IV 4 II 30 (NH), 3 pl. *u-i-e-er* KBo IV 4 IV 45, 51 (NH), 2 sg. imp. *u-i-ya* ib. II 25, 3 sg. *u-i-ya-ad-du* KUB XIV 17 III 24 (Pre-NH), 2 pl. *ú-e[-ya-at-tin* KUB XIV 14 Rs. 36 (Pre-NH) = [piyč/a-], [wiyč/a-]. These verbs can perhaps be derived from Pre-Hitt. **pe-iyḗ-* and **(o)u-iyḗ-*, compounds from reduplicated **yi-yeh₁-* (also in Gk. ἵημι "I send, throw") which became PA **iyā-* with loss of the **y* of the reduplicating syllable; cf. Oettinger, *Stammbildung* 348, who reconstructs **pē-(yi)-yē-* > [piyč-]. The MH first person singular present *pi-i-ya-mi* and participle *pi-e-ya-an-za* suggest early replacement of [iyč] with [iya] on the model of verbs in *-iya-*.

The rival derivation from **pe-* and **(o)u-* plus *iya-* "make" (cf. Pedersen, *Hitt.* 198, Melchert, *SHHP* 91 n. 29, 92) is less plausible semantically.

### 9.2.1.3. Retention before back vowels

OH *ya-*, OH etc. *iya-* "go" in 3 pl. pres. act. *ya-an-zi* KBo XXII 2 Vs. 7 (OH), 3 sg. pres. midd. *ya-at-ta* KUB XXXVI 106 Vs. 2 (OH), dur. *iyannai-* "march": 1 sg. pres. *i-ya-an-na-ah-h[e]* StBoT 25, 4 II 8, 3 sg. pres. *i-ya-an-na-i* StBoT 25, 23 Vs. 4, 3 pl.? *i-ya-an-ni-[an]-z[i?]* StBoT 25, 54 I 18, 3 sg. pret. *ya-an-ni-is* KBo XXII 2 Rs. 7. Post-OH texts have I-YA- overwhelmingly but the OH spellings with YA- and I-E- indicate that this is to be read [ya-]. The source is PA **yo-* : IE **h₁ei-* "go". OH *ya-an-zi* has to be from Pre-Hitt. **y-ónti* or **y-ánti* (with **-anti* < **-n̥ti*), since the expected **h₁y-énti* would have given PA **enti*). The middle continues thematic **h₁y-é/ó-*, which Oettinger (*Stammbildung* 348–9) describes as an Anatolian innovation and Melchert (19), following Watkins, *Idg. Gr.* III/1, 199, considers inherited.

For Post-OH forms see *StBoT* 5, 62–7, *Stammbildung* 78–9 (*iyannai-*), and *HED* 2, 325–35. Oettinger (*loc. cit.*) and Melchert (14–16, 19–20) provide arguments against deriving the middle from a full-grade **h₁éye/o-* comparable to Ved. *áyate* "goes" with Hollifield, *apud* Watkins *TPS* 1971, 80–1 and *JIES* 6 (1978) 177–8, and Eichner, *Fl. u. Wb.* 77–8 w. n. 3.

The reflex of initial **yu* is found only in *yugan* "yoke" (nom.-acc sg. *i-ú-ga-an*, OH+, etc., *i-ú-kan*, OH+, dat.-loc. sg. *i-ú-ki*, MH(?)+) = [yugan] ([yugān] ?) < **yugóm* {6.4.2.3.} and in the related *iugas* "heifer", "yearling" (OH etc.) from gen. sg. "of the yoke" = "suitable for yoking", i.e. "one-year-old".

## 9.2.2. *w

Initial prevocalic **w* was retained (Kronasser, Melchert 10–13, Sturtevant, *CGr*[1] 113, *CGr*[2] 88, Sturtevant-Trager).

*wātar* "water": nom.-acc. sg. *wa-a-tar* (OH etc.) = [wādar] < **wód-r̥* {2.4.1.}; oblique stem *ú-i-te-(e)-n°* (MH+, NH), *ú-e-te-n°* (MH etc.) = [widēn-] < **wed-én-* {2.6.3.}.

*waspa-* "garment": nom. sg. *wa-as-sa-pa-as* (NH), acc. sg. *wa-as-pa-an* (U) = [waspa-] < **wospo-* or **wospeh₂-* (position of the accent unclear) {11.5.1.3.}.

*wāk-* "bite": 3 sg. pres. *wa-a-ki* (OH etc.), pret. *wa-a-k-ki-is* (NH), *wa-a-ki-is* (NH), 2 sg. imp. *wa-ak* (NH), *wa-a-ga* (NH), ptcp. *wa-ga-an-d°* (NH), inf. *wa-ga-an-na* (MH etc.), *wa-ga-a-an-na* (NH) = [wāg-], [wăg-] < **woh₂g-*, **wh₂g-* {10.5.2.3.}.

*wēk(k)-* "ask": 1 sg. pres. *ú-e-ek-mi* (OH+), 3 sg. *ú-(e)-ek-zi* (OH etc.), 3 sg. pret. *ú-(e)-ek-ta* (OH etc.), 1 sg. pret. *ú-ek-ku-un* (OH+), 3 pl. *ú-e-ke-er* (OH+) = [wēg-], [wĕk-] < **wḗk-*, **wĕ̄k-* {6.4.4.1.}.

Initial **w* vocalized to /u/ before syllabic resonants, e.g. *ūrr-* "help" (3 pl. pret. *u-ur-re-er* KBo III 60 II 7, OH+) = [ūrr-] < **wr̥h₁-*, and *ūrki-* "trail, track" (*u-ur-ki*, MH+), if this word is from a sandhi variant **wr̥gi-* rather than **h₁wr̥gi-*; cf. the development of final and internal postconsonantal **wr̥* to *ur* {5.4.1.1.}.

## 9.3. Intervocalic

Eichner, *MSS* 31 (1973) 77; Friedrich, *HE* 27; Kronasser, *VLFH* 50, *EHS* 469; Goetze, *Madd.* 97; Goetze-Pedersen, *MS* 18; Melchert, *SHHP* 21–2, 31–48, *AHP* 129, 130; Oettinger, *Stammbildung* 133 w. n. 89, 338, 358–9; *Gram. Kat.* 301 w. refs., KZ 97 (1984) 44, 47, 48, 49, 50–1; Pedersen, *Hitt.* 171–2; Risch, *Fs Sommer* 190; Sommer, *AU* 357; Sturtevant, *CGr¹* 111–2, *CGr²* 34–5; Zinko, *Vertretung* 30–1, 64.

### 9.3.1. **y*

It has long been clear that IE **y* was lost between like vowels. Melchert, Oettinger, Pedersen, and Risch point out that **y* was also lost between unlike vowels. Zinko views loss of **y* between like vowels as irregular, but examples like *sallaya-* beside *salla-* in the oblique stem of *salli-* "big" can have analogical restoration of /y/. The most thorough discussion is Melchert's.

#### 9.3.1.1. Loss

*dān* "second(ly)" (*da-a-an* e.g. KUB XXIX 7 Vs. 45, MH) and in $^{UZU}$*dā(n)hasti* "twin-bone" = [dān] < **dwoyóm*, accusative singular from the stem **dwoyo-* seen also in Ved. *dvayá-* "two-fold" : **dwō* "two", and in *dā-*, first element of the compound *dāyuga-* "two-year-old".

The etymology was proposed (in slightly differing versions) by Puhvel, *KZ* 92 (1978) 98–103 = *AnIE* 389–92, and by Cowgill in an unpublished manuscript of Eichner's cited by Melchert, *SHHP* 44 w. n. 90.

Another example in a synchronically isolated word is 1-*an-ki* "one time", spelled out as *a-an-ki* KUB VI 2 IV 36, 38 (U) beside 1-*an-ki* ib. IV 37 = [ānki] or [āanki], perhaps from **oy-n̥ki* or **oy-o-nki* from **oy-* or **oy-o-* "one" comparable to **oy-no-* in e.g. Gk. οἶνος "one on a die", Lat. *ūnus*, Goth. *ains* "one", **oy-wo-* in Gk. οἰ(*F*)ος "alone" or **oi-ko-* in Skt. *eka-* "one" plus **-nki* or **-n̥ki* (cf. 2-*anki* "twice") : Gk. -απις in e.g. πολλάκις (Eichner, cited by Melchert, *SHHP* 44; see also Puhvel, *HED* 1, 73 w. refs.).

*ā-* "be warm, hot": 3 sg. pres. *a-a-ri* e.g. KUB XX 88 Rs. 21 (OH+), ptcp. nom. sg. c. *a-a-an-za* KUB XLIV 20 I 2 (NH), *a-an-za* e.g. KBo XIII 10 Vs. 6 (U), acc. *a-a-an-ta-an* e.g. KUB XXXIII 70 II 5 (MH+), nom.-acc. sg. n. *a-a-an* e.g. KBo V 1 I 55 (Pre-NH), abl. *a-an-da-az* KUB VIII 38 + XLIV 63 III 20 (NH), nom. pl. c. *a-a-an-te-e[s* KBo XIX 145 III 30 (NH), acc. pl. c. *a-a-an-du-us* KUB XVII 23 II 17 ( OH+) = [āri] or [āari] < **áy-o-ri*, [ānta] or [āanta] < **áy-n̥to*, ptcp. [ānt-] or [āant-] < **áy-n̥t-*, forms of



an acrostatic middle from a root **ai-*, cf. the extended stem **ai-dh-* : **i-dh-* in e.g. Gk. αἴθω "burn", **aidh-os* (m.) in Skt. *edhaḥ* "fuel", Gk αἰθός "burnt", αἰθος "fire", OE *ād* "pyre", OHG *eit* id.

Examples *HW²* 44–5, *HED* 1, 10–12; see especially Melchert, *SHHP* 38 for the acrostatic middle. For the hyperplene spelling *a-a-aC* see {1.4.}.

Oblique stem forms and neuter nominative-accusative plurals of *i*-stem adjectives: e.g. gen. sg. *p[al-ha-as* StBoT 25, 14 III 4, *pal-ḫa-as* KBo III 7 I 17 (OH+), nom.-acc. pl. n. *pal-ha* KUB XVII 6 I 6 (OH+) : *palhi-* "wide"; gen. sg. *sal-la-as* KBo III 1 + II 31 (OH+) : *salli-* "big"; dat.-loc. pl. *su-up-pa-[as]* StBoT 25, 54 I 2 : *suppi-* "pure" (Oettinger, *Gram. Kat.*). These have a Pre-Hittite suffix **-oy-*, (e.g. gen. sg. **-oy-os*, nom.-acc. pl. neut. **-oy-a* < **-oy-eh₂*) either inherited or analogical after the *u*-stem suffix **-ow-* (cf. Sturtevant, *CGr²* 86, 89).

Forms such as nom. sg. c. *sal-la-as* KUB VIII 24 Rs. 8 (OH+) and acc. sg. c. *pal-ha-an* KUB XVII 5 I 11 (OH+) are analogical *a*-stems.

*pā-*, prevocalic stem of *pā(i)-* "go": 3 pl. pres. *pa-a-an-zi* (OH etc.), 1 sg. pret. *pa-a-un* (OH etc.), *pa-a-ú-un* e.g. KBo XVI 59 Rs. 5 (NH), 3 pl. imp. *pa-a-an-tu* e.g. KUB XXVI 77 L. 13 (MH), *pa-a-an-du* e.g. KBo III 1 + II 13 (OH+), ptcp. *pa-a-an-t°/d°* (MH etc.), vbl. noun *pa-a-u-wa-ar* KBo IV 14 II 60 (NH) = [pā-] < **po-(h₁)y-V-* beside **po-(h₁)éi* > [pāi-], or **po-(h₁)éi-* > **paē-* > *pāi-* > [pāi-] : IE **h₁ei-* "go" {4.9.1.}.

A widely-cited example of **eye* > /ē/ is found in the animate nominative plural ending *-ēs* ( Sturtevant, *CGr¹*, *CGr²* 90, Pedersen, *Hitt.* 28, Kronasser, *VLFH*, Melchert; see also Zinko, *Vertretung* 12). This ending is probably ultimately from the animate *i*-stem nominative plural ending **-éy-es* (cf. the Latin consonant stem nominative plural ending *-ēs* also generalized from the *i*-stem ending **-ey-es*). Melchert, *SHHP* 121–2, outlines a plausible scenario for how the ending spread beyond the *i*-stems, noting that *i*-stem nouns themselves probably show analogical restoration of prevocalic [y] from the rest of the paradigm, cf. with [-y-ēs] *ar-ki-i-e-es* "testicles" = [argyēs] in KBo XVII 61 Rs. 15 (MH).

Neu, *Heth. u. Idg.* 191–2, and Kimball, *PW* 418, object to this derivation, noting that the attested adjectival *i*-stem suffix is *-aēs* for **-oyes*, but as Weitenberg, *u*-Stämme 369, 375, points out, the *o*-grade may in part be an analogical replacement for an inherited *e*-grade in the suffix of both *i*-stems and *u*-stems.

Another example is perhaps *wēs* "we": e.g. *ú-e-s[a]* "but we" StBoT 25, 3 I 21 = *ú-e-sa* 4 I 16, *ú-e-es* KBo VIII 42 Vs.? 4 (OH) = [wēs] if from **wéy-es* with Pedersen, *Hitt.* 75, Melchert, *SHHP* 92, Zinko 52, but **wéis* (reconstructed e.g. by Oettinger, *Stammbildung* 544) is also possible if **ei* regularly became /ē/ {4.3.}.

The suffix [-ĕ-], [-ē-] in 3 sg. pres. *wa-as-se-e[z-zi* StBoT 25, 65 Rs. 3 : *wasse/a-* "have on, wear"; 3 sg. pres. *lu-uk-ke-ez-zi* KBo VI 2 IV 53, 56, 59 (OH), *l]u-uk-ke-ez-zi* KUB XXIX 38 L. col. 1 (OH), 3 sg. pret. *lu-uk-ke-et* e.g. KUB XXIII 20 L. 13 (OH+), *lu-uk-ke-e-er* KUB XIV 1 Rs. 54 (MH) : *lukke/a-* "set afire" may be from the causative suffix **-éye-* (*Melchert*, *SHHP* 31–2). For 3 pl. pres. *wassanzi*, *lukkanzi*, and ptcp. *lukkant-* see {3.11.1.2.}.

There are no direct examples of Pre-Hitt. **oye*. The animate nominative plural ending *-āēs* or *-aēs* of some *i*-stem adjectives (e.g. *pal-ha-a-e-es* "wide" StBoT 25, 124

III 7, *me-eq-qa-e-es* "numerous" KBo XIX 44 Rs. 15, MH, *ta-lu-ga-e-es* "long" StBoT 25, 124 III 7) should have analogical *-ēs* and be a replacement for **-āis* < **-áes* < **-óy-es* with reduction of unaccented **e* to *i*.

Pre-Hitt. **óyu* shows up as */āu/* in animate accusative plural forms of *i*-stem adjectives with *-āus*, *-aus* from Pre-Hitt. **-óy-us*: e.g. *sal-la-us* KUB VIII 57 L. 7 (NH), *me-eq-qa-a-u/s* KUB IX 6 IV 10 (NH), *me-eq-qa-a-us-s°* ib. IV 23, *me-eḳ-gạ-ụs* KBo V 6 III 12 (NH) (Sturtevant, *CGr*[1] 112–13).

Pre-Hitt. **uyé* > *uē* > [uwē] with secondary glide insertion occurs in denominatives from *u*-stems with the *e*-grade suffix **-yé-*, e.g. *sarūē-* "loot": 3 pl. pret. *sa-ru-ú-e-er* KUB XVII 21+ II 5 (MH), *sa-ru-u-e-er* KUB XXXI 124 II 14 (MH) = [saruwē-] or [sāruwē-] with analogical */ā/* < **soru-yé-* : *sāru* "booty" (Melchert, *SHHP* 42); *kappūē-* "count, take care of" would have a similar derivation, though a denominative source is less clear: 2 sg. pres. *ka-pu-u-e-si* KBo III 28 II 13 (OH+), 3 sg. pres. *kap-pu-u-ez-zi* KBo XXI 22 I 31 (MH), *kap-pu-u-e-ez-zi* KUB XIII 7 I 9 (MH+), *kap-pu-ez-zi* IBoT I 36 I 46 (MH), 3 pl. *kap-pu-u-en-zi* KBo VI 2 IV 20, 3 sg. pret. *kap-pu-u-e-et* KUB XVII 10 IV 20, 27 (MH), *kap-pu-u-e-er* KUB XXIX III 6 (OH+) = [kapuwē-] from **kapuyé-* {5.5.}.

Forms of *kappūē-* with *o*-grade suffix show Pre-Hitt. **uyo* > **ua* > [uwa]: 3 pl. pres. *kap-pu-u-an-zi* KBo VI 3 IV 16 (MH), 1. sg. pret. *ḳap-pụ-u-wa-nu-un* KUB XIII 35 III 7 (NH) = [kapuwantṣi], [kapuwanun].

The OH third person plural present *kap-pu-u-en-zi* KBo VI 2 IV 20 (= *kap-pu-u-an-zi* in MH dup. KBo VI 3) has [uwē] by analogy from the singular; conversely, forms like 2 sg. pres. *kap-pu-u-wa-si* KUB XXXI 127 I 48 (MH) show generalization of the stem with the original *o*-grade suffix.

### 9.3.1.2. Chronology of loss

Loss of **y* between back and front vowels seems to have occurred only in Hittite. Luvian and Lycian correspondants of the Hittite *mi*-verbs in *-ā(i)-* underwent the sound change **ye* > **yi* seen elsewhere in these languages (Oettinger, *Stammbildung* 535). The Luvian suffix *-ā(y)i-* (Lyc. *-ei-*) should have had the following development: PA **-āyé-* > PLuv. **-āyi-* > CLuv. *-aī-*, HLuv. *-ai-*, Lyc. *-ei-*. The treatment seen in the Hittite suffix **-āyé-* > **-āé-* > (*-āē-*) > *-āi-* can be ruled out, because **-āé-* with PA loss of intervocalic **y* should have become PLuv. **-āa-* > *-ā-* with lowering of **ĕ* to **a* and contraction. Since the change **ye* > **yi* needed to explain the Luvian and Lycian suffix was not shared by Hittite, the loss of **y* between **ā* and **e* (and perhaps between **o* and **e* if some of these verbs can be derived from PA **-oyé/ó-*) cannot have been PA.

Although *-āi-* was extended analogically in the Luvian languages at the expense of the suffix with *o*-grade thematic vowel (note, e.g. CLuv. 3 pl. imp. *-āindu* vs. Hitt. *-āndu* and see Oettinger, *Stammbildung* 563–4), there is evidence that **-āya-* (and **-oyo-* perhaps) became *-ā-* in Luvian as in Hittite. Starke, *StBoT* 31, 247, notes that nominal derivatives in *-mman-* of original verbs in *-āi-* have a vowel *-ā-* preceding the suffix, which can be from **-oyo-* (Starke, following Oettinger) or from **-āyo-*, e.g. nom.-acc. pl. n. *pal-ha-am-ma*, *pal-ha-a-ma-an-za* "width" from a **palhā(i)-* "make wide" (Starke 256–7) or perhaps *kīsamman-* "hair, mane" : *kīsā(i)-* "comb" (cf. Starke 263–7, who derives the latter from athematic **kes-*). While the Luvian suffix *-ā-* shows that the loss of **y* between like vowels, or at least between back vowels, could



have occurred in PA, this is not a conclusion that can be drawn with certainty. Loss of intervocalic **y* is a typologically common sound change and nothing seems to stand in the way of viewing its loss in Hittite and the Luvian languages as independent developments.

### 9.3.1.3. Secondary *VyV*

Since intervocalic **y* was regularly lost, /y/ in the synchronic sequence [VyV] never directly continues inherited **y*. It has several sources.

Intervocalic /y/ is often restored by analogy to the strong case forms in oblique stem forms of *i*-stem adjectives: e.g. abl. sg. *sal-la-ya-az* KUB IX 15 II 10 (NH), gen. sg.?/pl.? *sal-la-ya-as* KUB XIX 39 III 7 (NH) : *salli-* "big" (*CGr*[2] 86, 89, cf. Melchert, *SHHP* 45).

In *dāyuga-* "two-year-old" = [dāyuga-] (e.g. *ta-a-i-ú-ga-as* KBo VI 2 III 24, 25, 28, OH, *da-a-i-ú-ga-as* KBo VI 6 I 44, OH+) from *dā-* "two" plus *yuga-* "of the yoke" = "year-old" the /y/ is clearly from the simplex.

Since the /y/ is found even in OH, *ta-a-ú-ga-as* in MH KBo VI 3 III 31 is undoubtedly simply a mistake with accidental omission of I (i.e. *ta-a-<i>-ú-ga-as*, cf. *ta-a-i-ú-ga-as* ib. III 27, 28) and not (*pace* Oettinger, *Gram. Kat.* 301–2 w. refs. and Friedrich, *HE*) an example of loss of intervocalic **y* (see also Melchert, *SHHP* 46).

The intervocalic /y/ of *mayant-* "grown up, youthful, vigorous, mature", noun "young man in the prime of life" (e.g. nom. sg. c. *ma-ya-an-za* KUB XXX 10 Rs. 7, MH, acc. pl. *ma-ya-an-du-us* KBo XX 42 I 41, MH, KBo III 40 L. 4, OH+) and of *mayas* (gen.?) "of adulthood"? (*CHD* 116) can be analogical from *miyāri*, weak stem of *māi-* "thrive, grow" < **mh₁y-* (cf. Melchert 46).

In *tāyē/a-* "steal" intervocalic /y/ may be the regular reflex of an earlier **iy* or **yy*. Intervocalic /y/ occurs throughout the paradigm: e.g. 3 sg. pres. *ta-a-i-e-ez-zi* KBo VI 2 I 39, 42, 45 etc. (OH), KBo VI 3 III 35 etc. (MH, dup. of KBo VI 2), *ta-i-e[z-zi* KBo VI 2 IV 42, *da-i-e-ez-zi* KBo VI 3 III 30, *ta-a-i-e-ez-zi* KBo VI 3 IV 40, *ta-ya-az-zi* ib. III 26, *da-a-ya-az-zi* KUB XXXIII 72 Rs. 56 (MH); *tayazzil* "theft": e.g. gen. sg. *ta-ya-az-zi-la-as* KBo VI 2 + XIX 1 III 45. The stem should be read [tāyē-], [tāya-], and this verb clearly belongs with Skt. *stāyu-*, *tāyu-* "thief", Gk. τητάομαι "I lack", τηύσιος "guilty", OCS *tajǫ* "I hide" and *tatĭ* "thief", which point to an extended root **(s)teh₂-i-*. *tāye/a-* can continue a derivative in **-ye/o-*, **téh₂i-ye/o-* > **tā́iye/o-* with loss of the laryngeal > [tāye/a-] with simplification of **iy* to /y/ after loss of intervocalic **y* had ceased being productive (the suffix [-yē-] has an analogical long vowel {1.3.3.4.}). Alternatively, if *tāyē/a-* is from a causative **toh₂i-éye/o-*, comparable to OCS *tajǫ* (see Jasanoff, *MSS* 37 (1978) 91–2), then the accent was apparently shifted to the root syllable, giving **tá[h₂]yeye/o-*, which might have become **tā́yye/o-* with syncope. Oettinger, *Stammbildung* 397, reading [tāyye-] < **(s)téh₂-ye/o-*, posits gemination of the glide, i.e. **Vh₂yV* > [VyyV] and claims that the reflex of the geminate glide was not lost between vowels.

Melchert, *SHHP* 39 w. n. 81, 77, who reconstructs **(s)teh₂-yé/ó-* as one possible preform, suggests that the preservation of /y/ shows that loss of **y* after **h₂* occurred after inherited intervocalic **y* had been lost. As the cognates show, however, the root was **(s)teh₂i-*, and the **-ye/o-* verb should have been **téh₂i-ye/o-*. Melchert's reconstruction **(s)taHyé/ó-* (*AHP* 130) will not explain the plene writing *ta-a-*. Eichner's derivation (*Laryngaltheorie* 141–2 w. n. 61) **táh₂-yeti* > **tāyeti* > **tāeti* > *taizzi* is precluded by the spelling *ta-(a)-i-e*.

The intervocalic /y/ of *suwāye/a-* "look, look to" may have a similar explanation. The verb belonged to the archaic language: 3 sg. pres. *su-wa-i-ez-zi* KBo VI 2 I 2, 3 12, 21 etc. (OH), *su-wa-a-i-ez-zi* KBo VI 3 I 30, 32, 34, 36 etc. (MH dup. of VI 2), KBo III 1 II 51 (OH+), *su-wa-ya-az-zi* KBo XXIX 28 I 9 (OH, cf. *da-a-ya-az-zi* "steals" ib. I 12), 1 sg. pret. *su-wa-ya-u-un* KUB XXIX 1 II 1 (OH+), 3. sg. pret. *su-wa-i-et* KUB XVII 6 I 24 (OH+), 2 sg. imp. *su-ú-wa-ya* ib. KUB XXIX 1 I 52 = [swāye/a-] perhaps from **swoH₂/₃i-yé/ó-* or a causative **swoH₂/₃y-éye/o-* : **sweH₂/₃i-*, **swiH₂/₃-* "move quickly, turn, swing" in, e.g., MLG *swāien* "swing oneself", Gk. σμιός "bent upwards", W. *chwim* "movement, rush", adj. "fast" < **swīmo-*, *chwyf* "movement" < **swīmo-*. The semantic development would have been "turn", i.e. "turn one's attention to" ‣ "look at".

The scribes who made the NH copies of the Law Code may have understood the *su-wa-(a)-i-ez-zi* of KBo VI 2 and KBo VI 3 as [swīʦi] since the verb is spelled *su-wa-a-IZ-zi* e.g. in KBo VI 5 I 22, KBo VI 10 II 19, *su-wa-IZ-zi* in KBo VI 5 I 13, 15, 17 etc. and *su-ú-wa-IZ-zi* in KUB XIII 13 Vs. 7.

The sequences [ēa] and [ia], arising through the loss of intervocalic **h₁* or **h₃* or in sandhi are sometimes replaced by [ēya] and [iya] with a secondary glide *y* (Kronasser, *VLFH* 51, Kimball, *PW* 372–3, Melchert, *SHHP* 46–7, *AHP* 130, Eichner, *Laryngaltheorie* 140 w. n. 53).

The earliest examples of [ēya] occur in OH texts, but spellings with the glide are more frequent later: e.g. *ne-e-ya* KUB VIII 81 II 7 (MH), 3 pl. pres. *ne-ya-an-zi* IBoT I 36 III 68 (MH) : *nāi-* "turn" (cf. OH ptcp. *ne-e-an-za, ne-e-an-te-es* {4.3.2.1.}); *he-e-ya-u-e-sa* StBoT 25, 137 II 12 (OH), nominative plural of *hēū-* "rain" beside *he-e-a-u-e-es* StBoT 25, 3 I 8; *zé-e-ya* StBoT 25, 54 II 20, third person singular of *zēya-* "be done, be cooked" beside ptcp. *ze-e-[an-t]e-es* StBoT 25, 3 III 21 = *ze-e-an-te-es* 6 III 13.

Insertion of secondary /y/ in the sequence [ēa] may explain some of the variation in spelling for *mē(y)a(n)ni-*, a unit of time of unclear duration. The earliest example is loc. sg. *me-e-a-ni* in KBo XXV 5 I 4, an OH copy of the Law Code, and this spelling also occurs in MH KUB XXXII 108 Rs. 2. Spellings with *me-(e)-ya-*, *mi-e-ya-* and *me-i-ya-* first show up in MH too: gen. *me-e-ya-ni-as* KBo XV 33 II 37 (MH), *me-e-ya-ni-ya-a[s* KUB XVII 21 III 14 (MH), *me-ya-ni-ya-as* ib. I 21, *me-e-ya-an-ni-ya-as* KUB LIII 3 IV 10 (OH+), *me-e-ya-na-as* KUB XXXVIII 12 I 19 (NH), *me-ya-an-as* e.g. KUB XXXVIII 12 I 23 etc., *m[e-i-ya-na-as* e.g. KUB XXXVI 81 Vs.? 17 (NH), *mi-i-ya-na-as* e.g. KUB XXIV 3 I 16 (MH+), *mi-ya-na-as* KUB XVIII 12 Vs. 3 etc. (U), *me-ya-an-na-as* e.g. KUB V 4 I 39 (U), loc. *mi-e-ya-ni* e.g. KUB IV 72 Rs. 2 (OH?/MH?), *me-i-ya-ni* KBo XV 32 I 2 (MH), *me-ya-ni* e.g. KUB X 5 VI 11 (NH), *mi-ya-ni* e.g. KUB XLIII 74 Vs. 10 (OH+) = [mēan-], [mēyan-]. The meaning and, therefore, the etymology are not entirely clear. Hoffner-Güterbock note that the word can mean "limit" or "extent" in a numerical sense as well as a chronological one, translating the chronological sense as "period, cycle, season". They suggest that appropriate literal English translations of the phrase *witti mē(y)ani* (MU-*ti mē(y)ani*) might be "year-cycle, year-period, time in the year, year-time", noting also that the phrase functions as a single accentual unit, or compound, (cf. MU-*ti me-e-ni-ma-as-si* = *witti mēni-ma-ssi* with enclitics occurring after the second element). If the basic sense is "unit of measurement", then the word is perhaps derivable from IE **meh₁-* "measure" as **méh₁-h₃on-* (with individualizing suffix **-h₃on-*) > PA **mēon* > *mēan-* > *mēyan-* (see the refs. in Tischler, *HEG* 6, 195–8).



Examples *CHD* 229–34. The variant *mēni-* seems to have arisen through syncope, *mē(y)ani-* > *mēni-* {3.7.3.1.}.

A secondary glide /y/ is inserted sporadically in sequences of [ia], e.g. *ki-i-ya-as-ta* (= dem. pro. *kī* plus particle *-asta*) KBo VI 34 IV 11 (MH+).

Intervocalic /y/ also arose through derivation, e.g. *arhaya(n)* "separately, additionally" (*ar-ha-ya-an*, e.g. KUB XXIX 4 III 33 (NH), KUB XXX 24 II 20 (OH+)) a secondary adjective with suffix *-ya-* from *arha* "away, forth".

LÚ*du-ya-na-al-li-is* "second man" IBoT I 36 I 39 and *du-ya-na-al-li* ib. I 38 (MH) are probably to be read [dwiyanalli-] with **dwi-* as in Lyc. *tbi* "another".

### 9.3.2. **w*

Intervocalic **w* was retained (Melchert, *SHHP* 21–2) except in the sequence **uw* which dissimilated to *um* {9.7.3.}: *nēwa-* "new" (*ne-e-wa-*) = [nēwa-] < **néwo-* {2.4.3.}; *e(u)wa-* "barley"(?) (nom.-acc. sg. *e-u-wa-an*) = [ēwa-] < **yéwHo-* {9.2.1.1.}; *hāwi-* "sheep" (nom. pl. *ha-a-u-e-es*) = [hāwi-] < **h₂ówi-* {2.8.2.2.}; *sīwatt-* "day" (nom. sg. *si-i-wa-az*, dat. *si-i-wa-at-ti*, loc. *si-i-wa-at*) = [siwats], [siwat-] < Pre-Hitt. **díw-ot-s*, **díw-ot-* {9.6.}.

Inherited **w* also occurs in the *u*-stem adjective suffix *-aw-* = [-aw-] < **-ow-*: e.g. gen. sg. *Ca-u-as*, *Ca-u-wa-as*, *Ca-ú-as* (rare), *Ca-(a)-wa-as*, dat. sg. *Ca-a-u-i*, *Ca-a-ú-i*, *Ca-ú-i*, *Ca-a-wi* (NH). The source seems to have been an original proterodynamic paradigm (see Weitenberg, *u*-Stämme 381–3). Since there are no morphologically isolated examples showing a change **ewV* > *awV*, the *o*-grade should be at least partially inherited, cf. gen. **-ou-s* in Goth. *-au-s*, Lith. *-aus*, OCS *-u*, and Osc. *-ous* and perhaps **-ow-* in e.g. OCS dat. sg. *syn-ovi*, nom. pl. *synove*, gen. pl. *synovŭ* "son", and see Melchert, *SHHP* 22 w. n. 42 and Weitenberg, *u*-Stämme 369.

## 9.4. Preconsonantal

### 9.4.1. Glide plus laryngeal

Eichner, *MSS* 31 (1973) 77 n. 30, posits gemination (Verschärfung) of a glide followed by **h₁* or **h₃*, i.e. **yH₁/₃* > [yy], **uH₁/₃* > [ww], but there is little independent evidence for this development. Inherited **y* was lost in sequences of **yH₁/₃* as it was when no laryngeal followed, e.g. *nēa* (OH *ne-e-a*) "turns" < **néiH₁/₃-o* (Post-OH spellings with *ne-(e)-ya(-)* indicate glide insertion [ēa] > [ēya] rather than a geminate glide {9.3.1.3.}). Similarly, Pre-Hitt. **uyh₂o* became **ua* with loss of the **y* and then [uwa] with secondary glide insertion in oblique stem forms of adjectives in *-ui-* from **-u-ih₂-o-*: e.g. gen.? sg.? *par-ku-wa-as* StBoT 25, 104 Vs.? II 6 : *parkuī-* "pure"; abl. sg. *da-an-ku-wa-az* KUB VII 1 II 23 (Pre-NH), nom.-acc. pl. n. *da-an-ku-wa* KUB XII 58 II 24 (MH+), dat.-loc.? pl.? *ta-an-ku-wa-as* StBoT 25, 123 L. 5 : *dankuī-* "dark" (Oettinger, *KZ* 97, 49).

Eventually the full-grade suffix [-way-] with analogical /y/ was generalized: e.g. dir. *parku-wa-ya* KUB XI 13 VI 11 (OH+), gen. sg. *da-an-ku-wa-ya-as* KUB XXXI 127 I 21 (MH+), abl. *da-an-ku-wa-ya-az* KBo V 3 IV 40 (Supp. I+).

Eichner also derives *mummiya-* "keep falling, crumble(?)" (e.g. 3 sg. pres. *mu-mi-e-ez-zi* KUB XXVI 44 IV 8, 9, MH?, *mu-um-mi-i-e-e[-zi* KUB XXXIV 19 I 9, Pre-NH) from an original iterative-causative **mouh₁-éyo-* = *[mowh₁-éyo-] > **mauwéya-* > **mūéya-* (with monophthongization of the diphthong) > **mŭwéya-* > **mumíya-* (with **uw* > *um*) > *mu(m)miya-*. IE medial **wH*, however, is probably represented by /w/ in *e(u)wa-mu(m)miya-*. IE medial **wH*, however, is probably represented by /w/ in *e(u)wa-*"grain, barley" = [ēwa-] < **yéwHo-* {4.2.1.}. For the laryngeal, cf. the acute accent of Lith. *jáujas* "barn" < **youHyos*, and see Illich-Svitych, *Nominal Accentuation* 26, 155 n. 17.

## 9.5. Postconsonantal

Cop. *Linguistica* 2 (1956) 19–36; Eichner, *Laryngaltheorie* 141–2; Melchert, *SHHP* 38–40, 46, 51–2, 54–7, *AHP* 128–9; Oettinger, *Stammbildung* 357, 393–7, 550; Sturtevant, *AJPh* 48 (1927) 249; Sturtevant-Trager, *Language* 18 (1942) 259–70, *Language* 19 (1943) 209–20.

### 9.5.1. **y*

Sturtevant-Trager and Melchert (54–7) provide evidence that postconsonantal **y* was in general preserved.

#### 9.5.1.1. Retention

An original **sy* is probably preserved in the rare and archaic demonstrative pronoun *siye-*: gen. sg. *si-i-e-el* KUB I 16 II 47 (OH+), abl. *si-e-ez* KBo XXIV 57 Rs. 6 (MH+), dat.-loc. *si-e-da-ni* StBoT 25, 104 II 7, Bo 3752 Vs.? II 7 (StBoT 26 n. 489), *si-e-ta-ni* KUB XIV 1 Rs. 36 (MH) = [syĕ-] < **syé-* : Ved. deictic pronoun *sya-* (masc. nom. sg. *sya*, *syaḥ*, fem. *syā*).

For the etymology see Neu, *StBoT* 26, n. 489 w. refs. It is not clear whether Vedic, where the declension of *sya-* parallels that of dem. pro. *sa-*, *ta-*, or Hittite preserves the original inflection more faithfully.

Verbs in **-ye/o-* have a suffix -[yĕ-], [-yĕ-], [-ya-], e.g. from OH, with suffix accent: *a-ni-e-ez-zi* KUB XXIX 30 II 21, *a-ni-ez-zi* StBoT 25, 59 I 5, II 1 : *aniya-* "do"; *ha-az-zi-e[i-tu* KBo III 22 Rs. 51, *ha-az-zi-an-zi* StBoT 25, 33 I 19, *ḫa-az-zi-an-zi* ib. I 8 : *hazziya-* "strike"; *ḫu-la-a-li-ya-mi* StBoT 25, 6 III 14, *ḫu-la-a-li-e-mi* StBoT 25, 4 IV 23, *ḫu-la-a-li-e-z[i* StBoT 25, 100 Rs. 3, *ḫu-la-li-an* StBoT 25, 4 IV 28 : *hulāliya-* "wind, entwine"; *tak-ka-li-et* KBo VII 14 Vs. 8, 9, 10, *tak-ka-li-an-d[a* KUB XXIX 23 L. 10 : *takkaliya-* "encircle"; with accented root or preverb: *ḫa-ri-e-mi* StBoT 25, 3 III 9, StBoT 25, 5 II 2, *ḫa-ri-e-nu-un* StBoT 25, 4 III 12 : *hāriya-* "bury"; *ḫu-e-et-ti-an-ta* KUB XXIX 30 III 6, *ḫu-e[t-ti-y]a-an-ta* KUB XXIX 35 IV 15, *ḫu-et-ti-ya-ti* KBo III 22 Rs. 54 : *huēttiya-* "drag, draw"; *pe-es-si-e-mi* StBoT 25, 3 IV 22 = 4 IV 8, *pe-es-si-ya-mi* StBoT 25, 4 IV 18, *pe-es-si-ya-u-e-ni* StBoT 25, 139 Vs. 6 : *pēssiya-* "throw"; *ú-e-mi-ez-zi* e.g. KBo VI 2 I IV 11, *ú-e-mi-ya-a[n-zi* StBoT 25, 124 III 11, *ú-e-mi-et* KUB XXXVI 99 Rs. 6, *ú-e-mi-ya-u-en* KBo XXII 2 Vs 14 : *wemiya-* "find".



Parallelism with *a-ni-(e)-ez-zi* suggests that the 1 sg. pres. *a-ne-e-mi* of StBoT 25, 3 II 2 should be read /anyĕmi/ with NE for NI. For the third person singular present in [-yĕ-] see {1.3.3.4.}.

*iya*-stems and *i*-stems: nom. sg. c. *ap-pe-ez-zi-ya-as* KBo XXII 2 Vs. 18, acc. sg. c. *ap-pe-ez-zi-ya-an* KBo III 22 Rs. 46, nom. pl. c. *a]p-pe-ez-zi-e-es* StBoT 25, 62 L. 9 : *appezziya-* "last"; gen. sg. *ḫal-ki-as* KBo VI 2 IV 49, 51, StBoT 25, 3 IV 9 = *ḫal-ki-ya-as* 4 IV 15: *ḫalki-* "grain"; abl. sg. *lu-ú-li-ya-az* KUB XXIX 21 L. 3, dir. *lu-li-ya* KBo VI 2 I 56 : *lūliya-* "pond, tank"; acc. pl. *mḫa-a-ri-us* StBoT 25, 54 I 13 : *māri-* "spear" with suffix [°C-ya-] < **C-yo-*.

Relative-interogative pronoun: nom. pl. c. *ku-i-e-es* e.g. StBoT 25, 14 II 13, *ku-i-es* StBoT 25, 13 II 7, StBoT 25, 61 Rs? 3 = 62 L. 10, acc. pl. c. *ku-i-us* StBoT 25, 15 IV 26, 34 = [kʷyĕs], [kʷyūs] < Pre-Hitt. **kʷy-és*, **kʷy-ús*, IE stem **kʷi-*.

#### 9.5.1.2. **y* following laryngeal

There is no evidence for **hɜy*. For loss of **h₁* and **h₂* between a consonant and **y* see {10.5.5.}. Intervocalic **h₁y* seems to have become **y* before the loss of inherited **y* between vowels, since it merged with inherited **y* and was lost (Melchert 46).

*uanzi, uwanzi*, third person plural present of *we-, uwa-* "come": *ú-an-zi* StBoT 25, 19 Vs. 16, *ú-wa-an-zi* StBoT 25, 54 III 7 (and Post-OH) can be derived from Pre-Hitt. **(o)u-y-anti* (for PA **(o)u-h₁y-enti*) > [uantsi] > [uwantsi] with glide insertion. The stem *uwa-* was extended elsewhere in the paradigm by the OH period (cf. e.g. 1 sg. pres. *ú-wa-mi* StBoT 25, 7 IV 11, 2 sg. *ú-wa-si* KBo VII 14 + I 5, 1 pl. *ú-wa-u-e-ni* StBoT 25, 3 IV 7, 1 pl. pret. *ú-wa-u-en* KBo VIII 42 Vs.? 5, 2 pl. *ú-wa-at-te-en* KBo XXII 2 Vs. 15).

Examples *Stammbildung* 38, 131–2, PW 694–5; discussion Risch, *Fs Sommer* 190, Oettinger, *Stammbildung* 132–4, 333, 391, Melchert, *SHHP* 28, 41. The archaic third person plural present *ú-en-zi* (e.g. KBo VI 2 IV 13 (OH), StBoT 25, 12 III 16, 18, IV 2, 14) is built analogically after the third person singular *ú-(e)-ez-zi* (Eichner, *MSS* 31 (1973) 85 n. 7, Oettinger 133, Melchert 141). The plene writing in 1 sg. pres. *ú-wa-a-mi* KUB XXIX 1 I 20 (OH+) is unusual.

Traces of loss of intervocalic **y* from **h₁y* can also be seen among diphthongal *ḫi*-verbs with stems in **-h₁y-*; for example: *ḫu-u-wa-an-zi* (e.g. KBo IV 2 II 26, OH+, KBo XIII 131 III 18, MH+) and *ḫu-u-wa-an* (StBoT 25, 137 II 14), 3 pl. pres. and ptcp. of *huwāi-* "run" < **h₂uh₁y-énti* and **h₂uh₁y-ónt-* {9.7.5.2.}; *da-a-er*, 3 pl. pret. of *dāi-* "put" (KUB XXXVI 104 Vs. 8, OH) = [dăĕr] < **dhóh₁y-ēr*. The /y/ is usually restored, however, even in OH: e.g.: 3 pl. pres. *ḫu-ya-an-zi* StBoT 25, 3 I 3, *ḫu-u-ya-an-zi* KBo XI 48 Vs. 4, 7 (OH+), *ḫu-u-i-ya-an-zi* KBo XI 32 Vs. 9 (OH+), *ḫu-u-i-an-zi* ib. Vs. 15; ptcp. *ḫu-ya-an-te-es* StBoT 25, 137 II 12, 13, 3 pl. pret. *ḫu-u-i-e-er* (NH); 3 pl. pret. *da-i-er* KBo XXII 2 Vs. 16 (OH), KBo XV 36 III 44 (MH), *da-a-i-er* ib. III 47, *da-i-e-er* KBo XII 62 L. 16 (OH+), *da-a-i-e-er* KUB XV 34 IV 58 (MH?), KBo VI 34 I 27 (MH+) (Oettinger, *Stammbildung* 480–1, Melchert, *SHHP* 16 n. 31, 28, 46, 48).

*sūē-/sūwa-* "push, reject": 1 sg. pres. *su-e-[mi]* KUB XXVI 77 I 11 (MH), 3 sg. pres. *su-ú-ez-zi* KBo VI 2 IV 48 (OH), KBo XVI 25 IV 5 (MH), *su-ú-i-e-ez-zi* KUB VIII 81 + III 7 (Supp. I), 3 sg. pret. *su-ú-et* KBo XVI 25 I 68, 2 pl. pret. *su-wa-at-te-en* KUB IV 1 II 13, 18 (MH?) = [suwĕ/a-] < **suh₁-yé/ó-* (Melchert, *SHHP* 16, 28, 90).

Intervocalic **hₓy* also seems to have become **y* before the loss of inherited intervocalic **y* with which it merged and was lost. A clear example is provided by the denominative suffix *-ā-* < **-ā-yo-* < **-eh₂-yó-*, *-āi-* < **-ā-yé-* < **-eh₂ye-*. The intervocalic */y/* of *tāye/a-* "steal" and *suwāye/a-* "look, look to" may be the regular reflex of an earlier **iy* or **yy* rather than **hₓy* with Oettinger, *Stammbildung* 397 and Melchert, *SHHP* 39 w. n. 81, 77 (9.3.1.3.).

## 9.5.2. **w*

### 9.5.2.1. Loss between dental stop and **o* or **ō*

Loss of **w* between an obstruent and PA **o* or **ō* was originally proposed by Sturtevant (*AJPH* 48) for *dān* "second(ly) : IE **dwō* "two" and by Čop (*Linguistica* 2, 19–36). In Čop's view, this sound change occurred in PA and included delabialization of labiovelars before **o*, but the evidence does not support such broad a formulation of the change. As Melchert (*SHHP* 51–2 and *AHP* 128) notes, the two best cases involve loss between a dental stop and **o* or **ō*, and loss is Hittite only, a conclusion that implies that PA **o* and **a* and **ō* and **ā* remained distinct into Pre-Hittite (2.2.1.).

See Melchert 51–2 nn. 98 and 99 for a discussion of Čop's other proposed examples.

*dān* "second(ly)" (*da-a-an*, MH etc., *ta-a-an*, OH) = [dān] < **dwoyóm* : Ved. *dvayá-* "twofold" (9.3.1.1.) and *dā-* in *dāyugas* "two-year-old" (*ta-a-i-ú-ga-as*, OH, MH, *da-a-i-ú-ga-as*, OH+) and in *ta-a* UD-*ti* = **tā siwatti* "on the second day" KUB XXXII 123 III 5 (NH) = [dā-] < **dwo-* "two" (Čop 33, Melchert 51–2).

Cf. Kronasser, *VLHF* 51, and see Puhvel, *KZ* 92 (1978) 99–100 = *AnIE* 390–3.

*idālu-* "evil" (nom-acc. sg. n. *i-da-a-lu*, OH etc., *i-ta-a-lu*, MH) = [idālu] < Pre-Hitt. **edwólu-* (secondary *u*-stem with root accent after *āssu* "good") from PA **édwōl-* in CLuv. *āddduwāl(i)-* and HLuv. *atuwali* (2.8.1.1.).

### 9.5.2.2. Retention

In most environments, posteonsonantal **w* remained.

*palwā(i)-* "cry out": 3 sg. pres. *pal-wa-a-iz-zi* StBoT 25, 82 Rs. 12, 3 pl. *pal-wa-an-zi* StBoT 25, 63 L. col. 3, 4, 5, StBoT 25, 86 Vs. 12, $^{LÚ}$*pal-wa-tal-le-es* StBoT 25, 31 II 5, $^{SAL}$*pal-wa-aš-tal-lḫa-as* StBoT 25, 31 IV 9 = [palwā(i)] < **polw-ā-yé/ó-*, denominative from a noun **palwa-* < **pol-w-éh₂-* : IE **(s)pel-* in e.g. OE *spell* "story".

For the meaning and etymology see Badalì, *Orientalia* 59 (1990) 130–42, Nowicki, ib. 239–42, and *CHD*, P 80–3.

First person plural ending *-weni*, pret. *-wen* (e.g. *a-du-e-ni*, e.g. StBoT 25, 4 II 8, *sa-su-e-ni* StBoT 25, 3 II 8, *ta-ru-e-ni* StBoT 25, 3 I 27, IV 9, *li-in-ku-en* KUB XXXVI 106 Vs. 6) = [-wēni], [-wēn] from PA **-wén(i)*.

*tuēl*, genitive of the second person singular personal pronoun (e.g. *tu-e-la-wa* KBo VIII 42 Vs.? 8, OH, *tu-e-eḫ* StBoT 25 122 III 12) = [twēl] < PA **tw-él*.

For *tuwān* (... *tuwēn*) "from here (... from there") < **dwā́m* < **dwehₓm* : **dwehₓ-* "separate, make distant" see (2.1.6., 2.5.2.).



## 9.6. Sievers–Lindeman's Law

Melchert, *SHHP* 55–7, *AHP* 48, 57–8.

There is solid evidence for reconstructing PA Sievers or Lindeman variants in **uw* that later became [um] by dissimilation (9.7.3.), which suggests that [iy] by Sievers-Lindeman's Law is also to be expected. Evidence for [iy] from Sievers-Lindeman's Law, however, is equivocal. Although spellings in CI-I-E(C) and CI-I-(YA)- occur from OH on, they are not confined to environments where Sievers or Lindeman variants are to be expected even in OH, and it is not clear whether they contrasted with CI-E(C) and CI-(Y)A in texts from any period (Melchert, *SHHP*, *AHP* 58) (1.13.2.3.). In dat.-loc. pl. *ut-ni-i-as* "in the lands" StBoT 25, 118 I 6 it is possible to read [udniyas] from **udniy-* beside nom.-acc. sg. *udnē* < **udnēi* (Melchert); cf. also *ar-ki-i-ú-az* StBoT 25, 26 Vs.? I 9 "passageway of the gatehouse" (but *ar-ki-ú-az* ib. I 7, *ar-ki-úḫ-* StBoT 25, 28 Rs.? III 70), a word with no etymology.

Two other words may also have [Ciy] via Lindeman's Law. IE **diy* perhaps became [siy] in the words for "sungod" and "day". The spelling *si-i-* is found in *si-i-us-mi-is* OH KBo III 22 Rs. 47 = nom. sg. *si-i-us* plus enclitic possessive pronoun *-mis* "my" (cf. *si-ú-su[m-mi-in* "our God" ib. Vs. 41) and perhaps in *ṣi-i-ú-us* in StBoT 25, 137 III 4, although the identification of the latter is uncertain (Neu, *StBoT* 26, n. 495). If *si-i-* indicates [siy] then the nominative singular forms would continue a Lindeman variant **diyḗus* as in Ved. *dyáuḥ* = [diyauḥ] or **diyéus* (cf. Melchert 56). But **dyḗus* > [sīus] with **ēu* > [īu] cannot be excluded (4.8.3.).

The interpretation of these forms as Lindeman variants is not certain, however, since the spelling *si-i-* can simply represent prevocalic [sy], i.e. [syūs] < **dyḗus*. It has also been claimed that nom. sg. *si-i-us* is to be read as [siu] with **ēu* > [iu] (Pedersen, *Hitt.* 175–6, Weitenberg, *u*-Stämme 115, 175–6, 373), and this development is impossible to disprove (4.8.3.).

The oblique stem of the word for "god" is always spelled *si-ú-un-* in OH, and this is the usual spelling in later texts, but sporadic examples of *si-i-ú-n°* occur from MH on (e.g. acc. sg. *si-i-ú-na-an* KBo XXIII 86 L. 11 (MH), dat. sg. *si-i-ú-ni-(mi)* KUB XXX 10 Rs. 11 (MH), dat.-loc. pl. *si-i-ú-na-as* KUB XXVII 45 VI 15 (OH+), and with NH CI-E- = OH CI-I-, *si-e-ú-ni*-AH-*ta* "struck down by a god" KBo VI 26 I 22 (OH+, Law Code = *ši-ú-ni*-AH-*ta* in OH+ KBo VI 10 IV 10, *si-ú-ni-ya-ah-ta* in OH+ KBo VI 15 L. 13; the OH copy is not preserved here). The stem *siun-* was probably generalized from an accusative, PA or Pre-Hitt. **dyun* or **diyun* (itself a replacement for IE **dyēm*; see Weitenberg, *u*-Stämme 176). The spelling *si-i-u-n°* could suggest that the pre-form was **diyun-* with **diy* from the nominative singular, and the lack of spellings in SI-I- from OH would then be accidental. Alternatively, if the pre-form was **dyun-* > [syun-], then [siy] was generalized from nom. sg. [siyus] within the historical period.

Examples and refs. Weitenberg *u*-Stämme 172–9. The spelling *si-i-* also shows up sporadically in the word for "day" in OH: nom. sg. *ṣi-i-wa-az* StBoT 25, 27 Rs.! 19, gen. sg. $^{D}$*si-i-wa-at-ta-as* StBoT 25, 27 Vs.! 10, loc. *si-i-wa-at* StBoT 25, 17 L. 1 and in KUB XX 4 VI 1 (OH+) beside dat.-loc. *si-wa-aš-ti* StBoT 25, 52 II 13 and *si-wa-at-šti* KBo III 22 Rs. 60 (OH). These forms could point to a stem [sīwat-] reflecting PA **díwod-* < **díwot-* with PA voicing as in the Luvian word for "sungod" in CLuv. gen. adj. *tiwadassi-* and **tiwatini(ya)-* "curse" (*CLuv. Lex.* (229–30) and HLuv. *-ti-wa/i+ra/i-*. The Hittite *tt* = [t] would have to be analogical from other nouns in *-att-*.

## 9.7. Dissimilation of **uw* and **wu* to *um*

Dressler, *Sprache* 10 (1964) 102–7; Eichner, *MSS* 31 (1973) 92 n. 34, 99 n. 79; Friedrich, *HE* 33; Kammenhuber, *MIO* 3 (1955) 363–8, *Fs Sommer* 102, *HdO* 137; Kronasser, *VLFH* 50–2, 170, *EHS* 81–8; Melchert, *SHHP* 22–7, 28–30, 76, *AHP* 127–8; Neu, *StBoT* 6, 129–30, StBoT 18, 121–2; Oettinger *Stammbildung* 297 n. 77, *Gds Kronasser* 174 n. 76; Puhvel, *HED* 1, 175; 3, 51; Sturtevant, *CGr*$^{1}$ 114–6, *CGr*$^{2}$ 44–5; Weitenberg, *u*-Stämme 376, 378.

Inherited **w* was dissimilated to /m/ before and after **u*. There is no independent evidence for assuming with Kronasser (*EHS*), Neu, and Weitenberg that °M° is a variant spelling for /w/ as in some versions of Akkadian. As Kammenhuber (*MIO* 3) and Dressler (106–7) note, spellings with °M° occur only in a restricted set of environments (most clearly, before and after **u*) and not, for example, in initial position as the supposedly parallel Akkadian spellings do. Melchert discusses the environments in which dissimilation occurs, arguing that it is regular before and after inherited **u* and where Sievers's or Lindeman's Law would have produced phonetic *[uw] in IE or PA. He notes too (76) that since sequences of [uwV] from **uH$_1$$_3$V* or **uyV* with loss of the laryngeal or **y* and secondary glide insertion do not undergo dissimilation, dissimilation must have preceded the loss of these sounds. Puhvel, *HED* 1 175, posits juncture shift in **ard-(u)weni* > **ardu-weni* > *ardumeni* : *ard-* "saw" (cf. also ib. 3, 51), but does not explain the conditioning for this change. It should be noted that [uw] would be regular by Sievers's Law here.

### 9.7.1. Dissimilation of **uw* to *um*

Dissimilation occurs in the first person plural present and preterit of verbs in *-nu-*: e.g. *arnu-* "bring": 1 pl. pres. *ar-nu-um-me-ni* (MH?, NH), 1 pl. pret. *ar-nu-um-me-en* (OH+); *tekkusnu-* "point out": 1 pl. pres. *te-ek-ku-us-nu-um-me-e-ni* (MH+), *te-ek-ku-us-nu-ma-ni* (MH+); *wahnu-* "make turn, swing": 1 pl. pres. *wa-ah-nu-me-ni* (OH), *wa-ah-hu-um-me-e-ni* (NH); 1 pl. pres. [-numēni] < **-nu-wéni*, [-numani] < **-nu-wani*, 1 pl. pret. [-numēn] < **-nu-wén*.

While there is no basis for reconstructing PA first person plural present and preterit endings **-mén(i)* < IE **-me-X* beside **-wén(i)*, the origin of PA **-wén(i)* vs. IE **-me* remains unexplained.

Similarly, the verbal noun and infinitive of *nu*-verbs show dissimilation, **-nu-war* > *-nu-mar*, gen. **nu-wens* > **-nu-was*, **-nu-wanzi* > **-nu-manzi*: e.g. *arnu-* "bring": vbl. noun nom.-acc. sg. *a-ar-nu-ma-ar* (NH), *ar-nu-ma-ar* (NH, vocab.), *ar-nu-um-mar* (Pre-NH), gen. sg. *ar-nu-ma-as* (OH+), *ar-nu-um-ma-as* (NH), inf. *ar-nu-ma-an-zi* (MH?, NH), *ar-nu-ma-zi* (U).

Dissimilation is regular too in the first person plural present of *au(s)-* "see", e.g. *ú-me-ni* StBoT 25, 3 IV 8, *u̯m-me-e-ni* (?) StBoT 25, 139 Rs. 6 < **u-wéni*, and in 1 pl. pret. *aumen* (*a-u-me-en* OH, OH+) < **áu-wen*.

*inumā(i)-* "make warm" (3 pl. pres. midd. *e-nu-ma-an-da-ri* KUB I 13 II 37, MH+) and *isharnumā(i)-* "make red": 3 sg. pres. *is-har-nu-ma-iz-zi* KBo V 1 I 26 (Pre-NH), KUB XV 31 II 23 (MH+), *is-ha-ar-nu-ma-a-iz-zi* KUB XV 32 II 18 (MH+; dup. of XV 31), 3 pl. pres. *e-es-ha-ar-nu-ma-an-zi* KUB XXIX 4 IV 39 (NH), *is-ha-ar-nu-ma-an-zi* KBo V 1 III 41) have a suffix *-mā(i)-* from **-nu-wā(i)-*, a conglomeration of *-nu-* from the base verbs *inu-* "make warm" and *esharnu-* "make red" plus the suffix *-wā(i)-*, seen also e.g. in *hisuwā(i)-* "lie open".



See Melchert, *SHHP* 27, who derives the deverbative suffix *-wā(i)-* from a reanalysis of *-u-* or *-wa-* stem denominatives in *-ā(i)-*, i.e., *-u-ā(i)-* > *-uw-ā(i)-* with hiatus-filling *-w-*.

Oettinger, *Stammbildung* 298 w. refs., derives *sumrā(i)-* "be pregnant" (it. sup. *sum-re-es-ke-wa-an* KUB XXIV 8 + XXXVI 60 III 2, 11, Pre-NH) from **sumarā(i)-*, a denominative to a verbal noun **sūmar* : *sū-* "fill". This analysis, which is semantically quite plausible (cf. esp. *sannapili-* "empty" = "not pregnant"), implies a series of developments: **seúh$_3$-u̯r̥* > **sū-wr̥* > **sū-war* (with post-vocalic **u̯r̥* > *-war* {5.4.}) > **sūmar*.

For **h$_3$* in the Anatolian words for "fill" and "full" {10.4.3.} and for the syncope **sūmarā(i)-* > [sūmrā(i)-] see {3.7.1.}.

### 9.7.2. Dissimilation of **wu* to *um*

This change is seen in the animate accusative plural of *u*-stem adjectives in *-amus* < Pre-Hitt. **-aw-us*: e.g. *a-as-sa-mu-us* KUB XXXIII 9 III 10 (MH+) : *āssu-* "good"; *i-da-a-la-mu-us* KBo XV 10 I 30, II 12 (MH), *i-da-a-l[a-mu-us* ib. III 54 : *idālu-* "bad"; *par-ga-mu-us* e.g. KUB XVII 10 I 24 (MH) : *parku-* "high".

Sporadic examples with an analogical ending *-aus* also occur, e.g. *par-ga-us* KUB VII 1 + KBo III 8 III 22 (Pre-NH, cf. *par-ga-mu-us* ib. III 3).

### 9.7.3. **uw* via Sievers–Lindeman

Pre-Hittite **uw* from Sievers-Lindeman's Law was also dissimilated to [um]. A thorough discussion is provided by Melchert, *SHHP* 25–7.

*tumēni*, 1 pl. pres. of *dā-* "take" (e.g. *tu-me-e-ni* e.g. StBoT 25, 3 IV 25 = 4 IV 22, 4 IV 43, *du-me-e-ni* KBo XV 10 II 58 (MH)) = [dumēni] is based on an earlier 1 pl. pret. **duwén*, Lindeman variant of **dwén* for PA **dh$_3$-wén*. Although the attested first person plural preterit of *dā-* is *dāwen* = [dāwen] with full-grade root (e.g. *da-a-u-en* KBo XV 10 II 60), the full-grade can be analogical from the third person plural *dāer* (OH etc.), and the regular form [dumēn] is retained in the compounds *pēda-* "take" (*pe-(e)-tu-me-en*) and *uda-* "bring" (*ú-tu-me-(e)-en*).

For this analysis see *Melchert*, SHHP 25, and cf. Oettinger, *Stammbildung* 566 n. 12, who reconstructs 1 pl. pres. **duweni*. Eichner's analysis, **dh$_3$wen(i)* > **duweni* with vocalization of **h$_3$* to **u* (*Laryngaltheorie* 137) is less likely {10.9.2.2.}

The first person plural and preterit endings *-umēni*, *-umēn* and infinitives and verbal nouns in *-umanzi*, *-umar*, *-umas* occur frequently among thematic and semithematic *hi*-verbs (see Kammenhuber, *MIO* 3 for the distribution): e.g. *ārr-* "wash": vbl. noun *ar-ru-um-ma-as* KBo II 20 L. 8 (U), KBo XVIII 181 Rs. 7 (NH), inf. *ar-ru-ma-an-zi* KUB I 13 II 61 (MH+), IBoT II 135 L. 7 (Pre-NH), *a[r-ru-u]m-ma-an-zi* KUB XV 34 III 38 (MH?), KUB XXXIV 59 L. 3 (MH+); *ard-* "saw": 1 pl. pres. *ar-du-me-e-ni* KUB XXXVI 74 III 2 (NH), *ar-du-mar* KBo XXVI 19 L. 10 (U); *sanna-* "conceal": vbl.

noun nom.-acc. sg. *sa-an-nu-um-mar* KUB XXVI 1 IV 19 (NH); *sarra-* "divide": 1 pl. pret. *sar-ru-um-me-en* KUB XXXI 76 Vs. 6 (NH), KUB XL 91 Rs. 10 (NH); *sunna-* "fill": inf. *su-un-nu-ma-an-zi* IBoT 7 IV 15 (MH?), KUB XXI 17 III 10 (NH), vbl. noun *su$^{l}$-un-nu-mar* KBo I 42 III 52 (NH, vocab.); *tarna-* "release": 1 pl. pres. *tar-nu-um-me-ni* KBo V 6 I 5 (NH), *tar-nu-um-ma-ni* KBo II 8 I 15 (NH), 1 pl. pret. *tar-nu-mi-en* KBo III 45 Vs. 10 (OH+), *tar-nu-um-me-en* KUB XIII 4 IV 75 (MH(?)+), vbl. noun nom.-acc. sg. *tar-nu-um-mar* KUB V 1 III 69 (NH); *zinne-* "end": 1 pl. pres. *zi-in-nu-um-me-e-ni* KUB XIII 35 IV 3 (NH), vbl. noun nom.-acc. sg. *zi-in-nu-[mar]* KBo I 31 Rs. 10 (NH; vocab.). Melchert (25) explains that many of these verbs, which have roots ending in original consonant clusters, would regularly have had Sievers variants before endings or suffixes in *w-* (e.g. = *[(h$_1$)r̥Huwr̥] > *ārrumar* "washing", *[tr̥nh$_2$-uwén] > *tarnumēn* "we let loose". Once these verbs had developed partially thematic inflection in Pre-Hittite, they could also have served as models for the extension of *-umēn(i), umanzi, -umar* to other verbs, e.g. *pennumēni* : *penna-* "drive (from)", NH *kuwennumen* etc. : *kwenna-* "kill" (see ib. n. 53) or inf. *ha-nu-ma-an-zi* KUB XXIX 4 I 59 (NH) : *hān-* "draw water".

For 1 pl. pres. *hu-ul-lu-mi-en* KUB XXIII 21 Vs. 29 (MH), vbl. noun nom.-acc. sg. *hu-ú-ul-lu-mar* KBo XIV 4 I 28 (NH) : *hulla-* "fight" see Melchert, ib. n. 52, although the derivation from **h$_2$wl̥h$_2$-* is not certain (10.10.2.).

Melchert (27) derives the nominative of the second person plural pronoun *sumēs* (e.g. *su-me-es* KBo VI 2 + III 18, OH, *su-me-s* StBoT 25, 4 II 7, KUB XXIII 77 L. 15, MH), nom.-acc. *su-me-es* KBo V 3 IV 13, 25, 29, 31 (Supp. I+), *su-me-ę-s* ib. IV 18, KUB XXXIII 62 III 10 , MH?) from a Lindeman variant **suwés* beside **suwes* in OIr. **si* and W. *chi*. Since its second syllable *-ēs* resembled the nominal animate nominative plural ending *-ēs, sumēs* was reanalyzed as *sum-ēs* and provided a model for the creation of acc.-dat. *sum-ās* (e.g. *s[u-ma-a-as* StBoT 25, 4 II 51).

For the ending *-ās* cf. 1 pl. acc.-dat. pl. *anz-ās*.

The second person plural middle present ending *(°t)-tu-ma, (°d)-du-ma* = [-ttuma] can be from **-dh$_2$uwe* beside **-dh$_2$ue* with gemination of **d* caused by the following **h$_2$* (10.7.1.). Sievers variants are also found in Indo-Iranian, cf. Skt. 2 pl. pres. midd. *-dhvam* beside *-dhvam*.

See Melchert, *SHHP* 26 n. 51, who reconstructs a Sievers variant **-dhuwe* beside **-dhue*, and cf. Eichner, *Fl. u. Wb.* 94, who reconstructs **-dhuwo*. Melchert notes that it is unclear whether CLuv. *-dduwari* represents [-ttuwari] from **-dh$_2$we* or [-ttuwari] from **-dh$_2$uwe*, since there is no other evidence for dissimilation of **uw* to *um* in Luvian.

## 9.7.4. Unlikely examples

In several words a sequence [um] that has been considered a reflex of **uw* probably has another explanation.

The ethnic-gentilic suffix *-umna-* is derived by Eichner, *MSS* 31 (1973) 99 n. 99, and *Heth. u. Idg.* 57 n. 51, from **-wo-n-* with syncope; cf. also Oettinger, *Gds Kronasser* 174 n. 76, who notes that dissimilation of the **w* would only have been regular in forms derived from *u*-stems or stems ending in resonant plus obstruent, which would have provided a Sievers environment (e.g. $^{URU}$*Salamp-uan* > [salamp-uwan] > *Salampuman-*. The suffix is better interpreted, however, as PA **-uman-* (7.5.3.3.).



*nekumant-* "naked", analyzed as [negumant-] by Friedrich, *HW* 150, Kammenhuber, *MIO* 3 (1955) 368 n. 48 and Dressler, *Sprache* 10 (1964) 103 and derived from **neg$^{w}$-went-*, should instead be [neg$^{w}$mant-] and is probably an probably extended form in *-ant-* from a **neg$^{w}$ma-*, dissimilated from IE **neg$^{w}$nó-* as in Skt. *nagná-* "naked" (7.10.3.).

See Tischler, *HEG* 7, 307–9, for further refs.

The origin of the variants *nūmān* "never" (*nu-u-ma-a-an* KUB XVII 5 I 14 = *nu-u-ma-an* KUB XVII 6 I 9, both OH+) and *nūwān* id. (*nu-u-wa-a-an* KBo V 6 III 14, NH = *nu-u-wa-an* KBo XIV 9 III 3, NH) is unclear. These forms are analyzed by Hoffner, *Gds Kronasser* 38–45, as negatives of the particle *man* in its use expressing a "subject optative". Since *nūwān* is found only in two texts, it is possible that *nūwān* is the product of scribes in whose speech analogical [uw] occasionally replaced phonologically regular [um] in verbal and nominal paradigms (9.7.5.1.).

For various etymologies see Tischler, *HEG* 7, 345–7.

## 9.7.5. Secondary *uw*

### 9.7.5.1. Analogical *uw*

Occasionally, [um] was replaced by analogical [uw]; e.g. from *nu*-causatives: 1 pl. pres. *hu-is-nu-e-ni* KUB XXXVI 32 L. 15 (NH) : *huisnu-* "let live"; vbl. noun *wa-ah-nu-wa-u-wa-ar* KUB I 11 + KUB XXIX 57 I 9 (MH+) : *wahnu-* "make turn, swing"; vbl. noun gen. sg. *w]a-ar-nu-wa-as* KUB XII 22 L. 16 (OH+) : *warnu-* "burn"; from paradigms of thematic and semi-thematic *hi*-verbs: e.g. vbl. noun gen. sg. *a-ar-ru-wa-as* KUB XV 42 II 4 (NH), inf. *ar-ra-u-wa-an-zi* KUB XXIV 7 III 57 (NH), *ar-ra-wa-an-zi* ib. III 58 : *ārr-* "wash"; 1 pl. pres. *sar-ra-u-e-ni* KUB XXIV 8 IV 5 (OH+) : *sarra-* "divide". It seems simpler to take forms such as these as analogical rather than to assume a redissimilation of [(n)um] to [(n)uw] with Eichner, *MSS* 31 (1973) 92 n. 34.

The first person plural present *la-hu-e-ni* (OH etc.) and verbal noun *la-a-hu-(u)wa-ar* (NH) of *lāh(u)-* "pour" reflect either a stem *lāh-* (i.e. *lāh-weni, lāh-war;* cf. 2 sg. imp. *lāh* and see *CHD* 3, 4 w. refs.), or they might be analogical replacements for **lahumeni* and **lahumar* < **lahu-weni, *lahu-war*.

### 9.7.5.2. [uw] via glide insertion

In some words the spellings CU-Ú-V-, CU-U-V-, CU-U-WA-, or CU-Ú-WA- seem to represent a sequence [Cuwa] that is distinct from [Cw]. Since inherited **uw* dissimilated to *um*, the synchronic sequence [uw] must be of secondary origin (Melchert 28–30; Oettinger, *Stammbildung* 297 n. 77). One source of [uw] is the insertion of a hiatus-filling glide [w] after the loss of intervocalic **y* (e.g. *ka-ap-pu-u-e-, ka-ap-pu-wa-* "count" with [-uwē-], [-uwa-] < **-u-yé/o-* (9.3.1.1.). Similarly, loss of intervocalic **h$_1$* and **h$_3$* after **u* produced [uV] > [uwV] (Oettinger, Melchert), e.g. *suē-, suwa-* "push" (*su-wa-, su-u-e-*) = [suwē-], [suwa-] < **suh$_1$-yé/ó-* (9.5.1.2.); *hu-u-wa-an-zi, hu-u-wa-an*, third person plural present and participle of *huwāi-* "run" = [huwantsi], [huw-

ānt-] < *$h_2uh_1y$-énti, *$h_2uh_1y$-ónt-, *hūwant-* "wind" (*hu-(u)-wa-an-za*), stem [huwānt-] < *$h_2uh_1$-ént- : *$h_2wéh_1$-n̥t-* in Lat. *vēntus* "wind", Goth. *winds*, OE *wind* id., from the participle of IE *$h_2weh_1$-* "blow" in Skt. *vāti* "blows", Gk. ἄημι "blow" etc. (cf. Oettinger, *Stammbildung* 297 n. 77, Melchert, *SHHP* 28 n. 59 and Puhvel, *HED* 3, 428–9), *sūwa-* "fill" (*su-(u)-wa-*) = [suwa-] < *$suh_3$-ó-* and *su-u-wa-mu-us*, animate accusative plural of *sū-* "full" with stem [sūwam-] from Pre-Hitt. *su-ów-* < *$suh_3$-ów-* {10.4.3.}.

# Chapter Ten

# Laryngeals

## 10.1. System inherited from IE

Catsanicos, *BSL* 61 (1986) 165–9; Eichner, *Laryngaltheorie* 140–1; Mayrhofer, *Idg. Gr.* I/2, 121–50; Melchert, *AHP* 47–52, 71; Schindler and Peters *apud* Eichner, *Lautgesch. u. Etym.* 129 n. 41, and *Gds Kronasser* 20 n. 21.

IE had three consonantal phonemes, here transcribed as *$h_1$, *$h_2$, and *$h_3$, that are generally known as laryngeals. These sounds are preserved as consonants in attested IE languages only in Anatolian, and are reconstructed for IE because of their effects on contiguous vowels and consonants. *$h_2$ colored a preceding or following IE */e/ to *[a] (e.g. */$h_2$ent-/ → *[$h_2$ant-] "front, forehead" in Skt. *anti*, Lat. *ante* "before", cf. Hitt. *hānza* "in front" < loc. *[$h_2$ánti]; */peh$_2$-/ → *[pah$_2$-] in Skt. *pāti* "protects", Lat. *pāscere* "to pasture", cf. Hitt. *pahhs-* "protect"). *$h_3$ colored a preceding or following */e/ to *[o] (e.g. */$h_1$neh$_3$mn̥/ → *[$h_1$noh$_3$mn̥] in Skt. *nāma* "name", Lat. *nōmen* id., cf. Hitt. *lāman* id.; */$h_3$ep-/ → *[$h_3$op-] in Skt. *apas-* "work", Lat. *opus* id., cf. Hitt. *hāppar* "price, business deal"). Considerable evidence suggests that *$h_2$ did not color a contiguous *o and that *ē remained a front vowel before and after *$h_2$ and *$h_3$.

### 10.1.1. Loss of laryngeals

#### 10.1.1.1. Loss of laryngeals in consonant clusters

*$h_2$ was lost between *s and *n in *ēs(sa)n-*, oblique stem of *ēshar* "blood", which is first attested in NH copies of OH texts: gen. *e-es-na-as* KBo III 1 II 47 (OH+, OH exemplar not preserved), *es-na-as* KUB XVII 18 II 31 (OH+, ritual text, OH exemplar not preserved), *e-es-sa-na-as* KUB VII 47 L. 10 (U), *is-na-as* KUB XVII 23 I 12 (OH+, exemplar not preserved); abl. *es-na-za* IBoT I 33 Vs 32 (U) = [ēssnas], [ēssnaṭṣ] with stem *$h_1$esn-* < *$h_1$esh$_2$n̥-* beside oblique stem *$(h_1)sh_2$n̥-* > *ishān-* = [shān-] (OH etc.). Several scholars compare the Sanskrit genitive *asnas* (not **asinas* with a vocalized laryngeal) considering the loss of *$h_2$ here to be of IE date (see Mayrhofer, *Idg. Gr.* I/2, 132 n. 141 w. refs. and add Eichner, *Laryngaltheorie* 134, *Lautgesch. u. Etym.* 128–9 n. 41, Melchert, *AHP* 71). Hart, *TPS* 1980, 10–11, however, noting that *ēs(sa)n-* is first found in texts written down in the NH period, suggests that the loss is an inner-Hittite development (see also Lindeman, *ILTh* 119). This is possible, but since *ēs(sa)n-* occurs in several texts which are copies of OH originals, it may well be a genuine archaism.

Lindeman's derivation (*Trip. Rep.* 45 n. 6) from IE **h₁sh₂n̥nos* > Pre-Hittite **shanas* > **eshanas* (with analogical **e*) > **eshnas* (with syncope) > *ēsnas*, seems unnecessarily complicated, and there is no independent evidence for the syncope.

The loss of **h₂* in *suwais* "bird" (or a particular kind of bird) = [swāis] < IE **swóis* < **sh₂wóis* with *s* mobile {4.4.2.} may have been due to its position as middle member of the cluster between **[sh₂w]*, although the laryngeal would have been lost anyway before a tautosyllabic o-grade {10.1.1.2}.

### 10.1.1.2. Loss of laryngeal in *o*-grade formations

Tautosyllabic laryngeals preceding and following consonantal resonants were lost in *o*-grade formations in IE; in phonological terms **HRo* > **Ro* and **oRH* > **oR*, cf. e.g. Dor. τόλμα "bravery, endurance" < **tol-meh₂-* beside τλᾱτός "endurable" < **tl̥h₂-tó-* : **telh₂-* "carry, lift, endure" (see Melchert, *AHP* 49–51 for a full discussion of the Anatolian evidence; for general IE and non-Anatolian references see Catsanicos and Eichner, and add Beekes, *Laryngaltheorie* 72). As a result, Anatolian inherited a few pairs of words, related by root etymology, in which one member of the pair has a laryngeal while the other does not.

GIŠ*wawarkema-* "door hinge": nom. sg. *wa-wa-ar-ke-ma-as* Tunn. I 44, acc. sg. *wa-wa-ar-ke-ma-an* ib. II 2, 188/d I 1 (Otten, *ZA* 16 (1952) 235), dat.-loc. sg. e.g. *wa-wa-ar-ke-mi* ib. 6, dir. *wa-wa-ar-ke-ma* KUB XVII 10 IV 10 (MH) = [wawargēma-] from a PA **worg-* "turn" : **h₂werg-* in *hurki-* [hurgi] "wheel" < **h₂wr̥gi-*, cf. Skt. *vr̥jiná-* "bent", *vr̥nákti* "twists"; for the laryngeal note 3 sg. impf. *āvr̥nak* < **é-h₂wr̥neg-t* (Catsanicos 167, Eichner, *Laryngaltheorie*).

*mitā(i)-* "fix, plant": 3 sg. pres. *mi-ta-a-iz-zi*, 1 sg. pret. *mi-ta-a-nu-un*, ptcp. *mi-i-da-an-t°/d°*; for OH **[mēdā(i)-]*, denominative from a **mēda-* < **mói-to-* < **h₂móito-* : **h₂mei-* "fix, establish" in *sūhmili-* "well fixed, well established" {4.4.1.3.} (Catsanicos).

In a few words, an Anatolian word lacking a laryngeal has cognates in other IE languages with laryngeal reflexes.

*warsa-* "moisture, dew" (*wa-ar-s°*) < **h₂wors-ó-* = Skt. *varṣá-* "rain", or **h₂wors-éh₂-* : **h₂wérs-eh₂-* in Dor. Gk. ἀέρσᾱ, Hmc. ἔέρση < **ἀϝερσᾱ* with assimilation (cf. Oettinger, *IH* 19 and Eichner); for the accent see {8.6.5.3}.

An IE **ḱol-mo-* (for **ḱolh₂-mo-*) was perhaps inherited in *kalmara-* "sunbeam": abl. *kal-ma-ra-az* KUB XVII 1 II 14 (NH), acc. pl. c. *kal-ma-ru-us* KUB XXXIII 93 IV 36 (NH) = [kalmara-] < PA **ḱol-mo-ro-* with secondary suffix **-ro-* (Oettinger, *IH* 21, 34–5 n. 109), cf. **ḱol-mo-* in Lat. *calamus* "reed", Latv. *salms* "straw", ON *halmr* id. beside **ḱl̥h₂-meh₂* in Gk. καλάμη "straw" and κάλαμος "reed" < **ḱl̥h₂-mo-*. PA **ḱol-mus-* and **ḱol-mi-s-*, also remade from **ḱol-mo-*, can perhaps be found in GIŠ*kalmus-* (neut.) "staff, lituus": e.g. nom. *kal-mu-us* KUB X 21 I 3, 6, 12 etc. (OH+), gen. *kal-mu-sa-as* IBoT I 36 III 43 (MH), dat. *kal-mu-si* 832/c I 19 (*HEG*); GIŠ*kalmisana-* "log, thunderbolt": e.g. acc. sg. *kal-mi-sa-na-an* (NH), nom. pl. *kal-mi-i-se-ni-is* (MH) (Catsanicos 168 w. n. 270, 271).

Oettinger, *IH* 21, 34–5 n. 109, reconstructs **kolh₂mo-* > PA **kalama-* > **kalma-*, but there is no independent reason to posit syncope here. For the identification of *kalmara-* and the etymology, see Laroche, *Fs Bittel* 309–10 and Güterbock, ib. 215 w. n. 94. For the anaptyxis in *kalmisana-* see {3.9.3.}. See now Puhvel, *HED* 4, 28–30, who suggests that *kalmus-* was borrowed from Akk. *gamlu(m)* "crook, curved staff" with metathesis to **galmu-*.



*tarma-* "nail, peg" < **tormo-* < **torh₁mo-* : Gk. τόρμος "hole, socket, nave of a wheel", τέρετρον "borer, gimlet" (Catsanicos 168 w. refs.).

If *huwāi-* "run" continues **h₂woh₁-y-* : **h₂weh₁-* "blow", then as Catsanicos, n. 260, points out, its initial laryngeal must be analogical to the *h* of its weak stem **h₂uh₁y-* in e.g. 3 pl. pres. *huiyanzi*, ptcp. *hu(y)ant-*.

A few of the examples of this change that have been cited are uncertain or doubtful.

*wātarnahh-* "report": 1 sg. pres. *wa-a-tar-na-ah-mi* KUB XIII 20 I 14, 17 (MH+), *wa-a-tar-na-ah-hi* KUB II 2 III 37 (NH), 3 sg. *wa-(a)-tar-na-ah-zi* KUB XXI 42 IV 8 (NH), 3 sg. pret. *wa-tar-na-ah-hi-is* KBo III 38 Vs 23 (OH+), *wa-a-tar-na-ah-ta* KUB XIV 1 Rs 87 (MH), ultimately denominative from a noun **[wādar]* < **wód(H)-r̥* : **h₂wed(H)-* "speak" in e.g. Gk. αὐδή "voice", Skt. *vaditi* "speaks", 1 pl. pf. *vadima*, and in Hitt. *uttar, uttān-* "word, matter", with analogical loss of initial **h₂* and gemination **dH* > *tt* {10.7.1.}. The root etymology goes back to Sturtevant, *CGr*² 61. Eichner, *Heth. u. Idg.* 20 n. 21, *Lautgesch. u. Etym.* 146 n. 69 and *Laryngaltheorie* 141, reconstructs **h₂wodh₂-r̥*, and Oettinger, *Stammbildung* 458, reconstructs **h₂wod-r̥-no-h₂-*. While it is possible that *uttar, uttān-* is from a PA **udH-r̥*, **udH-n̥-* with loss of the initial laryngeal after an original nominative-accusative singular **wódH-r̥* and extension of the zero-grade root to the nominative-accusative from the weak stem, there seems to be no straightforward way to explain the lack of gemination in **wādar, wātarnahh-*.

For the initial laryngeal in αὐδή etc. see Rix, *MSS* 27 (1970) 102 n. 5. Peters, however (*Unters.* 14–15), expresses doubts. Melchert, *AHP* 50, suggests that *uttar* beside CLuv. *utar* can be explained by reconstructing nom.-acc. **eut-r̥* (in CLuv. *utar* with PA voicing) beside weak stem **ut-n-* with zero-grade root generalized in Hittite *uttar*.

*nakkus-* "damage, tort" and *nakki-* "heavy, difficult" are derived by Catsanicos from **(h₂)noḱ-* : Gk. διηνεκής, ἤνεγκον. The former, however, probably belongs with Lat. *noxa* "harm, injury, damage" (*HEG* 7, 262–4 w. refs.), and while *nakki-* may be connected with the Greek words, the IE root was **h₁neḱ-* (Meier-Brügger, *Sprache* 33 (1987) 102–7), and **h₁* was lost anyway in PA. Similarly, *innara-* "force", and CLuv. **annaru-* id. < **en-h₂nor-* may have loss in an *o*-grade formation (see Eichner, *Laryngaltheorie* 141), but the laryngeal would also have been lost between the nasals {10.10.1.}.

### 10.1.1.3. Loss after *s* mobile

According to Hoenigswald, *Language* 28 (1952) 182–5, laryngeals were lost within IE after initial **s*. Alternations between **sV-* and **HV-* among apparent cognates, therefore, point to loss of laryngeals after *s* mobile. The evidence suggests, however, that initial **sh₂* became Hittite *ish* = [sh] (e.g. *ishahru-* "tear(s)" < PA **sh₂ahru-* assimilated from **sh₂aḱru-* with *s* mobile beside **h₂eḱru-* in Ved. *aśru* "tear", Av. *asru* id. and Toch. A *ākär* id. {6.8.1.}). Since **h₁* never appears as a consonantal sound in Anatolian it is not possible to tell whether the fact that initial **sh₁* became Hitt. *s* (as in *siya-* "press, seal, sting" < **sh₁yé/é-* {11.3.4.1.}) reflects IE loss of the laryngeal or loss that took place within PA. In *suwais* "bird" < **swóis* < **sh₂wóis*, the laryngeal was lost because it was the second member of a three consonant cluster {10.1.1.1.}.

Hittite does, however, provide three striking examples that suggest IE loss of *$h_3$ after initial *$s$. An especially cogent example is provided by *sankuwāi-* "fingernail, toenail, claw": nom. sg. *sa-an-ku-wa-a-[is]* KBo XII 31 III 10 (MH), *sa-an-ku-wa-i-s°* KUB XXXIII 66 II 5 (MH?), gen. sg. *sa-an-ku-wa-ay-as* KUB IX 4 I 26 (MH+), nom.-acc. pl. (?) n. *sa-an-ku-wa-a-i* KUB IV 47 Vs. 14 (OH+), dat.-loc. pl. *sa-an-ku-wa-ya-a[s]* KUB XXXIII 66 II 4, *sa-an-ku-wa-ya-as* KUB IX 4 I 8 (OH+) = [sangwāi-] < PA **sóngwōi-*, remodeled from IE **s* + **[h₃ongh-wo-]* : **h₃engh-*, **h₃n̥gh-* in Skt. *aṅghri-* "foot", Gk. ὄνυξ "nail, hoof", Lat. *unguis* id., O.Ir. *ingen*, OE *nægl*, Lith. *nãgas*. Another example may be *sākuwa* "eyes" (nom.-acc. pl. n. *sa-a-ku-wa*, OH etc.) = [sāg$^{w}$a], which Eichner, *MSS* 31 (1973) 82–3, derives from **s* + **h₃ók$^{w}$-eh₂*, nominative-accusative plural of a root noun with lengthened grade and PA voicing beside **h₃ók$^{w}$-eh₂* in Gk. ὤπα "face" and **h₃ok$^{w}$-* in Skt. *akṣi* "eye", Lat. *oculus* id. and Gk. du. ὄσσε.

Alternatively, *sākuwa* could come from **sók$^{w}$-eh₂-* : **sek$^{w}$-* "see" in e.g. Goth. *saihwan* "to see", OE *sēon* id. (6.4.4.1.)

Hittite also preserves at least one instance of initial *h* from **h₃* that corresponds to initial **s* from **sh₃* in non-Anatolian languages. The correspondence of Hitt. *hink-* "pour" to Skt. *siñcati* "pours" and Gk. ἰκμάς "moisture", ἰκμαίνω "moisten", observed by Hart, *Fs Palmer* 93–6, points to variant forms of an IE nasal present (**s[h₃]i-ne-k-*) : **s[h₃]i-n-k-* > Skt. *siñc-* beside **h₃i-n-k-* in *hink-* and **h₃ik-* in ἰκμάς (2.8.3.3.)

See also Puhvel, *HED* 3, 315–6 and Peters, *Unters.* 110–11 for the Greek words.

Hoenigswald originally suggested that loss of the laryngeal happened before a phonemic distinction between IE **e* and **a* had been established. If **h₂* did not drop after initial **s*, apparent correspondences of **a-* < **h₂e-* : **se-* < **s[h₂]e-* (e.g. Hitt. *hanna-* "grandmother", Lat. *anus* "old woman" etc. : Skt. *sána-* "old", Gk. ἕνος id., Lat. *senex* id.) have to be discarded and do not provide evidence for the relative chronology of loss. For additional references and discussion, see Mayrhofer, *Idg. Gr.* I/2, 120. If only **h₃* was lost, then the doubts expressed by Peters, *Unters.* 71 n. 34 and Lindeman, *ILTh* 49–50, may largely be resolved.

### 10.1.1.4. Stang's Law

**-eh₂m* became **-ām* in *tuwān (... tuwān)* "from here (... from there") < **dwā́m* < **dweh₂m* : **dweh₂-* "separate, make distant" (2.1.6., 2.5.2.).

## 10.1.2. Laryngeal metathesis

Jasanoff, *MSS* 37 (1978) 89–90, Melchert, *SHHP* 99 w. n. 49, 101, Mayrhofer, *Idg. Gr.* I/2, 175–6, Beekes, *Laryngaltheorie* 60, and Eichner, *Laryngaltheorie* 134–5, assume metathesis of */Hw/* and */Hy/* to */uH/* and */iH/* within IE to explain reflexes of **ū* (< **uH*) and **ī* (< **iH*) beside **ŭ* (< **Hu*) and **ĭ* (< **Hi*) or **w* (< **Hw*) and **y* (< **Hy*) among cognates in the IE languages, e.g. **sh₂w-* (in Ved. *s(u)var* "sun" < **sh₂wel*) beside **suh₂-* (e.g. Ved. gen. *sūraḥ* < **suh₂les*) beside full-grade **seh₂wel* in



Hmc. ἠέλιος etc. or **ph₃i-* (e.g. in Gk. impf. ἔπιον "I drank" ) beside **pih₃-* (e.g. in imp. πῖθι, Skt. ptcp. *pītaḥ*) beside full-grade **poh₃y-* in Skt. caus. *pāyayati*. The conditioning behind the metathesis is not well understood, although initial **Hw* and **Hy* apparently did not metathesize. As Eichner notes, **Hy* and **Hw* may have been analogically restored in some paradigms within IE or the daughter languages, and metathesized **uH* and **iH* seem to have become the basis for new derivatives. Hittite preserves traces of this process, several examples of which are discussed by Melchert and Eichner. As Melchert *(AHP* 58) notes, some pairs of related stems, which are specifically Anatolian, indicate that the rule was productive into PA.

*suhha-* "pour out" (*su-uh-ha-*, OH etc.) = [suha-] < **suh₂-o-* < **sh₂u-*, weak stem of a base verb **seh₂w-* : **sh₂u-*, cf. also root noun **seuh₂-*, **suh₂-o-* in *suhha-* "roof" (abl. *sūhza* < **séuh₂-ti*) beside *ishuwa-* "scatter, sprinkle" < unmetathesized **h₂i-sh₂w-* with reduplication (Melchert; see, however (10.10.2.)).

*zīnu-* "cause to cross": 3 pl. pret. *zi-nu-e-er* KBo III 46 Vs. 19 (OH+), it. 3 sg. pres. *zi-i-nu-us-ke-ez-zi* KBo VI 2 II 30 (OH) = [zīnu-] or [tsīnu-] if from **sih₁-n(e)u-* : **sih₁-* in Gk. ἰθύς "straight (forward)", ἰθύνω "press forward", **soh₁-i-* in *zāi-* "cross" : **seh₁-* in Skt. *sā́dhate* "goes toward, reaches a goal" (Melchert 101). The development of initial **s* to *z* is uncertain, however (11.8.2.2.).

*pittinu-* "cause to flee" (*pit-ti-nu-*, OH) = [pittinu-] < **ptih₁-n(e)u-* with anaptyxis < **pth₁i-* : **pteh₁-* "fly, fall" (Melchert 101).

*kīnu-* "open a vessel": 3 sg. pres. *ki-i-nu-zi* KBo XIX 145 III 25 (NH), *ki-nu-uz-zi* KUB XIII 9 III 5, 7, 8 (MH+), 3 pl. *ke-e-nu-wa-an-zi* KUB XXV 23 IV 51 (NH), *ge-e-nu-an-zi* KBo II 7 Vs. 9 (NH), *ki-nu-an-zi* KUB XXIX 4 IV 23 (NH), *ki-nu-wa-an-zi* KUB XV 31 II 9 (MH+), 3 sg. pret. *ki-nu-ut* KUB XXIV 7 III 25 (NH), *gi-nu-ut* KUB XIII 9 III 11, 3 sg. imp. *ki-i-nu-ud-du* KUB XXX 10 Vs. 24 (MH), *ki-nu-ut-tu* KUB XIII 9 III 6, ptcp. nom.-acc. sg. n. *ki-i-nu-an* KUB XIII 1 IV 7 (MH), inf. *ki-nu-ma-an-zi* KBo XXIV 45 Rs. 8 (MH?), = [gīnu-] < **ǵhih₁-n(e)u-* : **ǵhih₁-* in e.g. ON *gīna* "gape", Lat. *hiāre* "to gape", Lith. *žióti* id., OE *tōgīnian* id., OCS *žinǫ* "I gape" and Lat. *hīscere*, beside **ǵhh₁i-* in e.g. ON *gina* "gape", OHG *ginēn*, OS *ginian* "be wide open" and full-grade **ǵheh₁y-* in OCS *zějǫ* "gape" (Melchert).

See *HEG* 3, 578–80 for refs.

*mīnu-* "make mild": e.g. 1 sg. pres. *mi-i-nu-nu-un* KBo XIV 105 L. 2 (NH), 3 pl. pres. *mi-e-nu-u-e-er* KUB XIX 22 r. col. 3 (Supp. I), 3 sg. imp. *mi-e-nu-ud-du* KUB XVII 12 II 14 (NH), vbl. noun *mīnumar* (*mi-(i)-nu-mar*, MH etc.) = [mīnu-] < **mih₁-n(e)u-*, cf. **mih₁-* in Lat. *mītis* "mild, soft", **meh₁i-* in O.Ir. *mín* "mild" and **moh₁i-* in O.Ir. *móith*.

Examples *CHD* 3, 291–3.

In *ishiya-* "bind" < **(h₂i)-sh₂y-* : **seh₂i-* "bind"; *tiya-* "step, take one's place" < **th₂y-*; *miya-*, weak stem of *māi-* "grow, flourish" < **mh₁y-*; *tiya-*, weak stem of *tēhhi*, *dāi* "put" < **dhh₁y-*; *ispiya-*, weak stem of *ispāi-* "be satiated" < **sph₁y-* (10.5.5.); *tiya-* "bind" and *tiyam(m)ar* "cord" < **dh₁y-*, Hittite has an unmetathesized zero-grade. For *ishimān-* "cord" < **sh₂i-món-* : **sih₂-mon-* in OSax. *sīmo* "cord", Gk. ἱμονία "reins" and **sih₂mn̥* in Skt. *sīma* "cord" see (7.3.1.1.). *pahhur* "fire" preserves an original full-grade **péh₂-wr̥*, as does Toch. A *por* < **pawr*. The stem **pŭ-* in e.g. Gk. gen.

πυρός and Goth. gen. *funins* can continue unmetathesized **ph₂u-*, while **pū-* in Gk. nom.-acc. sg. πῦρ, Arm. *hur*, Toch. B *puwor* (< **puwār*), Umb. *pir*, OE *fȳr* and OIcl. *fúrr* (m.) is from **puh₂-* with metathesis. Presumably the occurrance of **puh₂-* in nominative-accusative singulars reflects secondary, and probably dialectal, analogical generalization of the zero-grade.

*Pace* Lindeman, *ILTh* 67, there is no reason to conclude that the Hitt. oblique stem *pahhwen-* is archaic; it can continue a generalized locative stem with full-grade from the nominative-accusative singular *[pah₂wen-] for **ph₂wen-*, cf. *witēn-* "water" < **wed-én-* for **ud-én-* {7.3.1.1.}.

## 10.2. IE to PA and Pre-Hittite

### 10.2.1. Loss and compensatory lengthening of vowels

Loss of laryngeals and compensatory lengthening of preceding vowels are best viewed as a series of conditioned changes, some of which took place after the break-up of the proto-language. The preservation of **h₂* before **s* and **w* in Anatolian (e.g. in *pahhs-* "protect" < **peh₂s-* and *warhuā-* "rough, shaggy" < **werh₂w-ih₂-*) indicates that, for example, loss of **h₂* after these sounds was dialectal. Loss and compensatory lengthening had taken place by Proto-Anatolian in some environments, cf. e.g. the Hitt. abstract suffix *-ātar* = [-ādar] < PA **-ā́dər* < **-áh₂-tr̥* with voicing of **t* after a long accented vowel. Within Anatolian the realization of final unaccented **-uh₂* as Hitt. [-u] in *āssū* "goods" (for **āsū*) < neut. pl. **h₁ós-uh₂*, but of final unaccented **-ah₂* as [-ă] in *sākuwa* "eyes" < PA neut. pl. **sṓgʷ-ah₂* seems to indicate that loss of final laryngeals occurred in at least two distinct chronological stages, one preceding the shortening of accented vowels and one following it {2.2.3.}.

### 10.2.2. Loss of **h₁*

**h₁* left no consonantal reflex in Anatolian (see especially Eichner, *MSS* 31 (1973) 54–6). Loss of initial prevocalic **h₁* is clearly PA, cf. IE **h₁ed-* "eat, bite" > PA **ed-* in Hitt. *ēd-* "eat", CLuv. 2 sg. pres. *az-ti-is, az-za-as-ti-is* (*CLuv. Lex.* 39), HLuv. 3 sg. imp. *az(a)tu*, and CLuv. [adrahit] "nourishment" (ib. 40) and *āddduwāl(i)-* "evil" (ib. 41) < PA **édri-, *éduōl*; IE **h₁es-* > PA **es-* "be" in Hitt. *ēs-* "be", CLuv. strong stem in 1 sg. pret. *asha*, 3 sg. *asta*, 3 sg. imp. *asdu* (*CLuv. Lex.* 33), HLuv. strong stem in 3 sg. pres. *asti*, 1 sg. pret. *(a)sha*, 3 sg. *(a)sta*, 3 sg. imp. *astu*; Lyc. 3 sg. pres. *esi* (< **asti*), 3 sg. imp. *esu* (<* *estu*), and Pal. 2 sg. imp. *as*, 3 sg. *asdu*.

### 10.2.3. Developments affecting **h₃*

Beekes, *Laryngaltheorie* 81; Catsanicos, *École Pratique des Hautes Études, IV^e section, Sciences historiques et philologiques, Annuaire* 1977–8 [79]; Couvreur, *H* 140–3; Eichner, *MSS* 31 (1973) 81–2; *Fl. u. Wb.* 84, 87; Kimball, *Fs Hoenigswald* 185–92; Lindeman, *ILTh* 38–9; Mayrhofer, *Idg. Gr.* I/2, 142–3 w. n. 182; Melchert, *SHHP* e.g. 61 n. 111, cf. also 93 n. 34,



*Sprache* 33 (1987) 20–1, *AHP* 22, 55, 71–4; Normier, *IF* 85 (1980[1]) 58–9; Oettinger, *Stammbildung* 546 n. 1 (and *passim*), *ZDMG* 130 (1980) 592; Polomé, *JIES* 15 (1987) 162, 164; Rikov, *Linguistique Balkanique* 23/1 (1980) 75–82; Rix, *MSS* 27 (1969) 92–3; Sturtevant, *CGr²* 51; Tischler, *Lautgesch. u. Etym.* 505 w. n. 47; Watkins, *Fs Neumann* 457.

IE **h₃* was lost medially between vowels and after consonants, e.g. *sū-* "full" < **suh₃-ú-* {10.4.3.}, *dā-* "take", 3 sg. pres. *dāi* < PA **dóh₃-ei*, 3 pl. pres. *danzi* < **dh₃-énti* {10.6.1.3.}. Etymologies depending on retention of medial **h₃* as single *h*, such as those provided by Sturtevant, are incorrect or the laryngeal should be reconstructed as **h₂* (e.g. in *mēhur* "time" or *sēhur* "urine" {2.9.5.1., 10.4.2.2.}). There are two schools of thought on what happened to initial **h₃* in Anatolian. It has been maintained that it was lost (Eichner, Mayrhofer, Oettinger, Rix, Tischler). Other scholars maintain that it remained as a consonantal sound spelled HV- (Sturtevant, Normier, Rikov, Melchert, Kimball, Watkins, Lindeman, Beekes, Polomé). The evidence suggests that the latter view is correct. There is no way of telling whether the reflexes of initial **h₂* and **h₃* remained distinct phonemes in Hittite, but solid evidence shows a phonemic distinction between **h₂* and **h₃* into PA and Pre-Luvian (Kimball).

Evidence for **h₃* in *hāppar* "price deal", *hapzi* "is rich", *hāpperiya-* "city, settled place" (< **"marketplace"*), *happenant-* (or *happinant-*) "rich" and related words is sound. Italic preserved a neuter *s*-stem **opos, *opes-* in Lat. *opus* "work" and the derived verb **opes-āye/o-* in Lat. *operor*, Osc. *upsannam* "operandam, faciendam" and Umb. *osatu* "operator, facito". Italic **opos* is itself from an IE **h₃épos, *h₃épes-* seen also in Skt. *apas-* "work", Av. *apah-* id. While an *e*-grade root would be regular in a neuter *s*-stem, an *o*-grade would be anomalous, suggesting that the *o*-vocalism of the Italic words reflects coloring of full-grade **e* by **h₃*. There is also evidence for retention of **h₃* from within Anatolian itself. While initial **h₂* shows up in Lycian as a velar spirant written χ or *q* (cf. e.g. *χñtawata-* "to rule," *χñtawata-* "rule, kingship", *χñtawati-* "rule, king" (*Lyc. Lex.²* 92) : Hitt. *hant-* "front" < **h₂(e)nt-* or *qla-* "enclosure" : Hitt. *hāli-* "pen, corral" < **h₂é/óli-*, *χawa-* "sheep" : Hitt. *hāwi-*, CLuv. *hāwī-* < **h₂áwi-*), the Lycian cognates of Hittite *hāppar* etc., *epirijeti* "sells" (*Lyc. Lex.²* 16), and *epenetija-* "act as sales agent" (ib. 17) show that **h₃* was lost in initial position in Lycian.

See Kimball, *Fs Hoenigswald* 185–92 w. refs. for a discussion of the relevant forms. Eichner, *Laryngaltheorie* 146, considers Lyc. *epirijeti* an example of sporadic loss of *h* from **h₂* in the Luvian languages, but does not explain why Lycian does not also show loss of χ from PLuv. **h* < **h₂* in other words, cf. e.g. the commonly attested words as *χñtawata-* "rule" etc. with *χñt-* < **h₂nt-*, which never show loss.

It is not clear whether the loss of initial **h₃* was Proto-Luvian or just Lycian. *happinatta-* "wealth, riches" and **happinanza* "rich" (*CLuv. Lex.* 56) are not necessarily Luvian rather than Hittite, and other clear examples of initial **h₃* are not found in Luvian (Kimball, *op. cit.* 191).

**h₃* is likely on morphological grounds in the word for "eagle": nom. sg. *hāras* (OH etc.), acc. sg. *harānan* (OH etc.), gen. *hāranas* (MH?), nom. pl. *hāranis* (MH?). Germanic and Greek cognates point to an animate *n*-stem with holokinetic or amphikinetic inflection: nom. sg. **h₃ér-ō* plus PA animate nominative singular suffix **-s* > Hitt. *hāras* and Pal. *harās*, acc. sg. **h₃ér-on-m̥* (> Hitt. *hāranan*), nom. pl. **h₃ér-on-es* (in Hitt. *hāranis* and Goth. nom. pl. *arans* "eagles", hap. leg. L. 17.37). A zero-grade

suffix *-*n*- from weak case forms (e.g. gen. sg. **h₂r̥n-é/ós*) is continued in ON *ǫrn* (*u*-stem, generalized from Gmc. acc. pl. **ar-n-unz* < IE **h₂ér-n-ṇs*), OE *earn*, nom. pl. *earnas* (*a*-stem), and Gk. ὄρνεον "bird" and ὄρνις, gen. ὄρνῑθος id. Although Hitt. *har-*, Gk. ὀρ- and Gmc. **ar-* could, in strictly phonological terms, continue **h₂or-*, the double *o*-grade **h₂ór-on-* necessary to account for Hitt. *hāran-* and Gmc. **aran-* would be highly unlikely, while an *e*-grade root and *o*-grade suffix **h₂ér-ō*, **h₂er-ón-* would be well paralleled.

The genitive singular *hāranas* KUB XV 34 IV 12 (MH) suggests that Hittite generalized the strong stem **h₂ór-on-*. For the long vowel see {2.8.1.3.}.

Another word likely to have initial **h₃* is $^{GIŠ}$*hissa-* "chariot pole" (acc. sg. *hi-is-sa-an*, OH+, dat.-loc. sg. *hi-is-si*, OH+, NH {2.8.3.3.}) = *[hissa-] or *[hissā-], probably from **h₂ih₁s-éh₂* or **h₂ih₁s-ó-* : Skt. *īṣā́* "chariot pole" < **h₂ih₁s-éh₂*. For the initial laryngeal cf. Att. οἴαξ, Hmc. οἶηξ "rudder, tiller" and Hmc. οἰήιον "rudder" (PGk. **oysā-*, **oysos*), the Slavic *s*-stem **aya/es-* "pole, shaft of a wagon" in Slov. *ójȅ* and Av. *s*-stem *aeša-* "pole plow", which point to an IE neuter *s*-stem **h₂eiH-es-* for which the *o*-vocalism must be explained by laryngeal coloring.

For the Greek words see Peters, *Unters.* 94–5.

That *hink-* "pour, wet, deluge" can be derived from **h₂i-n-k-* with **h₃* rather than **h₂* is indicated by the *s* of Skt. *siñcati* "pours" < **s[h₃]i-n-k-* with IE loss of **h₃* after initial **s* {10.1.1.3.}.

Other criteria for distinguishing initial **h₃* and **h₂* are less certain. Rikov's idea (*Linguistique Balkanique* 23/1 (1980) 77–8) that **h₂* was lost before **i* but **h₃* is maintained (e.g. in *hissa-* "chariot pole, shaft" and *hink-* "pour, wet, deluge") suffers from a number of uncertainties. Two examples Rikov cites in support of loss of **h₂* before **i* can be from zero-grades of roots in **ai-*. The verb *inu-* "make hot" (OH *inutten*), which Rikov derives from **(h₁)h₂i-neu-* or **(h₁)h₂idh-neu-* can be from **i-n(e)u-* {4.5.1.3.}. The noun *inan* "illness", if it belongs with Gk. αἰνός "horrible, dread, terrible" as well as Av. *inaoiti* "make ill" can be from a stem **i-n-* beside full-grade **ain-* {4.5.1.3.}. The lack of initial /h/ in *ishāi-* "bind" beside CLuv. *hishiya-* (3 pl. pres. *hi-is-hi-ya-an-ti*, *CLuv. Lex.* 70) could, as Rikov suggests, show loss of initial **h₂* if both verbs are from a PA reduplicated **h₂ish₂yo-*, but neither the reconstruction nor the conditioning for possible loss of **h₂* is certain. Melchert, *SHHP* 99, for example, reconstructs **h₂ish₂y-* with loss of the initial laryngeal by dissimilation. Since *ishāi-* can be read [shāi-] as well as [ishāi-], and since reduplication is very productive in Luvian, it is also possible that *ishāi-* is from unreduplicated **sh₂oi-* {10.10.2.}. At least one apparent counterexample also needs to be explained. As Rikov himself (79) notes, if *himma-* "imitation, substitute" is cognate with Lat. *imāgō* and both are related to Lat. *aemulus* "rival", then a reconstruction **h₂im-* (**h₂im-nó-*? {2.8.3.2., 7.3.3.2.}) cannot be excluded.

Other apparent examples of words with *hi-* lack etymologies: *hi-hi-al-la-as*, an animal (*HEG* 2, 240), $^{GIŠ}$*hi-iq-qar-za*, a tree from whose wood tables are made (*HEG* 2, 241).

Commonly cited examples of loss can usually be explained in other ways: *āis, issā-* "mouth" : Lat. *ōs* can be from **h₂oh₃-es-* {4.9.1.}; *ariya-* "use divination" ("consult an oracle") : Lat. *orāculum* "oracle", *orāre* "orate" is instead from **h₁r̥-ye/o-*; *ārras* "arse" : Gk. *ārras* "arse" : Gk. ὄρρος, OHG, ON *ars*, OE *ears*, Arm. *or*, O.Ir. *err* "hindpart, end" points to **h₁ors-*, **h₁ers-* {8.6.5.1., 10.3.1.1.}; *arki-* "testicle" : Gk. ὄρχις can be from **h₁r̥gh-i-*; *āppa, āppan* "after, following" : Gk. ὀπίσσω, ὄπισθεν are from **h₁op-* {6.4.1.1.}; *ar-* "arrive", *ar-* "place oneself, stand", *arai-* "arise" : Gk. ὄρνυμι, ὄρορα, ὄρτο, Lat. *orior* are from **h₁or-*, **h₁r-* rather than **h₃or-*, **h₃r-* {10.3.1.1.}. At least two commonly cited etymologies are unsubstantiated: *āk-* "die" : Skt. *āśu* "swift", Gk. ὠκύς id., Lat. *ōcior* "swifter" (Eichner, *MSS* 31 (1973) 81–2, *Fl. u. Wb.* 87, and Oettinger, *Stammbildung* 54, 401–2, 418–9) and *aniya-* "work", CLuv. *anniya-* id., Pal. *aniya-* id. : Lat. *onus* "burden" (see Tischler, *HEG* 1, 30, Puhvel, *HED* 1, 66–71).

## 10.2.4. Laryngeals and PA voicing

Postvocalic laryngeals dropped, causing lengthening of a preceding vowel which caused voicing of a voiceless stop: e.g. abstract suffix *-ātar* = [-ādar] < *-ā́dər < *-áh₂-tr̥* {6.4.4.3.}; *hūta-* "haste" = [hūdā-] < **h₂uh₁tó-*; **mūta-* = *[mūdā-] < **muh₁tó-* in *mūdā(i)-* "root around, remove evils" {6.4.4.3.}. Like stops, **h₂* was voiced after long accented vowels and in unaccented syllables {10.4.2.2., 10.4.2.3.}.

## 10.2.5. Vocalization

Strictly speaking, interconsonantal laryngeals did not vocalize in the sense that they adopted the feature [+vocalic]. Instead, the process often termed vocalization, whereby interconsonantal laryngeals left a vowel as reflex in IE languages (e.g. Skt. *duhitā* "daughter", Gk. θυγάτηρ id. < IE **dhugh₂-tḗr*) is better viewed as anaptyxis followed by loss of a consontantal laryngeal (cf. Mayrhofer, *Idg. Gr.* I/2, 138, and Lindeman, *ILTh 98*-196). Mayrhofer suggests that anaptyxis was IE and that the realization of the anaptyctic vowel after the consonantal laryngeal segment depended on position within the word. In initial syllables, the anaptyctic vowel preceded the laryngeal, i.e. /CHC/ → [$C_eHC$] as in */ph₂tḗr/ "father" → *[$p_eh_2$tḗr] > Skt. *pitā*, Gk. πατήρ, Lat. *pater*, OE *fæder*. In medial syllables, however, the anaptyctic vowel followed the laryngeal, i.e. /CHC/ → [$CH_eC$] as in */dhugh₂tḗr/ "daughter" → *[dhugh$_2$$_e$tḗr] > Skt. *duhitā*, Gk. θυγάτηρ. Under this view, loss of interconsonantal laryngeals, as in OE *dohtor*, Lith. *duktė́*, Arm. *dustr* etc., which was dialectal, entailed loss of both the anaptyctic vowel and the consonantal segment.

The question of whether the Anatolian languages show vocalic reflexes or loss of interconsonantal laryngeals in specific environments is vexed, largely because most medial clusters of three consonants and clusters of geminate plus following consonant could not be represented without dead vowels in the cuneiform and hieroglyphic writing systems. It is unlikely that, as assumed, for example, by Adrados, *RHA* 28 (1970) 7–17 and Bernabé, *Au. Or.* 2 (1984) 191, that the second °A° of e.g.1 sg. pres. act. *pa-ah-ha-as-mi* "I protect", midd. *pa-ah-ha-as-ha* beside 3 pl. pres. midd. *pa-ah-sa-an-ta, pa-ah-sa-an-da* with [hs] before vocalic initial ending, or the second °A° of *sa-na-ah-hu-un* beside *sa-an-hu-un* : *sanh-* "I seek" is an epenthetic vowel rather than a dead vowel. Some examples of anaptyxis in the vicinity of laryngeals are clearly

post-IE, e.g. the *u*-anaptyxis in *tūhusiya-* = [tūḫusya-] "keep quiet" < **téuh₂s-ye/o-* {4.6.1., 3.3.2., 3.9.4.} and the *i*-anaptyxis in e.g. 3 sg. pret. *māniyahhis*, iterative stem *māniyahhisk-* : *māniyahh-* "distribute, administer" {3.9.3.}.

The Luvian reflexes of the IE word for "daughter" (nom. sg. **dhugh₂-tḗr*, acc. sg. **dhugh₂-tér-m̥*, gen. **dhugh₂-tr-és*), however, provide evidence showing that between stops, **h₂* did vocalize, at least in Luvian. A **duwattri-* shows up in CLuv. $^{TÚL}$*Du-wa-at-ta-ri-na-as* KUB XL 2 Rs. 5, name of a spring, and in the name or title $^{SAL/F}$*Du-ut-tar-ya-ta-as*[!] Bo 4120 r/ col. 4, *Du-ut-tar-ri-ya-at-ti-is* KUB XXII 40 III 18, and *Du-ut-ta-ri-ya-ti-ya-as* KBo XXIV 126 Rs. 28 (Starke, *KZ* 100 (1987) 343–69, Melchert, *CLuv. Lex.* 238). In HLuv. acc. sg. *tu-wa/i-tara/i-na* (= [duwataran] or [tuwataran]) and Lyc. *kbatra* (with **kb* from **dw*) the original sense "daughter" is retained. Vocalization is assured both by the Lycian *a* and by the loss of the voiced velar, which suggests that by the time of Proto-Luvian **h₂* had vocalized to a vowel with front articulation, perhaps a *ə*-like vowel that caused palatalization and later loss of the velar, i.e. strong stem IE **[dhugh₂étér-] > *dugətér-* > **duɣətér-* (with palatalization) > **duwətér-* (with loss of the velar and glide insertion) > **duwattarr-*; weak stem IE **[dhugh₂ətr-] > *dugətr-* > **duɣətr-* > **duwətr-* > **duwatr-*. CLuv. *du-ut-ta(r)-* shows later syncope of **uwa* to *u*, and Lycian *kbatra* shows syncope of **uwa* to **wa* or a divergent development of PLuv. **duɣətr-* to *dwatr-*. The precise conditioning for vocalization of **h₂* between stops is not entirely clear; note that Hitt. *huēzz-* "pull" < **h₂wedh₂-* before endings in initial dental stops shows loss rather than vocalization {10.10.1.}.

Melchert, *AHP* 69, suggests that the development is instead loss of the laryngeal in a sequence C*h₂*CC followed by anaptyxis in the resulting three-consonant cluster, i.e. **dhugh₂ter-* > **dugtr-* > **dugətr-* >**dugater*.

There is no unequivocal evidence for vocalization of initial **h₁* to **a* before stops in PA and, for example, PA **ad-* "eat" in Hitt. *adanzi* and probably CLuv. 3 pl. imp. *adandu*, inf. *aduna* and ptcp. (?) *adammi-* beside Hitt. *ēd-* < **h₁ed-* can be explained as analogical {10.3.1.4.}. Inherited initial **h₁s* became PA **s* and the initial vowel of Hitt. *asanzi, asantu, asānt-*, CLuv. *asandu*, and Lyc. *ahnta* "property, possessions" (reflecting the archaic *nt*-participle IE **h₁s-ónt-*) beside Hitt. *ēs-* "be" < **h₁es-* must be analogical {10.3.1.4.}. Before **s* and stops, initial **h₂* may show up as [ha] with anaptyctic /a/ {10.3.2.4.}, and **h₃* developed to [ha] before stops {10.3.3.3.}.

## 10.3. Initial

### 10.3.1. **h₁*

Beekes, *Sprache* 33 (1987) 7–12, *Laryngaltheorie* 80; Benveniste, *Origines* 149; Catsanicos, *BSL* 81 (1986) 165–6 w. refs.; Crossland, *Arch. Ling.* 10 (1951) 95; Eichner, *MSS* 31 (1973) 55; Hrozný, *SH* 169; Kammenhuber, *KZ* 77 (1961) 170–1 n. 4; *SH* 169; Kimball, *Gds Cowgill* 160–81; Lindeman, *Trip. Rep.* 65–8, *ILTh* 80; Melchert, *AHP* 66–7; Milewski, *IH* 9–10; Oettinger, *Stammbildung* 15 n. 13, 90 w. n. 15; Pedersen, *Hitt.* 188 n. 2; Risch, *Fs Sommer* 197, *Fs Neumann* 32; Starke, *Sprache* 31 (1985) 252; Sturtevant, *IHL* 31–2; Watkins, *Idg. Gr.* III/1, 26.



#### 10.3.1.1. Prevocalic

Initial prevocalic **h₁* was lost (see especially Eichner, *MSS* 31).

*ēd-* "eat", *ēdri-* "food", *idālu-* "evil" = [ēd-], [ēdri-], [idālu-] < **h₁ed-* "eat, bite", cf. Gk. ἔδομαι, "I shall eat", Lat. *edere* "to eat", OE *etan* id. etc. For the initial laryngeal cf. Aeol. ἐδοντ- "tooth", Att.-Ion. ὀδοντ- < **ἐδοντ-* < (substantivized participle) **h₁dont-*.

*ēs-* "be", *ēs(sa)ri-* "shape, fleece" = [ēs-], [ēssri-] < **h₁es-* : Gk. ἐστί "is", Lat. 3 sg. pres. *est*, Goth. *ist* "is" etc. For the initial laryngeal, note the lengthening in Ved. *āsat* "unreal" < ptcp. **n̥-h₁sn̥t-* (Mayrhofer, *Idg. Gr.* I/2, 124, 125). The adjective *assu-* "good" (nom.-acc. sg. n. *a-as-su*, OH etc.) = [āssu] for **āsu-* < **h₁ós-u* : **h₁su-* in Gk. εὐ-, ἐύς , Skt. *su-* etc., and Hitt. *su-* in *sū-hmili-* "well fixed" {10.3.1.4.} is also ultimately from the root **h₁es-* "be".

*ārra-* "arse" *((a-)ar-ra-)* = [ārra-] < **h₁órso-* is ultimately from a root noun **h₁ors-*, **h₁ers-*, cf. Gk. ὄρρος, -ορσος, OE *ears*, OHG, ON *ars* < thematized **h₁órs-o-* beside **h₁ers-* (P.Celt. **ersā-*) in O.Ir. *err* "hindpart, end" {8.6.5.1.}.

*ār-* "arrive" : 1 sg. pres. *a-ar-hi* (MH etc.), 2 sg. *a-ar-ti* (MH etc.), 3 sg. *a-a-ri* (OH, OH+), *a-ri* (OH etc.) = [ār-], from perf. **h₁e-h₁ór-e* in Skt. *āra* and Gk. perf. ὄρορα "rouse, stir up", ultimately from **h₁er-*, **h₁or-* "set in motion, be in motion"; **h₁* rather than **h₃* is implied by Gk. ἔρετο · ὡρμήθε Hesych.), which was perhaps thematized from an original **ἔρτο* < **h₁érto* (cf. **e-h₁erto* in Skt. *ārta*), by the PN Λα-έρτης, and by the related present ἔρχομαι < **h₁r̥ǵh-e/o-* (see especially Rix, *MSS* 27 (1970) 98, 109 w. n. 89–91 and Mayrhofer, *Idg. Gr.* I/2, 130 w. n. 134).

The earliest form of the third person plural preterit was *arer* (OH *a-re-er* KUB XXXVI 102 L. 3 and probably *a-re-er* in KBo XXII 2 I 8); *e-re-er* with *e*-vocalism is found only in NH texts (Otten, *StBoT* 17, 29 w. n. 50), which suggests that it is unnecessary to posit a reduplicated weak stem **h₁e-h₁r-* to explain forms with *e*-vocalism with Eichner, *MSS* 31 (1973) 54 and Oettinger, *Stammbildung* 404.

#### 10.3.1.2. Before syllabic resonant

The treatment before **r̥* appears to be loss of the laryngeal with subsequent vocalization of the resonant to /ăr/. An example of the PA treatment of **h₁n̥* can be found in **h₁n̥h₃mn-*, oblique stem of the word for "name" > PA **an(a)m-* > PLuv. **adaman-* in HLuv. *atamanza* and Lyc. *alama* (?). No clear examples of **h₁l̥* or **h₁m̥* occur.

*ar-* "stand, place oneself": e.g. 1 sg. pres. *ar-ha-ri* (OH), 3 sg. *ar-ta* (OH etc.), *ar-ta-ri* (OH etc.), 1 pl. *ar-wa-as-ta* (MH etc.), 3 pl. *a-ra-an-da-ri* (OH etc.), *a-ra-an-ta-ri* (OH+ etc.), *a-ra-an-da* (OH etc.). The forms occurring in OH and MH texts do not have plene writing of the root vowel, suggesting that they represent [ăr-] from zero-grade **h₁r̥-* : **h₁er-* "move, set in motion", e.g. 3 sg. pres. **h₁r̥-to* in 3 sg. pres. [ărta] {5.3.1.}, cf. **h₁r̥-n(e)u-*, also from **h₁r̥-* "set in motion, which became [ărnu-] "bring" {5.3.1.}.

#### 10.3.1.3. Before consonantal resonant

**h₁* was lost before **l* (Eichner, *MSS* 31, 55) but probably vocalized to /a/ before **m* (Beekes).

*link-* "swear an oath" = [liŋg-], *lingai-* "oath" = [liŋgāi-] < Pre-Hitt. **leŋg-* with raising of **e* before [ŋg] {3.2.1.2.} : IE **h₁lengh-* in Gk. ἐλέγχω "reproach, dispute with" (Sturtevant, *Lang.* 6 (1930) 218, Tischler, *HEG* 5, 60–2, Eichner, Oettinger, *Stammbildung* 138, 180–1).

*lāman* "name" = [lāman] < nom.-acc. **h₁néh₃mn̥* with dissimilation of the first **n* {7.10.1.} (cf. Eichner, who reconstructs **h₁néh₃m(o)n*). Initial **h₁* is implied by the Laconian proper names Ἐνυμακρατίδας (IG V 1.213, L.45), and Ἐνυμαντιάδας (V.1.97.20, 280) with ἐνυμα < *ἐνομα and by Att.-Ion. ὄνομα < *ἐνομα with assimilation **ε ... ο > ο ... ο*.

The Hitt. oblique stem *lamn-* in e.g. dat. *lamni* (MH), inst. *lamnit* (MH etc.) and in *lamniya-* "call by name" is analogical for **anamn-* < **h₁n̥h₃mn-V-* seen in Luv. **adaman-* {10.3.1.2.}.

First person singular pronoun, acc.-dat. *ammuk* (*am-mu-uk*), gen. *a-mi-el* KBo III 22 Vs. 22 (OH), *am-me-el* KUB XIV 1 Rs. 40, 41, 58, 67, 88 (MH), abl. *ammētaz* (e.g. *a-me-e-ta-az* KBo VI 29 II 17, NH); cf. HLuv. *amu*, Lyc. *ẽmu*, "I, me" (*Lyc. Lex.* 21), Lyd. *amu*, with stem [ammu-], [ammē-] < PA **amŭ*, **amé-* < **h₁móu-*, **h₁mé-* cf. Gk. acc. ἀμέ, dat. ἀμοῦ (Beekes). For Hittite [mm] see {7.3.3.}. The loss of initial **a* (or in IE **h₁*) may be due to the fact that the word was enclitic (Beekes).

### 10.3.1.4. Before stop, *s

Vocalization of initial preconsonantal **h₁* has long been considered a potential source of the /a/ of the weak stem in *mi*-verbs with *ē* : *ă* ablaut (Beekes, Benveniste, Eichner, *MSS* 31, *Fl. u. Wb.*, Kammenhuber, Kimball, Oettinger, Pedersen, Rosenkranz, Sturtevant, Watkins). In fact, the suggestion that the initial vowel of *adanzi* might be the reflex of **ə* (i.e. a vocalized laryngeal) goes back to Hrozný, *SH* 169 (see also Mayrhofer and Oettinger, who derive *āssu* "good" from zero-grade **h₁su-*, and Starke, who posits **h₁* > PA **a* in CLuv. *ad-* "eat" in weak stem verbal forms and nominal derivatives). Two verbs of this type, *ēs-*, *as-* "be" and *ēd-*, *ad-* "eat" are, indeed, derived from roots which had initial **h₁* in IE, and *app-*, weak stem of *ēpp-* "take, seize", can continue **(h₁)h₁p-* beside **eh₁p-* or **h₁eh₁p-* {2.9.1.1.}. However, no certain example of vocalization of **h₁* before an obstruent has been found in a morphologically isolated word (Melchert, Eichner, *Laryngaltheorie*), and it is possible that /ă/ is a secondary zero-grade or analogical in some verbs; note especially *sas-*, weak stem of *sēs-* "sleep" (IE **ses-*), with an /a/ that cannot continue a laryngeal as a possible model (Melchert, Eichner, *Laryngaltheorie*). For /a/ as analogical, at least in some verbs, see also Catsanicos, Kimball 160–1, Lindeman (*Trip. Rep.* 65–8 and *ILTh.* 80) and Watkins.

Eichner (*MSS* 31, *Fl. u. Wb.*) derives *as-* "be" and *ad-* "eat" from **h₁s-* and **h₁d-*, weak stems of athematic presents, but considers the /a/ of *aku-*, weak stem of *eku-* "drink", analogical. Oettinger, *Stammbildung* 90, derives *as-* from **h₁s-*, but derives *ēd-* "eat" and *ēpp-* "take" from acrostatic presents **h₁ḗd-ti* : **h₁ed-n̥ti* (> **[ēdantsi]) and **h₁ḗp-ti* : **h₁ep-n̥ti* (> **[ēpantsi]), considering *ad-* and *app-* analogical after *asanzi* < **h₁s-énti*. Starke, *Sprache* 31 (1985) 249–55, derives CLuv. *azzti* = [at$^{s}$ti] "nourishment" from **h₁d-ti-*, but as Eichner, *Laryngaltheorie* 137–8 n. 49 points out, **ti*-abstracts could also have full-grade (cf. e.g. **dhéh₁-ti-* in e.g. OE *dǣd*, OHG *tāt*), and **h₁éd-ti-* would also have given Luv. *azzti*.



Perhaps the only somewhat plausible looking example of vocalization of **h₁* to *a* before obstruent in a morphologically isolated word that has been cited in the literature is Puhvel's comparison (*HED* 1, 103–4) of *apuzzi-* (n.) "sheep fat, tallow" (*ap-pu-uz-zi* OH+, MH+; *appuzziyant-* id. OH, MH+) with Lat. *adeps* "suet, lard" and **pīmus* "fat, fattened" in *opīmus* "fat" < **opi-pīmos*). Puhvel reconstructs an IE **ep-* (= **h₁ep-*) "to grease", from which *apuzzi-* would be a deverbative meaning "greasing stuff"; a zero-grade **h₁p-uti-* would be paralleled among nouns in *-uzzi* (e.g. *luzzi* "corvée" < **lh₁-uti-* {6.7.2.2.}). The etymologies of the Latin words, however, are not assured (see Walde-Hoffmann, *LEWb* I 12–13, II 211–12).

There is clear evidence that **h₁* did not vocalize before **s* and that the /a/ of *as-* "be" must, therefore, be analogical (Catsanicos, Kimball). Two words for which **h₁* may be reconstructed with confidence have initial *s*.

*sīē-*, *sīya-*, trans. "shoot, hurl", intrans. "spurt, gush, flow": e.g. 3 sg. pres. act. *si-i-e-ez-zi* Tunn. II 43 (MH+), KUB XXIX 8 II 9, 11 (MH), *si-i-ya-az-zi* ib. Tunn. III 54, pret. (?) *si-i-e-et-ta* KUB XXXIII 23 I 13 (MH+), *si-i-e-e̯t-t[a* VBoT 58 IV 1 (MH+) (both with *-(y)a-* "and"); NH also *siyā(i)-*, e.g. 3 sg. pret. *si-ya-a-it* KBo III 4 II 17, midd. 3 sg. pres. *si-ya-a-ri* KBo III 16 + II 9 (OH+), *si-ya-ri* ib. II 10, pret. *si-ya-ti* ib. II 15, 17, KBo XVII 61 Rs. 7 (MH+), it. 3 sg. pres. *si-i-e-es-ke-e[z-zi* KBo VII 35 + KBo XVII 44 I 6 (MH dup. of StBoT 25, 42 and 43), 3 pl. *si-es-kan-zi* KBo III 34 II 33 (OH+), imp. *si-ya-as-ki* KUB VII 54 III 23 (NH) = [siyē-], [siyā-], also in the compounds *pēssiya-* "throw" (3 sg. pres. *pe-es-si-i-e-ez-zi* StBoT 25, 43 I 16, stem *pe-e-es-si-(i)-ya-* (MH, OH+), *pe-e-es-se-i-* (MH)) and *ūssiya-* "draw curtains" (*ú-u-s-si-e°* (OH), *us-si-(ya)-* (OH+)), cf. also HLuv. *pasiya-* "reject" = Hitt. *pēssiya-*. The simplex should continue **h₁s-yé/ó-* beside **h₁és-ye/o-* in Skt. *ásyati* "throws, hurls, shoots". Presumably these verbs are independent thematizations of an athematic present **h₁es-* : **h₁s-* "throw, shoot", homophonous with **h₁es-* : **h₁s-* "be". Support for the initial laryngeal comes from the geminate *ss* of the compounds; **h₂* can be excluded, since it remains before **s*, and **h₃* would probably have colored the vowel of the preverb to **o*. The correspondence Luv. *a* : Hitt. *ē* < **eh₁* in HLuv. *pasiya-* : Hitt. *pēssiya-* is well paralleled {2.2.2.}.

Examples, discussion Kimball, *Gds Cowgill*. The etymology goes back to Pedersen, *Hitt.* 151. *sīē-*, *sīya-* should be separated from the partially homophonous *sāi-/sīya-* "press", which made active *hi*-conjugation forms from OH on (Kimball).

The preverb **h₁su-* "good, well" (= Skt. *su-*, Gk. εὐ-) shows up in the compound adj. *sūhmili-* "well fixed": nom. sg. c. *su-uh-mi-li-is* KUB XLIII 23 III 13, 17 (OH?/MH?), *su-u-uh-mi-li-is* KBo XIX 132 Rs.? 11 (OH+), = *s[u-uh-mi-li-is* KUB IX 28 III 24 (OH+), dat.-loc. *su-uh-mi-li* KBo X 37 III 7 (OH+), *su-uh-mi-li* KUB XLIII 23 Rs. 57, *su-uh-mi-li-in* KBo X 37 II 33 = [sūhmili-] from **h₁su-* plus **h₂mei-* "fix, attach", cf. Ved. *sū-máya-* "well connected" (hap. leg.), *su-meka-* "well attached".

For this etymology and its phonological and morphological implications see Catsanicos, *BSL* 81 (1986) 121–80.

### 10.3.1.5. Before glide

OH *ya-*, OH etc. *iya-* "go" in 3 pl. pres. act. *ya-an-zi* (OH), 3 sg. pres. midd. *ya-at-ta* (OH), *i-ya-* (MH etc.), dur. *i-ya-an-na-* (OH etc.) "march" with [ya-] < **h₁y-ó-*.

*ūrki-* "trail, track" (nom. sg. *u-ur-ki-is*, OH+) = [ūrgi-] < Pre-Hitt. **úrgi-* if from **h₁urǧi-* : Skt. *vrajati* "wanders", *vrajana-* "way, track" {5.4.1.1.}.

## 10.3.2. *$h_2$

### 10.3.2.1. Prevocalic

Initial prevocalic **h₂* remained.

*hānt-* "front, forehead" is from an original root noun paradigm with strong stem **h₂ént-*, nom sg. **h₂ént-s* in nom. sg. *ha-an-za* KUB III 95 L. 13 (NH, vocab.), KUB XX 96 IV 11, 14 (OH+) and loc. **h₂énti* in adv. *hānza* "in front" (*ha-a-an-za* KUB IX 28 II 12 (OH+), *ha-an-za* ib. II 24, IV 3, 16), cf. Skt. *anti* "before" and Lat. *ante* id.

Examples and etymological discussion *HED* 3, 89–96; see also *HEG* 1, 149–53.

*hastāi-* "bone(s)": nom.-acc. sg. or pl. *ha-as-ta-a-i* KUB V 1 II 18, 64 (NH), KUB XXIV 12 II 31, III 5 (NH), *ha-as-ta-i-i* KUB V 1 I 75, IV 6, *ha-as-da-e* 2413 III 11 (*has-tai* ib. 13, *HED*), *ha-as-da-a-i* KUB XX 48 I 12 (U), *ha-as-ta-a-e* KBo XV 25 Rs. 18 (MH?), *ha-as-ta-a-e* ib. Rs 19, *ha-as-ta-e* KUB XVII 28 I 23 (OH+), *ha-as-ta-i* StBoT 25, 24 Vs? 9, KBo XIX 128 III 42 (OH(?)+), KUB IV 1 I 17 (MH?), KUB IX 4 I 15 (MH+), KUB XXX 15 Vs. 3, 7, 13 (OH+), KUB XXX 65 II 12 (NH), *ha-as-ta-i* KBo VI 34 II 26 (MH+), gen. sg. *ha-as-ti-i-as* StBoT 25, 26 Rs.? IV 7, *ha-as-ti-as* KUB XXX 15 Vs. 1, *ha-as-ti-ya-as* KBo XVII 54 I 11 (MH), KUB IX 34 I 23 (MH+), KUB XXX 15 Vs. 17, inst. *ha-as-ti-it-t[a]* KUB XIX 37 II 6 (NH), *ha-as-ti-i-it* KUB XIII 27 + Vs. 23 (MH) = [hastāi], [hastiy-]. Melchert, *SHHP* 59, 63, 71, reconstructs an amphikinetic collective **h₂ést[H]-ōi*, but the lack of plene writing of the root vowel suggests a shift of the accent onto the suffix (i.e. PA **h₂ast[H]-ói*) comparable to that in *witār* "water" = [widār] < **wedṓr* for **wédōr* {2.6.3.}, cf. sg. **h₂é/óst[H]-i* in Skt. *ásthi* "bone", oblique stem **h₂ost[H]-éi-* in Gk. ὀστέον "bone", du. **h₂ést[H]-ih₁* in $^{UZU}$*dānhasti-* "twinbone, doublebone"; **h₂* rather than **h₃* is supported by the **a* of W. *asgwrn* "bone" (Lionel Joseph, personal communication) and by ὀ : ἀ in Gk. ὀστέον : ἄστραγα.

For examples and etymological discussion see *HEG* 2, 202–3, *HED* 3, 233–7.

*hāli-* "fold, corral, ring around the sun or moon" (nom. sg. *ha-a-li*, OH etc.) = [hāli-] is from **h₂é/ól-i-*, cf. *hīla-* "court(yard)" < **h₂élo-* lit. "of the enclosure" {2.8.5.2., 8.4.2.1.} : **h₂el-* "protect, enclose", probably also in Gk. ἄλσος "sacred grove" (< *"enclosed space"), ἄλμα id. beside extended **h₂lek-*, **h₂elk-* in Skt. *rakṣati* "protects", Gk. ἀλέξω "I ward off, defend", Goth. *alhs* "temple", Lith. *alkas* (*ẽlkas*) "sacred grove", both < *"enclosure" (Melchert, *SHHP* 111–12) {8.4.1.1.}.

*hāt-* "dry, dry out" (intrans. and trans.): 3 sg. pres. *ha-a-ti* KUB VIII 3 Vs. 12 (OH+), 3 sg. pret. *ha-a-az-ta* e.g. KUB XVII 10 I 16, 17 (MH), *ha-az-ta* e.g. KUB XXXIII 24 I 15 (MH+), 3 pl. *ha-a-te-er* KUB XVII 10 I 16, 17, ptcp. nom.-acc. sg. n. *ha-a-da-an* e.g. KBo XXI 33 I 12 (U), gen. *ha-a-ta-an-t[a-as* StBoT 25, 80 IV 4, *ha-a-d[a-an-ta-as* ib. IV 5 = [hād-], perhaps from perf. **(h₂e)-h₂ód(h)-e* : **h₂ed-* or **h₂edh-* also in Lat. *ador* "spelt" < coll. **h₂ed(h)-ōr* "dry stuff" (Watkins, *HSCtPh* 77 (1973) 187–93, *HSCtPh* 79 (1975) 181–7 = *Harv.IE St.* II 367–8).

Examples and discussion *HED* 3, 246–8.



*hāssa-, hassā-* "hearth": acc. sg. *ha-a-as-sa-an* (OH etc.), gen. sg. *ha-as-sa-a-as* (OH etc.) = [hāssan], [hassās] < root noun acc. sg. **h₂ó/₁s-m̥*, gen. **h₂h₁s-ós* : **h₂eh₁s-* in Skt. *aśaḥ* "ash", Lat. *āra* "altar", *āridus* "dry".

### 10.3.2.2. Before syllabic resonant

IE **h₂ṛ* should have become [har], but examples in which a zero-grade is certain are difficult to find. One might be *hartag(g)a-* "bear" (nom. sg. *har-ta-ga-as* (OH etc.), acc. *har-tak-kan* (OH), *har-tag-ga-an*) if this is [hărtka-] < **h₂ṛtḱo-* (cf. **h₂ṛḱ*þ*o-* in e.g. Ved. *ṛkṣa-*, Gk. ἄρκτος, Lat. *ursus*) rather than full-grade **h₂értḱo-* {1.10.2.1., 6.1.3.}.

### 10.3.2.3. Before consonantal resonant

Catsanicos, *BSL* 81 (1986) 165–6 w. n. 253, establishes that initial **h₂* remained before **m* in *sūhmili-* "well fixed, firmly established" (*su-(u)-uh-mi-li-* = [su-hmili-] < **h₁su-* "good" plus **h₂mi-* : **h₂mei-* "fix, establish") etc. {10.3.1.4.}. Initial **h₂l-* probably occurs in *halīna-* "clay" (gen. sg. *ha-li-i-na-as* (OH)) = [h(a)līna-] < **h₂líno-* : **h₂ei-* "smear" in Gk. ἀλίνειν : ἀλείφειν (Hesych.) {2.4.4.1.}.

### 10.3.2.4. Before *s

The laryngeal remained. It is possible that an epenthetic vowel is inserted between it and /s/.

*hasterza* "star": nom. sg. *ha-as-te-er-za* KBo XXVI 34 III 9 (NH, vocab.), acc. sg. in place name $^{URU}$*Ha-as-te-ra-an* KUB XIX 64 L. 24 (NH), *Ha-as-ti-ir-ra-an* KUB XIX 65 + XXXI 13 L. 9 (NH), gen. $^{URU}$*Ha-as-ti-ra-as* KBo XIX 10 + KUB VIII 75 I 22 (NH) = [h(a)sterts], [h(a)stēran] < **h₂stḗr-s* (nom. sg. with PA animate nominative singular ending **-s*), acc. **h₂stér-m̥* : Gk. ἀστήρ "star" (Lindeman, *ELTh*, *ILTh*, *Trip. Rep.* 70, Watkins, *Sprache* 20 (1974) 10–14, Puhvel, *HED* 3, 238–9).

## 10.3.3. *$h_3$

### 10.3.3.1. Prevocalic

Initial prevocalic **h₃* remained {10.2.3.}. Certain examples are: *hāppar* "price deal", *hapzi* "is rich", *hāpperiya-* "city, settled place" (< *"marketplace") < **h₃ep-* "work, riches, abundance" {2.7.2., 10.2.3.}; *hāras, hāran-* "eagle" < PA **h₃ór-ō-s, *h₃óron-*, IE sg. **h₃ér-ō*, **h₃óron-* {2.8.1.3.} ; $^{GIŠ}$*hissa-* "chariot pole" < **h₃ih₁s-éh₂* or **h₃ih₁s-ó-* {2.8.3.3.}; *hink-* "pour, wet, deluge" < **h₃i-n-k-* {2.8.3.3, 10.1.1.3.}.

IE **h₃* is possible in several other words with initial *h*.

*hāriya-* "bury" (*ha-(a)-ri-(ya)-*, OH etc.) = [hārye/a-] < **h₃ér-ye/o-* : Gk. ὀρύσσω "I dig" and *harī-* "valley" (*ha-(a)-ri-*, OH etc.) = [hāri-] < **h₃ér-i-* : **h₃er-* in Hmc. οὖρος < *ὀϙ*f*ος "boundary" {2.8.1.3.} (Kimball, *PW* 525–7).

*happēna-* "baking kiln, fire-pit, broiler oven": loc. *ha-ap-pe-e-ni* StBoT 25, 5 II 7, KUB XXXVI 44 IV 9 (MH), *ha-ap-pe-ni* e.g. KBo XI 11 I 6 (NH), dir. *ha-ap-pe-na*

KBo VI 34 I 42, II 6 (MH+), inst. *ha-ap-pe-ni-it* e.g. KBo XV 10 III 59, 70, II 23, 63 (MH) = [hapēni] < **h₃ep-* : Gk. ὀπτός "roasted", ὀπτάω "roast".

Examples, discussion, and etymological refs. *HED* 3, 121–2, *HEG* 1, 165.

*hāliya-* "kneel": 3 sg. pres. midd. *ha-a-li-ya* KUB X 11 II 17 (OH+), *ha-a-li-ya-ri* KUB XX 99 II 5 (OH+), *ha-a-la-ya-ri* KBo XVII 75 I 27 (OH+), ptcp. nom. pl. c. *ha-a-li-an-te-es* KUb XXIX 1 II 4 (OH+) = [hālya-] < **h₃él-ye/o-* : **h₃el-* "bend" in e.g. Gk. ὠλένη "elbow", Lat. *ulna*, O.Ir. *uilenn* "elbow, corner". A related word is *halhaltūmar* "corner" : e.g. dat.-loc. sg. *hal-hal-tu-ma-ri* KBo IV 1 I 19 (OH+) = *hal-hal-tu-u-[m]a-ri* KUB II 2 I 21, *hal-hal-du-ma-ri* KUB XXX 34 IV 11 (MH+), nom.-acc. pl. *hal-hal-tu-u-mar* KUB XXXI 130 I 6 (MH) < Pre-Hitt. **h₃al-h₃al-t-umar* "place where something bends" (Melchert, *Sprache* 29 (1983) 13–14), cf. also *halhalzana-* (*halhanzana-*) *halhaldana-* "shoulder"(?) < **h₃elt-no-* : Skt. *aratni-* "elbow", Av. *arəθna-* id. (Melchert, *loc. cit.*, Puhvel, *Gds Schwartz* 255–8).

Examples, etymological discussion *HED* 3, 20–22, 28–9.

**h₃* is problematic, unlikely or impossible in: *hastāi-* "bone(s)" {10.3.2.1.}; *hapāti* as "personal servant", connected by Sturtevant, *Lang.* 4 (1928) 164, *CGr*[1] 79 with Gk. ὀπηδός, Dor. ὀπαδός "retainer", refers instead to a type of terrain and may belong with *hap-* "river < **h₂eb(h)-*. Etymologies based on a correspondence Hitt. *hu-* : **o* (**h₃o*) in the other IE languages do not work: e.g. *hulle/a-* "fight" : Gk. ὄλλυμι "I kill" (refs. *HEG* 2, 255); *hūmant-* "all" : Lat. *omnis* "all" (refs. *HEG* 2, 285).

### 10.3.3.2. Before syllabic resonant

Melchert, *Sprache* 33 (1987) 21–2, suggests that **h₃r̥* became *har* in *harganāu-* "palm, sole": nom. sg. c. *har-ga-na-us*, nom.-acc. sg. n. *har-ga-na-ú* KUB IX 4 I 14 (MH+), erg. *har-ga-na-u-wa-an-za* ib. I 13, 32 (MH+), gen. *har-ga-na-u-wa-as* KUB IX 34 II 42 (MH+), dat.-loc. sg. *har-ga-na-ú-i* KUB IX 4 I 13, *har-ga-ṇa-ú-i* KUB IX 34 II 34, nom. pl. c. *har-ga-na-u-i-s* KUB XXXIII 66 II 3 (MH?) = [hărg(a)nāu-] with root [harg-] < **h₃r̥ǵ-*, cf. Gk. ὀρέγω "stretch out", ὄργυια "arm width, fathom" and Skt. *r̥jú-* "straight" (Melchert, *loc. cit.*).

Examples *HED* 3, 168–9. For the root etymology see also Weitenberg, *u*-Stämme 223.

### 10.3.3.3. Before stop

Initial **h₃* remained, and a following voiceless stop was voiced in *hapus(s)a-* "penis": nom.-acc. sg. *ha-a-pu-sa-as-sa* KUB XVII 28 IV 5 (OH+), gen. *ha-a-pu-u-sa-as* KUB IX 4 I 31 (MH+), erg. *ha-pu-sa-as-an-za* KUB VII 1 + KBo III 8 II 35 (OH+), *[ha-p]u-sa-an-za* = [hābus-], perhaps from **h₃ébus-* < **[h₃bus-] with **h₃p* > [h₃b] : Gk. ὀπυίω "mount, marry" < **h₃pus-ye/o-*. The occasional plene writing in the first graphic syllable is difficult to explain. It might, however, suggest a further development to [hāb] with epenthetic vowel, accent shift, and lengthening.

The etymology is that of Watkins, *Fs Neumann* 455–7; see also Melchert, *Sprache* 33 (1987) 23.



## 10.4. Intervocalic

### 10.4.1. **h₁*

IE **h₁* was lost between vowels (see especially Eichner, *MSS* 31 (1973) 54).

*mīū-* "mild, soft, gentle": nom. sg. c. *mi-i-ú-us* (OH+), *mi-u-us* (MH), *mi-i-us* KUB XVII 10 IV 32 (MH), acc. sg. c. *mi-i-ú-un* (OH+), cf. nom.-acc. sg. n. *mi-(i)-u* = [miyū-] < **mih₁-ú-* {2.4.4.2.}.

*huwant-* "wind": nom. sg. *hu-u-wa-an-za* KUB VIII 65 L. 4 (MH+), also *hu-wa-an-za*, e.g. KBo XVII 62 (+ 63) IV 8 (MH), gen. sg. *hu-wa-an-da-as* KUB XVII 28 II 7 (OH+), *hu-u-wa-an-da-as* KBo X 37 II 31 (OH+), dat. sg. *hu-u-wa-an-ti* KBo XXII 6 I 27 (OH+), nom. pl. *hu-u-wa-an-te-<es>* KUB VI 46 III 49 (NH), *hu-u-wa-an-te-es* KUB VII 5 I 17 (MH+), acc. pl. *hu-u-wa-an-du-us* KUB XXIV 3 III 38 (MH+) = [huwānt-] < **h₂uh₁-ént-* from the participle of **h₂weh₁-* "blow" in Skt. *vāti* "blows", Gk. ἄημι "blow" etc. beside **h₂wéh₁-n̥t-* in Lat. *ventus* "wind", Goth. *winds*, OE *wind* id.

Third person plural of *e*-statives in [-ēr] < **-éh₁-ēr*, e.g. *mar-se-e-er* "they were false" KBo VI 2 II 55 (OH) = [marsēr] < **mr̥s-éh₁-ēr* {2.7.3., 2.9.1.1.}; third person plural preterit of *pēhute-* "take", e.g. *pe-hu-te-er* KUB XXXVI 104 Vs. 14 (OH); *uwate-* "bring", e.g. *ú-wa-te-er* KBo VIII 42 Vs.? 3 (OH), *[ú]-wa-te-er* KUB XXXVI 104 Vs. 12, and *wete-* "build" = [-dĕr] < unaccented **-dheh₁-ēr* : **dheh₁-* "put" {2.9.1.1.}.

*sūēl, sūil* "thread" may also have had intervocalic **h₁*: nom.-acc. sg. *su-ú-il* KBo XV 10 I 7 (MH), *su-ú-i-il* KUB XII 51 I 8 (NH), *su-u-e-el* HT 1 II 17 (MH?/NH?), if [suwēl] < **suh₁-él*. For the laryngeal cf. e.g. Lat. ptcp. *sūtus* "sewn", *sūbula* "awl", *sūtor* "cobbler" with *sū-* < **suH-* beside **syuH-* in e.g. Goth. *siujan* "to sew", OE *sēowan* id., Skt. ptcp. *syūta-*, Lith. *siuvù, siúti* and **siHw-* in Skt. *sīvyati* "sews" (Eichner, *MSS* 31 (1973) 54, Melchert, *SHHP* 119 w. refs.). The reconstruction with **h₁* is based on the lack of coloring of the suffix vowel of the Hittite word, but since the word is first attested in MH (with *-il*) it is unclear whether the suffix was originally [-ēl] or [-īl].

### 10.4.2. **h₂*

Eichner, *MSS* 34 (1973) 55–73, established that intervocalic **h₂* became a sound spelled °H-H° (here transcribed /h/) or °H° (here transcribed /ḫ/) depending on the accent, on the quantity, and perhaps the quality of the preceding vowel. Since **h₁* and **h₃* were lost between vowels, the distinction between °H-H° and °H° in inherited words must reflect phonemic split of **h₂*.

### 10.4.2.1. After short accented vowel

IE **éh₂V* became *ahhV* (= [āhV]). Although the preceding vowel was accented in IE or PA, plene writing is surprisingly rare.

*pāhhur* "fire": nom.-acc. sg. *pa-a-ah-hu-ur* KUB XVII 10 III 22 (2 ex., MH), *pa-ah-ah-hu-ur* (MH etc.), *pa-ah-hur* (OH etc.) = [pāhur] < **péh₂-wr̥*, oblique stem *pahhwen-* < Pre-Hitt. **pah₂-wén-* for **ph₂-wén-* {7.3.1.1.}.

The factitive suffix *-ahh-* continues the IE denominative suffix **-eh₂-*, cf. e.g. *newahh-* "renew, make new, recopy" < **new-eh₂-* : Lat. *novāre* "renew" (< **new-ā-*), Gk. νεάω "replow" (< **νεϝᾱ-*).

*sahhan* "ground rent" (nom.-acc. sg. *sa-ah-ha-an*, OH, MH, OH+) = [sāhan] < **seh₂-om* : **seh₂(i)-* "bind."

*antuwahha-* "human being": nom. sg. *an-tu-wa-ah-ha-as* (OH+, MH+), *an-tu-u-wa-ah-ha-as* (OH+), *an-tuh-wa-ah-ha-as* (MH+), acc. *an-tu-wa-ah-ha-an* KBo XI 10 II 20 (NH), nom. pl. *an-tu-wa-ah-hi-es* (OH+), *an-tu-wa-ah-hi-is* (OH+) with stem [andwaha-], remade from the strong stem of an *s*-stem **en-dhweh₂-os* "having breath, spirit within" : **dhweh₂-* in *tuhhā(i)-* "pant, gasp", Skt. *dhūmaḥ* "smoke", Gk. θῦμός "spirit", Lat. *fūmus* "smoke" etc.

Examples, discussion Puhvel, *HED* 1, 81–2; cf. Eichner, *Sprache* 25 (1979) 77, who reconstructs **anda + *dhweh₂-ōs* : **dhuh₂-es*, Oettinger, *Stammbildung* 373, and Melchert, *SHHP* 53. For the weak stem **dhuh₂s-* in *antuhs-* see {3.7.4.2.}.

Cuneiform Luvian *hūha-* "grandfather", *huhat(t)alla/i-* "grandfatherly" (Starke, *KZ* 100 (1987) 260–1 n. 66, Melchert, *CLuv. Lex.* 71) and Lycian χ*uga-* "grandfather" < PA **h₂ŭ̯h₂o-* < IE **h₂éuh₂o-* (cf. Lat. *avus*) indicate that **h₂* was voiced after the reflex of an accented diphthong in PA. Hittite *huhha-* (*hu-uh-ha-*, NH also *hu-u-uh-ha-* with ligature HU-U-) can be a replacement for **hūha-* = **[hu̯ha-]* with geminate /hh/ restored on the model of *hanna-* "grandmother", *anna-* "mother" and *atta-* "father". Hittite [uhhV] and [ahhV], therefore, probably cannot directly continue **éuh₂V* or **óuh₂V*.

*tuhhā(i)-* "gasp, pant": 3 sg. pres. act. *tu-uh-ha-a-iz-zi* KUB XVII 7 L. 7 (NH), midd. *tuh-ha-it-t[a]* KUB VII 41 Vs. 10 (MH), 2 sg. pret. act. *[tu]h-ha-a-it* KUB XXXIII 118 L. 17 (NH), 3 sg. *tuh-ha-a-it* ib. L. 12, it. sup. *t]uh-hi-es-ke-u-wa-an* ib. L 25, *tuh-hi-es-ke-u-[w]a-a[n]* ib. L.28; also *tuhhima-* "gasp", acc. sg. *tuh-hi-ma-an* KUB XXXIII 118 L. 17 = [duhāitṣi], [duhima-] etc. : IE **dheuh₂-* "smoke, mist". For the etymology see Laroche, *BSL* 52 (1976) 80. The verb *tuhhā(i)-* can be a denominative from a noun **dhuh₂-éh₂-* or **dhuh₂-ó-* (cf. Oettinger, *Stammbildung* 373, who reconstructs **dh(é)uh₂-eh₂-*). *tuhhima-* should be from **dhuh₂-émo-* with raising of **ē* to /i/ after **h₂* {3.9.5.1.}.

*suhha-* "pour out": 1 sg. pres. *s]u-uh-ha-ah-hi* StBoT 25, 138 Rs.? 5 (cf. StBoT 26 n. 520), 3 sg. *su-ḫa-a-i* StBoT 25, 149 Vs. 7 (at line end), *su-uh-ha-a-i* KUB XXIX 1 II 14 (OH+), 3 pl. *su-uh-ha-an-zi* StBoT 25, 30 III 17, *su-u]h-ha-an-zi* ib. III 18, 1 sg. pret. *su-uh-ha-ah-hu-un* VBoT 58 IV 6 (MH+), 3 sg. *su-uh-ha-as* ABoT 44 I 53 (MH+), 3 pl. *su-uh-ha-ir* KUB XXXVI 104 Vs. 6 (OH) = *su-uh-ha-a-ir* KBo III 34 I 8 (OH+) = [suha-] < **suh₂-o-* : **seuh₂-* in Gk. ἑάω "I let go" < **ἐϝαω*, root **εὐ-*, cf. ἔβασον · ἔασον (Hesych.), εὖα · ἔα (Hesych.).

For the laryngeal, note aor. ἔασον < **(ε)ἐϝασον*. Initial **s* is implied by the augment εἰ of e.g. Hmc. εἴασεν.

*sūhha-* "roof": nom.-acc. sg. n. *[s]u-uh-ha* KUB XXXI 89 II 7 (MH+), dat.-loc. *su-u-uh-hi* StBoT 25, 26 I 8, *su-uh-hi* KBo IV 11 I 25 (NH), KBo V 2 II 1 (MH+), KUB VII 40 L. 7, 8 (U), dir. *su-uh-ha* StBoT 25, 104 II 2, KBo V 11 IV 13 (MH+), KUB VII 1 II 19, 31 (Pre-NH), abl. *su-u-uh-za* StBoT 35, 30 III 18, *su-uh-ha-az*, KUB VII 41 Rs. 4 (MH), acc. pl. c. *su-uh-hu-us* KUB IX 15 III 8, 13 (NH) = [sūha-], probably from a root



noun **séuh₂-* : **suh₂-ós* : **seuh₂-* "let go", also in *suhha-* "pour". The plene writing in OH suggests a full-grade **séuh₂-C* > *sū(h)-C-*, **séuh₂-V-* > **[sūḫ-V-]*, with voicing of the laryngeal, and voiceless /h/ analogical from a weak stem **suh₂-*, ablative **séuh₂-ti* > **[sūtṣ]* in OH *su-u-uh-za* = [sūhtṣ] with analogical laryngeal.

One source of *āhV* = [aḫV] may be *o*-grade **óh₂V*, though the evidence is open to dispute since there seem to be no certain examples of **óh₂V* in morphologically isolated contexts. The spelling CA-A-HV- is found in forms of several *hi*-conjugation paradigms where an accented *o*-grade root would be expected. In several paradigms, it is opposed to CA-AH-HV- in forms where the weak stem is expected. If these verbs originally had **o* : **e* ablaut, then they could suggest a development **óh₂* > [aḫV] beside **éh₂V* > [CahV]. Since **o* was retained into Pre-Hittite {2.2.1.}, the voicing of the laryngeal would have been separate from PA voicing after long accented vowels {10.4.2.2.}. Alternatively, the alternation between *hh* = [h] and *h* = [ḫ] in these verbs may have been modeled after the alternation between voiceless and voiced stop in the paradigms of verbs like *āk-*, *akk-* "die" or *istāp-*, *istapp-* "plug up, cover" {6.4.4.8.}.

For **o* : **e* ablaut in the *hi*-conjugation see Jasanoff, *Heth. u. Idg.* 79–90 and *Reconstructing Languages and Cultures* 129–55.

*nāh-*, *nahh-* "be afraid, fear"; with *nāhV*: 3 sg. pres. *na-a-hi* KUB XLIX 3 II 3 (U), 1 sg. pret. *na-a-hu-un* KBo XVI 59 L. edge 3 (NH), KBo IV 2 III 42 (OH+), 2 sg. imp. *na-a-hi-i* KBo XXI 90 Rs. 54 (MH), *na-a-hi()* e.g. KBo XXI 103 Rs. 30 (MH), (*na-hi* ib. Rs. 28), KUB XXXIIII 24 I 43 (MH+), vbl. noun gen. sg. *na-a-hu-u-wa-as* KBo XVIII 69 Vs.? 5 (U); *nāhV* is also found in the first person plural present where an analogical strong stem would have parallels: *na-a-hu-e-ni* KUB LII 75 Rs. 20 (NH) = [nāḫ-] < stem **nóh₂-* beside weak stem *nahh-* = [nāh-] < **néh₂-* regularly in participle *na-ah-ha-(a)-an-t°* (OH+ etc.), midd. 3 pl. pret. *na-ah-ha-an-ta-at* 1081/u Rs. 4 (*CHD*, StBoT 5), and 1 pl. pres. *na-a-ah-hu-u-e-ni* KBo XXVIII 203 II 5, 9 (U).

Examples *CHD* 3, 338–41. Catsanicos, *BSL* 75 (1980) 172–4, also provides a discussion of spellings with single and double °H°, but his claim that forms with °H° show assimilation of **h₂* to a following **u* or **i* is contradicted by e.g. *tuhhus-* "cut, separate". The first person singular preterit *na-ah-hu-un* (e.g. KUB XIV 3 II 3, NH), and verbal noun gen. sg. *na-ah-hu-u-wa-as* KBo III 6 IV 15 (NH) can have *nahh-* analogically. The iterative has both *nahh-* and *nāh-*.

*zāh-*, *zahh-* "fight": with *zahV*: 3 sg. pres. *za-a-hi* KBo VI 25+ KBo XIII 35 III 7 (OH+); with *zahh-* 1 pl. pres. *za-ah-hu-u-e-ni* KBo III 60 II 17 (OH+), midd. 3 pl. pres. *za-ah-ha-an-da* KBo XXIIII 92 II 14, 3 (MH), pl. pret. *za-ah-hi-ir* KUB XVII 21 IV 2 (MH), it. 3 pl. pres. midd. *za-ah-hi-is-kan-ta* StBoT 25, 54 II 16, cf. also noun *zahhāi-* "fight", denominative *zahhiya-* "fight" and *zahhurā(i)-*, which implies an *r/n*-stem **zāhhur*. The stem should be [tsāḫ-] < **dsóh₂-* : [tsāh-] < **dséh₂-* in e.g. **[zāhur]* < **dséh₂-u̯r̥*, cf. **d-h₂s-* in Hmc. δαῖ "in battle" (Schindler *apud* Oettinger, *Stammbildung* 446–7).

*sāh-*, *sāhh-* "clog, cram, stuff"; with *sāh-*: 3 sg. pres. *sa-a-hi* KBo XVII 103 I 15 (NH), KUB XXXIX 88 I 10 (U), midd. *sa-ha-a-ri* KUB XIII 2 II 23 (MH(?+)), 3 pl. *sa-ha-[a-an-]zi* KUB I 13 III 32 (MH+), ptcp. nom.-acc. sg. n. *sa-ha-a-an* KUB I 13 III 11, acc. sg. c. *sa-a-ha-an-ta-an* 422/2 III 24 (*Stammbildung* 512); stem [sāḫ-] < PA **sóh₂-ei*, either from an IE perfect **(se)-sóh₂-e* or an **h₂*-present **sóh₂-ei*, cf. Hmc. root aor.

ἄμενα, short vowel subjunctive ἕωμεν < *σάομεν, pres. ἄεται < PGk. *σα-γε/o-, Lat. *satis*, OE *sæd* (NE *sad*) etc. Voiceless /h/ is found in the participle, acc. sg. c. *sa-a-ah-ha-an* KUB IX 28 I 14 (OH+), which would regularly continue the participle of an $h_2$-present **séh₂-n̥t-*. Alternatively, if *sāh-* is from an IE perfect, the participle would be secondary, presumably on the model of *nāhh-*, *nāh-* etc.

On the identity and meaning of this verb see Berman, *JAOS* 92 (1972) 466, Puhvel, *Fs Laroche* 297–303 = *AnIE* 365–71, and Eichner, *Sprache* 21 (1975) 159–60.

*lāhu-* "pour": 3 sg. pres. *la-a-hu-i* (OH, MH), 3 pl. *la-hu-an-zi* (OH, MH), *la-hu-wa-an-zi* (OH), *la-a-hu-(u)-wa-an-zi* (MH etc.), ptcp. *la-hu-an* (OH), *la-a-hu-an* (MH?), *la-a-hu-u-wa-an* (MH) = [lāhu-] < **lóh₂-w-*; if *lāhu-* was originally an **h₂*-present, then the weak stem should have been **léh₂-w-* > *lahhu-* = [lāhu-] or **l̥h₂w-* > **alhu-*. Presumably then 3 pl. pres. *lahuwanzi*, *lāhuwanzi* and ptcp. *lahuwant-*, *lāhuwant-* are analogical after the strong stem. The distribution of plene writing in these forms can suggest that the earliest examples are to be read with [lăhu-] but that later examples should be [lāhu-] with analogical /ā/ from the strong stem.

Examples *CHD* 3, 13–15. For references on various root etymologies that have been proposed, see Tischler, *HEG* 5, 3–8. A few examples of *la-ah-hu-(wa)-* occur, but they are sporadic, late, and can be analogical to *nahh-* etc.

### 10.4.2.2. After long accented vowel, diphthong

Inherited **ḗh₂V* became PA **ḗn̥V* which shows up in Hittite as [ēn̥V] and in Luvian as [in̥V] with PA voicing of the laryngeal after a long accented vowel. For the lack of coloring of IE **ē* see {3.9.5.1., 2.9.5.1.}.

This treatment was established by Eichner, *MSS* 31 (1973) 53–107 (esp. 68–72), and while there is still some disagreement about etymologies, and it is not universally accepted (see e.g. Polomé, *JIES* 15 (1987) 163, and Lindeman, *LTh* 56–9, 111, *HS* 105 (1992) 164 n. 3), its basic correctness has been confirmed by additional evidence from Luvian and from the other IE languages (see Mayrhofer, *Idg. Gr.* I/2, 132–3 *w.* refs.).

There is, *pace* Lindeman, no *a priori* difficulty reconciling the chronology of lengthened grade inflection and laryngeal coloring. We cannot reconstruct with certainty a stage of IE without lengthened grade inflection or laryngeal coloring.

*mēhur* "time" and adv. "in/at the time": nom.-acc. sg. *me-e-hur* (OH+, MH+, NH), *me-hu-ur* (OH etc.), *me-hur* (MH, NH) = [mēn̥ur] < **méh₂wr̥* : **meh₂-* "be at the right time, be ripe" in e.g. Lat. *mātūrus* "ripe", *Mātūta* "goddess of early morning", *māni-*, *-e* "early", O.Lat. *mānus* "good", **mh₂-* in e.g. O.Ir. *maith* "good" < PCelt. **mă-ti-* (Eichner) {2.9.5.1}.

*sēhur* "urine" (nom.-acc. sg. *se-e-hur*, MH+) = [sēn̥ur] < IE nom.-acc. sg. **sḗh₂wr̥* : **seh₂-* "defile, dirty" (Eichner) {2.9.5.1}.

Inherited **éih₂V* became Hittite [ēn̥V] {4.3.2.1.}.

*ehu* "come on!" (*e-hu* e.g. KBo VII 14 Vs 4, OH) = [ēn̥u] < PA **éi-h₂(a)u* from **h₁ei*, second person singular imperative of **h₂₁ei-* "go" (cf. Att. ἔξει "leave!", Lat. *ī* "go!") plus the particle *hu* also seen in *pēhute-* "take" (Eichner).

*wēḫ-* "turn": 1 sg. pret. act. *ú-e-ḫu-un* (MH), 1 sg. pres. midd. *ú-e-ḫa-ah-ḫa* KUB XXXVI 75 III 18 (MH), 3 pl. *ú-e-ḫa-an-ta* (OH), 3 sg. pret. *ú-e-ha-at-ta-at* (MH?), *ú-e-ḫ-ha-at* (OH+), 3 pl. imp. *ú-e-ha-an-da-ru* (MH(+?)) = [wēn̥-], probably < **wéih₂-* : Skt. *veti* "follows after", ptcp. *vītaḥ*, Lith. *véju*, *výti* "follow after, hunt", ptcp. *výtas* < IE act. **wéih₂-ti*, ptcp. **vih₂-tó-* (Eichner) {10.4.2.2.}.

Inherited **éuh₂* occurs in *tūhusiya-* "keep quiet, keep silent" = [tūn̥usiya-] < **téuh₂s-ye/o-* : **tuh₂s-* in Skt. *tūṣnīm* "quietly, silently", Av. *tūšni-* {3.9.4., 4.6.1.}



### 10.4.2.3. In unaccented syllable

Eichner, *MSS* 31 (1973), provides evidence that intervocalic **h₂* became [n̥] with PA voicing in unaccented syllables.

**miyahuwant-*, **miyahunt-* "aged, old" in *mihuntahh-* "make/become old": 2 sg. imp. midd. *mi-ya-hu-un-ta-ah-hu-ut* (NH), *mi-e-hu-wa-an-da-hu-ut* (NH); *mi(ya)huntatar* "old age": nom.-acc. sg. *mi-hu-un-ta-tar* (OH+), gen. *mi-ya-hu-an-da-na-as* (MH); *miyahuntē-* "become old", 3 sg. pres. (hap. leg.) *mi-ya-hu-un-te-zi* KUB VIII 29 I 2 (OH+). The related inchoative has single °H° in 3. sg. pres. *mi-ya-hu-un-te-es-z[i]* KUB XIV 12 Vs 12 (NH), though Hoffner and Güterbock restore °H-H° in *mi-ya-ah-[hu-un-te-es-zi]* ib. Vs. 9. The stem [miyan̥ud-] is from PA **mi(y)an̥wantáh-*, **mi(y)an̥wantā́dər*, **mi(y)an̥wantḗ-*, derivatives of **mi(y)ah₂wént-* "mature, ripe, old" from abstract noun **miyáh₂* "ripeness, growth" (in IE terms **mih₁wéh₂*).

See Eichner, *MSS* 31 (1973) 50. Examples *CHD* 3, 223–9.

Secondary and analogical *ēhV* and *ēhhV* occur in *pēhute-* "take" with preverb *pē* < PA **pe* {2.2.2., 4.4.1.4.}, and in *nēhhi* "I turn", *nēhhun* "I turned" with root [nē-] < **noiH₁₃-* {4.9.1.} plus first person singular present ending OH *-hhe* (*-hhi*) = [-he], preterit *-hhun* = [-hun].

## 10.4.3. **h₃*

Intervocalic **h₃* was lost in PA. Melchert, *Sprache* 33 (1987) 24–5, shows that the decisive evidence for loss comes from forms derived from the root *sū-* "fill" and its cognates in the other Anatolian languages. Although there are no obvious cognates outside of Anatolian, a good case can be made for reconstructing the root as **seuh₃-*.

*sū-* "full": nom. sg. c. *su-u-us* StBoT 25, 26 Rs.? IV 4, 6, KBo X 23 IV y + 5 (OH+), acc. sg. c. *su-u-un* e.g. KBo XXI 72 I 13 (OH+), *su-u-ú-un* KBo XXV 72 L. 20 (OH?/MH?), nom.-acc. sg. n. *su-u* e.g. KBo VI 34 III 12 (MH+), *su-u-ú* KBo XIX 132 Rs. 14 (OH+), KUB XI 19 IV 22 (U), acc. pl. c. *su-u-wa-mu-us* StBoT 25, 3 I 26 = 4 I 21, StBoT 25, 6 II 2 = [sū-] or perhaps [sūu-] with hiatus {1.4.2.}, probably from a proterokinetic paradigm **séuh₃-u-* : **suh₃-ów-*.

Examples Weitenberg, *u*-Stämme 140; on the inflection see Oettinger, *StBoT* 22, 39, Watkins, *Fl. u. Wb.* 378, Melchert, *SHHP* 29, *Sprache* 33, 24, and Weitenberg, *loc. cit.*

*sūwa-* "fill": e.g. 3 sg. pres. midd. *su-wa-at-ta-ri* KUB XIII 2 III 24 (MH?), pret. *su-u-wa-at-ta-t* KUB XXX 39 Rs. 10 (OH+), *su-wa-u-e-ni* KUB XII 63 Vs. 29 (MH), 3 pl. *su-u-wa-an-zi* KUB XVII 37 I 6 (NH); ptcp. *sūwant-*: e.g. nom. sg. c. *su-u-wa-an-za* KUB XIII 2 III 40, *su-ú-wa-an-z[a]* KBo XXII 107 I 17 (OH+), nom.-acc. sg. n. *su-u-wa-an* KBo V 1 II 39, 40, 42, 43 (Pre-NH), KBo X 34 I 29 (MH), nom. pl. c. *su-u-wa-an-*

*te-es* KBo IV 9 I 17 (OH+), nom.-acc. pl. n. *su-u-an-da* KBo X 34 I 27. The verb also occurs in Luvian: CLuv. *sūwa-* "fill" (e.g. 3 sg. pres. midd. *su-u-wa-at-ta*) and *suwātar* "fullness" (*CLuv. Lex.* 198), and perhaps *sunnuwant(i)-* and *sunatruwant(i)-* (ib. 197); HLuv. *su-wa/i-*, reduplicated *susu-*, Lyc. *hwedr(i)-* "all" < *"of fullness, totality" (*Lyc. Lex.*$^2$ 29) and in Palaic in ptcp. *suwant-* (StBoT 10, 70), 3 sg. pret. *sūnat* (*su-u-na-at*) and *sunnutil* "a serving" (or sim.). The Cuneiform Luvian third person singular preterit ending ending *-atta* in *suwatta* points to PA *-*ó-to*, and presumably implies a zero-grade root, i.e. **suh₃-ó-to(-ri)*, and the zero-grade root is presumably continued too in the ptcp. [suwānt-] < **suh₃-ónt-*. The root-final laryngeal is confirmed by the gemination in Hitt. *sunna-* "fill" and Pal. *sunnutil*, which should have a [sunn-] from the weak stem of a nasal present **su-n-h₃-* {10.8.7.}. The strong stem **su-neh₃-* is preserved in the Palaic third person singular preterit *sūnat* (< **su-né-h₃-t*). Since **eh₁* shows up as a front vowel in Palaic (cf. *wite-*, *witi-* "build" = Hitt. *wete-* < **we-dheh₁-* {2.9.1.1.}), **h₁* can be ruled out, and since the laryngeal is not preserved in Hitt. *sū-* "full" (cf. **suh₂-ó-* in *suhha-* "pour out" {10.4.2.1.}), the root clearly did not end in **h₂*.

Examples of *sūwa-* *Stammbildung* 295, *PW* 506–8; cf. also it. 2 sg. pres. *su-us-ke-si* StBoT 25, 110 143 II 22. Since the iterative is only found once, the lack of plene writing is not significant.

The third person plural preterit of *dā-* "take", *dāer* (*da-a-er* e.g. KBo XXII 2 Vs. 5, OH) is from PA **dóh₃-ēr* : IE **deh₃-* "give". MH and later *da-a-i-er* (e.g. KBo XV 10 II 30) may have [-y-er] by analogy to *dāier* "put."

## 10.5. Preconsonantal

### 10.5.1. *h₁

Medial postvocalic **h₁* was lost before consonants.

*tē-* "say, speak" (1 sg. pres. *te-(e)-mi*, OH etc., 2 sg. *te-(e)-si*, OH, MH, 3 sg. *te-ez-zi*, OH etc.) with stem [dē-] < PA **dḗ-m(i)* etc. : IE **dheh₁-* "put" {2.9.1.1.}; *sēli-* "grain pile, grain storage area" (*se-(e)-li-(ya-)*, MH, OH+) = [sēli-] < PA **sḗli-* < **séh₁li-* : **seh₁-* "press, throw, plant, sow" {2.9.1.1.}; *parās* "air" (nom. sg. *pa-ra-a-as*) = [prās] < **proh₁-s*, root noun from **preh₁-* "blow, breathe" : **proh₁i-* in *parāi-* "blow" {2.9.1.}.

*su(m)manzā-* "cord": nom. sg. *su-ma-an-za* KBo III 8 III 24 (Pre-NH), gen. sg. *su-ma-a-an-za-[na-as]* StBoT 25, 34 Vs. 11 (see StBoT 26, 173), dat.-loc. sg. *su-ma-an-za-ni* StBoT 25, 26 Rs.? IV 14 beside NH nom. sg. *su-um-ma-an-za-a-as* KBo X 45 II 29 (MH+) with stem [sūmants-] generalized from **sūmḗns* from hysterokinetic nominative **suh₁-mḗn*, as in Gk. ὑμήν "membrane", plus animate suffix **-s* (see Melchert, *Sprache* 29, 7–8).

### 10.5.2. *h₂

At least one word, *wannumiya-* "orphaned, widowed" with stem *wann-* < **weh₂-* (7.11) suggests that inherited **h₂n* became *nn* with assimilation of the laryngeal to the nasal. A very few words with synchronic *h* plus nasal do occur, but none has a good IE etymology: *lahma-* (meaning unknown *CHD* 3, 12, *HEG* 5, 14); *lahmant-* (hapax, meaning unknown *CHD* 3, 12,); *lahni-* "substance mixed in water and drunk" (hapax, *CHD* 3, 12, *HEG* 5, 14).

As Melchert, *AHP* 162 notes, *hn* in *wahnu-* "turn" can be analogical.



#### 10.5.2.1. Retention

Medial sequences of *hl* and *hr* are found in several words. Few of the words involved, however, have completely clear etymologies, and it is not always certain that the *h* is from IE **h₂* (note e.g. *zahli-*, also *zahelli-*) "cress" (*HW* 257), $^{GIŠ}$*zahrai-*, a holy symbol (*HW* 257), which are surely loanwords). As Oettinger, *Stammbildung* 548–9, notes, it is possible that some synchronic sequences of *h* plus consonantal liquid arose through syncope, so a synchronic sequence *hl* or *hr* does not necessarily continue an inherited sequence. There do not, however, seem to be words with good etymologies showing loss of **h₂* before consonantal liquids, so retention of **h₂* in this environment is possible.

$^{UZU}$*mūhrāi-*, an edible body part of animals (cattle, lambs, mice): stem *mu-uh-r*°, e.g. nom. sg. *mu-uh-ra-is* KUB XX 20 III 15 (OH+), gen. sg. or pl. *mu-uh-ri-as* KBo XXX 61 Vs.? 18 (U), nom. pl. *mu-uh-ra-a-us* StBoT 25, 27 Vs! 15; also *mu-u-uh-r*° (1 ex.) in acc. sg. *mu-u-uh-ra-[in]* KBo XXIII 34 I 27 (U), *mu-uh-ha-ra-in* (3 ex., NH only), and *ma-ah-ra-en* (1 ex., StBoT 25, 72 II 2). This word was compared by Weitenberg, *Heth. u. Idg.* 303 to Gk. μηρός "thigh", implying **meh₂-r-*. It has been suggested that the stem in *mūhr-* is from zero-grade **mh₂-r-* {3.3.2.}.

See *CHD* 3, *loc. cit.* and *HEG* 6, 225–6 for refs. on other etymological suggestions.

$^{GIŠ}$*hahra-* "rake": nom. sg. *ha-ah-har-as* KUB XII 51 I 11 (NH), nom.-acc. sg. n. *ha-ah-har* KBo XII 126 I 5 (MH+), KUB XLI 2 I 2 (MH+), acc. sg. *ha-ah-ha-ra-an* KUB XXXV 52 L. 5 ( U), inst. *ha-ah-ha-ri-it* KUB XXIV 10 III 11 (MH+); denominative *hahriya-* "rake, scratch": *ha-ah-ri-ya-at* Bo 5454 I 14 (*HED*), *ha-ah-ha-ri-ya-ad-du* KUB XXIV 11 III 9 (MH+) = [hahra-], perhaps from reduplicated **h₂e-h₂rh₃-o-* : *harrā-* "damage, *hārs-* "plow", if the original meaning of **h₂erh₃-* was "scratch".

Examples, etymological refs. *HEG* 1, 124–5, *HED* 3, 6–7.

Several examples clearly do have syncope: *zahrā(i)-* "stamp to bits", via syncope from *zahhurā(i)-* (Oettinger, *Stammbildung* 366, 446); *hulhuliya-* "wind around, embrace, wrestle" < reduplicated **hulhulāliya-* : *hulāliya-* "wind around" (*HEG* 2, 124, *HED* 3, 361–3), cf. also hap. leg. *halhaliya-* "wind"; *lahlahhiya-* "be agitated, anxious" (*la-ah-la-ah-hi-(ya)-*, OH+?, NH), and derivatives with stem *lahlahhi-* (all NH) from *lahhilahhi-* with full reduplication (*CHD* 3, 10–12; cf. *HEG* 5, 13–14); *zahli-*, beside *zahelli-* "cress".

*hr* and *hl* occur in a number of words with unclear meanings and/or etymologies: e.g. *hahla-* "green" in e.g. *hahlawant-* id. (*ha-ah-la-u-wa-an-d*° (MH+), *ha-ah-li-u-wa-an-t*° (OH+, MH)), *hahlima-* "green-gold" (cf. *ha-(a)-ah-ha-al* "greenery, brush", OH etc.) (*HEG* 1123–4, *HED* 3, 3–5 ); *muhla-* (hap. leg., *CHD* 3, 319 w. refs., *HEG* 6, 225), a substance used in making glass; $^{UZU}$*hahri-* "lung" (*HEG* 1124, *HED* 3, 7).

$^{GIŠ}$*māhla-* "branch of a grape vine" (e.g. nom. sg. *ma-a-ah-la-as* KUB XLIII 23 Rs. 21, OH?/MH?, loc. sg. *ma-a-ah-li* KBo XXI 22 L. 46, MH) = [māhla], was compared,

apparently independently, by Sturtevant, *Language* 4 (1928) 162, Marstrander, *NTS* 3 (1929) 294 and Cuny, *RHA* 1 (1930) 31–6 to Gk. μῆλον (Dor. μᾶλον) "apple" and Lat. *mālum* "apple", *mālus* "apple tree", implying **meh₂lo-*. However, since the Hittite word clearly refers to grape vines and their branches, the etymology is not likely.

Examples *CHD* 3, 112–13; see also Tischler, *HEG* 5, 89–90 w. refs.

### 10.5.2.2. Retention before **s* and **w*

**h₂* remained before **s* and **w*. The reflex of **h₂s* is spelled °H-HV-Š° and °H-Š° (Oettinger, *Stammbildung* 548).

*pahhs-* "protect": *pa-ah-ha-as-*: e.g. 1 sg. pres. midd. *pa-ah-ha-as-ha* KUB XXXVI 127 Vs. 5 (MH?), act. *pa-ah-ha-as-mi* KUB XXIX 1 I 19 (OH+), 2 sg. pres. midd. *pa-ah-ha-as-ta* HAB 28 (OH+), 2 pl. pres. midd. *pa-ah-ha-as-du-ma* KBo VIII 35 II 14 (MH), 2 pl. imp. midd. *pa-ah-ha-as-du-ma-at* e.g. KBo XVI 25 I 69 (MH), act. *pa-ah-ha-as-te-en* KUB XXIII 68 Rs. 8 (MH), *pa-ah-ha-as-ten* KUB XXXI 115 L. 19 (OH+); beside *pa-a-ah-sV-* only in 3 pl. pres. midd. *pa-a-ah-sa-an-ta* KBo XXI 22 Rs. 38 (MH); and *pa-ah-sV-*: e.g. 3 sg. pres. midd. *pa-ah-sa* KUB XXXVI 127 Vs. 8 (MH, and OH+ etc.), *pa-ah-sa-ri* e.g. KBo XVI 25 I 49 (MH, and OH+ etc.), 1 pl. pres. midd. *pa-ah-su-wa-as-ta* KBo XVI 27 III 16 (MH), 2 sg. act. imp. *pa-ah-si* e.g. KBo XV 10 II 44 (MH), 3 pl. midd. imp. *pa-ah-sa-an-da-ru* KBo VIII 35 II 15 (MH) = [pahs-] < midd. 1 sg. pres. **péh₂s-h₂o*, 3 sg. **péh₂s-o* etc. : **peh₂-s-* in Lat. *pāscere* "to pasture", *pāstor* "sheepherd", OCS *pasti* "to pasture" and unextended **peh₂-* in Skt. *pāti* "protects" and **peh₂-i-* in Gk. ποιμήν "sheepherd" < **poh₂i-mēn*.

See Oettinger, *Stammbildung* 210–12 for forms and discussion.

*nahsaratt-* "fear": e.g. nom. sg. *na-ah-sar-ra-az* (MH+), *na-ah-sar-az* (MH+), *na-ah-sa-ra-az* (MH etc.), *na-ah-sa-ra-za* (MH+ etc.); *nahsariya-* "be(come) afraid": e.g. 2 pl. pres. act. *na-ah-sar-ri-ya-at-ten* (NH), 3 pl. *na-ah-sa-ri-ya-an-zi* (NH), 3 pl. pret. midd. */n/a-ah-sa-ri-an-ta-ti* KUB XXXVI 100 Rs. 4 (OH) = [nahs-], [nahsrats], [nahsriya-], implying an adjective **neh₂s-ro-* "afraid, ashamed", as in O.Ir. *nár* "ashamed" < **neh₂s-ro-* and *ná(i)re* "shame" < **neh₂sriyo-*.

Examples *CHD* 3, 343–6; the etymology was originally suggested by Pedersen, *MS* 61.

Inherited **sh₂* also remains in the suffix *-sha-* < **sh₂o-* in e.g. *tēsha-* "dream" = [dēsha-] < **dheh₁-sh₂o-* and *dammishā-* "oppression" (Starke, *KZ* 93 (1979) 249–50).

*warhuī-* "rough, shaggy": nom. sg. c. *wa-ar-hu-is* KBo II 5 II 19 (NH), KBo V 13 II 9 (NH), *wa-ar-hu-u-is* KUB XIX 37 II 6 (NH), acc. sg. c. *wa-ar-hu-u-i* KUB XXXI 89 II 7 (MH(?)+) with suffix [-wīs], [-wīn], [-wī] < **-w-ih₂-s*, **-w-ih₂-m*, **-w-ih₂* {2.9.3.2.}.

*tuhhus-* "cut off, separate": 3 sg. pres. act. *tuh-hu-us-zi* StBoT 25, 135 L. col. 16, KBo XXV 2 II 10 (OH), midd. *tu-uh-sa* e.g. StBoT 25, 73 L. col. 7, *tuh$^{uh}$-sa* (= *tuhhsa*) e.g. StBoT 25, 36 II 7, *tu-uh-s[a]-ri* KUB XXIX 29 Vs. 5 (OH), *tuh-sa-ri* KBo VI 10 III 13 (OH+), 3 pl. act. *tuh-sa-an-zi* KBo VI 5 III 5 (OH+), inf. *tuh-hu-su-wa-an-zi* KBo VI 2 III 21 (OH) = *tuh-su-u-wa-an-zi* KBo VI 3 III 24 (MH) = [duhus-], [duhusa] etc. < **duh₂s-o* : **dweh₂-* "be distant, be separated", also in *tuwān* etc. {2.5.2.}, cf. Oettinger, *MSS* 34 (1976) 133–4.



*tuhhuī-*, *tuhhuwai-* "smoke": nom. sg. *tuh-hu-is* e.g. KUB XVII 10 IV 21 (MH), *tuh-hu-i-is* KBo XII 89 III 16 (NH), *tu-uh-hu-wa-is* KUB V 24 II 16 (U), acc. sg. *tuh-hu-in* e.g. KBo VIII 35 III 6 (MH), *t/uh-hu-i-in* KBo XII 89 III 8, *tu-uh-hu-i-in* ib. III 17, *tuh-$^{uh}$-hu-wa-in* e.g. KBo X 2 III 40 (OH+), inst. *tuh-hu-it/-* KUB II 4 II 4 (OH+) = [duhwi-], [duhwāi-]: IE **dheuh₂-*, in e.g. Skt. *dhūmaḥ* "smoke", Lat. *fūmus* id., Gk. θῦμός "spirit" < **dhuh₂-mo-*; *tuhhuī-* may have been remodeled from an earlier *u*-stem **dhuh₂-u-*.

Etymology and discussion Laroche, *BSL* 52 (1956) 72–3, Oettinger, *Stammbildung* 373.

*pahhwen-*, oblique stem of *pahhur* "fire" (*pa-ah-hu-en-*, OH etc.) = [pahwēn-]. The full-grade suffix can be from a locative **ph₂wén(i)* {7.3.1.1.}, but the root [pāh-] should continue the full-grade **peh₂-* of the nominative-accusative **péh₂ur*. The *e*-vocalism of the suffix in OH shows that it was accented, and the consistent lack of plene writing for the root syllable in oblique stem forms suggests that the Pre-Hittite stem **pah₂-wén-* > [pahwēn-] antedates the lengthening rules.

### 10.5.2.3. Loss before stops

**h₂* was lost before stops, e.g abstract suffix nom.-acc. sg. *-ātar* = [-ādar] < **-ā́dər* < **-éh₂-tr̥*, oblique stem *-ānna-* = [-ānna-] < **-ā́tnō-* < **-éh₂-nō-* {6.10.1.1.}.

*wāk-* "bite": e.g. 3 sg. pres. *wa-a-ki* KBo VI 2 I 24 (OH), KBo VI 3 I 35 (MH), KUB XIV 1 Rs. 91 (MH), 3 pl. pres. *wa-ak-kan²-zi* IBoT I 36 I 20 (MH), 3 sg. pret. *wa-ak-ki-is* KUB XXXIII 120 I 25 (NH), *wa-a-ki-is* 963/u L. 4 (*Stammbildung*), *wa-qa-as* KUB XVIII 11 Rs. 9 (NH), 2 sg. imp. *wa-a-qa* KBo IV 14 II 29 (NH), inf. *wa-qa-a-an-na* (NH) = [wāg-], [wāgi], 3 sg. pret. [wākis] < **woh₂g-*, **wóh₂g-ei*, **wóh₂g-s*, perhaps from an original perfect as in Gk. ἔᾱγα "shatters" (intrans.) for **ϝέϝωγα* beside ἄγνυμι "break, shatter", aor. ἔαξα, ἐάγην {2.1.4.}.

Etymology Kammenhuber, *KZ* 77 (1961) 47, Risch, *Fl. u. Wb.* 253. For the internal laryngeal, see also Kimball, *Laryngaltheorie* 245 w. refs.

## 10.5.3. **h₃*

Melchert, *Sprache* 29 (1983) 267, demonstrates that **h₃* was lost between a vowel and a consonant. It is not clear whether **oh₃C* became **ōC* with compensatory lengthening {11.4.3}.

*pās-* "take a swallow": 3 sg. pres. *pa-as-zi* e.g. KUB VII 1 + I 30 (Pre-NH); *pa-a-si* KUB XXVII 29 III 9 (MH+), 3 sg. pret. act. *pa-as-ta* e.g. KUB XXIX 7 Rs. 55 (MH), *pa-a-as-ta* KUB XLIII 38 Rs. 15 (NH), 3 sg. imp. *pa-as-du* KUB XXIX 7 Rs. 55, 2 sg. imp. *pa-a-su* KUB X 45 IV 4 (MH+), *pa-a-su* KUB XLIII 38 Rs. 11, it. 3 pl. pres. *"pa-as-ker* KUB VIII 67 L. 19 (MH+) = [pās-] < **péh₃-s-*, in formal terms originally an *s*-aorist (e.g. 3 sg. **péh₃-s-t* > [pāsta]) beside the root aorist **é-peh₃-t* in Skt. *ápāt* (Eichner, *Fl. u. Wb.* 83 and Mayrhofer, *Idg. Gr.* I/2, 142–3).

Examples and etymological discussion *Stammbildung* 435, cf. also CLuv. inf. *pa-as-su-u-na* KUB XXIV 7 III 31 (NH).

*lāman* "name": nom.-acc. sg. *la-a-ma-an* e.g. KBo XIX 152 I 20 (MH), *lam-an* e.g. KUB XXIV 8 III 7 (Pre-NH), *la-ma-an* FHG 1 II 17 (OH+?) = [lāman] < **h₁néh₃mn̥*, cf. Skt. *nāma*, Lat. *nōmen*, Arm. *anun* (cf. Melchert 27).

Examples *CHD* 3, 31–6.

*ganess-* "recognize": **3** sg. pres. *ga-ne-es-zi* KBo VI 2 I 38 (OH), *ga-ne-ʃes-zi* ib. III 33, *gʃa-n[e-es-zi* ib. III 38, *ga-ni-es-zi* KBo XXII 2 Vs. 17 (OH), KBo VI 2 I 43, 46, 3 pl. pret. *ga-ni-es-ser* KBo XXII 2 Vs. 18 = [gnēss-] < sig. aor. **ĝnéh₃-s-* (Mayrhofer, *Idg. Gr.* I/2, 141 w. refs.).

Jasanoff, *Laryngaltheorie* 227–37, however, reconstructs an *s*-present **ĝnéh₃-s-*.

## 10.5.4. Laryngeal plus laryngeal

One example would be *issā-*, oblique stem of *āis* "mouth", e.g. dat. *is-is-si-i* (MH+), abl. *is-sa-az* (OH), *is-sa-a-az* (OH+) = [issā-] < **h₁h₃-es-ó-* (with analogical lack of coloring of the suffix vowel). The Hittite form would then show loss of both laryngeals and raising of unaccented **e* beside nom.-acc. sg. **h₁éh₃-es-* = **[h₁éh₃-es-] with analogical lack of coloring of the suffix vowel > nom.-acc. sg. *āis*.

## 10.5.5. Laryngeal plus glide

**h₁* and **h₂* were lost before **y*. There are no clear examples of **h₃y*. Loss of **h₁* apparently preceded the loss of intervocalic **y*, since **Vh₁yV* became *VV* or *V̄* (9.5.1.2.).

*ispāi-* "be satiated": 3 sg. pres. *is-pa-a-i* = [spāi] < **spóh₁y-ei*, 3 pl. pret. *is-pi-i-e-er* = [sp(i)yēr] < **sph₁y-ḗr; ispān* "satiation" : nom.-acc. sg. *is-pa-a-an* KBo VIII 42 Vs. 6 (OH), VBoT 116 L. **10** (MH+), gen. *is-pa-a-na-as* KUB XXXVI 44 I 12 (MH) = [spān] < **spóh₁y-n̥* or **spoh₁y-om*.

Examples *HED* 2, 431. See alternatively Oettinger, *Stammbildung* 468, who suggests that *ispān-* can be from a root noun from the unextended root **speh₁-*, **spoh₁-* "be fat, be satisfied", i.e. **spóh₁-n̥* > [spān], cf. **speh₁-s* in Lat. *spēs* "hope". The genitive *ispānas* may be a secondary *n*-stem with analogical extension of the *-n-* as in *eyan-* "evergreen tree" or *ewan-* "barley".

*dāi-* "put" : 3 sg. pres. *da-a-i* (OH etc.) = [dāi] < **dhóh₁y-ei*, 3 pl. pret. *da-a-er* (OH etc.) = [dāēr] < **dhóh₁y-ēr;* weak stem *ti-(i)-ya-* < **dhh₁y-*.

*tāyē/a-* "steal" (*ta-a-i-e-*, OH etc.) = [tāyē-] continues either **téh₂i-ye/o-* > **tā́ye/o-* (with analogical suffix [-yē-]) or **toh₂i-éye/o-* > **tā́yeye/o-* (with shifted accent) > **tā́yye/o-* (with analogical suffix [-yē-]) (9.3.1.3.).

Loss of postconsonantal **h₁* before **y* seems to have followed the assibilation of **dy* to *s(y)*, since assibilation is blocked in *tiya-* "bind" (2 sg. imp. *ti-ya-* KBo III 40 + I 14, *tʃi-ya-* ib. I 17, OH+) and *tiya(m)mar* "cord" (nom.-acc. sg. n. *ti-ya-am-ma* KUB IX 28 III 15, MH+, *ti-ya-mar* KUB XVII 28 IV 50, OH+) = [diya-] < **dh₁y-o-*, cf. **deh₁(y)-* and **dh₁(y)-* in Skt. *dyati* "binds", *dītaḥ* "bound" and Gk. δέω "I bind", δετός "bound" (Melchert, *Sprache* 29 (1983) 14). **h₂* was apparently also lost after assibilation of **ty* to *z(z)* = [ts], since assibilation is blocked in *tiya-* "step, take one's place" (*ti-(i)-e-*, OH etc., *ti-(i)-ya-*, OH etc.) < **th₂-yé/ó-* and *tittiya-* "set up, establish" (*ti-it-ti-(ya)-*, OH etc.) < **ti-th₂yo-* : **(s)teh₂-* "stand". Loss of **h₂* either followed or accompanied gemination of the voiced stop in *huēttiya-* "lead, drag" (*hu-(e)-et-ti-(ya)-*, OH etc.) = [hwēttya-] < **h₂wédh₂-ye/o-*, since gemination is not blocked (10.7.1.).



# 10.6. Postconsonantal

Crossland, *TPS* 1951 115; Eichner, *Laryngaltheorie* 141; Melchert, *AHP* 68–9; Oettinger, *Stammbildung* 548; Pedersen, *Hitt.* 36, 184.

## 10.6.1. **h₁*

**h₁* was lost between a stop and vowel, e.g. third person plural present *-danzi* = [-dantsi] in *pe-e-hu-da-an-zi, pe-e-hu-ta-an-zi* "take" and *ú-e-da-an-zi* "build" < **-dh₁-enti*; participle stem *-tant-* = [-dant-] in *ú-e/i-ta-an-t°* "built" < **-dh₁-ont-* (CR).

## 10.6.2. **h₂*

**h₂* was lost between stop and vowel. When the stop followed a vowel it was geminated (10.7.).

*paltana/i-* "shoulder, arm" (e.g. nom. sg. n. *pal-ta-ni* KBo III 13 Rs 15, OH+) from **[paltana-] < **pl̥th₂-e/ono-* or **pl̥th₂-no-* (10.9.1.2.).

*istantā(i)-* "linger, delay" (e.g. 3 sg. pret. *is-ta-an-ta-it*, NH, *is-ta-an-da-a-it*, NH) = [stantā(i)-] : IE **steh₂-* "stand"; either denominative from the participle **stant-* "standing" < **sth₂-ónt-* = **[sth₂ánt-] or from a nominal **sth₂-n̥t-* > **sth₂-ant-* > **stant-* (11.3.2.2).

*hi*-conjugation second person singular present ending *°C-ti* (e.g. *a-ak-ti* "you die" KBo VII 14 Vs 6, OH, *sa-a-ak-ti* "you know" KBo XV 10 II 62, MH, KUB XXXVI 32 L. 9, MH) = [-ti] for **-te* < PA **-th₂ai* from IE perfect or *h₂*-present ending **-th₂e* = **[-th₂a]* plus deictic particle **-i*.

Middle second person singular present ending *°C-ta* (e.g. *hu-e-ez-ta* "you pull" KUB XVII 10 IV 1, 2 (MH), *ki-is-ta* "you become" KUB XXIX 1 I 12 (2x) (OH+), *pa-ah-ha-as-ta* "you protect" KUB I 16 III 28 (OH+)) = [-ta] < **-th₂e*, cf. Skt. *-thās* (cf. Eichner, *Laryngaltheorie*).

Middle second person plural present ending *°C-du-ma, °C-tu-ma* (e.g. *pa-ah-ha-as-du-ma* "you protect" KBo VIII 35 II 14 (MH), KUB I 16 III 47, 49 (OH+)) = [-duma] < **-dh₂uwe* (10.7.1.).

## 10.6.3. **h₃*

Prevocalic **h₃* was lost after stops; see Melchert, *Sprache* 33 (1987) 27.

*danzi*, third person plural present of *dā-* "take" (*da-an-zi*, OH etc.) = [dantsi] < **dh₃-énti*. Similarly, the participle *dānt-* (nom. sg. c. *da-a-an-za* e.g. KBo XVII 62 I 19, MH+, nom.-acc. sg. n. *da-a-an* e.g. KUB XIII 2 IV 25, MH?) continues **dh₃-ónt-* > **d-ónt-* > [dānt-]. Occasional spellings of the third person plural present with plene writing, e.g. *da-a-an-zi* KBo XX 48 Rs.? 7 (MH), are probably analogical on the model of the participle.

It is possible that medial **h₃* was retained after a liquid in *walh-* "strike, slaughter", which is probably from a root aorist **(e)wélh₃-t* : **(e)wl̥h₃-ént* (cf. Gk. ἑάλων "I am caught" < **é-wl̥h₃-eh₁-n̥*). See Normier, *KZ* 92 (1978) 132–4, and Kim-

ball, *MSS* 53 (1992) 79, 93, w. refs. Other potential cognates would include Gk. ἁλωτός "taken", οὐλή "wound" < *ϝολνᾱ with result noun accentuation, Lat. *volnus* "wound", perhaps from a result noun **wolh₃-no-*, OE *wæl* "slaughter", OHG *wal* id., OS *wal-dād* "murder" from a result noun **wolh₃-ó-* and Cz. *váleti* "wage war". Loss of *h₃ in intervocalic and final position would not, in and of itself, be an obstacle to its retention medially after a liquid, especially if loss in intervocalic position were the final stage in the lenition, or weakening, of a voiced phoneme.

## 10.7. Gemination of stop plus laryngeal

Beekes, *Laryngaltheorie* 83; Čop, *Linguistica* 5 (1964) 27–8; Eichner, *MSS* 31 (1973) 71, 97 n. 71; *Laryngaltheorie* 141; Gamkrelidze, *Ar. Or.* 29 (1961) 418 n. 46, *Fs Diakonoff* 77–8; Georgiev, *Orbis* 27 (1978) 49; Kimball, *PW* 810–21; *IF* 91 (1986) 97–9; Kammenhuber, *HdO* 331, 338–9; Kuryłowicz, *PICL* 8, 221; Lindeman, *ELTh* 81–2; *LTh* 91–3; Melchert, *SHHP* 26 w. n. 54, 55, 88 n. 16, 99 n. 51, *AHP* 76–7; Oettinger, *Stammbildung* 548; Pedersen, *Hitt.* 36, 184; Polomé, *JIES* 15 (1987) 161; Watkins, *Fl. u. Wb.* 375–6; Winter, *PICL* 8, 251.

Postvocalic stops, including voiced or voiced aspirated stops, show up as sounds written with double stops before *h₂ and probably before *h₁. Gemination was proposed by Pedersen to explain *mekki-* "numerous" with *kk* (*gg*, *qq*) beside Skt. *mahi* "great, large" and Gk. μέγα id. The best examples involve *h₂. There are a few possible examples with *h₁, but each is uncertain because the etymology itself is uncertain, the stop was voiceless and would have been written double anyway, or the stop may have been devoiced for some reason other than contact with the laryngeal. *h₃ probably did not geminate a preceding stop and may instead have voiced preceding stops within IE. The equation of the Hittite second person plural middle ending ending *-dduma* from **-dh₂(u)we(-)* with CLuv. *-dduar* in *dādduwar* "they take" indicates that gemination is PA.

There is little agreement on the phonetic nature of the doubled stops. Winter, for example, viewed the process as devoicing, Georgiev, Oettinger, and Kimball have viewed it as true gemination, while Gamkrelidze views it as aspiration; see also the suggested readings for various morphemes offered by Eichner, *Laryngaltheorie* 141. Kammenhuber claims that a sequence of stop plus *h₂ became a voiceless aspirate in IE that merged with voiceless stops in Anatolian, and notes that the fact that *th₂ did not assibilate shows that the laryngeal remained into Anatolian. Kuryłowicz (*PICL* 8) considered the gemination purely graphic, but doubled stops from stop plus laryngeal do not behave as doubled stops from voiceless stops phonologically. Kimball (*PW*, *IF* 91) argues that accented vowels fail to undergo lengthening before geminates from stop plus laryngeal, especially *mekki-* "numerous" (*me-ek-k°*, *me-eg-g°*, *me-eq-q°* = [měkk-]) < **mégh₂-* with OH *e*-vocalism pointing to a root accent. Apparent exceptions do occur, but they seem to be explainable as analogical [2.10.1.]. Kimball also argues (*PW*, *IF*) that the oblique stem suffix *-ān-* in *paddān-* : *pattar* "basket, tray" reflects a Sievers variant *-n̥n- produced by a true long consonant or geminate, although a cluster of stop plus laryngeal would probably also have triggered Sievers Law, i.e. **p(o)lh₂-n̥n-* > **pott-n̥n-* > [pattān-], cf. also *uttar* : *uddān-* "word", perhaps from Pre-Hitt. **udh₂-n̥n-* rather than **ukt-n̥n-* with Kimball, *loc. cit.* Another Sievers



variant after an original cluster of stop plus laryngeal is probably the second person plural middle endings in *-dduma(-)*, (e.g. 2 pl. pres. °*d-du-ma* etc.) < **-dh₂uwe-* (Melchert, *SHHP* 26 w. n. 54). For geminating *-a-* "and" see [10.8.].

### 10.7.1. Voiced stop plus *h₂

*mekki-* "much, many, numerous (adv. "very"): nom. sg. c. *me-ek-ki-is* e.g. KUB XXI 47 II 15 (MH; also OH+), nom.-acc. sg. *me-ek-ki* e.g. KBo VI 2 IV 42 (OH, also MH etc.), abl. sg. *me-eq-qa-ya-az* KUB V 7 Vs. 25 pl. c. *me-eq-qa-a-u/s* KUB IX 6 IV 10 (NH), *me-eq-qa-a-us-s°* ib. IV 23, *me-eg-ga-uš* KBo V 6 III 12 (Supp.I), nom.-acc. pl. n. *me-eg-ga-ya* e.g. KBo V 8 II 35 (NH), *me-eq-qa-ya* e.g. KUB XXIII 38 Rs. 4 (U), adv. *me-ek-ki-i* KBo VI 2 II 46 (OH) = [mekki-], [mekka(y)-] < **mégh₂i-*, **mégh₂oy-* : Skt. *mahi* "great", Gk. μέγα id.

Examples *CHD* 3, 345–9.

Second person plural middle endings; 2 pl. pres. *-dduma*, *-ttuma*: e.g. *hu-ya-ad-du-ma* "you run" KUB XXIII 72 Rs. 20 (MH); *i-ya-ad-du-ma* "you make" ib. Rs. 55, *sar-ra-ad-du-ma* "you break a treaty" KBo VIII 35 II 16, 22 (MH), KUB XXIII 78b. L. 12 (MH+), *sar-ra-at-tu-ma* KBo III 27 Vs. 25 (OH+), KBo III 28 II 21 (OH+); *za-ah-hi-ya-ad-du-ma* "you fight" KUB XXIII 72 Rs. 66; 2 pl. pret. *-ddumat*: e.g. *ú-li-is-ke-ed-du-ma-at* "you hid" KUB XXIX 1 I 28 (OH+); *wa-al-lu-us-ke-ed-du-ma-at* "you were praising" KUB XXXVI 44 IV 14 (MH); 2 pl. imp. *-ddumat*, *-ttumat*: e.g. *i-ya-ad-du-ma-at* "make!" KUB XV 34 I 42 (MH?); *za-ah-hi-ya-ad-du-ma-at* "fight!" KUB XXVI 17 I 5 (U), KUB XIII 20 I 7, (MH+); *za-ah-hi-ya-as-du-ma[-(at)* "keep fighting!" ib. I 19 = [-ttuma-] < Sievers variant **-dh₂uwe* : Skt. *-dhva(m)* < **-dh₂we-* (Melchert, *SHHP* 26 n. 54).

*huēttiya-* "pull, drag, draw": 2 sg. pres. midd. *hu-et-ti-at-[ta* KUB XXI 19 + 1303 II 18 (NH), 3 sg. *hu-et-ti-ya-ri* KBo XVII 92 lower edge 15 (U), 3 pl. *hu-e-et-ti-an-ta* KUB XXIX 30 III 6 (OH), *hu-et-t[i-y]a-an-ta* KUB XXIX 35 IV 15 (OH), 3 sg. pret. *hu-et-ti-ya-ti* KBo III 22 Rs. 54 (OH), *hu-et-ti-ya-at* KBo III 53 Vs. 6 (OH+), ptcp. nom.-acc. sg. n. *hu-et-ti-an* KBo VIII 42 Vs.? 14 (OH), also act. *hu-et-ti-ya-* (MH, MH+, NH), dur. *hu-ut-ti-an-n°* (OH), *hu-et-ti-(ya)-an-n°* (OH+ etc.) = [hwēttya-] < **h₂wédh₂-yo-* : **h₂wedh₂-* "lead" in Skt. *vadhū-* "bride", Lith. *vèžti* "lead, marry", OE *weotuma* "bride price". Hmc. ἀνάεδνος "without bridal gifts", ἔεδνα "bridal gifts" < *αϝεδνα via assimilation.

Examples *StBoT* 5, 56–8, *HED* 3, 343–52. The etymology is that of Peters, *Unters.* 317, and Melchert, *SHHP* 88 n. 16; for the root-final laryngeal see also Hamp, *Sprache* 14 (1968) 156–9. The plene writing in OH *hu-e-et-ti-an-ta* (Post-OH also sporadically *hu-(u)-i-it-ti-(ya)-*) could show the influence of athematic *huēzz-* (MH etc.) < **h₂wédh₂-* plus dental stop [2.10.1.].

*uttar* "word, thing": nom.-acc. sg. *ut-tar* KBo VI 2 + XIX 1 III 43 (OH), StBoT 25, 13 II 10, KUB XIV 1 Rs. 63 (MH), gen. sg. *ut-ta-na-a-as* KBo XIII 31 III 9 (MH), *ud-da-na-a-as* KUB XVII 10 II 24 (MH), *ud-da-a-na-as* KUB XVII 18 II 29 (NH), *ud-da-na-as* ib. III 4, dat. *ud-da-ni-i* KBo XV 33 III 21 (MH), KUB XVII 21 + I 19 (MH), KUB XIV 1 Rs. 27, 36 (2x), KBo XIX 44 Rs. 28 (Supp.I, also NH), inst. *ud-da-an-ta* KUB XXX 10 Vs. 18 (MH), *ud-da-ni-i-it* KUB XLIII 68 Vs.? 4 (NH), nom.-acc. pl. *ut-ta-a-ar* KUB XXXVI 106 Rs. 5 (OH), StBoT 25, 54 II 5, *ud-d[a]-a-ar* KBo III 22 Vs. 13

(OH), *ud-da-a-ar* KUB XIV 1 Vs. 14, 27, Rs. 37, if [uttar], [uttān-], [uttār] < Pre-Hitt. **udh₂-ər* for IE **h₂wódh₂-r̥* (> **wādar* with loss before **Ro* {10.1.1.2.}). The loss of the laryngeal in the oblique stem **h₂udh₂-n̥n-* (> ***huttān-*) and plural **h₂udh₂-ōr* (> ***huttōr*) would have to be analogical after the nominative-accusative singular, **wādar*, while the zero-grade root of the attested nominative-accusative singular would be from the oblique stem and plural.

The word also shows up in Cuneiform Luvian as *utar/utn-* "word, spell" (nom. sg. *ú-tar*, *ú-tar-sa*, nom.-acc. pl. *ú-ut-ra*, *ú-ut-na-as-si-in*, *CLuv. Lex.* 247). The lack of gemination can be explained if the consonant is analogical from the PA nom.-acc. sg. **wādar*.

## 10.7.2. Voiceless stop plus **h₂*

*hi*-conjugation second person singular present ending post-vocalic °*t-ti*: e.g *a-ut-ti* "you see" StBoT 25, 122 III 3, *a-ut-t[i]* ib. III 7, *a-u̯t-t[i]* ib. III 9; *hal-za-it-ti* "you call out" KUB XIII 3 IV 28, *hal-za-i-it-t[i* KBo XVII 23 Vs. 2 (MH); *me-e-ma-at-ti* "you speak" KBo III 8 III 14 (Pre-NH), *me-ma-at-ti* KBo V 3 I 28, II 1, 35 (Supp. I+); *ta-it-ti* "you put" KBo III 38 Vs. 24 (OH+) = [-tti] for **-tte* < PA **-th₂ai* from IE perfect or **h₂*-present ending **-th₂a* plus deictic particle **-i*; cf. also CLuv. 2 sg. pres. ending *-ttis*, e.g. in *uwattis* "you shall drink", and HLuv. *-tis*.

Second person singular middle ending post-vocalic °*t-ta*: e.g. *hal-za-it-ta* "you call out" KUB I 16 II 60 (OH+); *sar-ra-at-ta* "you break a treaty" KBo XI 10 II 35 = KBo XI 72 II 38 (NH), KBo XVI 47 Vs. 14 (MH); *tar-ra-at-ta* "you try" KUB XV32 I 3 (MH) = [-tta] from IE **-th₂e*.

*pattar* "basket, tray": nom.-acc. sg. *pa-at-tar* StBoT 25, 137 I 7, *pa-at-tar* KBo III 41 + KUB XXXI 4 Vs. 2 (OH+), *pad-da-ra* StBoT 25, 137 III 11, *pat-tar* KUB IX 6 I 3 (NH), dat.-loc. sg. *pad-da-a-ni* StBoT 25, 4 III 41, *pa]ta-ni-i* ib. IV 7, *[p]ad-da-ni-i* StBoT 25, 3 IV 21, *pad-da-ni-i*° KUB IX 6 I 12, *pad-da-ni-i* ib. I 14, *pad-da-ni* KBo XV 10 I 7, III 20 (MH), *pa]d-da-ni* ib. 24, *pad-da-[ni* StBoT 25, 137 III 10, *pad-[d]a-ni* ib. III 8, *p]ad-da-ni* StBoT 25, 4 III 39, *pa]d-da-ni* KBo XV 10 III 24 (MH, also OH+), *pat-ta-a-ni* KUB IX 6 I 3, inst. *pat-ta-ni-it* KUB XXXXI 4 Vs. 8, abl. *pad-da-na-[az]* KUB IX 6 I 21, *pa-at-ta-ni[(-)* StBoT 25, 122 II 3 (loc. or inst.), *pa-at-ta-[ni* ib. II 7 = [pattar] < **póth₂-r̥*, [pattan-] < **p(o)th₂-n̥n-* {5.3.1., 5.6.} : **peth₂-* "spread open", cf. Lat. *patera* "flat dish", "saucer", Gk. πατάνη "flat dish" (> Lat. *patina*); a Lycian cognate survives in πατάρα, glossed by Stephen of Byzantium as "bucket" (ἄγγος) or "basket" (κίστη).

See Puhvel, *Heth. u. Idg.* 210 = *AnIE* 357, for forms and discussion; for the original paradigm see Schindler, *BSL* 70 (1975) 5. The *a*-vocalism is established by *pa-at-tar*.

*pittalwant-* "light, thin, plain, mere, unseasoned": nom. sg. c. *pit-tal-wa-an-za* KUB XII 1 III 40 (NH), *pi[t-t]al-wa-an-za* KUB XVII 12 II 20 (NH), nom.-acc. sg. n. *pit-tal-wa-an* KBo V 2 I 28, II 16 (NH), KUB XXV 36 II 10 (OH+), *pit-tal-lu-[* ABoT 32 Vs. 8 (MH+), *pit-[tal-]wa-an* ib. Vs. 9, dat.-loc. sg. *pit-ta-la-wa-<an>-ti* IBoT III 1 L. 9 (OH+); perhaps [pittalwant-] with PIE-*d*° = [pitt] < **peth₂lwént-*, derivative of a **peth₂-ló-* > **[pettalā-]* : **peth₂-* "spread open"; cf. Gk. πέταλον "leaf", OLat. *petilus* "thin, slender, meager".

The etymology is given by Puhvel, *Heth. u. Idg.* 210–11 = *AnIE* 357–8, who notes that *e*-vocalism is likely on morphological grounds but unprovable in the absence of spellings in *pe-et-t*°, *pe-ed-d*°.



*tittiya-*, *tittanu-* "settle, establish" : *ti-it-ti-(ya)-* (OH etc.), *ti-it-ta-nu-* (OH etc.), *ti-it-nu-ut* KUB XIV 1 Rs 40 (MH) = [tittya-], [tittnu-], probably from < **títh₂-yo-* : **(s)teh₂-* "stand" (Sturtevant, *CGr*² 60, Pedersen, *Hitt.* 183, Melchert, *SHHP* 99–100) rather than from **dhi-dh₁yo-* : **dheh₁-* "put" (Watkins, *Fl. u. Wb.* 376, Oettinger, *Stammbildung* 347, 350, Kimball, *PW* 815–19).

## 10.7.3. Voiced aspirate plus **h₁*

The most plausible example is provided by *tittisk-* it. "suckle", 3 sg. pres. *ti-it-ti-is-ke-ez-zi* KBo XIV 98 I 17 (OH+), presupposing a reduplicated verb **tittiya-* "suckle" and the Luvoid agent noun acc. sg. *ti-ti-is-sa-al-li-in* KUB V 9 Vs. 4 (U) from an iterative **ti(t)tissa-*, both of which are ultimately from a **dhi-dhh₁-* : **dheh₁-i-* "suckle", cf. Hitt. and CLuv. *tītan-* (*tēta-*) "breast" < **dhi-dhoh₁-*, CLuv. *titaimi-*, Lyc. *tideimi-* "offspring" < ptcp. **dhi-dhh₁-* and Ved. *dhayati* "sucks", Latv. *deju* "I suck", Arm. *diem* id., OHG *tāen* "to suck"; cf. Oettinger, *Stammbildung* 347, who reconstructs PA **dhi-dhh₁-ye-*.

## 10.7.4. Voiceless stop plus **h₁*

*piddai-*, *pittiya-* "flee" (NH also *mi*-verb *piddā(i)-*): 3 sg. *pid-da-a-i* StBoT 25, 25 I 1, StBoT 25, 43 I 16, IBoT I 36 III 10 (MH), KUB XII 62 II 9 (Pre-NH), 3 pl. *pit-ti-an-zi* IBoT I 36 II 17, KUB X 1 L. 12 (OH+), *pit-ti-ya-an-zi* KUB X 17 I 4 (OH+), 3 sg. pret. *pi]d-da-a-is* KUB XIV 1 Vs. 3 (MH also NH etc.), *pid-da-is* KUB VI 41 I 41 (NH); also substantivized participle LÚ*pittiyant-*, LÚ*pitteyant-* "fugitive": e.g. nom. sg. c. *pit-te-an-za* KUB VIII 81 II 11, 13 (Supp. I), acc. *pit-te-ya-an-ta-an* ib. III 3, nom. pl. c. *pit-te-ya-an-te-es* KUB XIV 1 Rs. 34; adverb *pitteantili-* "as a fugitive" (*pit-te-an-ti-li* KUB XXIII 77 L. 71, 72, 73 (MH); and causative *pittinu-* (e.g. 3 sg. pres. *pit-ti-nu-uz-zi* KBo VI 2 II 10 (OH), 3 pl. *pit-ti-nu-an-zi* StBoT 25, 54 IV 2, ptcp. nom.-acc. sg. n. *pit-ti-nu-an* KUB XXXVI 100 Vs. 11 (OH); Post-OH also *pit-te-nu-*). A reading with *e*-vocalism [pitt-] ([pett-] ?) is suggested by LÚ*pi-te-an-t[* KUB XL 5 II 10 (OH+) (see Puhvel, *Heth. u. Idg.* 212). The etymon is **peth₁-* "fly", cf. Skt. *patati* "fly", Gk. πέτομαι, id., πίπτω "fall", Dor. ἄπτης "unfalling".

For forms and discussion see Puhvel, *Heth. u. Idg.* 212 = *AnIE* 359, and Oettinger, *Stammbildung* 472–3. Although Puhvel reconstructs perf. **ptoh₁-e* > *piddai* and *pittiya-* (*pattiya-?*) < **pot[h₁]éy-*, as Oettinger notes, *mi*-conjugation inflection is secondary and likely to be based in part on confusion with *piddā(i)-* "deliver, pay".

*pittar* or *pattar* "wing": nom.-acc. sg. *pit-tar* KBo I 42 I 34 (NH, vocab.), also in *pit-tarpalhi-* (*pattarpalhi-*), name of a bird used in bird-oracles ("broad-winged"): nom. sg. *pit-tar-pal-hi-is* KUB XVIII 57 III 13 (NH), KUB V 11 I 22 (NH), *pit-tar-pal-hi-es* ib. I 40, acc. sg. *pit-tar-pal-hi-in* KUB XVI 46 I 11 (NH), gen. *pit-tar-pal-hi-ya-as* KUB XVIII 57 III 14 = [pettar] < **péth₁-r̥* or coll. **péth₁-ōr* or [pattar] < **póth₁-r̥* : **peth₁-* "fly, fall", cf. Skt. *pattram* "wing", Gk. πτερόν "feather".

See Puhvel, *Heth. u. Idg.* 212–3 = *AnIE* 359–60, for a discussion of forms and etymology.

*pittiyali-* "fleet, quick": nom. sg. c. *pit-ti-ya-li-is* KUB XV 39 II 25 (MH+), nom. pl. c. *pi]t-ti-ya-li-e-es* KUB XXXIII 62 II 3 (MH?/MH+?), ultimately : **peth₁-* "fly, fall."

## 10.7.5. Laryngeal unclear

*pippa-* "overturn": e.g. 3 sg. pres. *pi-ip-pa-i* KUB VII 2 II 21 (Pre-NH), KUB XVII 27 II 35 (OH+), KUB XLI 3 Rs. 5 (MH), *pi-i]p-pa-a-i* KUB XXX 36 I 3 (MH+), midd. *pi-ip-pa-at-ta-ri* KUB XXXIV 22 I 9 (U), 3 pl. act. *pi-ip-pa-an-zi* KUB VII 52 Vs. 11 (MH+), KUB XXXVII 223 Vs. 3 (OH), 1 sg. pret. *pi-ip-pa-ah-hu-un* KUB XVII 27 II 33, 3 sg. *pi-ip-pa-as* KUB XXIV 14 I 25 (NH), KUB XXXIII 10 Vs. 12 (MH), 3 pl. *pi-ip-pe-er* KUB XXXI 124 II 11 (MH), 3 pl. imp. *pi-ip-pa-an-du* KBo XII 1 IV 5 (OH+), KBo XXII 6 IV 23 (OH+, dup. of KBo XII 1), ptcp. nom.-acc. sg. n. *pi-ip-pa-an* IBoT II 115 L. 4 (MH, joins KUB XLI 3), inf. *pi-ip-pa-wa-an-zi* KBo XVIII 54 Rs. 11 (NH), it. *pi-ip-pe-es-ke-ez-zi* KBo XXII 84 L. 3 (U) = [pippa-] < **pi-pH-o-*, present with *i*-reduplication; see Melchert, *SHHP* 100, who reconstructs **pi-pH$_{1/3}$-*. The reconstruction depends on reading the first syllable with *i*-vocalism, i.e. *pi-ip-p°* = [pipp-] rather than *pe-ep-p°* = [pepp-] (cf. Oettinger, *Stammbildung* 498, who reconstructs a perfect **pe-poH$_{1/3}$-*). A likely cognate is Skt. *ud pīpite* "arises", as suggested by Hoffmann *apud* Oettinger, *loc. cit.*

Examples *Stammbildung* 498.

## 10.7.6. Etymology unclear

PAD-*da-* "dig": 1 sg. pres. *pad-da-ah-hi* StBoT 25, 5 II 12, KBo XV 25 Vs. 20 (MH?), KUB XII 44 III 3 (NH), 3 sg. *pad-da-i* KUB VII 41 Vs. 7 (MH), KBo IV 1 I 5 (OH+), 3 pl. *pad-da-an-zi* KUB XXIX 4 IV 34 (NH), VBoT 24 II 6 (MH+), *pad-da-a-an-zi* KUB XXXIV 97 L. 15, 16 (U), 3 pl. pret. *pat-te-er* KBo XV 10 III 45 (MH), also *pattessar* "hole" (e.g. nom.-acc. sg. *pat-te-es-sar* KUB VII 41 I 6, 8). This word and its derivatives are always written with PAD/PED, so either *a*-vocalism [patta-] or *e*-vocalism [petta-] is possible. Puhvel's reading as *pe-da-* with ⊢◁ = PE (*Heth. u. Idg.* 214–6 = *AnIE* 361–3) depends on whether *pe-da-a-i* in OH KUB XXIX 30 III 9 should be interpreted as *pe-da-a-i* (1.2.2.). *padda-* has been compared by Pedersen, *Hitt.* 77, with Lat. *fodīre* "digs" (1.1.2.2.). *padda-* has been compared by Pedersen, *Hitt.* 77, with Lat. *fodīre* "dig", Lith. *bedù, bèsti* "stab, dig", OCS *bodǫ, bosti* "stab, pierce", from a root traditionally reconstructed as **bhedh-*. As Melchert, *SHHP* 26 n. 53, notes, a root **bhedh$_2$-* will explain the doubled stop in the Hittite verb, but this makes the traditional connection with Goth. *badi* "bed", OE *bedd* id. etc. and Gk. βόθρος "pit" impossible if **dh$_2$* yielded a voiced stop in Greek (cf. μέγα and Goth. *mikils* < **megh$_2$-*). An alternative etymology, also suggested by Pedersen (*Ar. Or.* 7 (1935) 88; cf. also Oettinger, *Stammbildung* 505), that derives *padda-* from **peth$_2$-* "spread open" in e.g. Gk. πατέομαι "spread open" and Lat. *patēre* "lie open" would also explain the Hittite geminate, i.e. [patta-] < perf.? **póth$_2$-e* etc., but would be less satisfactory semantically.

Examples *Stammbildung* 505.

## 10.8. Gemination of resonant plus laryngeal

Bernabé Pajares, *REL* 3 (1973) 430–41; Eichner, *Laryngaltheorie* 142 n. 61, Georgiev, *Orbis* 27 (1978[9]) 46; Melchert, *SHHP* 16–19 w. n. 33, *AHP* 79–80; Oettinger, *Stammmbildung* 280–1, 289–90, 549–50; Watkins, *Fl. u. Wb.* 375–8.



The gemination of resonants by a following laryngeal was first described in detail by Bernabé and Watkins. There are several very certain examples (*pace* Eichner). Although there is not yet general agreement on the roles of accent and ablaut in conditioning gemination, it seems clear that all three laryngeals could cause it. Oettinger notes examples of *aRR* beside *aRH* (*Stammbildung* 280, 288–90, 299, 549–59), e.g. *salli-* "big" < **sélh$_2$-i-* beside CLuv. *salhitti* "growth". Kimball (*PW*) notes that plene writing does not normally occur before geminate resonants, even when the preceding vowel should have been accented, and suggests that the lengthening rules failed to work in this environment; *ārr-* "wash", 1 sg. pres. *a-ar-hi*, 3 sg. *a-ar-ri* < **h$_1$erH-* is not an exception, since it is athematic and its long vowel can be derived from preconsonantal **h$_1$érH-C-* > *ār-C-* (e.g. 1 sg. pres. **h$_1$érH-h$_2$ai* > *ārhi*) and its geminate from prevocalic forms (e.g. 3 sg. pres. **h$_1$érH-ei* > **ārri* > *ārri* with analogical /a/). The forms affected were normally *e*-grade, since **oRH* became **oR* in IE (10.1.1.2.), and the lowering of **e* before **RH*, which must have preceded gemination, since it occurs e.g. in *warhuī-* "rough, shaggy" = [warhwī-] < **werh$_2$wih$_2$-* (10.5.2.2.) with laryngeal retained before /w/, may have been a form of laryngeal umlaut (3.2.2.3.).

Bernabé views *RH* beside *RR* (e.g. *tarh-* "overcome, prevail" beside *tarra-* "be able") as free variation, but examples like this are better seen as reflecting different ablaut variants and conditioned sound change. Watkins (376) describes the process as loss of prevocalic laryngeal with graphic doubling of the resonant and suggests that the graphic doubling was linguistically significant. Prevocalic laryngeals were retained in Anatolian, however (e.g. *palhi-* "wide", oblique stem *palhā(y)-* < **pl̥h$_2$-í-*, **pl̥h$_2$-óy-* with prevocalic **h$_2$* throughout its paradigm (5.3.2.).

Oettinger, *Stammbildung* 549–50, views both accent and prevocalic position as conditioning factors for gemination in original clusters of **Rh$_2$*, contrasting the prevocalic full-grade **Vrh2-V* in e.g. *tarra-* "be able" (< **térh$_2$-o-*) with the preconsonantal full-grade **CéRh$_2$-C* > **CaRh$_2$-C* in e.g. *tarhta* "(s)he prevailed" (< root aor. inj. **térh$_2$-t*) and zero-grade **R̥H$_2$* in e.g. *palhi-* "wide" (< **pl̥h$_2$-í-*). Note, however, that the plene writing of the vowel of the ending in 3 sg. pres. midd. *is-kal-la-a-ri* "slits, cuts" (MH) < **skelH-* suggests the root was not originally accented, and that gemination could occur in pretonic syllables.

Kimball, *PW* 787–805, considers both accent and ablaut conditioning factors in the gemination of clusters of **Rh$_2$* and **Rh$_3$*, contrasting **VRH$_{2/3}$* > *VRR* in e.g. *tarra-* < **térh$_2$-o-* and *salli-* "big" < **sélh$_2$-o(y)-* with **R̥H$_{2/3}$* > *aRh* in e.g. *tarh-, tarhu-* < (generalized) zero-grade **tr̥h$_2$-*, **tr̥h$_2$u-* or *palhi-* < **pl̥h$_2$-í-*). She derives *iskallāri* "slits, cuts" from **skl̥h$_1$-ó-* with zero-grade **l̥h$_1$V* > *all*, claiming that **h$_1$* caused gemination of the reflexes of syllabic resonants.

In Melchert's view (*SHHP* 44–5 n. 91, following a suggestion of Schindler's) the difference between *VRRV* and *aRH* can be explained chronologically. According to Melchert, there was a general rule of gemination **VRHV* > *VRR* (presumably PA in view of e.g. Pal. *sunnatil* "filling") which operated before the vocalization of syllabic resonants produced new sequences of *aRhV* (i.e. **R̥H$_{2/3}$(V)* > *aRhV*). This view is more satisfactory than those of Oettinger and Kimball, since it explains examples of **VRH-V́-* > *VRRV́* as in *iskāllari* without recourse to *ad hoc* reconstructions and without ignoring independent evidence (e.g. in the form of plene writing) for accent.

The enclitic conjunction *-(y)a-* "and" geminated a preceding stop or resonant (e.g. *a-a-s-su-se-et-ta* = [āssu-ssett-a] "and his goods", *ha-(a)ra-an-na* = [hārann-a] "and the eagle") and was distinct from non-geminating *-a-* "but" in OH. It continues **-h₂o*, which is still preserved in CLuv. and HLuv. *-ha* "and" (*CLuv. Lex.* 45), Lyc. *-ke*, and in the indefinite relative CLuv. nom. sg. c. *kuisha*, HLuv. REL-*isha* and Lyc. *tike* beside Hitt. *kuissa*, Pal. *kuisa* and Lyd. nom.-acc. sg. n. *qida* (PA **kʷis-h₂o*).

See Watkins, *Fl. u. Wb.* 375–6 w.refs. The variant *-ya-*, used mainly after vowels and logograms, can have been extracted from words in which *-a-* followed /e/ or /e/, which would have given [-ēya] and [-eya] with glide insertion. Puhvel's attempt to take *-ya-* as basic and to derive *-a-* from **-yo-* (*HED* 1, 8–9) assumes that **y* geminated a preceding consonant, and there is no evidence for this {7.7.1., 8.6.3.}.

## 10.8.1. **lh₁*

The clearest example is probably *kalless-* "invite": 3 sg. pret. *kal-li-is-ta* KUB XVII 5 L. 6 (OH+), imp. *kal-li-is-du* KUB XXIV 1 I 12 (Pre-NH), inf. *kal-le-es-su-wa-an-[zi* KBo X 45 I 38 (MH+), *kal-li-is-su-u-[wa-an-zi* KUB X 93 I 10 (OH+), *kal-li-is-su-u-wa-an-z[i* KUB XX 88 VI 22 (OH+); *kalestar* "invitation": nom.-acc. sg. *kal-le-es-tar[* KUB XXXVI 25 IV 13 (NH); LÚ*kallistarwana-*, nom. sg. LÚ*kal-li-is-tar-wa-na-as* ib. I 11. If the stem can be interpreted as OH *[kallēss-], then perhaps it was reformed from **kalh₁-éh₁-* (> PA **kallḗ-* > OH **kallē-*) as in Umb. *kařitum, kařetu, carsito* "calato, appellato" (< Ital. **kalētōd*) beside **kl̥h₁-* in Gk. καλέω "I call" and Aeol. κάλημι id.

For the *a*-vocalism cf. Oettinger, *Stammbildung* 185, who considers the verb a back-formation from *kallesstar*.

Another example may be *hwallis* "pinecone, fircone": nom.-acc. sg. *[h]u-wa-al-li-is* StBoT 25, 137 II 19 (OH), *hu-ul-li-is* StBoT 25, 25 I 39 (OH), *hwallissar* "collection of cones": loc. *hu-wa-al-li-is-na-as* StBoT 25, 138 Vs.? 10 (OH); Post-OH also *hu-u-wa-al-li-is, hu-u-li-is* with ligature HU-U- {1.5.1.} = [hwallis], perhaps from **h₂wélh₁es* with reduction of the second, unaccented **e* to /i/ {2.6.3.}. Melchert, *SIHHP* 105 n. 62, reconstructs **h₂wélh₂-es*, but the second **e* might have been colored by **h₂*. Puhvel, *HED* 3, 423–4, reconstructs **h₂wl̥nes*, comparing Gk. ἁλής, Aeol. ἀολλής "thronged in a mass" < **sm̥-wl̥nēs* to the root of Skt. *valati* "winds", Gk. εἰλέω "I wind, twist", Arm. *gelum* id. But if this root did have an initial laryngeal, it was **h₁*, not **h₂* (see Peters, *Unters.* 44–50).

Examples *HED* 3, 423–4.

*walla-* "praise": 1 sg. pres. *wa-al-la-ah-hi* KUB XXXI 127 III 37 (MH+), KUB XXIV 7 I 1 24 (NH), *wa-al-ah-hi* ib. I 22, it. stem *wa-al-lu-us-k°* (MH, OH+), it. 3 sg. pres. *wa-al-le-es-ke-ez-zi* KBo V 6 I 4 (Supp.I), *wa-al-li-is-ke-ez-zi* KBo IV 6 Vs. 19 (NH) = [wall-] perhaps from **walh₁-* in Lat. *valēre* "be strong", Toch. B *walo* "king", oblique stem *lānt-* < **walh₁-n̥t-*, if the iterative *wallusk-* was formed within PA as **walh₁-sk-* and shows vocalization of **h₁* to /u/ after consonantal **l* {10.9.2.1.}. The third person plural present *wa-li-ya-an-zi* KUB VI 46 IV 28 (NH) can show the regular reflex of **walh₁-yo-*, since the laryngeal would have been lost before **y* without causing gemination of the preceding resonant.

Examples and etymological discussion Oettinger, *Stammbildung* 490–1.



## 10.8.2. **lh₂*

*salli-* "big": nom. sg. c. *sal-li-is* e.g. KBo IV 2 II 10 etc. (OH+), KBo III 8 III 1 (Pre-NH), *sa-al-li-is* KUB XII 66 IV 7 (OH+), acc. *s[al-li-in* e.g. KUB XLIV 64 II 9 (NH), nom.-acc. sg. n. *sal-li* KUB II 2 II 44 (NH), *sa-al-li* KBo XVII 65 Vs. 24 (MH), gen. sg. *sal-la-as* KBo III 1 + II 31 (OH+), dat. *sa-al-la-i-e* KUB XXXI 127 + III 16 (MH+), *sal-li* KBo X 20 I 15 (OH+), KUB X 45 III 15 (U), KUB XX 99 II 27 (OH+), *sal-la-i* KBo I 42 IV 24 (NH, vocab.), abl. *sal-la-ya-az* KUB IX 15 II 10 (NH), dir. *sal-li-ya* KUB X 45 III 10, KUB XXX 39 Vs. 11 (OH+), nom. pl. c. *sal-la-e-es* KBo I 30 Vs. 10 (NH, vocab.), acc. pl. *sal-la-us* KUB VIII 57 L. 7 (NH), nom.-acc. pl. n. *sal-l[i]* KUB XVII 21 I 2 (MH), caus. stem. *sal-la-nu-* "make big, raise, rear" (OH etc.) = [salli-], [salla(y)-] < **sélh₂i-*, **sélh₂-oy-* with generalized full-grade : Lat. *solidus* "solid", Gk. ὅλος (**σολϝος*) "whole", O.Ir. *slán* id. CLuv. *salhitti-* "growth" and *salha/i-* "great, grown" (?) preserve the zero-grade **sl̥h₂-*. The spellings with *sa-al-l°* beside *sal-l°* suggest that the gemination is linguistically real and not simply the result of using the *CVC* sign SAL.

*malla-* "grind": 3 sg. pres. *ma-al-li* KUB VII 1 II 1 (Pre-NH), *ma-al-la-i* (NH), *m[a-al-l]a-a-i* KBo XV 35 + KBo XV 33 I 11 (MH), 3 pl. *ma-al-la-an-zi* IBoT I 29 Rs. 19 (MH?, also MH+, NH), imp. 3 pl. *ma-al-la-an-du* KBo VI 34 II 27 (MH+), ptcp. *ma-al-la-an-t°/d°* (NH) = [mall-] < **mélh₂-*, cf. e.g. Lat. *molere* "grind", *molitus* "ground", Lith. *malù, málti*, OCS *mel'ǫ, mlěti*, O.Ir. *melid*, OHG *malan* "grind". The root-final **h₂* is confirmed by the *h* of CLuv. *malhuta* 3 sg. pret. "crush, break" (*CLuv. Lex.* 132) and reduplicated *mammalhw-, mammalw-* (ib. 134) from the stem in *-u, *mol(h₂)-u-*, cf. Goth. caus. *gamalwjan* "bruise", Toch. A *malyw-, mely-* "crush".

Examples *CHD* 3, 125–6. See also Oettinger, *Stammbildung* 277–81, and Tischler, *HEG* 6, 102–3; for CLuv. *malhu-* and reduplicated *mammaluwai-* see Melchert, *HS* 100 (1988) 215–6.

## 10.8.3. **rh₂*

*tarra-* "be able": 1 sg. pres. midd. *tar-ra-ah-ha-ri* KUB XV 1 II 15 (NH), 2 sg. *tar-ra-at-ta* KBo XV 32 I 3 (MH), 3 sg. pret. *tar-ra-at-ta-at* KBo IV 7 I 10 (NH), ptcp. nom. sg. c. *tar-ra-an-za* KBo XV 34 II 14 (MH+), caus. *tarranu-* in e.g. 3 sg. pret. *tar-ra-nu-ut* KBo III 1 + I 6, 16, 26 (OH+) = [tarra-] < midd. **térh₂-o-* : Skt. *tarate* "pass over" (< **térh₂-o-toi*).

Examples *StBoT* 5, 167–8, *PW* 785–6. For the derivation see also Oettinger, *Stammbildung* 223, and see Tischler, *HEG* 8, 147–8 for further references.

*marra-* (*marriya-*) "melt, disolve, break up, cook, stew": the stem *marra-*, although not attested in OH originals, can be old, since it is found in OH+ and MH texts; note 3 sg. pret. midd. *mar-ra-at-ta-at* KUB XXXIV 91 I 2, 3, 4, 5, *ma]r-ra-at-ta* ib. I 7 (MH+), ptcp. nom. sg. c. *mar-ra-an-te-es* KBo X 34 I 11 (MH), case(?) *mar-ra-an-ta-as* KBo III 13 Rs. 16 (OH+) = [marra-], perhaps from a thematic middle **mérh₂-o-* beside **mr̥h₂-* in (TU₇)*marhā-*, a kind of stew < **mr̥h₂-ó-* (note acc. sg. *m]ar-ha-a-an* IBoI II 5 Vs. 14, U) and in CLuv. participle *mar]-ha-nu-wa-an* "brewed" (*CLuv. Lex.* 139). Non-Anatolian cognates would include Gk. μαραίνω "wear away", ON *merja* "break up", OHG *meren* id. (< Gmc. **marjan*) and Lat. *mortārium* "mortar" (see Oettinger, *Stammbildung* 279–81 and Tischler, *HEG* 6, 129–30).

Examples *CHD* 3, 180–1. The stem *mar-re-* or *mar-ri-*, which occurs from OH on (3 sg. pres. midd. *mar-re/i-e/it-ta* StBoT 25, 42 II 7 = *mar-re/i-e/it-t[a* StBoT 25, 43 I 6, 2 sg. pres. act. *m]ar-ri-et-ti* KUB XLIII 60 III 8, MH+), is interpreted as thematic [marre-] by Oettinger, *Stammbildung* 279–82 and as [marrye-] by Melchert, *SHHP* 18. The latter interpretation is more likely. Unambiguous forms in [-ye-/-ya-] first occur in 3 sg. imp. *mar-ri-e-et-ta-*<*ru*> KBo VI 34 II 3 (MH+), and *mar-ri-ya-az-zi* KUB XXXIII 120 III 72 (NH). Presumably the forms in *-iya-* were formed from the geminate stem, since the laryngeal would have been lost before PA **y*.

## 10.8.4. **rh₃*

*sarre/a-*, midd. *sarra-* "divide, transgress an oath": midd. 2 sg. pres. *sar-ra-at-ta* e.g. KUB XIV 1 Vs. 42 (MH), *sar-ra-ad-da* KBo VI 34 II 11, 24, III 16 (MH+), 3 sg. *sar-ra-at-[ta-* KUB XXXVI 108 Vs. 10 (OH), *sar-ra-at-ta* KUB XXIII 68 Rs. 27 (MH, also OH+, NH etc.), 2 pl. pres. *sar-ra-ad-du-ma* e.g. KBo VIII 35 II 16, 22 (MH?), KUB XXIII 78b. L. 12 (MH+), *sar-ra-at-tu-ma* e.g. KBo III 27 Vs. 25 (OH+), 1 sg. pret. *sar-ra-ah-ha-at* KUB XXX 10 Vs. 12 (MH), 3 sg. *sar-ra-at-ta-at* e.g. KUB XIV 1 Rs. 20, KUB XXXIII 72 Vs. 14 (MH), 3 pl. *sar-ra-an-ta-ti* KUB XXX 12 I 18 (MH); act. 3 pl. pres. *sar-ra-an-zi* e.g. KBo VI 2 III 8, 10, 11, (OH, also MH etc.), 3 sg. pret. *sar-ri-et* KUB XXXVI 106 Rs. 5 (OH), *sar-ra-as* KUB XXIII 72 Rs. 3, 3 pl. *sar-ri-er* e.g. KUB XVII 21 III 3 (MH), it. *sar-ri-es-k* KUB XXXI 127 I 31 (MH+), 3 sg. pres. *sar-ra-as-ke-et* KUB XXIII 72 Vs. 37 = [sarra-] < midd. **sérh₃-o-* : Gk. ῥώομαι "move violently, dart, rush" < **sr̥h₃-o-*. For the laryngeal, cf. *sarhuntalli-* "predatory" < **sarhwant-*, presupposing a *u*-stem **sarhu-* < **sr̥h₃-u-* and *sarhiya-* "ambush" in 3 sg. imp. *sar-hi-i-e-ed-du* KBo XVI 24 + I 15 (MH) and it. 3 sg. pres. *sar-hi-is-ke-et* KUB XXIV 3 II 45 (MH+) (cf. Oettinger, *Stammbildung* 288–9 w. n. 57, who reconstructs **serh₂-*, **sr̥h₂-*).

Examples *StBoT* 5 152–4; see also *Stammbildung* 284–6 for examples and discussion. The active, although found from OH on, looks secondary and based on the middle as is the stem in *-iya-*.

*harra-* "damage, be damaged"; the earliest examples are middle: 3 sg. pres. *har-ra-at-ta-ri* KUB XXIII 77 Vs. 38 (MH), act. 3 sg. pres. *har-ra-i* KUB XXV 23 IV 52 (NH), *har-ra-an-zi* e.g. KUB XX 89 L. 7 (NH), 3 sg. pret. *har-ra-at-ta* KUB XII 63 Vs. 32 (MH), inf. *har-ru-u-wa-an-zi* KUB XXV 24 II 6 (NH); ptcp. nom. sg. c. *har-ra-a-an-za* KUB IX 31 I 2 (MH?+), *har-ra-an-za* ib. II 40 (= *har-ra-a-an-za* in dup. HT 1 II 14), nom.-acc. sg. n. *har-ra-a-an* ib. I 3, *har-ra-an* e.g. KBo V 3 II 16 (Supp.I+), KUB XIII 3 II 30 (MH+), KUB XIV 13 I 56 (Pre-NH) = [harra-] < them. midd. **h₂érh₃-o-* : **h₂erh₃s-* in *hārs-* "break up earth" etc. {8.6.5.2.}.

Examples *StBoT* 5, 48, *Stammbildung* 505–7, *HED* 3, 135–7.

## 10.8.5. **nh₁*

*zinni/a-* "finish, end": 2 sg. pres. *zi-in-ni-si* KUB XXIX 1 I 5 (OH+),3 sg. *zi-in-ni-zi* e.g. StBoT 25, 59 I 5 (also OH+, NH), *zi-in-ni-iz-zi* e.g. StBoT 25, 47 III 20 (*/zi/-in-ni-iz-[zi]*, also MH+, NH), 1 pl. *z]i-in-na-ú-e-ni* StBoT 25, 138 Vs.? 2, *zi-in-nu-um-me-e-ni* KUB XIII 35 IV 3 (NH), 2 pl. *zi-en-na-aṭ-te-ni* KUB XLIII 22 IV 15 (U), 3 pl. *zi-in-na-an-zi* e.g. StBoT 25, 27 Vs. 19 (also OH+, NH), 3 sg. pret. *z]i-in-ni-it* KUB XXXIII 33 L. 12 (MH+), 3 pl. *zi-in-ni-er* KUB XXIX 54 IV 12 (MH), 2 pl. imp. *zi-in-na-at-ten*



KUB XXXI 64 III 20 (OH+), midd. e.g. 3 pl. pres. *zi-in-na-an-ta-ri* IBoT I 36 III 51 (MH), ptcp. e.g. nom. pl. c. *zi-in-na-an-te-es* KBo II 13 Rs. 11 (NH) = [zinn-] or [tsinn-]. Oettinger, *Stammbildung* 151–2, and Melchert, *SHHP* 25, 29 n. 61, 114, derive this verb from a nasal present **si-néh₁-ti* : **si-nh₁-énti* from the root **seih₁-*, also in Lat. *sinere* "let go of" and in the acrostatic middle **seih₁o* > *zēa* "be done, be cooked". The etymology depends, however, on whether *z* is a reflex of initial **s* {11.8.2.2.}. As Melchert points out (29 n. 61), the *-nn-* recalls the geminate *-nn-* of *sunna-* "fill" (< **su-n-h₃-*) and suggests a generalized weak stem suffix **-nH-* (**-nh₁-*). The source of the stem-final -NI-, however, is obscure. It is clearly not [-ny-] < **ny*, since ***zi-in-ni-ya-* does not occur. A full-grade suffix (*-néh₁-*) would yield ***-nē-* or, with *-nn-* from the weak stem, ***-nnē-*. An earlier **´ -neh₁-* with (analogical) root accent would probably have become **-nĕ-* with shortening of unaccented **eh₁* to */ĕ/* {2.9.1.1.}. It is possible, however, that *zinni/a-* is an original nasal present that was remade as a root-accented thematic, i.e., Pre-Hitt. **zinne-* (with generalized **-nn-* from the weak stem) ‣ **zínne-* > *zinni-* with unaccented **e* > */i/* {2.6.3.} beside weak stem **zinn-* ‣ **zinna-* > **zinna-* (cf. Melchert, *SHHP* for a similar analysis).

*mūnnā(i)-* "hide, conceal": 1 sg. pres. *mu-un-na-a-mi* KUB XXXVI 44 IV 5 (MH), *mu-na-a-mi* KUB XXVI 33 III 14 (NH), 2 sg. *mu-un-na-a-si* e.g. KBo XVI 46 Vs.? 17 (MH), 3 sg. *mu-un-na-a-iz-zi* e.g. KUB XXXVI 127 Rs.? 13 (MH), *mu-un-na-iz-zi*, e.g. *mu-un-na-i[z-zi* KBo XVI 25 I 14, *mu-un-na-iz-zi* ib. I 58 (MH), 2 pl. *mu-un-na-at-te-ni* e.g. KBo XVI 27 IV 18 (MH+), *mu-u[n-na]-it-te-ni* KUB XXVI 1 III 56 (NH), 3 pl. *mu-un-na-a-an-zi* KBo XXIV 18 I 6 (U), *mu-un-na-an-zi* e.g. KBo III 1 II 29 (OH+), KUB XIII 20 I 4 (MH+), 3 sg. pret. *mu-ú-un-na-it* KUB XVII 5 I 4 (OH+), IBoT I 33 L. 6, 7 (U), *mu-un-na-a-it* KUB XIV 1 Rs. 49 (MH), 3 pl. *mu-un-na-a-ir* KUB XXXIII 121 II 14 (NH); midd. *mu-un-na-* e.g. 3 pl. pret. *mu-un-na-an-da-at* KBo XXV 18 Rs. 9 (OH+) = [mūnnā(i)-], perhaps ultimately remade as a root-accented deverbative in *-ā(i)-* from **mu-n-h₁-*, weak stem of a nasal present to the root **meuh₁-* of *mauss-*, *mū-* "fall", Lat. *movēre* "to move", *mōtum* < **movitum* and Lith. *máuju, máuti* "draw up, raise". The plene writing in the initial syllable suggests a shifted accent, which would have parallels in other derivatives of nasal verbs, cf. *zinni/a-* "end" and *hūnink-* "damage" {1.5.1.}.

Examples *CHD* 3, 329–32. For the root etymology, see Eichner, *Fl. u. Wb.* 84, and see Tischler, *HEG* 5, 231–2 w. refs. for alternatives.

## 10.8.6. **nh₂*

*sanna-* "hide, conceal": 1 sg. pres. *sa-an-na-ah-hi* KBo X 37 I 34 (OH+), 2 sg. e.g. *sa-an-na-at-[t]i* KBo IV 14 III 70 (NH), *sa-an-na-at-ti* KBo V 3 I 28 (Supp. I+), 3 sg. *sa]-an-na-a-i* KBo V 3 III 70, midd. 3 sg. pres. *sa-an-na-at-ta* KUB XXXVI 127 Rs. 13 (MH), 3 sg. pret. *sa-an-ne-es-ta* KUB XIV 4 III 10 (NH), verbal noun nom.-acc. sg. *sa-an-nu-um-mar* KUB XXVI 1 II 19 (NH), it. 2 sg. pres. *sa-an-na-as-ke-si* KUB XIV 1 Rs. 17, *sa-an-ni-is-ke-si* IBoT I 33 L. 102 (U) = [sanna-] < **sn̥-n-h₂-*, weak stem of a nasal infix present : **senh₂-* "be hidden, separated", cf. e.g. Gk. ἄνευ "without", Lat. *sine* id. < **senh₂-i*, O.Ir. *sain* adv. "special, different" < **sn̥h₂-*.

Examples, refs., and discussion, Oettinger, *Stammbildung* 159–60.

In *innara-* "forceful, strong" and derivatives (*i-na-ra-*, OH, *in-na-ra-*, MH etc.) < **en-nh₂or-* the [nn] is probably simply from **n* plus *n* {10.10.1.}.

### 10.8.7. **nh₃*

*sunna-* "fill": 1 sg. pres. *su-un-n[a-ah-he* StBoT 25, 4 III 48, *su-un-na-ah-hi* e.g. KBo III 38 Rs. 17 (OH+), 3 sg. *su-un-na-i* e.g. KBo VI 2 IV 50 (OH, also MH etc.), *su-un-na-a-i* (MH+, OH+, NH), 1 sg. pret. *su-un-na-ah-hu-un* KBo X 2 I 21 (OH+), 3 sg. *su-un-na-as* KBo XXII 2 Vs. 2 (OH, also OH+ etc.), it. 3 sg. pres. *su-un-ni-es-ke-ez-zi* StBoT 25, 104 II 5 = [sunn-] < **su-n-h₃-*, weak stem of a nasal present, beside strong stem **su-ne-h₃-* in Pal. 3 sg. pret. *su-u-na-at* < **suné́h₃-t* {10.4.3.}.

Examples *Stammbildung* 158, *PW* 807–9. For **h₃* in this root see 10.4.3.

*hanna-* "judge, litigate": midd. 2 sg. pres. *ha[-an-na-at-ta* KUB XXXI 135 Vs. 10 + KUB XXX 11 Vs. 3 (MH), *ha-a[n-na-at-ta-ri* ib. Vs. 12, 3 sg. *ha-an-na-ri* e.g. KBo IV 10 Vs.! 23 (NH), KBo XVI 24 II 23 (MH), KUB XXXX 24 II 2 (OH+, also NH), 2 pl. *ha-an-na-d[u-ma-a]t* KBo X 45 III 36 (MH+), 3 sg. pret. *ha-an-na-at* KUB XII 63 Vs. 33 (MH), 3 pl. *ha-an-na-ta-ti* (sic) KUB XII 26 II 2 (NH), 3 sg. imp. *ha-an-na-r[u* KBo III 46 Vs. 3 (OH+), 2 pl. *ha-an-na-du-ma-ti* KUB XLI 8 III 8 (MH+) = KBo X 45 III 17; active stem *ha-an-na-* from MH(?): e.g. 2 sg. imp. *ha-an-ni* KUB XIII 2 III 31, 32 (MH(+?)); *ha-an-ne-es-sar* "judgement, law court", nom.-acc. sg. *ha-an-ne-es-sar* (MH etc.), gen. *ha-an-ni-es-na-as* (MH+), *ha-an-ne-es-na-as* KBo VI 2 III 14 (OH), dat. *ha-an-ne-is-ni* KBo VI 2 II 13; stem [hanna-], also in CLuv. *hanna-* "judge" (*CLuv. Lex.* 51), probably from a thematic middle **h₃énh₂-o-* = **[h₃ónh₂o-]*, cf. Gk. ὄνομα, Hmc. aor. ὄνατο, ὄνητο "blame".

Examples *StBoT* 5, 39, Oettinger, *MSS* 34 (1976) 122–3; see also Puhvel, *HED* 3, 77–84 for examples and etymology.

### 10.8.8. **mh₂*

Inherited **mh₂* occurs in *dammishā-* "oppression, forcing". Unlike the related verb *damess-, damass-* "oppress", which has single °M° in early texts, *dammisha-* and the denominative *dammishā(i)-* have °M-M° in texts from all periods: e.g. nom. sg. *dam-me-es-ha-as* KBo VIII 32 Vs. 11 (NH), acc. sg. *dam-mi-is-ha-a-an* KUB XIII 1 IV 5 (MH), *dam-me-es-ha-an* KUB XIII 24 L. 7 (MH =), *dam-mi-is-ha-a-an*, KUB IV 1 II 9 (MH?), KUB XIII 2 IV 14 (MH(+?)), *dam-mi-is-ha-an* KBo III 23 I 8 (OH+); *dammishā(i)-* in e.g. 3 sg. pres. *dam-me-is-ha-a-iz-zi* Mşt 75/13 L. 21 (MH), *dam-mi-is-ha-iz-zi* Mşt 75/113 L. 17 (MH), ptcp. acc. sg. c. *ta-am-m[i-is-ha-an-ta-an* KBo XXV 25 Vs. 4 (OH?/MH?). The gemination implies a full-grade root, suggesting that these forms can be derived from an original **demh₂es-sh₂ó-* (with analogical /e/ as in the strong stem of the verb **dmh₂es-*) > **damh₂-eshₓó-* (with lowering of **e* before **RH*) > **dammeshₓó-* (with gemination of **mh₂* to **mm*) > [dammishā-] (with **ó* > /a/ and raising of unaccented **e* to /i/).

On the distribution of °M-M° and °M° in *dammishā-* and *damess-, damass-* see Otten, *StBoT* 17, 52–3 n. 22, Oettinger, *Stammbildung* 122–5, and van den Hout, *Gds Kerns* 308–9. For *damass-, damess-* see 10.10.1.



### 10.8.9. Laryngeal unclear

*iskallā-* "slice, slit, cut": 3 sg. pres. midd. *is-kal-la-a-ri* KBo VI 3 I 37 (MH), KBo VI 5 I 18 (OH+), *is-kal-la-ri* KBo VI 3 I 39, active from OH+: *is-kal-la-i* KBo VI 4 I 39 (OH+), *is-gal-la-i* ib. I 37, *is-kal-la-a-i* Bo 2981 III 6 (*HED*), *is-kal-la-at-ta* KBo VIII 37 Vs. 9 (MH) = KUB XXIII 7 II 2 (MH(+?)); *is-kal-la-i-iz-zi* KUB XII 58 II 17 (MH+), 3 pl. *is-kal-la-an-zi* KUB XXX 22 L. 8 (OH+), 1 sg. pret. *is-kal-la-hu-un* KUB XIII 35 IV 24, 31 (NH), ptcp. nom. sg. c. *is-kal-la-an-za* KUB V 7 Rs. 8 (NH), nom. pl. c. *is-kal-la-an-ti-is* ib. Vs. 28, *is-kal-la-an-te-es* ib. Vs. 36 = [skall-] < **skelH-*, cf. Lith. *skeliù, skélti* "I split, to split", *skiliù, skilti* id.

Examples *HED* 2, 413–5. The etymology was established by Benveniste, *BSL* 33 (1932) 139. Oettinger, *MSS* 34 (1976) 126–7, and *Stammbildung* 549 reconstructs **skélh₂-o-re-i*, but there is no evidence for determining the nature of the laryngeal.

*ārr-* "wash": 1 sg. pres. *a-ar-ra-ah-hi* Bo 2489 I 6 (*HED*), *ar-ra-ah-hi* e.g. KUB VII 1 I 29 (Pre-NH), 3 sg. *a-ar-ri* e.g. StBoT 25, 3 I 15, KBo XXIII 23 Vs 30, Rs 64 (MH), KBo V 1 IV 5 (Pre-NH), KBo X 45 III 10, IV 38 (MH+), KUB VII 53 II 22, 25 (MH+), KUB IX 22 III 29 (MH+), VBoT 120 III 5 (MH+), 3 pl. *a-ar-ra-an-zi* e.g. KBo V 1 III 25, IV 15, KUB IX 1 III 16 (NH), *ar-ra-an-zi* e.g. KBo II 3 IV 6 (MH+), KUB XLIII 58 I 41 (MH), 1 sg. pret. *a-ar-ra-ah-hu-un* VBoT 120 III 6, 3 sg. *a-ar-ra-as-ta* KUB XXXIII 88 L. 9 (MH+), 3 pl. *ar-re-er* KBo X 24 II 1 (OH+), KUB IX 1 III 24, KUB XII 26 II 7 (NH), ptcp. nom. sg. c. *a-ar-ra-an-za* KBo XXI 57 III 8 (MH+?), nom. pl. c. *a-ar-ra-an-te-es* KUB XLIII 58 II 41 = [ărr-] for [ărr-] < **(h₁)erH-*. For the *seṭ* root cf. Toch. A inf. *yārnāssi* "to bathe", and for the plene writing of the root vowel see 2.10.1.

## 10.9. Vocalization of medial laryngeals

Beekes, *Laryngaltheorie* 82; Bernabé Pajares, *Au. Or.* 1 (1983) 39–43, *Au. Or.* 2 (1984) 189–95; Eichner, *MSS* 31 (1973) 70, *Lautgesch. u. Etym.* 128–9 n. 41, *Laryngaltheorie* 136–8; Lindeman, *Trip. Rep.* 65–8, *ILTh* 105–6; Oettinger, *Stammbildung* 196, 208–9, 328, 345, 413 n. 34; *Fs Neumann* 235; *Gds Kronasser* 173 w. n. 45; Puhvel, *Fs Whatmough* 231–37 = *AnIE* 33–9 and *EFL* 90 = *AnIE* 136; Sturtevant, *IHL* 31–2.

In some cases, interconsonantal laryngeals were lost without vocalizing, e.g. *weriya-* "call, invite" < **wérh₁-ye/o-* {2.4.3} or *hārs-* "break up earth" < **h₂erhₓs-* {8.6.5.2.}. For loss of **h₂* see {10.1.1.1., 10.10.}. In some words it is difficult to distinguish between vowels resulting from vocalized laryngeals and dead vowels used to write consonant clusters. In some examples that have been cited (e.g. *sāgāi-* "omen"), a medial vowel can be the reflex of IE **a* (cf. Lindeman, *ILTh*). Although the Luvian reflexes of the IE word for "daughter", CLuv. **du(wa)ttari-*, HLuv. *tu-wa/i-tara/i-na* (= acc. sg. [duwataran] or [tuwataran]) and Lyc. *kbatra* < PLuv. **dugətér-*, **dugətr-* < IE **dhughhₓtér-*, **dhughₓtr-* provide evidence for vocalization of **h₂* between stops {10.2.5.}, examples that have been cited from Hittite are less certain. It is likely that medial **h₁* vocalized to /a/ under some conditions and to /u/ after **l* or **ḷ*.

For discussion of vocalization of initial preconsonantal laryngeals {10.3.1.4.} and for final postconsonantal **h₂*, which did not vocalize, see {10.11.2.}.

## 10.9.1. Vocalization to /a/

### 10.9.1.1. *$h_1$

*samān-* "foundation", pl. "foundation stones": acc. sg. *sa-ma-na-an* KUB IX 33 I 18 (U), gen. sg. *sa-ma-na-as* KUB II 2 I 40 (NH), KUB IX 33 I 18, KUB XXI 27 I 8 (NH), acc. pl. *sa-ma-nu-us* KUB XIII 2 + II 17 (MH(+?), KBo IV 1 Vs. 2 (OH+), KUB II 2 I 50 (NH), KUB XXIX 1 III 21 (OH+), *sa-a-ma-a-nu-us* 2030/c + 1703 + Vs. 1/2, *sa-ma-a-nu-us* Vs. 3b/4b (*HED* 2,406 sub *ishuwa-* "pour", described as "OH"), *sa-me-nu-us* KUB XXXI 112 L. 21 (MH+), *sa-ma-na-as* (sic) KBo IV 1 Vs. 2, 41; *samnātar* "foundation", dat. sg. *sa-ma-na-an-ni* KBo IV 1 Vs. 41; denominative *samnā(i)-* "create, build": 2 sg. pret. *sa-am-na-a-es* KUB XXX 10 Rs. 12 (MH) = KUB XXXVI 75 II 15 (MH), 3 sg. *sa-am-na-it* KUB XXXIIII 106 III 33 (NH), ptcp. nom.-acc. sg. n. *sa-am-na-an* KBo III 19 Rs. 20 (OH+); it. *samnaisk-; samniya-* (*sammanya-*) id.: 3 pl. pret. act. *sa-am-ni-er* KUB VIII 57 I 4 (MH+), midd. 3 pl. imp. *sa-am-ma-ni-ya-an-ta-ru* KUB I 15 II 9 (Pre-NH), ptcp. acc. sg. c. *sa-am-ni-ya-an-ta-an* KUB VIII 57 I 3; stem [samān-], [samn-] < PA **sh₁món-*, **sh₁m̥n-* : Arm. *himn* < **seh₁-mn̥* : IE **seh₁-* "sow, plant". The *e*-grade root of an IE nominative singular **séh₁m-ō*, acc. **séh₁mon-m̥* is preserved in nom.-acc. sg. *si-im-ma-an-ta* "form, facial features" KBo I 44+ KBo XIII 1 IV 32 (NH, vocab.; on the dating see Neu, *Fs Neumann* 216) and in *sem(m)nā(i)-* "create", 3 pl. pres. *se-im-na-an-zi* KBo VIII 102 L. 8 (MH), *se-im-ma-na-an-zi* Bo 2599 I 19 (Neu, *loc. cit.*, from an old archetype). The denominative *samniya-* can be derived from **sh₁m̥n-*, weak stem of a holokinetic or amphikinetic paradigm. The plene writing of the suffix vowel in acc. pl. *sa-(a)-ma-a-nu-us* suggests that the zero-grade root was generalized in PA and the accent shifted to the suffix, i.e. acc. sg. ***séh₁mon-m̥* > **sh₁món-m̥* = [samānan] etc., cf. OH *ishimānes* "ropes" < PA **sh₂i-món-es* for **sh₂éi-mon-es* (7.3.1.1.). If the accusative plural *samenus* in KUB XXXI 112 has a generalized locative stem **sh₁-mén(i)*, then the original inflection was holokinetic, but the *e*-grade suffix could be analogical from the *kutruwēn*-type.

Etymology Laroche, *BSL* 58 (1963) 75–7; see also Neu, *Fs Neumann* 216 (who connects *samen-* "disappear, pass in review"), Oettinger, *Stammbildung* 366 n. 223 (who reconstructs proterokinetic **seh₁-mōn-*, gen. **sh₁-mén-s*), and Starke, *StBoT* 31, 416 (who reconstructs **sh₁-mén-/*sh₁-mn-*).

### 10.9.1.2. *$h_2$

*ispātar* "spit, skewer": nom.-acc. sg./pl. *is-pa-a-tar*, e.g. KUB VII 1 II 3 (Pre-NH), *is-pa-a-ta* KUB IX 28 I 15 (OH+), gen. *is-pa-an-na-as* KUB IX 35 Rs. 7 (U), inst. *is-pa-an-nit-it* KUB VII 1 II 4, KUB XXXI + KBo III 16 II 7, 13 (OH+), abl. *is-pa-an-na-za* KUB XXIV 13 II 31 (MH+) = [spātar], [spānn-] (?). Puhvel, *HED* 2, 450–1, suggests that *ispatar* is from **sph₁-tr̥* beside **speh₁y-* in e.g. OE *spitu* "spit", Lith. *spitnà*, *spitulė* "buckle-pin" and has vocalized **h₁*. Attractive as this etymology is semantically, it probably will not work, since there is no evidence for an unextended **speh₁-* with the right meaning. *ispātar* may, however, belong with the family of Gk. σπάθη "spatula, blade", σφήν (PGk. **σπᾱν*), OE *spadu* "spade" (Gmc. **spadōn-*) and OE *spōn*, OHG *spān*, ON *spánn* "wood chip, shingle" (Gmc. **spēnu-*), which seem originally to have referred to long pieces of wood used as tools. The lengthened-grade of Gmc. **spēnu-* < **spēh₂nu-* beside **speh₂-* in PGk. **σπᾱν* and **sph₂-* in σπάθη, *spadu* etc. should confirm the internal laryngeal. Hittite *ispātar* may be a heteroclitic noun from the root with dental extension seen in σπάθη. An *e-* or *o*-grade **spéh₂dh-r̥* or **spóh₂dh-r̥* would be expected in the nominative-accusative singular. The oblique stem *ispann-* does not have plene writing, and it could continue the expected **sph₂dh-n-*, but it is poorly attested, and there is no guarantee that its vowel is the reflex of a vocalized laryngeal.

*sāgāi-* "omen" (nom. sg. *sa-ga-i-is*, OH, *sa-ga-a-is*, MH, acc. sg. *sa-a-ga-a-in*, OH+; cf. also *sākiya-* "make known, 3 sg. pres. *sa-a-ki-ya-az-zi* KBo XVI 97 III, NH) has been cited by Eichner (*MSS* 31, *Laryngaltheorie* 137), Oettinger (*Stammbildung* 345, 413 n. 34) and Beekes as an example of a word with vocalized **h₂* and derived from **sh₂gōi-* : **sch₂g-*, **sh₂g-* in Lat. *sāgiō*, *sāgus*, *sāgax*, Goth. *sōkjan* "to seek", O.Ir. *sagim*. The word *sāklāi-* "rite, custom" (nom. sg. *sa-(a)-ak-la-(a)-is* : Lat. *sacer*, Osc. σακορο, Umb. *sakra* (Ital. **sākro-*), Lat. *sacrem (porcum)*, Osc. *sakrim*, Umb. *sakre* (Ital. **sākri*)) provides a parallel case. The alternation between **ā* : **a* in cognates of both words could come from IE **ā* : **a* or from **eh₂* : **h₂*. If one or the other or both of these words did have internal **h₂*, then it is possible that they continue forms with zero-grade roots. At least one other archaic-looking and fairly isolated noun in *-āi-*, *zashāi-* "dream" < **dhh₁-sh₂o-*, does have a zero-grade root, although it is probably ultimately derived from a thematic noun. However, there is good evidence for an IE *e*-grade nominative-accusative singular in nouns of this type (Weitenberg, *Heth. u. Idg.* 289), and **séh₂g-ōi* and **séh₂kl-ōi* cannot be excluded.

It is not at all clear that *sākk-/sekk-* "know" is related to *sāgāi-*. It does not show the regular treatment of **Vh₂g*, cf. *wāki* "bites" < **woh₂g-* {10.5.2.3.}.

For *paltana/i-* "shoulder" the spelling is unrevealing. *pal-ta-n°* could represent [paltnV-] or, with vocalization, [paltanV-] from **pl̥th₂-no-*, a substantivized adjective in **-no-*, i.e. "something wide or broad", cf. O.Ir. *lethan* "wide", Arm. *lain* id. Alternatively, the spelling could represent [paltanV-] from **pl̥th₂-e/ono-*, a derivative in **-eno-* or **-ono-* (Oettinger, *Stammbildung* 372 n. 235, 548 w. refs.), cf. **pleth₂-yeh₂-* in O.Ir. *leith* "shoulder", **pleth₂-yo-* in OCS *plešte* "shoulder", **pl̥th₂-eh₂-* in Gk. ὠμοπλάτη "shoulder blade".

### 10.9.1.3. *$h_3$

A couple of examples of vocalization of **h₃* to /a/ have been cited, but none is very convincing.

Oettinger, *Stammbildung* 208–9, analyzes *mazz-* "withstand, resist" (spelled *ma-az-(z°)*; see *CHD* 3, 213–4) as [mat$^{s}$t-], generalized from **maD-t-*, weak stem of a root aorist **mh₃d-*, comparing Arm. aorist *mateay* : *matcim* "approach" and Gmc. **mōto-* "meeting" (in OE *gemōt* etc.) < **meh₃d-*. The etymology, however, is not especially convincing semantically, and there is no guarantee that the Hittite word had a zero-grade.

Hitt. *istaman(a)-* "ear" and CLuv. *tūmman(t)-* id. (*CLuv. Lex.* 232–3 w. derivs.) are compared by Oettinger, *Stammbildung* 196, *Fs Neumann* 235 and *Gds Kronasser* 173, with Greek στόμα "mouth" and Avestan *staman-* "mouth (of a dog)" and derived from **stem-n-* or from **sth₃m(e)n-* (see also Starke, *StBoT* 31, 135,

who derives *tūmant-* and στόμα from **sth₃-mn̥-t-*). The etymology works semantically if the original meaning was something like "opening", "hole", or "bodily oriface", but, while στόμα could have **h₃*, the Avestan word ought to rule a laryngeal out.

### 10.9.1.4. Laryngeal unclear

The word for "wool" (dat.-loc. sg. *hu-u-la-ʃni* KBo III 8 III 8 (Pre-NH), also SÍG-*la-n°* and CLuv. SÍG-*la-ni-is*) is highly problematic. If *hulana-* is related to Sanskrit *ūrṇā-*, Lat. *lāna*, OCS *vlъ̄na*, Serb. *vùna*, Lith. *vilna*, Goth. *wulla* etc., but not to Greek λῆνος "wollen fillet", which appears to have had PGk. **ē* (Peters, *Sprache* 33 (1987) 114–5), the IE words had both an initial and an internal laryngeal, i.e. **H₂/₃wl̥H-neh₂-*. *dalūki-* "long" < **dl̥h₁g-* suggests that **l̥h₁* became [alu], indicating that the internal laryngeal in the word for "wool" was **h₂* or **h₃*. Since the scribes could have indicated a pronunciation [hulna-] unambiguously as *hul-na-* or *hu-ul-na-* if they had wanted to, it is possible that the spelling with LA indicates vocalization of the medial laryngeal, i.e. [hulana-].

For the reconstruction cf. Peters, *Sprache* (1987) 114–15, Beekes, *Laryngaltheorie* 82, who reconstructs **H₂₃ulh₁ₓn-* (with reservations), and Oettinger, *Stammbildung* 264 who reconstructs **h₂ul̥h₂-nah₂-*.

## 10.9.2. Vocalization to /u/

There is some evidence for vocalization to /u/, but only in restricted contexts. The best examples occur after **l*, and where the laryngeal can be determined, it is **h₁*.

### 10.9.2.1. Likely examples

*dalūki-* "long": nom. pl. *ta-lu-ga-e-es* (OH), *da-lu-ga-es* (NH), acc. pl. *ta-lu-ga-ú-us* (OH), *ta-lu-ga-us* (MH), *da-lu-ga-us* (NH), nom.-acc. pl. n. *ta-lu-u-ga* KBo X 7 II 27, 31 (OH+), gen. pl. *ta-lu-ga-as* (MH), dat.-loc. pl. *ta-lu-ga-as* (OH), *da-lu-ga-u-wa-as* KUB XXVII 67 II 40 (NH) = [dalūg-] < **dl̥h₁gh-* : Skt. *dīrgha-* "long", Gk. δολιχός id.; for **h₁* cf. ἐνδελεχής "continual, constant" [5.3.2.].

The adjective **zaluki-* or **zaluga-*, "delayed" or "prolonged", implied by the derivatives *zaluganu-* "delay, retain" and *zalugēss-* "be prolonged", provides a parallel. Laroche, *RHA* 11 (1950) 41, first suggested a connection with Greek λήγω "I cease" and Latin *langueō* and *laxus*, deriving these words from a root **slēg-*, **slag-*. The root, however, can probably be reconstructed as **sleh₁-g-* : **sl̥h₁-g-* "be slow, slack, lax, lazy"; cf. **sleh₁-g-* > PGk. **(σ)ληγ- in e.g. λήγω, (λήξαντο Pi. P. 4.292), λῆξις "end", Hmc. ἄλληκτος "unceasing" beside **(σ)λωγ- (< **sloh₁g-*) in Epirote λωγάνιον "dewlap of oxen", λωγάς · πόρνη (Hesych) and **(σ)λεγ- (< **sl̥h₁g-*) in λέγαι δὲ γυναῖκες Archil. 179 (**(σ)λαγ- in λαγάσαι Gort. 1.5, "to release", λαγάσει ib. 1.9 would have to be secondary). An unextended **sleh₁-* "be slow" probably occurs in Gmc. **slēwa-* "slow" (OE *slāw*, OS *slēu*, OHG *slēo*, ON *slǣr*).

There is, by contrast, no evidence to support Oettinger's suggestion (*Stammbildung* 249 n. 23) that **zaluki-* is from **dl̥h₁gh-*, while *daluki-* is from **dolh₁gh-*, and the spelling of the



reflex of initial **s* before resonant with signs of the Z-series is paralleled by the spelling of *zama(n)kur* "beard" < **smokur* [11.8.2.1.].

*wallusk-* "praise": 1 sg. pres. *wa-al-lu-us-ke-mi* KUB XXIX 1 I 26 (OH+), 2 sg. *wa-al-lu-us-ke-si* KUB XIX 20 Rs. 12 (Supp.I?), 2 pl. imp. *wa-al-lu-us-ke-et-te-n°* KUB XXIII 77 L. 79 (MH); note also 3 sg. pret. midd. *wal-lu-ut-ta-at* KUB VLIII 99 L. 14 (U). These forms are related to forms from a stem *wall-* in *hi*-verb *walla-* "praise" (e.g. 1 sg. pres. *wa-al-la-ah-hi*, MH+, NH) in the *mi*-verb *wa(l)liya-* id. (e.g. 3 pl. pres. *wa-li-ya-an-zi*, NH, it. 3 sg. pres. *wa-al-li-is-ke-ez-zi*, NH, *wa-al-le-es-ke-ez-zi*, NH) to CLuv. *walli(ya)-* "lift" and HLuv. *wa/i-li-ya-* "exalt" (see Melchert, *CLuv. Lex.* 253) and to the adjective **walla/i-* "strong" in Hitt. *niwalla-* "innocent", CLuv. *niwalli-* id. and CLuv. *walliwalli-* "strong". The source seems to have been an IE **walH-* (**walh₁-*?) "be strong, rule" also in Lat. *valēre*, *validus*, O.Ir. *flaith*, *flaithem* "ruler" (< Celt. **wala-*), Toch. B *walo*, *lānt-* "king". If the iterative was formed within PA as **walh₁-sk-*, then it could show vocalization of **h₁* to /u/ after consonantal **l*. The geminate *ll* of *walla-* "praise" and **walla/i-* "strong" would be the regular reflex of **lh₁* [10.8.1.]. A laryngeal should have dropped without geminating a preceding **l* in **walH-ye/o-*. The variants in *wa-li-ya-* may have single /l/ by regular phonological development, while *walliya-* would have geminate /ll/ by analogy to *walla-*.

IE **walH-* would not be connected with **weldh-*, **woldh-* "hold political power" in Goth. *waldan* "to rule", OE *wealdan* id., OCS *vlasti* id., Lith. *veldu* "I rule."

### 10.9.2.2. Uncertain examples

*arūna-*, *āruna-* "sea": nom. sg. *a-ru-ú-ni* KUB XXXVI 41 I 13 (NH), *a-a-ru-na-as* KBo V 3 I 59 (Supp. I+), *a-ru-na-a-as* KUB XXXVI 25 IV 6 (NH), otherwise *a-ru-n°* < **HrHno-* : Skt. *īrṇa-* "stirred" (cf. also RV *árṇas-* "surging, billowing mass of water, flood, sea") is proposed by Puhvel, *Fs Whatmough* 231–37 = *AnIE* 33–9 and *EFL* 90 = *AnIE* 136. Semantically, the etymology seems plausible, but there are no other likely examples of vocalization to /u/ after **r*.

For additional references see *HED* 1, 71–3.

*kaluti-* "circle, group, community" and CLuv. **kalutta/i-* in *kaluttani(ya)-* "make the rounds of" (*CLuv. Lex.* 99) are derived from the equivalent of **kl̥h₃dhi-* : Gk. κλώθω "I spin", κλῶσις "spinning line, clue" by Puhvel, *Fs Whatmough* 235–6 = *AnIE* 37–8 and *EFL* 90 = *AnIE* 136. The Hittite and Luvian words might, however, be from **gleu-t-*, **gl-u-t-* beside **gleu-d-* "stick together" in e.g. Gmc. **klauta-* "lump, ball" in OE **clēat* (NE *cleat*), Du. *kloot* "ball", OHG *klōz* "clod, lump (NHG *Kloß* "dumpling"), Lith. *glaũsti* "cling, draw together", *gludnùs* "smooth", Lett. *gluds* id. Alternatively, they can be from the unextended root **gleu-* plus suffix **-ti-*, i.e. **gleu-ti-* > Hitt. **[gludi-]* with PA voicing.

The *u* of *tumēni*, 1 sg. pret. of *dā-* "take", is considered the vocalized reflex of **h₃* by Eichner, *Laryngaltheorie* 137 and Oettinger, *Stammbildung* 328, cf. also Sturtevant, *CGr*[1] 114–6, *CGr*[2] 44–5, who described this word as having IH **ɔw* > IH *um* > Hitt. *um*. It is more likely, however, that the *tumēni* reflects a PA Lindeman variant **dh₃-uwén* (Melchert, *SHHP* 25–7, and cf. Oettinger, *Stammbildung* 566 n. 12, who reconstructs 1 pl. pres. **duweni*).

## 10.10. Loss of *$h_2$

### 10.10.1. Loss between consonants

For loss within IE see **10.1.1.1.**

Loss of *$h_2$ occurred between dental stops in 2 sg. pres. midd. *hu-e-ez-ta* "drag, draw, pull" KUB XVII 10 IV 1, 2 (MH), 3 sg. pret. midd. *hu-e-ez-za-as-ta-ti* KUB XLIII 74 Vs.? 11 (OH+), 2 pl. pret./imp. (?) *hu-u-e-ez-za-at-ten* Bo 2702 I 27f (Oettinger, *Stammbildung* 517) = [hwētˢt ], [hwētˢta] etc. < *$h_2$wédh$_2$-th$_2$o, *$h_2$wédh$_2$-ten etc.; for the root-final laryngeal cf. *huēttiya-* "pull" < *$h_2$wédh$_2$-yo- {10.7.1.}.

The stem *tarsik-* in it. 2 pl. pres. *tar-si-ke-et-[te-n]i* KUB XXIII 72 Rs. 41 (MH) : *tarna-* "(let) loose" is ultimately from *$t_{\text{r}}$-ne-$h_2$- : *terh$_2$- in e.g. *tarh-* "overcome". The iterative may have been formed from *$t_{\text{r}}$n-sk- from the preconsonantal weak stem *$t_{\text{r}}$nh$_2$- with loss of *$h_2$; *$t_{\text{r}}$n-sk- would have become *tarsk- with loss of the nasal and vocalization of *$_{\text{r}}$, and this would have become [tarsik-] with anaptyxis as in *tarsi(k)k-* : *tar-* "say" {3.9.3}. Alternatively, the iterative was formed directly within PA as *$t_{\text{r}}$nh$_2$-sḱ- > *t(ə)rn-sḱ- > *tarsk- > [tarsik-] with anaptyxis between *r and *sC or as *$t_{\text{r}}$nh$_2$-sḱ- > *t(ə)rn-sḱ- > *tarnsik- with anaptyxis between nasal and *sC > [tarsik-] (cf. Oettinger, *Stammbildung* 311 n. 110, 323, Eichner, *MSS* 28, Kimball, *MSS* 53, (1992) 91).

Later *tar-na-as-k°* and *tar-ne/ni-is-k°* etc. are analogical.

GIŠ*palza(h)ha-, palzasha-* "base of a statue": nom. sg. *pal-za-ah-ha-as* KBo IV 1 II 8 (OH+), *pal-za-ah-ha-as* ib. II, 11, *pal-za-ha-as* KUB XII 63 I 6 (MH), *pal-za-ha-as* e.g. KBo XVIII 175a L. 2 (NH), KUB XLII 11 V 7, 9, dir. *pal-za-ah-ha* KBo IV 1 II 9 (OH+), *pal-za-as-ha* KUB XLII 35 L. 6, acc. pl. *pal-za-hu-us* StBoT 25, 54 II 14 = [paltsha-]. Oettinger, *Stammbildung* 372 n. 235, and Starke, *KZ* 93 (1979) 249, reconstruct *pe/olh$_2$-th$_2$-sh$_2$o from *pleth$_2$- "broad, wide" in e.g. in Skt. *prathas-* "breadth" < *$p_{\text{l}}$th$_2$- in Skt. *p$_{\text{r}}$thu-* "broad", Gk. πλατύς id. with loss of the first two laryngeals by dissimilation. Note, however, that the laryngeal would have been lost after the *o*-grade in *polh$_2$-th$_2$-sh$_2$o-. Alternatively *palza(s)h(h)a-* can simply be from *$p_{\text{l}}$th$_2$-sh$_2$o- : *pleth$_2$- or from a *$p_{\text{l}}$h$_2$d-sh$_2$o-, or *pe/olh$_2$d-sh$_2$o- from the variant root *pelh$_2$- "flat", which appears with a dental extension as *pelh$_2$-d- in MDu., MLG *vlot* "flat, shallow", Gmc. *flat-* in *flata-* "flat" (ON *flatr*, OS *flat*, OHG *flaz*), *flatja-* (n.) "levelled and raised ground floor of a dwelling" (> "dwelling") in ON *flet*, OE *flett*, OS *flet, fletti*, OHG *flazzi, flezzi*.

In two other words, loss is likely or possible, but the conditioning is unclear. In *innara-* "strength, force" and Luv. *annaru-* id. < *en-h$_2$nor-o- "having vitality within" loss of *$h_2$ is due either to its position between consonants (cf. Melchert, *SHHP* 104 n. 59) or to the following *o*-grade {10.1.1.2.}. *tanduki-* "mortal" (nom. sg. *ta-an-du-ki-is* KUB XXXI 1 + KBo III 16 II 9, OH+) and *tandukissna-* "mortality" (e.g. acc. *da-an-du-ki-is-na-an* KBo XII 89 III 18, MH, loc. *da-an-du-ki-is-ni* StBoT 25, 109 II 2, 5, 8, 11, 19, III 14, *ta-an-du-ki-is-ni* e.g. StBoT 25, 111 II 10, III 21) with stem [dantugi-](?) are derived by Oettinger, *Stammbildung* 550, from *dh$_{\text{n}}$h$_2$-tu- : Gk. θάνατος, Ονητός. If the root etymology is correct, however, an *o*-grade *dhonh$_2$-tu- > *dhon-tu- > *dantu- with loss of the laryngeal in an *o*-grade formation is also possible.



*dasuwant-* "blind": nom. sg. c. *ta-su-wa-an-za* KUB XII 62 Rs. 8 (U), *ta-as-wa-an-za* ib. Rs. 12; factitive *dasuwahh-* "blind, make blind": 3 pl. pres. *ta-su-wa-ah-ha-an-zi* KUB XIII 9 II 18 (MH+), ptcp. nom. pl. c. *ta-su-wa-ah-ha-an-za* ib. II 12, 14 are derived by Oettinger, *Stammbildung* 550 from *te/omh$_2$s-went- "having darkness", cf. Skt. *tamisrāḥ* "darkness", Lat. *tenebrae* id. Semantically, the etymology is plausible, and phonologically it is possible if loss of the laryngeal preceded reduction of preconsonantal *ms to /s/, but it is not certain that the laryngeal was *$h_2$. If *ānss-* "wipe" is from *amh$_1$s- {7.8.4.}, then loss of *$h_1$ apparently followed *msC > s, and *$h_1$ can be excluded.

Loss of *$h_2$ is unlikely in *palwā(i)-* (3 sg. pres. *pal-wa-a-iz-zi*, OH). Oettinger, *Stammbildung* 369–72, suggests that if the meaning is "clap", *palwā(i)-* can be a denominative to a *pálwa- "palm" < *$p_{\text{l}}$h$_2$-w-eh$_2$- : *pelh$_2$- "wide" (cf. e.g. Gk. παλάμη "palm"). But Badalì, *Orientalia* 59 (1990) 130–42, shows that the meaning is probably "recite", and Nowicki, ib. 239–42, suggests that *palwā(i)-* is likely to be a denominative from a noun *pel-weh$_2$- (or *pol-weh$_2$-) : *(s)pel-* "speak" in e.g. OE *spell* "story" {9.5.2.2.}. See also *CHD* P 80–3 on the meaning.

For *damass-, da(m)mess-* "press, oppress" Oettinger, *Stammbildung* 123–4, 550, reconstructs *d$_{\text{m}}$mh$_2$-s- > [d(a)mmas-] with epenthesis, and *demh$_2$-s- > [dammess-] with anaptyctic /e/. The later distribution of *e/a* in the attested paradigm would, according to Oettinger, be analogical to the *hi*-conjugation *a/e* type. He derives the related noun *dammishā-* "oppression, forcing" from *demh$_2$-sh$_2$o- > *damh$_2$sh$_2$a- > *damsha- > [dammesha-] also with epenthetic /e/. Van den Hout, *Gds Kerns* 305–19, however, derives the verb from an original desiderative with strong stem *dmh$_2$-es- and weak stem *d$_{\text{m}}$mh$_2$-s-. He explains the regular development of the strong stem as *dmh$_2$-es- > *damhas- (with vowel coloring and epenthesis in the first syllable) and the weak stem as *d$_{\text{m}}$mh$_2$-s- > *dams- > [damess-] with epenthetic /e/. Forms of the singular were, according to van den Hout, later remade as *damass-* without a laryngeal after the plural *damess-* and after *dammishā-*. Van den Hout's reconstruction of morphology is quite plausible, and more satisfying phonologically and morphologically than attempts to derive the verb from a sigmatic aorist *demh$_2$s- as in Gk. ἐδάμασα "tamed" (for *ἐδέμεσα). But the anaptyxis presupposed by van den Hout and Oettinger's derivations is not paralleled. The weak stem *d$_{\text{m}}$mh$_2$s- reconstructed by van den Hout should perhaps have become PA *dəmh$_2$s- (with vocalization of *$_{\text{m}}$) > *dəms- (with loss of *$h_2$). If the loss of the laryngeal took place in Hittite after the change of *mss to *nss*, then *dəms- might have become [damss-], which would have been spelled *da-ma-as-s°, ta-ma-as-s°* in OH and MH. If, as seems likely, the original distribution of strong and weak stems had been disrupted by analogy, then the stem [damss-] may be preserved in the MH third person singular present *ta-ma-a-as-zi* IBoT I 36 I 34, *ta-ma-as-zi* ib. I 43 = [damstsi]. The strong stem, which may originally have been *dmh$_2$es- with analogical /e/ as in *dammishā-* < *demh$_2$-esh$_2$ó- {10.8.8.}, would be preserved in the OH third person plural preterit *ta-me-es-se-er* KBo XXII 2 Rs. 12, perhaps = [damess-] with loss of laryngeal and analogical vowel in its first syllable after the weak stem. Like the weak stem, the strong stem was extended analogically as in e.g. it. 2 pl. pres. *ta-me-es-kat-te-ni* KBo XXII 2 Vs. 3 (OH), *da-me-es-kat-te-ni* ib. Rs. 19, supine *da-me-es-ke-wa-an* ib. Vs. 4. Presumably the spread of *damess-* would have been encouraged by the existence of other similar-looking verbs like *kalles-* "invite, call upon", *ganess-* "recognize" and the fientives in *-ess-*.

## 10.10.2. Loss by dissimilation

Loss of **h₂* by dissimilation has been suggested for several words. One type of evidence that supports this change is that *h ... h(h)* is fairly rare, occurring only in *huhha-* "grandfather" and in a few reduplicated forms such as *hahhars-* "laugh", *hah(ha)ra-* "rake", or *hahli(want-)* "yellow-green". However, in a few of the words for which dissimilation has been proposed, it is not clear whether loss was the result of dissimilation or some other conditioning factor. In others, it is not certain that **h₂* should be reconstructed.

For *walli-* "shorn" Oettinger, *Stammbildung* 264, reconstructs **h₂welh₂-i-*, comparing Lat. *vellere* "to pluck", and explains the loss of the first laryngeal by dissimilation. There is, however, no positive independent evidence for initial **h₂* in this root. In $^{GIŠ}$*palza(h)ha-*, *palzasha-* "base of a statue" = [paltsha-] < **pe/olh₂-th₂-sh₂o* from **pleth₂-* "broad, wide" (Oettinger, *Stammbildung* 372 n. 235, and Starke, *KZ* 93 (1979) 249), the laryngeal would have been lost after the *o*-grade in **polh₂-th₂-sh₂o*, it would probably have been lost between consonants anyway, or the preform can have been **pl̥th₂-sh₂o-* or **pl̥h₂d-sh₂o-*, **pe/olh₂d-sh₂o-* : **pelh₂-* "flat" {10.10.1.}. *hulana-* "wool" (Oettinger, *Stammbildung* 264) probably had a medial laryngeal (cf. e.g Skt. *ūrṇā-* and Lith. *vilna*), but it is not certain that it was **h₂*, and the spelling *hu-u-la-n°* could represent [hulana-] with vocalization {10.9.1.4.}. In *huliya-* "wind", reconstructed as **h₂ulh₂iyáh₂-* by Oettinger, *loc. cit.*, the medial laryngeal would have been lost before **y*. Melchert, *SHHP* 105 n. 62, reconstructs *huwallis* "pinecone" as **h₂welh₂-es-*, explaining the loss of the second laryngeal as the result of dissimilation. However, it is unlikely that the laryngeal could have both caused gemination and been lost by dissimilation.

Oettinger, *Stammbildung* 264, and Melchert, *SHHP* 16 w. n. 33, reconstruct **h₂welh₂-* > *walh-* in *walh-* "strike" beside **h₂wl̥h₂-* in *hulle/a-* "smash, quash, defeat". It is not, however, certain that these two verbs belong together despite their similarity in meaning; *walh-* can be from a root aorist **(e)wélh₃-t* : **(e)wl̥h₃-ént* : Gk. ἑάλων "I am caught" < **é-wl̥h₃-eh₁-n* {10.6.3}. The weak stem **h₂wl̥h₃-* should perhaps have become [hūl(l)-] with vocalization of **wl* to [ul] and compensatory lengthening of the vowel (cf. [ūrr-] "help" < **wr̥h₁-* {5.4.1.2.}), but spellings with *hu-u-ul-l°*, which would point to a long vowel, do not occur in early texts, and *hu-ú-ul-l°* is not found, suggesting that *hu-u-ul-l°* in this verb is the ligature HU-U {1.5.1.}.

Melchert, *SHHP* 99 w. n. 50, reconstructs *ishuwa-* "scatter" and *ishiya-* "bind" as reduplicated iteratives **h₂ish₂u-* and **h₂ish₂y-*. The latter would also be preserved in CLuv. *hishiya-* "bind". However, reduplication was highly productive in Luvian and does not guarantee that Hitt. *ishiya-* was reduplicated. Melchert himself offers alternative explanations for both verbs (n. 50).

For *ishiya-* as unreduplicated, see also Oettinger, *KZ* 99 (1986) 48.

*hamesha-*, *hameshant-* "spring" (*ha-me-es-h°* OH etc., *ha-mi-es-h°*, *ha-mi-is-h°*) is derived by Starke, *KZ* 93 (1979) 249–50, from **h₂meh₂-sh₂o-* (root **h₂meh₂-* : Gk. ἀμάω "reap" + suff. **-sh₂o-*) > [hmēsha-] with loss of the second **h₂* by dissimilation. However, since **h₂* colored a contiguous **e* in IE, the root should have been realized phonetically as **[h₂mah₂-]*. This etymology, which goes back to Sturtevant, *Language* 4 (1928) 163–4 also suffers from serious uncertainties. Although Gk. ἀμάω "to reap" (Hes., *Works* 392) and Dor. ἀμᾱτήϱ "reaper" (dat. pl. ἀμᾱτήϱεσσι Theocr. 7.29) point to IE **h₂meh₂-* **[h₂mah₂-]*, Germanic cognates (e.g. OHG *māen* "to mow", OE *māwan* id., OHG *mād* "mowing", OE *mād* id. < Gmc. **mē-*, **mē-þo-*) suggest a parallel **h₂meh₁-*, while Lat. *metere* "mow" should be from **h₂me-t-*. It is possible, if the root etymology is correct, that *hamesha-* continues either **h₂meh₁-sh₂o-* or **h₂me-sh₂o-*. The etymology also presupposes that reaping was done in the spring. Hoffner, *Alimenta* 15–16, however, notes that grain was not harvested in spring, while Puhvel (*HED* 4, 74), who is skeptical of the etymology, note that grass mowing and plant plucking would have been springtime activities on the Anatolian plateau. If Melchert (*HS* 101 (1988) 212 n. 30) is correct in seeing *ānss-* "wipe" (IE **amh₁s-*) as the cognate of the Greek, Latin and Germanic words, then there is no basis for reconstructing medial **h₂* {7.8.4.}



Beekes, *Development* 43 reconstructs **h₂meh₁-*, **h₂emh₁-* for Gk. ἀμάω, and Peters, *Unters.* 16, 91 n. 41 reconstructs **h₂meh₁-*; but it is difficult to explain the ᾱ of epic ἀμάω as a reflex of **h₁*.

## 10.10.3. Dissimilation of *h .. h* to *h .. k*

A sequence *h ... h* dissimilated to *h ... k* in nom. sg. *ha-mi-es-kan-zi* (sic) "spring" KUB XXXVIII 26 Rs 19 (NH), *ha-mi-is-kan-za* ib. Rs 1 for *ha-mi-e/is-ha-an-za*.

## 10.11. Final

Laryngeals, including **h₂*, were lost in absolute final position.

### 10.11.1. **h₁*

$^{GIŠ}$*ēlzi* "scale(s)" (*e-el-zi*, OH etc.) and $^{UZU}$*dānhasti* (*da-a-an-ha-as-ti*), perhaps with final [-ī] (?) or [-i] from neut. dual **-i-h₁*.

For the derivation of *-i* see Oettinger, *Stammbildung* 547 n. 7, Puhvel, *HED* 270 and Starke, *StBoT* 31, 29, 123. As Oettinger and Starke note, the pl. ending *-i* of neuter *r*-and *l*-stems, e.g. *halhaltūmari* "corners", may have originated in the dual ending.

Negative particle *le-e* = [lē] (OH etc.), perhaps from imperative **leh₁* "let go!" (Oettinger, *Stammbildung* 543).

### 10.11.2. **h₂*

Final **h₂* was lost both after vowels and after consonants.

*sākuwa* "eyes" (nom-acc. *sa-(a)-ku-wa*, OH etc.) = [sāg$^{w}$a] < neut. pl. **s + h₃ók$^{w}$-eh₂* : **h₃ek$^{w}$-* in e.g. Gk. du. ὄσσε or from **sók$^{w}$-eh₂* : **sek$^{w}$-* in e.g. Gk. ἕπομαι "I follow", Goth. *saihvan* "to see" {6.4.4.1.}. The etymology is in dispute, but the derivation of the final *-a* from the neuter collective-plural in **-eh₂* seems clear (Oettinger, *Stammbildung* 395).

The consonant stem neuter plural ending *-a* is from **-$eh_2$*. Similarly, the neuter nominative-accusative plurals of *u*- and *i*-stem nouns (e.g. *a-as-su-u* (OH, MH, OH+) : *āssu* "good", *ú-e-el-lu(-)* (OH, OH+) : *wēllus* "meadow", *me-ek-ki* (OH) : *mekki-* "numerous") have a suffix [-ū] from **-u-$h_2$* and [-ī] from **-i-$h_2$* (Watkins, *Gds Kronasser* 250–62, Neu, *Lok.* 48 n. 113).

Weitenberg, *u*-Stämme 313, 370, suggests that the ending *-(u)wa* of Post-OH texts is analogical from consonant stems.

In nom.-acc. sg. neut. *mēk* "big" *(fm)e-e-ek* StBoT 25, 23 Rs 6) = [mēg] or [mēk] beside **mégh$_2$-i* in *mekki* "numerous", the loss of the laryngeal apparently permitted lengthening of the **é* {1.3.3.4.}.

The first person plural middle ending *-wasta* = [-wasta] can be derived from PA **-wasd* (with anaptyxis {3.9.1.}) from **-wosdh$_2$* = *[-wozdh$_2$]. The loss of the final laryngeal in *mēk* suggests that the final /a/ here is the result of PA anaptyxis rather than vocalization of the laryngeal (for the reconstruction cf. Eichner, *Fl. u. Wb.* 93, and Oettinger, *Stammbildung* 521).

A root or stem final *ḫ* < **h$_2$* is restored analogically in second person singular imperatives of verbs with stems ending in *-ḫ(ḫ)*, e.g. *ma-a-ni-ya-ah* : *māniyahh-* "distribute"; *za-a-ah* : *zāhh-* "fight". The origin of the final *-ḫ* in *isgārih* (OH *is-ka-a-ri-ih*), *isgāruh, iskāruh, isqārih* (*is-ka-(a)-ru-uh, is-qa-(a)-ri-ih*), name of a ritual vessel, a word reminiscent of *iskār-* "stab, stick, pierce", is not clear.

For various explanations see Puhvel, *HED* 2, 419–20 (loanword), Tischler, *HEG* 2, 400, Eichner, *MSS* 31 (1973) 89 n. 26 (*-ḫ* is analogical) and Oettinger, *Stammbildung* 547 (**-rh$_2$#* > [rVh] with anaptyxis).

The pronominal nominative-accusative plural ending *-e* (e.g. in rel.-int. *ku-e-*) can continue either an IE dual ending **-éih$_1$* or a plural ending **-éih$_2$* {4.2.1}.

### 10.11.3. **h$_3$*

A likely example is perhaps the second person singular imperative *da-a* = [dā] < **déh$_3$* : *dā-* "take" (Melchert, *Sprache* 33 (1987) 28).

# Chapter Eleven

# Sibilants

## 11.1. System inherited from IE

### 11.1.1. IE */s/

IE had a single alveolar or dental fricative phoneme **s* that was realized as voiced *[z] before voiced sounds (e.g. Skt. *nīdaḥ* "nest", Lat. *nīdus* id., OE *nest* id. < IE *[nizdos] = */nisdos/; Gk. ὄζος "branch", Goth. *asts* id., Hitt. *hasduwēr* "branch(es), brush" < IE *[h$_2$ozd-] = */h$_2$osd-/) and as voiceless *[s] elsewhere (Mayrhofer, *Idg. Gr.* I/2, 118–9). Reflexes of both sounds are usually written with signs of the Š-series, but the Hittite sound was dental or alveolar {1.15.1.1.}.

### 11.1.2. *s* mobile

Mayrhofer, *Idg. Gr.* I/2, 119–20; Sturtevant, *CGr*$^2$ 66.

Initial *s* plus stop is sometimes found beside initial stop in cognates or in related words within a single language, e.g. Ved. *spaśyati* "sees", *paśyati* id., Lat. *specere* "to see" (IE **(s)pek̑-* "see") or Gk. στέγος, τέγος "roof", Lat. *toga* (IE **(s)teg-* "cover"). A Hittite initial stop corresponds to initial *s* plus stop or to initial stop in Hittite or other IE languages in: *tiya-* "step, take one's place" < **th$_2$yé/ó* : **steh$_2$-* "stand" in Skt. aor. *asthāt*, Dor. ἔσταν, Lat. *stāre* "to stand", Hitt. *istantā(i)-* "tarry, delay" and *istanāna-* "altar" {11.3.2.2 }; *tītha-* "thunder" < **tí-th$_2$-o-* : **(s)ten-* in Gk. στένω "I thunder", OE *stenan*, Ved. *tanati* "thunders", Aeol. τέννει id., Lat. *tonāre* "to thunder" {2.4.4.1.}; *tāyē/a-* "steal" : **(s)teh$_2$i-* in Skt. *stāyu-*, *tāyu-* "thief", *steyam* "theft", Gk. τηύσιος "guilty", τηταόμαι "I lack", OCS *tajiti* "to steal", *tatĭ* "thief" {9.3.1.3.}. Within Hittite, note *iskār-* "stab, stick, pierce" beside *kars-* "cut" and *kartā(i)-* "cut off" < IE **(s)ker-*.

## 11.2. IE to PA and Pre-Hittite

### 11.2.1. Luvian reduction of initial **s* plus stop

IE initial clusters of **s* plus stop were retained into PA, but the Luvian languages show evidence for loss of **s* in: *"par(r)iy-* "smear, coat" (in Hitt. context) : Hitt. *ispar(r)-*, *isparriya-* "strew, spread" (*HED* 2, 444–5 and *CLuv. Lex.* 168 w. refs.);

CLuv. *parzassa-*, epithet of an arrow, from an *i*-stem adjective **parzi-* < **sp̥rdh-ti-* : Hitt. *ispart-* "escape" (Oettinger, *Stammbildung* 417 w. n. 46, *CLuv. Lex.* 171); CLuv. *tāīn* "oil, fat" < **stoh₂y-en-* or **steh₂y-en-* (with loss of **h₂* before **y* {10.5.5.}) from an *r/n*-stem **steh₂-r̥* "solid fat" : **steh₂-* "be thick" in Gk. στέαρ "solid fat, tallow" (Morpurgo Davies, *Gds Cowgill* 221, Starke, *StBoT* 31 239–42, *CLuv. Lex.* 201); CLuv. *tū(m)mānt-* "ear", *tūmma(n)ti(ya)-* "hear" : Hitt. *istaman(a)-* "ear" < **steh₃m-*(?) {10.9.1.3.} (Puhvel, *HED* 2, 459–60, Starke, *StBoT* 31, 133–5, *CLuv. Lex.* 233, cf. Melchert, *AHP* 271); *"dusduma/i-* "manifest, voucher" (in Hitt. contexts), and **dusdussa-* "make known", which can be from a reduplicated stem **tu-stu-* : Hitt. *isduwā-* "make known" (Puhvel, HED 2, 484 w. refs., Starke, *StBoT* 31, 268–9, *CLuv. Lex.* 237); HLuv. *tapa-* "wall off" : Hitt. *istapp-* "stop up" (Melchert, *AHP* 271).

Two other words with a Luvian stop that corresponds to a Hittite sequence of *s* plus stop come from roots with *s* mobile: CLuv. *ta-* "step", HLuv. *ta-* id., it. *taza-*, caus. *tanu-* "set up, erect, establish" < IE **(s)teh₂-* "stand", cf. Hitt. *tiya-* "step" < **th₂yé/ó-* {10.5.5.}; CLuv. *dūpi-*, *dūpai-* "strike" (*CLuv. Lex.* 235), HLuv. *tupa/i-* id., Lyc. *tub(e)i-* id. < **(s)teup-*, cf. e.g. Gk. τύπτω "I strike", στυπός "club", Lat. *stupēre* "be stunned" (Oettinger, *Stammbildung* 508).

Lyc. *stta-* "stand, remain" (*Lyc. Lex.* 57) can be a loanword from Greek (Morpurgo Davies, *Gds Cowgill* 211–20).

### 11.2.2. PA *s and **ss

#### 11.2.2.1. Medial *s and **ss

In medial position **s* apparently underwent split, becoming a sound written with geminate °S-S° before and after liquids and nasals (Melchert, *AHP* 150–2) and before accented vowels, but becoming a sound written with single °Š° after reflexes of inherited long vowels and diphthongs, after short accented vowels and in unaccented syllables. It is not clear whether the spellings °Š° : °Š-Š° reflect a voicing distinction /z/ : /s/, or whether these spellings reflect an opposition between short and long consonants or between lenis and fortis consonants.

#### 11.2.2.2. Gemination of *s before resonants

Gemination of **s* before resonants is PA. Note especially CLuv. *īs(sa)ra/i-* "hand" (*CLuv. Lex.* 95) beside Hitt. *ki-is-sa-r°*, *ki-is-sar°*, *ki-is-r°* id., reflecting PA **yessr-*. In Hieroglyphic Luvian and Lycian PA **ssr* developed an epenthetic dental stop, cf. HLuv. *istri-* "hand" and Lyc. *izre/i-* id. (Melchert, *SHHP* 106, *AHP* 272, 314–5, Starke, *StBoT* 31, 384 n. 1394).

#### 11.2.2.3. Gemination of *s after resonants

Luvian seems at least in part to have shared gemination of **s* after resonants with Hittite, suggesting that this change was also PA. Note e.g. 3 pl. pret. *"am-ma-as-sa-an-da* "they wipe" KUB XII 26 II 8 (NH) < PA **amss-* < **ams-* : Hitt. *āns-* "wipe" (spelled *(a)-an-s°*, *a-an-as-*) = [ānss-] (Melchert, *HS* 101 (1988) 211–12). Similarly, with gemination after **r*, note CLuv. *karss-* "cut" in e.g. 1 pl. pres. *kar-as-su-u-ni*



(Starke, *StBoT* 31 456, Melchert, *CLuv. Lex.* 9) beside *kar-s°*. After **l*, however, PA geminate **ss* may have been voiced to /z/ in Luvian, note CLuv. *gulza(i)-* "scratch, engrave, write, draw", *gulza(t)tar* "(wooden) writing tablet", "rough draft", $^{D}$*Gulza-* "fate (goddess)", and **gulza-* "sign, mark" in gen. adj. *gulzassa-* : Hitt. *gul-(as)-s°* "scratch, write, engrave", $^{D}$*Gul-sa-* "fate goddess" < **k*$^{w}$*l̥s-* {5.4.2.}. The Luvian case ending *-sa* is written *-za* in *l*-stems, e.g. *ādduwālza* (*CLuv. Lex.* 42) "evil", *hantilza* "first" (ib.52), or *parsulza* "gruel" (ib. 170). Cuneiform Luvian has *-sa* in *āsharsa* "blood" (*CLuv. Lex.* 35), but *-za* in *zārza* "heart" (?) (*CLuv. Lex.* 280). Since **rs* is otherwise spelled °R-(VŠ)-Š° (cf. *kar-(as)-* "cut"), the spelling with °Z° in the latter word may indicate assmilation to the initial *z*. Palaic may also show a tendency to voice **s* after resonants, e.g. *Gulzanikes* "Fate deities", *ma-ar-za* (a plant name?), *su-wa-a-sa-la-a-an-za* (meaning unknown) (Carruba, *StBoT* 10, 40).

## 11.3. Initial *s

### 11.3.1. *s plus vowel

IE initial **s* normally became /s/. For °Z° = /z/? from IE initial **s* see 11.8.

*sēs-* "sleep" (e.g. 3 sg. pres. *sēszi*, 3 pl. *sasanzi*) = [sēstsi], [sasantsi] etc. : IE **ses-* "sleep", 3 sg. pres. **sés-ti* = Skt. *sásti* "sleeps"; *sāru* "booty" (*sa-a-ru*, NH) < **sóru* {2.4.1.}; *sāktā(i)-* "take care of a sick person" (3 sg. pres. *sa-a-ak-ta-a-iz-zi*, OH, MH), denominative from a **sākta-* "sickness" < **sókto-* : O.Ir. *socht* "stupor" {2.4.1.}; *sipta-miya-*, a drink, also written VII-*miya-*, implies **siptan* "seven" < IE **septm̥* : Skt. *saptá*, "seven", Gk. ἑπτά id., Lat. *septem* id.

*salpa/i-* "dog excrement": nom. sg. *sal-pi-is* KBo I 45 I 10 (NH vocab.), *sal-pa-as* KUB XXIV 14 I 23 (NH), acc. sg. *sal-pa-an* ib. I 4, dup. KUB XXIV 15 I 22 (NH) = [salbi/a-] < **salbhi-* : Arm. *alb* "excrement" (*i*-stem) or **salbh-eh₂-* : OE *salb*, *sealf* "salve", OHG, OS *salba* id., ultimately from IE **sal-* "dirty, grey" (Schindler, *Sprache* 24 (1978) 45 and Oettinger, *Stammbildung* 365).

*supp-* "sleep": 3 sg. pres. midd. *su-up-pa-ri* KUB XXXII 190 Vs. 6 (U), *su-up-ta-a-r[i]* KUB IV 47 I 3 (OH+), *su-up-ta*$^{!}$*-ri* KBo V 4 Rs. 38 (NH) = [supāri], [suptāri] < midd. **sup-ó-(ri)*, **sup-tó-(ri)* : **sup-*, zero-grade of **swep-* "sleep", cf. e.g. Skt. ptcp. *suptáḥ* "sleeping, asleep".

### 11.3.2. *s plus stop

The reflex of initial **s* plus stop is usually written IŠ-P°, IŠ-T°, IŠ-K°, and these are probably to be interpreted as [sp], [st] and [sk] {1.15.3.}. Variant spellings with ŠV-P° are found for **sp* and perhaps for **sk*.

#### 11.3.2.1. *sp

*ispānt-*, *si(p)pānd-* "make a libation": 1 sg. pres. *is-pa-an-tah-hi* StBoT 25, 4 IV 6 = *is-pa-an-ta-ah-he* StBoT 25, 3 IV 10, 3 sg, *is-pa-a-an-ti* e.g. StBoT 25, 44 I 2, *is-pa-an-ti* e.g. StBoT 25, 21 Vs.? I 6 (2x), 7, *si-pa-a-an-ti* e.g. StBoT 25, 25 IV 23, StBoT 25,

77 Rs. III? 9 (and MH, OH+), *si-pa-an-ti* e.g. StBoT 25, 43 I 9 (and Post-OH), 3 pl. *i]s-pa-an-ta-an-zi* StBoT 25, 27 Vs.! 18, *s]i-pa-an-ta-an-zi* StBoT 25, 58 II 4, *si-pa-an-t[a-a]n-zi* ib. II 7 *s]i-pa-an-da-an-zi*? ib. Rs. 5 (and *si-pa-an-ta-an-zi*, *si-pa-an-da-an-zi* Post-OH), 3 pl. pret. *si-pa-an-te-er* KBo XV 10 II 31 (MH), it. 3 sg. pres. *is-pa-an-za-as-ke-e]z-zi* StBoT 25, 66 I 3, *is-pa-an-za-ke-zi* KBo XX 34 Rs. 6 (MH), spelling *si-ip-pa-an-t°* (OH+, NH) : = [spānd-], [spand-] < *$h_2$-present **spónd-h$_2$e* : weak stem **spend-* or **spn̥d-*, cf. Gk. σπένδω "make a libation" and Lat. *spondēre* "promise" < *"make a libation to seal a promise".

Examples, discussion *Stammbildung* 41–2, 116–19, *HED* 2, 436–41 (*ispānt-*), cf. also the derivatives *ispanduwa-* "libation vessel", *ispantuzzi-* "libation vessel, libation", *ispanduzziya-sar* "libation vessel", $^{LU}$*ispantuzziyala-* "libation bearer".

*ispāi-*, *ispiya-* "be satiated": 3 sg. pres. *is-pa-a-i* KUB XXXIII 11 II 11 (MH+), weak stem *is-pi-i-e-* (MH etc.), *is-pi-ya-* (MH etc.), *is-pi-iC-* (MH etc.) = [spāi], [spyē-], [spī-C] < perf. **spóh$_1$ge*, **sph$_1$-y-* : **speh$_1$-i-* "be prosperous, fat" in e.g. Skt. *sphāyate* (gramm.), "grows fat", OCS *spěti* "be successful", Lith. *spėti* id., Gmc. **spōjan* "thrive" (OE *spōwen*, OHG *spuoen*).

Examples *HED* 2, 429–31.

*ispāta(r)* "spit, skewer" (nom.-acc. sg. *is-pa-a-tar*, Pre-NH, sg.?/pl.? *is-pa-a-ta* KUB IX 28 I 15, OH+) = [spādar] < **spéh$_2$dh-r̥* : **sph$_2$dh-* in Gk. σπάθη "spatula" and OE *spada* "spade" {10.9.1.2.}.

*ispart-*, *isparz-*, *ispartiya-* "escape" (*is-par-t°/d°-*, MH etc., *is-par-z°*, OH etc.) = [spard-], [spartst-], [spardya-] : **sperdh-*, **spr̥dh-* in Arm. *sprdem* "I escape", Skt. *spardhate* "contends, rivals", aor. 3 pl. midd. *aspr̥dhran* {6.7.11}.

In two words, inherited **sp* is spelled ŠV-P°: *sapantalla-* "having to do with libations", nom.-acc. pl. *sa-pa-an-ta-al-la* KUB XXX 42 I 7 (NH) = [spantalla-] (?), beside *is-pa-(a)-an-t°* and *si-pa-(a)-an-t°/d°*, and *sepi(k)kusta-*, *sapi(k)kusta-* "pin, stylus": *sa-pi-ku-us-ta-* (MH etc.), *sa-a-pi-ku-us-ta-* (U), *se-pi-(k)ku-us-ta-* (MH etc.), *se-pi-ku-us-t°* (MH+), *si-pi-ik-ku-us-ta-* (MH?) = [spikusta-] (?) < **spik-us-to-* from an *s*-stem **spikus-* : **spe(i)k-*, **sp(e)ig-* {1.**15**.3.2.}.

### 11.3.2.2. **st*

*istantā(i)-* "delay, linger, procrastinate" (e.g. 3 sg. pres. *is-ta-an-ta-a-iz-zi* StBoT 25, 139 Rs. 8 and Post-OH) = [stantā(i)-], either denominative from the participle **stant-* "standing" < **sth$_2$ónt-* = *[sth$_2$ánt-] with Oettinger, *Stammbildung* 367, Melchert, *SHHP* 150, or from a nominal **sth$_2$n̥t-* > **sth$_2$ant-* > **stant-* (Puhvel, *HED* 2, 464–5). From the same root comes *istanāna-* "altar table": gen. sg. *is-ta-na-na-as* e.g. StBoT 25, 14 III 3, dat.-loc. sg. *is-ta-na-a-ni* e.g. KBo XV 33 II 13, 41, III 13 (MH), KBo XXI 34 + IBoT I 7 III 15 (MH?), loc. pl. *is-ta-na-na-as* e.g. StBoT 25, 36 III 6, 9 = [stanāna-] (see *HED* 2, 461–3).

*istar(ak)k(iya)-* "become sick, ail": e.g. 3 sg. pret. *is-tar-ak-ki-at* KBo XXXII 14 II 51 (MH), 3 sg. pres. *i]s-tar-ki-ya-az-zi* KBo V 4 Rs. 38 (NH), *is-tar-ak-ki-ya-zi* KBo XXI 21 III 4 (NH); *is-tar-ak-*: e.g. 3 sg. pret. *is-tar-ak-ta* KUB XIII 35 III 5 (NH); nasal verb *istarnink-* "make sick": e.g. 2 sg. pres. *is-tar-ni-ik-si* KBo III 28 II 16 (OH+), 3 sg. *is-tar-ni-ik-zi* KBo VI 2 I 16 (OH) = [stark-], [starniŋk-] < **ster-k-* : **ster-* "be stiff" plus velar extension, cf. **ster-g-* in Lith. *strėgti* "to stiffen, freeze", OE *stearc* "stiff, strong", OHG *stark* id. and **streng-* in e.g. Lat. *stringere* "draw tight" and M.Ir. *strengim* "I draw".



Examples and etymological discussion *PW* 716–8, *HED* 2, 475–7.

*isduwā-* "become known" (3 sg. pres. *is-du-wa-(a)-ri*, MH etc., *is-tu-wa-(a)-ri*, MH? etc.) = [stwāri] < **stw-ó-ri* : **steu-* in RV *stāve* "praises", *stavate* id., Gk. στεῦται "promises, threatens".

*istarna*, *istarni* "in the middle" (*is-tar-n*, OH etc.) = [starn-] < **stern-* or **storn-* : Gk. στέρνον "breast", Lat. *sternum* id., OCS *strana* "side" etc. (Kimball, *MSS* 53 (1992) 78).

### 11.3.2.3. **sk*

*iskallā-* "cut, slit, slice" (3 sg. pres. midd. *is-kal-la-a-ri*, MH, OH+) = [skallā-] < **skelH-ó-* : **skelH-* in e.g. Gk. σκάλλω "I hoe", Arm. *celk'em* "I split", Lith. *skėlti* "to split", *skilti* id. {10.8.9.}; *iskār-* "stab, stick, pierce, adhere" (3 sg. pres. *is-ka-a-ri*, OH etc., *is-ga-a-ri*, MH etc., *is-qa-a-ri*, MH etc.) = [skāri] < PA **skór-ei* : **sker-* "cut", cf. e.g. O.Ir. *scaraim* "I cut", Lith. *skìrti* "to separate", OE *sceran* "to shear". The alternative spelling ZA-AŠ-G° is found for *zasgarais* "anus" (lit. "excrement mouth") in nom. sg. *za-as-ga-ra-is*, dat.-loc. sg. *za-as-ga-ri-is-s°* KBo XVII 61 Rs. 14 (MH) = [skārāis] with [skār] < coll. **skṓr* = Gk. σκῶρ "excrement" plus *āis* "mouth, beside IŠ-G° in ablative singular *is-ga-su*$^{!}$*-u-wa-an-ta-za* KUB XXVI 32 I 8 (NH) "dung-filled" = [skaswantaʦ] < oblique stem **skan-* < **skn̥-* plus *sūwant-*, participle of *sūwa-* "fill".

## 11.3.3. **s* plus continuant

The normal spelling for **s* plus liquid or nasal is with a dead vowel SVR°. Sporadic spellings for **sl* and **sm* with ZV-L° and ZV-M° suggest a tendency toward voicing assimilation. There are no certain examples of **sn*. *sanh-* "cleanse, rinse, flush" : Skt. *snāti* "bathes" is from zero-grade **sn̥h$_2$-* {5.2., 5.3.4.}.

### 11.3.3.1. **sl*

**sl* is perhaps spelled *sa-l* in *sālīg-* "approach, come into contact with, accost, molest" (3 sg. pres. mid. *sa-li-i-ga* StBoT 25, 42 II 17 = *sa-li-ga* StBoT 25, 43 I 150), if this verb can be read as [slīga] < **sléigo* : **sleig-* "be slimy, be smooth, stick, adhere". Several examples, however, have plene writing of the first vowel, which makes the assumption of a dead vowel problematic {4.3.1.2.}.

A treatment **sl* > [sul] with anaptyxis is suggested for *suli-* "lead" (e.g. OH gen. sg. *su-li-i-as* StBoT 25, 4 IV 32) < **sl(e)i-* by Neumann, *Fs Friedrich* 347–8. Oettinger, *MSS* 35 (1976) 95, points out that this is not a phonologically regular development.

### 11.3.3.2. **sm*

Both ŠV-M° and ZV-M° are certain as spellings for the reflex of **sm*. A development **sm* > [sum] with epenthetic /u/ has been proposed for one word, but the conditioning behind it is obscure.

**sm* shows up as [sm] in *samen-/semen-* "pass in review, disappear, withdraw": 3 sg. pres. *sa-me-en-zi* StBoT 25, 19 Rs. 53, *se-me-en-zi* StBoT 25, 12 II 16, KUB XXIX 29 I 7 (OH), KBo XXI 8 I 3 (MH), *sa-me-in-zi* (NH), *se-me-in-zi* (NH), 3 sg. imp. *sa-me-en-du* KUB XI 1 IV 18 (OH+), *sa-me-ed-du* 394.d R. col. 3 (MSS 35, 99) = [smēn-], [smēnʦi], [smēntu] beside weak stem [samn-] < **sm̥n-* in 3 pl. pres. *sa-am-na-an-zi* StBoT 25, 19 Rs. 52. Oettinger, *MSS* 36 (1976) 97–103, compares Gk. μόνος, μοῦνος "alone", and Arm. *manr* "small".

Examples, discussion, Oettinger, loc. cit. and Stammbildung 21; see also Melchert, SHHP 88, 107, 130. For the meaning, see Singer, StBoT 27, 95 n. 21, and for the dead vowel *Ca-Ce-*, *Ce-Ce* = [CCe] {1.16.6.1.}.

A similar alternation *sa-me-/se-me-*, probably to be read as [sme-], also shows up in *samehuna-*, *semehuna-*, a food stuff (acc. sg. *sa-me-hu-na-an* StBoT 25, 54 III 4, 7, *se-me-hu-na-an* StBoT 25, 30 III 16, inst. *se-me-hu-ni-it* StBoT 25, 26 Rs.? IV 6), but no etymology is apparent.

See Oettinger, *MSS* 35 (1976) 102 n. 35, *Stammbildung* 104 n. 35, and *Gds Kronasser* 162. It is not clear whether gen.(?) *se-me-e-na-as* StBoT 25, 26 Rs.? IV 4 belongs here (Neu, *StBoT* 26 n. 462).

The reflex of **sm* is spelled ŠA-M° and ZA-M° in *zama(n)kur* "beard" beside *samankurwant-* "bearded" < **smok̑wr̥* {11.8.2.1.}. Inherited **sm* may be spelled IŠ-M° (= [sm]?) in *ismeri-* "bridle, rein" FHG 16 II 3 and *ismeriyant-* "bridled" if, as Čop, *Linguistica* 2 (1956) 37–9, suggests, these words belong with Gk. μέρμις "cord, rope", (σ)μήρινθος "line, string", μηρύομαι "furl", σμῆργγες · πλεκταί, σειραί (Hes.) and σμῆρία · κισσός "ivy", Χαλκιδεῖς (Hesych.) and can be derived from an IE **smer-*, but the etymology is far from certain.

Both Frisk, *GEW* II 211, and Chantraine, *Dict. ét.* 687, express doubts. See also Puhvel, *HED* 2, 428–9, who suggests an alternative comparison with Gk. ἰμονία "well rope", ἱμαντ- "strap" etc.

Neumann, *Fs Friedrich* 347–8, and Oettinger, *MSS* 35 (1976) 95 w. refs., suggest that initial **sm* developed to [sum] with anaptyctic [u] in the vicinity of a labial in *sumittant-* "axe" (acc. sg. *sum-mi-it-ta-an-ta-an* KUB VIII 51 II 4, NH) : **smeit-*, **smit-*, cf. e.g. Gk. σμίλη "cutting knife", σμινύνη, σμινός "hoe", Goth. *aiza-smiþa* "blacksmith", OE *smiþ* id. Hittite °T-T° = [t] points to a preceding short vowel and hence a zero-grade **smit-* {3.9.4.}.

### 11.3.3.3. **sy*

**sy* occurs in the demonstrative pronoun *siē-*: loc. *si-e-da-ni* (OH), *si-e-ta-ni* (MH), abl. *si-e-ez* = [syē-] < **syé-* : Ved. *sya-* "this" {9.5.1.1.}.

### 11.3.3.4. **sw*

There are no clear examples of inherited **sw*. Puhvel, *JAOS* 91 (1981) 213–214, analyzes *suwāru-* as "heavily, weighty, mighty" (adv. "heavily" etc.), comparing Lith. *svarùs* "heavy" (IE **swer-*). Citations such as *suwāru kuē* GAL$^{\text{III.A}}$ *akkuskanzi* "the vessels which they drink fully" KBo XVII 74 IV 33–34, 41–42, *suwāru mayanza* "fully grown" KUB XXX 10 Rs. 7 (KUB XXXI 127 I 11 with *su-wa-ru*) and *suwāru* TI-*tar* "full life" KUB XXI 38 Vs. 3, however, suggest that *suwāru-* ultimately belongs with *sū-* "fill" (IE **suh₁-*).

See also Weitenberg, *u*-Stämme 191–4 on the interpretation of this word.



## 11.3.4. **s* plus laryngeal

### 11.3.4.1. **sh₁*

Initial **sh₁* resulted in /s/ in the plural, participle, and iterative of *sīē-*, *sīya-* "press, seal, sting": 1 pl. pres. *si-ya-a-u-e-ni* KUB XXXI 79 L. 23 (MH), 3 sg. pret. *si-i-e-[et]* KUB XXXIII 10 Vs. 5, 2 sg. imp. *si-ya-a* KUB XXXIII 5 II 6 = *[s]i-i-ya* KUB XXXIII 9 II 4 (MH+), 3 pl. imp. *si-i-ya-an-du* KUB XXIX 1 IV 16 (OH+), ptcp. nom.-acc. sg. n. *si-ya-a-an* KUB XXXI 87 II 12 (MH), it. 2 sg. pres. *si-e-[es-ke-si* KBo III 1 + III 52 (OH+), 2 sg. imp. *si-i-e-es-ki* KBo III 67 III 9 (OH+) = *si-[i-es-ki* KBo III 1 + III 50, *si-i]-e-es-ki* ib. III 52 (NH also *siyaesk-*); note also stem *sīē-* in 3 sg. midd. pres. *si-i-e-et-ta-ri* KBo XXV 163 IV 6 (OH+) = [siyē/ă-] < **sh₁y-* : IE **seh₁i-* "press, sow seed". *hi*-conjugation singular forms may be as early as OH (note 3 sg. pres.(?) *sa-a-[i* StBoT 25, 65 Rs.? 5, *sa-a-i*, NH, 2 sg. pret. *si-is-ta* KBo III 34 I 23, OH+), which may continue **soh₁i-*, parallel to e.g. *ispāi-* "be satiated" < **spoh₁-i-*, cf. e.g. Lith. *sėti* "sow seed", OCS *sějati* id., Goth. *saian*, OE *sāwan* id. The *mi*-verb with stem *sīē-*, *sīyā-*, which is found from MH, may well be old, at least within Anatolian. The stem *sīyā-* may belong with either paradigm.

Examples, discussion Oettinger, *Stammbildung* 473–4, Kimball, *Gds Cowgill* 166–8. A *mi*-verb *sīyā(i)-* also shows up in texts written down in the NH period, e.g. 3 sg. pres. *si-i-ya-iz-zi* KUB XXIX 1 IV 5 (OH+), *si-ya-iz-zi* KUB II 3 II 53 (OH+).

### 11.3.4.2. **sh₂*

The reflex of **sh₂* is written IŠ° in *ishahru* "tear(s)": nom.-acc. sg./pl. *is-ha-ah-ru* e.g. KBo XV 10 I 6 (MH), KUB XXXIII 66 II 13 (MH?), KUB XXX 31 + XXXII 114 I 12, 54 (MH?), KBo XII 8 IV 32 (OH+), gen. *is-ha-ah-ru-wa-as* KUB XXXI 77 I 7 (NH), dat.-loc. *is-ha-ah-ru-ú-i* KBo XI 1 IV 45 (NH), abl. *is-ha-ah-ru-wa-az* KUB XXX 31 + XXXII 114 I 17, *is-ha-ah-ru-wa-za* KUB XXX 33 I 10 (MH+); probably [shahru], from *s* mobile plus **h₂ék̑ru* with assimilation **h ...k* > *h ...h* {6.8.1.}, cf. **h₂ék̑ru* in Ved. *áśru* "tear", Av. *asrū* id., Toch. A *ākär* id. (Eichner, *Heth. u. Idg.* 55 n. 42, Oettinger, *Stammbildung* 367 n. 224, 548).

Examples and etymological refs. *u*-Stämme 32–3, *HED* 2, 390–4, *HEG* 3, 337–8.

*ishimān-* "cord, line" (nom. sg. *is-hi-ma-a-as*, OH, obl. stem *is-hi-ma-a-n°*, OH) < **sh₂imṓ*, **sh₂imón-* for **sh₂éimō*, **sh₂éimon-* : **sh₂ei-* "bind" {7.3.1.1.}. The same root occurs in *ishāi-*, *ishiya-* "bind", although the morphology of this verb is far from certain. OH texts have only weak stem forms: ptcp. nom.-acc. sg. n. *iš-hi-ya-an* StBoT 25, 27 Rs.! 17, nom.-acc. pl. *is-hi-ya-an-da* StBoT 25, 3 IV 19, 20 = 4 IV 15, 16, it. 3 pl. pres. *is-hi-is-kan-[zi* StBoT 25, 54 III 5. *hi*-conjugation inflection may have been early, since unambiguous *hi*-conjugation forms occur in OH+ and MH+ texts: e.g. 3 sg. pres. *is-ha-a-i* KUB XIII 15 Rs. 4 (OH+), KBo X 45 II 12 (OH+), KUB XII 58 III 26 (MH+). However, *mi*-conjugation forms also occur in MH+ texts and in at least one

text that may be MH: 3 sg. pres. *is-hi-i-e-ez-zi* KUB XXXIII 67 I 5 (MH+), *is-hi-ya-zi* KBo XXI 34 I 58 (MH?/MH+?), cf. also 2 pl. imp. *is-hi-ya-at-ten* KBo X 45 II 8 from the *mi*-conjugation stem beside *ishāi* in II 12 and *is-ha-is-te[n* KBo XII 22 II. 11 (OH+), from the *hi*-conjugation stem. The stem *ishiya-* can continue **sh₂yé/ó-*, cf. Ved. *syáti* "binds" for at least a parallel formation, and see Puhvel, *HED* 2, 402–3, and Oettinger, *Stammbildung* 461, 611. Note, however, that since the **y* was clearly a root extension (cf. e. g Skt. *sināti* "binds" and *setár-* "binder"), Oettinger's reconstruction of a **-ye/o-* verb will not work. The relationship of *ishiya-* to the *hi-* and *mi*-conjugation stems is disputed (see HEG 3, 384–8 for extensive refs.). Oettinger and Puhvel compare *ishāi-* with the Indo-Iranian perfect in Ved. *siṣāya* "bound" and GAv. *hišhāiiā* id. (Oettinger as parallel replacements for an IE **se-soh₂-e*; Puhvel apparently as an inherited form), but the Indo-Iranian perfect may well be secondary (Cowgill, *PICL* 11 (1972) 567). Oettinger and Puhvel also compare *ishiya-* with the Sanskrit present *syáti* "binds", which is not impossible, but the comparison implies a thematic **sh₂y-é/ó-*.

Melchert, *SHHP* 99, reconstructs reduplicated **h₂i-sh₂y-*, comparing the CLuv. ptcp. *his-hiyant-* (*CLuv. Lex.* 46), but this derivation depends on dissimilatory loss of the initial **h₂*, a sound change that has not been confirmed (10.10.2.), and since reduplication was highly productive in Luvian, CLuv. *hishiyant-* does not guarantee the existence of a reduplicated verb in PA.

IE **sh₂ei-* "bind" also occurs in *ishamāi-* "song": acc. sg. c. *is-ha-ma-in* KUB XII 11 III 30 (Pre-NH), acc. pl. *is-ha-ma-[us]* KUB X 7 L. 14 (Pre-NH) and denom. *ishamāi-* "sing", e. g. 1 sg. pres. *is-ha-mi-ih-hi* KUB XXXIII 96 I 4 (NH), 3 pl. *is-ha-mi-ya-an-zi* KUB XX 28 IV 11, V 14, 25 (OH+), it. *is-ham-mi-is-k°* (OH etc.), *is-ha-ma-is-k°* (OH+), and *ishamātalla-* "singer": nom. pl. *is-ha-ma-tal-le-es* KUB XVII 21 II 11 (MH), *is-ha-ma-t[al-le]-es* ib. III 19, acc. pl. *is-ha-ma-tal-lu-us* KUB XXXI 124 II 17 (MH), *is-ha-ma-tal-<li>-lu-us* KUB XVII 21 III 5 = [shamāi-], perhaps reformation of a noun **ishama-* < **sh₂óm-o-* or **sh₂óm-eh₂-* : Gk. οἶμη "song", οἶμος id. (< **sh₂om-yéh₂-* with analogical μ).

Examples, refs., discussion *HEG* 3, 378–9, *HED* 2, 394–5, *Stammbildung* 465. The **sh₂oymo-* that Puhvel reconstructs should have become ***ishaima-*, ***ishaema-*, cf. $^{LU}$*gaena-* "son-in-law" < **ḱoino-* (4.4.2.).

### 11.3.4.3. *sh₃

It is likely that prevocalic **sh₃* resulted in /s/ in *sankuwāi-* "fingernail, toenail" (nom. sg. *sa-an-ku-wa-a-is*, MH, *sa-an-ku-wa-i-s°*, MH?) = [sangwāi-] < **s* mobile plus **h₃engʰ-u-* : **h₃engʰu-*, **h₃nǵʰ-* in Skt. *áṅghri-* "foot", Gk. ὄνυξ "nail, hoof", Lat. *unguis* id., OIr. *ingen*, OE *nægl*, Lith. *nãgas* (10.1.1.3.). Another example may be provided by *sākuwa-* "eyes" (*sa-(a)-ku-wa(-)*, OH etc.) if this is from **s* mobile plus **h₃ókʷ-eh₂-* (10.1.1.3., 6.4.4.1.).

## 11.4. Intervocalic *s

Bernabé, *REL* 3/2 (1973) 415–56 (passim); Čop, *Linguistica* 6 (1964) 37–76 (passim); Eichner, *MSS* 31 (1973) 100 n. 88, *Heth. u. Idg* 78–9, *Laryngaltheorie* 145, *Lautgesch. u. Etym.* 161–3; Kimball, *PW* 168, 341, 869–71, *Gds Cowgill* 176–7 w.n. 41; Kuryłowicz, *PICL* 8, 220; Melchert, *SHHP* 31–2 n. 64, 90 w. n. 24, *AHP* 150–2; Oettinger, *Stammbildung* 90–1 n. 16, 528 n. 22



Intervocalic **s* underwent split, becoming a sound written °Š-Š° in some environments and a sound written °Š° in others, but the conditioning behind this change is only partially understood, and the phonetic interpretation of the spellings is disputed. Most individual words regularly have °Š° or °Š-Š° with little variation (Eichner, *Lautgesch. u. Etym.*). In some cases, spellings with °Š° for otherwise normal °Š-Š° are clearly defective, e. g. ptcp. *ka-ni-sa-an-za* "recognized" KUB XLIII 8 II 11 (U, running over the right edge of the tablet ), for *ka-ni-is-s°*, (cf. Oettinger, *Stammbildung* 199), but there are also a few anomalous looking examples of °Š-Š° for otherwise regular °Š°. These seem to be confined to texts written down in the NH period, which raises the possibility of Luvian influence: e. g. *ēs-* "be": 1 sg. pret. *e-es-su-un* Bo 6251 Vs. 8 (*Stammbildung* 91 n. 16), 3 pl. *e-es-ser* KBo XIV 21 I 30 (U), KUB XVIII 24 III 5 (NH), KUB XVIII 67 Vs. 8 (NH), KUB XXIV 3 II 39 (MH+ = *e-se-er* in MH dupl. KUB XXIV 4 Vs. 26), *is-ser* KUB XXXIV 53 Rs. 11 (U); *sēs-* "sleep": 1 sg. pret. *se-e-es-su-un* Bo 6469 (*Stammbildung* 19 n. 16); *kīs-* "become": 3 sg. pres. *ki-is-sa-ri* KUB XXIV 5 + Rs 11 (NH), cf. dup. KUB XXXVI 94 L. 8 with *ki-sa-ri*, 3 sg. imp. *ki-is-sa-ru* 153/v L. 12 (StBoT 5, 93). A few paradigms or derivationally related sets exhibit an apparent morphophonemic alternation between °Š° and °Š-Š°. Typically, at least in early texts, single °Š° is associated with likely full-grades, occurring, for example, in singular and third person plural preterit forms of verbs and in nominative and accusative singular forms of nouns, while °Š-Š° occurs in third person plural presents and participles of athematic verbs, forms which in IE terms would have had zero-grade.

Clear examples show that **s* became single /s/ after inherited long accented vowels and between unaccented short vowels. The major difficulty is explaining /ss/. Some examples cited in previous discussions are the result of assimilation (e. g. *hāssa-*, *hassā-* "hearth" < **h₂éh₁s-* : **h₂eh₁s-Ý-* (10.3.2.1.), *hissa-* "axle" < **h₃ih₁s-éh₂-* or **h₃ih₁s-ó-*, cf. Eichner, *Etym. u. Lautgesch.*), and it is not certain that these should behave like inherited **s*. Doubling of **s* before accented vowels is proposed by Eichner (*MSS* 31, *Etym. u. Lautgesch.*) and Kimball (*PW* 870, *Gds Cowgill*), and seems to be supported by at least one example from a morphologically isolated word. Evidence for gemination used to delimit morpheme boundaries (Bernabé 448–9, Kuryłowicz, Kronasser 35, Melchert) is found in a tendency to spell the initial /s/ of enclitic pronouns and particles as °Š-Š°. There are significant differences of opinion over the treatment of **s* after short accented vowels. Čop, Eichner and Oettinger hold that the regular reflex is /ss/, while Kimball and Melchert claim that it is single /s/. For Bernabé single and double spellings are conditioned by syllabification, and secondary differences in vowel length; /s/ is regular after synchronic long vowel and /ss/ is regular after synchronic short vowel.

### 11.4.1. After short accented vowel

There are several putative examples of either treatment, and proponents of each view are obliged to explain several apparent exceptions as analogical or as reflecting something other than a sequence of short accented vowel followed by **s*.

### 11.4.1.1. Apparent examples of **V́sV > V̄ssV*

*ates-* "adze, axe": acc. sg. *a-te-es-sa-an* HT 1 I 20, 21 (MH?+) = *a-te-es-sa-na-as* KUB IX 31 I 27, (MH?+), *a-te-es-sa-an* ib. I 28, inst. *a-te-es-se-et* KUB XLI 8 I 3 (MH+), *ates-sit, atesset* (*HED*), abl. *atessaz* (*HED*), nom.-acc. pl. n. *a-ti-is-sa* HT 1 I 28 = KUB IX 31 I 35, acc. pl. c. *atessus* (*HED*) beside nom.-acc. sg. n. *a-te-es* KBo VI 26 I 14, 16 (OH+), *a-t[e-es* KUB XXIX 30 II 13, 14 (OH), KBo VI 26 I 1 (OH+) = [adess-] ([adēss-]?). The word is derived by Melchert, *SHHP* 90, 105, from an *s*-stem **adhés-*, originally adjectival **"that which cuts"; see also Čop, *Linguistica* 6 (1964) 76, who first compared Gmc. **adus-on-* (OE *adesa, adosa* "adze"). Note that **ádhes-* > [ādis-] is excluded by the *e*-vocalism of OH *ates*.

Examples *HEG* 1, 227–8, *HW*$^2$ 570.

Other examples are provided by forms of athematic verbs in root-final *s* with vowel initial endings.

*kiss-* "comb" (3 pl. pret. *ki-is-si-ir* KUB XII 26 II 6, NH) = [kēsser] < Pre-Hitt. **kés-ēr* : **kes-* (for the athematic stem note 3 sg. pres. *ki-is-zi* Bo 7568 L. 4; *Stammbildung*), cf. OCS *česati* "to comb" (Eichner, *Lautgesch. u. Etym.*, Oettinger, *Stammbildung* 210–2).

*less-* "gather": 3 pl. pres. *li-is-sa-an-zi* KBo II 8 III 1 (NH), KBo XV 25 Rs. 18 (MH?), midd. 3 sg. pres. *li-is-sa-ta-ri* KBo XIII 24 L. 6 (MH+) = [lēssantṣi], [lēssatari] < **lés-*, generalized strong stem of an IE athematic present **lés-ti* : **l̥s-énti* beside Gmc. thematic **les-a-* "gather" (> "read") in Goth. *-lisan*, ON *lesa*, OE *lesan*, OHG *lesan* etc., cf. also inf. *le-es-su-u-wa-an-zi* KUB XXX 15 + Vs. 1, 7, 17 (OH+), *[li-is]-su-u-wa-an-zi* KBo XIII 24 L. 8 (U) = [lēsswantṣi] (Oettinger 206).

Examples, etymological discussion *CHD* 3, 72, *Stammbildung* 206, *HEG* 5, 64.

*pess-* "rub" (3 pl. pret. *pi-is-si-ir* KUB XII 26 II 6, NH) = [pēsser] beside 3 sg. pres. *pe-es-zi* KUB VII 1 I 33 (Pre-NH), imp. *pe-es-du* ABot 56 III 17 (NH) is derived by Oettinger, *Stammbildung* 94, 327, from a **pes-* "rub" (cf. Lith. *pìsti* "futuere"). The zero-grade **ps-* is preserved in *iskē/a-* "smear, annoint" < **ps-sḱ-* {11.7.}. Starke, *StBoT* 31, 484, and Melchert, *CLuv. Lex.* 172, connect CLuv. *pāsihā(i)-* "pulverize". The stem of the Luvian verb, cannot, however, have had *e*-grade **pés-*, since this would have become **pass-*.

*kuwass-, kuss-* "kiss": 3 pl. pres. act. *ku-wa-as-sa-an-zi* KUB XX 88 I 2 (OH+), KUB XXXIV 128 II 3 (OH+), midd. *ku-(wa)-as-sa-an-ta-r[i* Bo 8306 Rs. 1 (*Stammbildung* 206 sic) = [kwass-] < **kwas-* : **kus-* in NHG *küssen* "to kiss" and Gk. aor. ἔκυσσα. Like Gk. ἔκυσσα, *kuwass-* probably continues a root aorist **kwas-* : **kus-* beside the nasal pres. **ku-ne-s-*, thematized in Gk. κυνέω "kiss" (Eichner, *Heth. u. Idg.* 82, Oettinger, *Stammbildung* 170 n. 92).

Paradigm *Stammbildung* 205–6; etymological references *HEG* 4, 695–6. The earliest form of the stem seems to have been *kwas(s)-*, note OH *ku-wa-aṣ[-* (form unclear) StBoT 25, 66 I 1; *kuss-* can be the regular weak stem (IE **kus-*), in which case, *kuwassanzi* would have an analogical full-grade. For the Gk. words see Strunk, *IF* 78 (1973) 73–4. Eichner, *Laryngaltheorie* 133, reconstructs full-grade **kwas-* with inherited *a*-vocalism.



*wēss-* "have on": 3 pl. pres. midd. *ú-e-es-sa-an-da* e.g. StBoT 25, 4 I 19, *ú-e-es-sa-an-ta* IBoT I 36 I 77, II 49 (MH) = [wēssanta] < **wés-n̥to* : **wes-* "have on, wear" (Eichner, Oettinger, Stammbildung 101, 528 n. 22).

Other words that have been cited as examples are *kissar* "hand" (nom. sg. *ke-es-sar* KBo VI 3 I 6, MH) < **ǵhés-ōr* (cited as *kessar* by Eichner, *Heth. u. Idg., Lautgesch. u. Etym.*) and *āssu-* "good": nom. sg. c. *a-as-su-us* (OH etc.), acc. sg. c. *a-as-su-un* (OH? etc.), nom.-acc. sg. n. *a-as-su* (OH etc.), nom.-acc. pl. *a-as-su-(u)* (OH etc.) < **h₁ósu-* : Gk. ἐύς "good" (Eichner, *MSS* 31, 54).

### 11.4.1.2. Apparent examples of **V́sV > V̄sV*

*ēs-* "be": 1 sg. pret. *e-su-un* e.g. KBo IV 4 I 34 (NH), 3 pl. pret. *e-ser* KBo VIII 42 Rs.? 6 (OH), *e-se-er* StBoT 25, 61 Rs.? 3, 19 = [ēsun], [ēser] < Pre-Hitt. **és-un, *és-ēr* (Melchert, *SHHP* 31–2 n. 64, Kimball, *Gds Cowgill*).

*sēs-* "sleep": 1 sg. pret. *se-e-su-un* KBo IV 4 IV 16 (NH), KUB XL 3 II 4 (NH), *se-su-un* KUB XLIII 46 L. 7 (NH), 3 pl. *se-e-se-er* KUB I 16 III 15 (OH+) = [sēsun], [sēser] < Pre-Hitt. **sés-un, *sés-ēr* (Kimball, *op. cit.*).

*sēsān(a)-* in acc. sg. *se-e-sa-a-an* KBo XI 10 III 5 (U) = *se-sa-an-na* KBo XI 72 II 44 (U). The latter words might be analogical replacements for a **sēsānan*, derivable from a proterokinetic *n*-stem **sésō* : **sés-on-* (cf. *hāras, hāran-* "eagle") with suffix *-ān-* analogically from e.g. *ishimān-* "cord" {7.3.1.1.}.

*wesi-* "meadow" (acc. sg. *ú-e-si-in* KUB XXIX 29 Vs. 8, OH), if [wēsi-] < **wés-i-* : **wes-* "graze, pasture" in e.g. Hitt. *wēstar(a)-* "shepherd", Av. *vastar* id., Goth. *wisan* "enjoy oneself", M.Ir. *fess, feiss* "feast" (Kimball, *PW* 663–4, *Gds Cowgill*). It is possible, however, to derive *wesi-* from **wéisi-*, and single /s/ would be expected after the reflex of **éi* {4.3.2.4.}.

Iterative second person singular present ending: *s-ke-(e)-si*, e.g. *a-ku-us-ke-e-si* StBoT 15, 110 II 16, *ak-ku-us-ke-si* ib. II 9, *zi-ik-ke-si* KUB XXXVI 75 + I 5 (MH), KUB XXIV 3 I 37 (MH+), *zi-ik-ke-si* KUB XXXI 127 + ABoT 44 I 28 (MH+) = [-skēsi] < **-sḱési* (Melchert, *SHHP*, Kimball, *Gds Cowgill*).

*māsi-*, interrogative and relative pronoun: e.g. acc. sg. c. *ma-si-in* KUB XXIX 51 I 12 (MH), nom. pl. c. *ma-si-e-es* KUB I 16 IV 44 (OH+, also NH), *ma-si-i-e-es* KUB V 6 II 40 (NH), KBo XXIV 93 III 21 (U); adv. *māsiwan* "as much, as many as, how many": *ma-a-si-wa-an* KUB XXV 27 I 15 (OH+), *ma-si-wa-an* KBo XXV 109 III 9 (MH?, also NH), *māsiwant-*: e.g. nom. sg. *ma-a-si-wa-[a]n-za* KUB XXXI 71 IV 36 (NH), *ma-si-wa-an-za* e.g. KUB XIX 20 Rs. 17 (NH), acc. sg. *ma-si-wa-an-ta-an* KBo XVI 47 Vs. 8 (MH), 1684/u L. 8 + KUB XXII 72 Vs. 42 (MH), with stem [māsi-] < **mós-i-* : IE pronominal stem **mo-* also in O.Ir. *ma* "when, because" and Toch. A *mant-*.

Examples and etymological refs. *CHD* 3, 205, 207–8, *HEG* 6,158–9; see Melchert, *KZ* 97 (1984) 34–6 on the Palaic cognate *mas*.

*wās-* "buy": 3 sg. pres. *wa-a-si* KBo VI 2 II 45, 50 (OH), KUB XXIX 29 Vs. 11 (OH, also OH+) = [wāsi] < PA **wós-ei* : IE **wes-* in e.g. Skt. *vasna-* "price", Lat. *vēnum* id., Arm. *gin* id. < **wes-no-*, Gk. ὦνος id. < **wos-no-*, and **us-no-* in Hitt. *us(sa)niya-* "buy" (cf. Melchert, *SHHP* 11).

Examples *PW* 238–9.

A *u*-stem adjective **wēsu-* "clothed" < **wésu-* may be implied by forms from a denominative *wesuwā(i)-* "be clothed": 3 pl. pres. *ú-i-su-wa-an-zi* KBo XV 12 L. 9 (NH), *ú-e-su-wa-a-an-zi* KUB XVII 18 II 13 (NH) (Weitenberg, *u*-Stämme 103, 150).

*iskīs-* "back": gen. sg. *is-ki-sa-as* (NH), dat. *is-ki-si* (MH etc.), dir. *is-ki-sa* (OH+), abl. *is-ki-sa-az* (MH+), dir. *is-ki-sa* (OH+), nom.-acc. pl. *is-ki-i-sa* KBo I 42 II 24 (NH, vocab.), KUB XX 38 Vs. 16 (OH+) = [iskīs-V-] < **isghís-V-* = **[izghís-V-] (2.4.4.1.).

*hwesu-* "alive, raw": nom.-acc. sg. n. *hu-e-su* e.g. KUB XXV 23 IV 40 (NH), *hu-u-e-su* KBo IV 9 I 12 (OH+), KBo XXVI 159 L. 7 (NH), *hu-i-su* e.g. KBo IX 140 III 4 (MH), VBoT 58 IV 46 (MH+), *hu-u-i-su* KBo III 63 II 11 (OH+), KBo XXII 180 I 9, 13 (NH), KUB XVII 24 II 7 (NH) = [hwēsu-] < **h₂wésu-* : IE **h₂wes-* "spend the night in a place, be in a place" in e.g. Hmc. ἄεσα (νύκτα) "spend the night", Skt. *vasati* "dwells", Goth. *wisan* "to be".

The *i*-vocalism of *hwīs(s)want-* "alive" (OH *hu-is-wa-an-t°/d°*, *hu-is-su-wa-ant°/d°*) = [hwiss-want-] < **h₂wes-wént-* is due to the accent, and the sporadic spellings with °Š-Š° reflect gemination before the semivowel [w] (11.5.3.2.). Examples *u*-Stämme 103–12, for the etymology see Puhvel, *HED* 3, 335–8 and Tischler, *HEG* 2, 265–6.

### 11.4.1.3. Explanations for apparent **ĺsV* > *ĺsV*

To explain the single /s/ of *esun* "I am" and *eser* "they were" Eichner, *Fl. u. Wb.* 78–9, reconstructs an augmented first person singular imperfect **é-h₁s-m̥* > **ésun* (= Gk.ἦα, Skt. *āsam*) and third person plural **é-h₁s-n̥t* > **ésant* (→ Pre-Hitt. **ésser*), cf. Hmc. ἔην, Skt. *āsan*) both of which would have had single /s/ after the reflex of a long accented vowel. He suggests too that [ēs-] from augmented forms may have been partially extended thoughout the paradigm to differentiate *ēs-* from *ēssa-* (OH *īssa-*!) "do". Oettinger, *Stammbildung* 113, reconstructs 3 pl. pret. **h₁e-h₁s-eh₁-re* > [ēser] with lenition of **s* after **é*, but this will not explain the single *s*, since **éh₁sV* yielded *ēssV* (11.6.3.1.).

### 11.4.1.4. Explanations for apparent **ĺsV* > *ĺssV*

In *kuass-* "kiss" the /ss/ could result from expressive gemination. Melchert, *SHHP* 32 n. 62, 90 n. 24, 106, *AHP* 150–2, who proposes a rule geminating **s* before consonants, explains the intervocalic *ss* of *wēssanta* "they wear" and *kissar* "hand" as the result of analogical extension of the geminate from forms of the paradigm where gemination was regular before an ending beginning with a consonant, e.g. 3 sg. *ú-e-es-ta* = [wēssta] < **wés-to*; oblique stem *ki-is-sa-r, ki-is-r* = [gissr-] < **ĝhes-r-*. This rule would also explain the geminate in other athematic verbs. For example, in the paradigm of *kess-* "comb", the present singular would have shown gemination: 1 sg. **kés-mi*, 2 sg. **kés-si*, 3 sg. **kés-ti* > [kēssmi], [kēssi], **[kēssti]*, while the third person plural preterit **kés-ēr* > **kēsĕr* could have been analogically replaced by *kēsser* with geminate /ss/ from forms with endings in initial consonants. Although there is considerable evidence for gemination before liquids, nasals and **w* (note also 1 pl. pres./pret. **kes-wén(i)* > **[kisswen(i)]*), graphic evidence supporting gemination before stops is at best sporadic (11.5.1.3.).

Kimball (*PW* 341, *Gds Cowgill*) posits doubling of **s* before accented syllables (i.e. **VsV́* > *VssV́*) and explains *ss* in *wēssanta* as analogical from *wassē/a-* (< PA thematic **was-é/ó-*) and *āssu-* (*PW* 168–9, *Gds Cowgill*) as having ss from the adjectival oblique stem **h₁s-ów-* and adjectival nominative-accusative singular **h₁s-ú-* > Pre-Hitt. **[saw-], *[su-]* → **asáw-, *asú-* with analogical full-grade *assāw-*. Since **s* was apparently geminated before **w* (11.5.3.2.), the nominal oblique stem **h₁s-w-* > [**sw-]* → **asw-* > **assw-* ( → *āssw-* with analogical full-grade) would also have provided a source for the geminate.

Double /ss/ in other ablauting paradigms can be explained in similar fashion. For example, the Pre-Hittite paradigm of *less-* "gather" must have had a generalized full-grade, since, as Oettinger notes (*Stammbildung* 206), the regular zero-grade **l̥s-* should have become ***als-*. Assuming that generalization of the full-grade did not entail a shift to a fixed root accent (cf. sg. *saknās*, gen. of *sakkar* "excrement" < **sok-n-ós* with generalized full-grade root **sok-*, but accented ending (2.2.4.1.)), the third person plural present and the participle should have shown the following developments: Pre-Hitt. **les-ánti* > (**)lissanzi*, ptcp. **les-ónt-* > **lissānt-* (perhaps in OH terms [lēssantsi] and [lēssānt-] with analogical /ē/ from the singular). In the third person plural preterit **lés-ēr* > **lēsĕr, lēss-* would be analogical from the third person plural present and participle.



## 11.4.2. After long accented vowel, diphthong

Čop, *Linguistica* 6 (1964), 38, 46, 47–8, 50; Eichner, *Fl. u. Wb.* 78, *Lautgesch. u. Etym.* 161–2, *Laryngaltheorie* 145; Melchert, *SHHP* 31–2 n. 64.

Intervocalic **s* is written as single °Š° after long accented vowels and after the monophthongized reflexes of accented diphthongs.

*ēs-* "sit": 3 sg. pres. *e-sa* (OH etc.) = [ēsa], *e-sa-ri* (OH etc.) = [ēsari] < **h₁é́s-o-(ri)*, 3 pl. pres. *e-sa-an-ta* (OH etc.), *e-sa-an-da* (OH etc.) = [ēsanta] < **h₁é́s-n̥to* : IE **h₁ēs-*, cf. Skt. *āste* "sits", Gk. ἧμαι "I sit".

Examples *StBoT* 5 25–31, *PW* 644–6, *HED* 291–300. A root **h₁eh₁s-* as reconstructed by Eichner, *Fl. u. Wb.* 75, *Lautgesch. u. Etym.* 162, and Oettinger, *MSS* 34 (1976) 112, *Stammbildung* 101, 431, 543, or a reduplicated **h₁e-h₁s-* (Eichner, *MSS* 31 (1973) 54) can be ruled out, since **-éh₁s-V-* became Hittite *ēssV-* (11.6.3.1.) (cf. Eichner, *Laryngaltheorie* 145).

*kīs-* "become": 3 sg. pres. *ki-i-sa* (OH etc.) = [kīsa], *ki-i-sa-ri* (OH etc.) = [kīsari] < **kéis-o-(ri)*, 3 pl. pres. *ki-sa-an-da* (MH etc.) = [kīsanta] < **kéis-n̥to* : **keis-*, cf. Skt. *ceṣṭa-* "motion", denom. *ceṣṭati* "be in motion", ultimately from **kei-s-*, with *s*-extension from **kei-* "move, be in motion" (4.3.1.1.).

*wisūriya-* "oppress, constrict, stifle" (*ú-i-su-(u)-ri-ya-*, MH etc., *ú-e-su-(u)-ri-ya-*, NH) = [wisūrya-] ([wesūrya-]?), denominative from **wisūra-* (**wesūra-*) < **wēisúro-* or **weisúro-* (4.8.1.).

The single /s/ of *kīsā(i)-* "comb" and *līsā(i)-* "gather" probably also reflects the regular treatment after long accented vowel: *kīsā(i)-*: 3 sg. pres. *ki-sa-a-iz-zi* KUB XII 58 II 42 (MH+), 3 pl. imp. *ki-i-sa-a-id-du* KBo XXI 8 III 14 (MH), ptcp. acc. sg. c. *ki-sa-a-a[n-da-an* KUB XXXV 145 Rs14 (NH) = [kēsā(i)-]; *līsā(i)-*: 3 sg. pres. *li-i-sa-iz-zi* KUB XV 31 II 15 (MH+), *li-sa-iz-zi* KUB XV 32 II 9 (MH+) = [lēsā(i)-]. Both verbs continue PA stems with **ē, *kēsāye/o-* and **lēsāye/o-*. The **ē* of *kīsā(i)-* is confirmed by the *i* (< **ē*) and single *s* of the Cuneiform Luvian third person plural preterit *"ki-sa-an-*

*ta* and participle (nom. sg. c. *ki-i-sa-am-m[i-is], ki-sa-me-es,* acc. sg. c. *ki-sa-am-ma-an*) and the noun *kisamman-* "hair, mane" (nom.-acc. pl. n. *ki-i-sa-am-ma*). The long vowel iterative **kēsāye/o-* suggested by Hollifield *apud* Watkins, *Fl. u. Wb.* 374, would explain the single *s* and the Luvian *i* but not the plene writing of the root vowel in MH *kīsaiddu,* since unaccented **ē* should have become OH **/ĕ/* {2.6.3.}. Oettinger, *Stammbildung* 201–2 reconstructs a denominative **kēsāyé/ó-* from an otherwise unattested noun **kēsā-* (cf., however, O.Ir. *cír* "comb" < **kēs-rā-*), and the long root vowel in the denominative could be analogical from the base noun (cf. e.g. *sāktāizzi* "takes care of a sick person" : **sākta-* "sickness" {2.4.1.}). There is no independent evidence for a **lḗsā-* as base noun for a denominative **lēsāyé/ó-*, but it is likely that one verb may have influenced the other, and a PA denominative **kēsāyé/ó-* beside **kes-* "comb" may well have provided a model for the formation of a **lēsāyé/ó-* beside **les-* "gather" (cf. Oettinger, ib. 206).

Examples *Stammbildung* 201–2, 206 and *CHD* 3, 72; for the Luvian forms, see Starke, *StBoT* 31, 263–5 and Melchert, *CLuv. Lex.* 104, and for etymological references see Tischler, *HEG* 3, 587–8, *HEG* 5, 64.

## 11.4.3. Before accented vowel

Eichner, *MSS* 31 (1973) 100 n. 88, *Lautgesch. u. Etym.* 161–3, *Laryngaltheorie* 138–9; Kimball, *PW* 870, *Gds Cowgill* 178 n. 41, 181 n. 48; Melchert, *AHP* 152.

Doubling of **s* before accented vowels is posited by Eichner and Kimball, and it seems to be supported by at least one example from a fairly morphologically isolated word and by a few others from words which are members of inflectional or derivational paradigms.

A noun *sissūra-* "irrigation" is attested in gen. sg. *si-is-su-ú-ra-as* KBo VI 26 III 5 (OH+), *se-e-su-ra-as* (sic) KUB XVII 8 IV 3 (MH+ ), *se-es-su-ra-as* Rs 421 39 (NH) and in the denominative *sissūriya-* "irrigate, water": *si-is-su*$^{!}$*-ri-es-ke/* KUB XXXI 85 III 54 (MH+), supine *si-is-su-u-ri-ya-u-wa-an* KUB XXXI 100 II 17 (U). The noun can perhaps be read [sissūra-] and derived from an earlier **sesúro-* with raising of unaccented **e* to /i/ and lengthening of accented **u;* cf. *isnūra-* "dough bowl" < **yesnúro-* {2.4.4.2.}, though the plene writing and single °Š° of *se-e-su-ra-as* is difficult to account for. Within Hittite, *sissūra-* can be related to $^{LÚ}$*sēsāla-* "fruit-keeper" (nom. *s[e-e-sa-la-a-as* KUB XIII 3 II 4, MH+), to *sēsātar* "harvest, fruit" in gen. *se-e-sa-an-na-as* KUB XXIV 1 IV 12, and to *sēsān(a)-* "fruit tree" (?) in acc. sg. *se-e-sa-a-an* KBo XI 10 III 5 (U) = *se-sa-an-na* KBo XI 72 II 44 (U). The latter words might be analogical replacements for a **sēsānan,* from a proterokinetic *n*-stem **sésō* : **sés-on-* (cf. *hāras, hāran-* "eagle" with acc. sg. *hāran* e.g. KUB XXXIX 34 IV 12 (MH+) for OH etc. *hāranan*) with suffix *-ān-* analogically from e.g. *ishimān-* "cord" {7.3.1.1.}. Cognates would be Ved. *sasá-* "crop, plant, nourishment", *sasyá-* "crop, grain, seeds", Av. *hahya-* id., W. *haidd* "rye" and Bret. *heiz* "barley".

Eichner, *Gds Kronasser* 26–9, posits a root **ses-* "cultivate". It is possible that the meaning "irrigate" reflects Near Eastern innovations in farming technology. For discussion see also Hoffner, *Alimenta* 22, 38–9.



*issā-*, oblique stem of *āis* "mouth": dat. sg. *is-si-i* e.g. KBo V 2 IV 60 (MH+), KBo XVI 97 Rs. 5, 9 (NH), KUB XLIII 53 I 21 (OH+), dir. *is-sa-a* StBoT 25, 2 I? 6, 8, abl. *is-sa-a-az* KUB XXV 148 III 4 (OH+) = [issā-] < **h$_1$h$_3$-es-ó-* with reduction of the initial cluster and raising of unaccented **e* to /i/ {10.5.4.}.

*wassē/a-* "has on, wears" = [wassē/a-] probably from causative **wos-éye/o-*.

Note that Melchert, *SHHP* 31–2, who argues for **wos-éye/o-*, does not derive /ss/ from **VsV*. Kimball, *Gds Cowgill* 178 n. 41 reconstructs PA **wos-é-ti* with doubling before an accented vowel, while Oettinger, *Stammbildung* 305, reconstructs thematic **wós-e/o-*.

Assuming doubling before accented vowels helps to explain an alternation between °Š° and °Š-Š° in several paradigms.

*lēsi-* "liver": nom.-ac. sg. *le-e-si* KUB XII 58 I 24 (NH) beside *liss-* in loc. *li-is-si* KBo III 21 II 10, 12, 16, 22, 26 (OH+) and adj. *lissiyala-* "pertaining to the liver" ib. II 6; cf. also *le-es-sa* (case uncertain) KUB XXII 4 L. 6 (U). If the spelling with single °Š° is not defective, the nominative-accusative singular continues **léh$_1$i-s-* with single /s/ after diphthong. It is possible that the locative *lissi* continues a dative **lh$_1$is-éi* and that *lissiyala-* ([lĭssyăla-]?) is derived from the weak stem **lh$_1$is-*, cf. Arm. *leard* "liver" < **lihard-* < **lēs̥-t* or **lē(i)s-r̥-t,* and for the laryngeal, note Lat. *lāridum* and Gk. λᾱρίνος.

Examples *CHD* 3, 72; for the inflection, cf. Schindler, *Sprache* 12 (1966) 8 and see *HEG* 5, 54–5 for additional refs.

Alternations between °Š° and °Š-Š° in *hi*-conjugation paradigms can be explained in similar fashion. In *pās-* "take a swallow" single °Š° occurs in the singular (3 sg. pres. *pa-a-si* (MH+?), 2 sg. imp. *pa-a-su* (MH+) {10.5.3.}). Although the third person plural present and the participle are not found, the latter is attested indirectly in the derivative $^{LÚ}$*passantala-* "taster" (sg. (case?) *pa-as-s[a-an-* StBoT 25, 67 Rs. 8, dat.? pl. *pa-as-sa-an-ta-l[a-as* StBoT 25, 75 I 4; see Starke, *StBoT* 31, 319 n. 114) which is from **passant-* = [păssānt-], participle of *pās-* plus agent noun suffix *-āla-*. The stem *pās-* can continue PA **pó(h$_3$)s-*, formally a sigmatic aorist (in IE terms **péh$_3$-s-*) formed within Anatolian from the root aorist **péh$_3$-t* (cf. Skt. *a-pāt* "drank"). The participle may have been formed within PA as **po(h$_3$)s-ónt-* (> Hitt. **[păssānt-]*) with full-grade root but with accent after other athematic verbs (cf. e.g. *appānt-* : *ēpp-* "seize").

Note that the /ss/ of these forms provides evidence either for **oh$_3$C* > PA **ŏC* without compensatory lengthening or for shortening of unaccented **ōC* before the lengthening rule became productive, since single /s/ is the regular reflex after PA long vowels. Double /ss/ also occurs at least occasionally in $^{UZU}$*pa(p)a(s)sāla-* "esophagus" (lit. "swallower"): acc. sg. c. *pa-ap-pa-as-sa-la-an* KBo III 8 + KUB VII 1 III 37, 57 (Pre-NH = KUB VII 1 III 3, 23), *pa-ap-pa-sa-li-in* ib. III 49 (VII III 15) = *pa-pa-as-sa-la-an* in dup. KBo XXII 128 + 145 + KUB XLIII 52 + 350/z III 13, nom.-acc. pl. *pa[-pa-sa-a-la* KBo XXIX 52 L. 3 (NH), but here it is likely that the form was derived from the weak stem with *ss*, since other agent nouns in *-āla-* show single °Š° consistently (cf. e.g. $^{LÚ}$*asusāla-*, a cult functionary, $^{LÚ}$*sēsalā-* "fruit-keeper", cf. Starke, *op. cit.* 310–12, and Melchert, *CLuv. Lex.* 165, who consider *papassāla-* a loanword from Luvian.

For *hās, hass-, hēs-* "open" OH and MH texts have single *s* in the third person singular present (*ha-a-si* KUB XVII 10 I 33, MH, also MH+, NH) and in the third person plural preterit (*he-e-se-er* StBoT 15, 1 I 5). By contrast, the third person plural pres-

ent and the participle have *ha-as-s°*: 3 pl. pres. *ha-as-sa-an-zi* e.g. StBoT 25, 59 I 1 (and Post-OH), ptcp. nom. sg. c. *ha-as-sa-an-za*, e.g. KBo IV 9 I 29 (OH+), KUB II 6 III 35 (OH+), nom.-acc. sg. n. *ha-as-sa-an* KUB XI 20 II 20 (OH+). The stems [hās-] and [hăss-] perhaps continue forms of a paradigm with a generalized full-grade, Pre-Hitt. 3 sg. pres. **H₂ʒós-ei* (or **h₂ásei*) beside 3 pl. **H₂ʒos-énti*, ptcp. **H₂ʒos-ónt-* (**h₂as-énti*, **h₂as-ónt-*). Gemination of **s* before vowel would have been regular in the third person present and participle and in the first person singular present before the /w/ of the ending (cf. *ha-as-su-ú-e-ni* StBoT 25, 139 Rs. 9, *ha-as-su-e-ni* StBoT 25, 137 II 1 3 = [hasswēni]).

Examples, paradigm *Stammbildung* 49–50, 440, *HED* 3, 218–21. In Post-OH texts *hēs-* from 3 pl. pret. *he-se-er* (e.g. StBoT 25, 1 I 5 = KUB XXIX 1 I 24 (OH+)) and *hēss-* (with *-ss-* from *hăss-*) have been extended analogically, e.g. 3 sg. pres. *he-e-es-zi* KBo XVII 94 III 23 (MH), 3 pl. *he-e-sa-an-zi* e.g. KUB XII 2 IV 3 (NH), *hi-sa-an-zi* KBo XXI 33 II 3 (MH?), *hi-is-sa-an-zi* Bo 6871 Rs. 33 (HED), 3 sg. imp. *he-es-du* KUB XXXVI 89 Vs. 19 (NH), *he-e-es-du* ib. Vs. 39, 3 pl. *he-e-sa-an-du* KBo XII 58 II 26 (MH(+)?).

Given the development of **VnsV* to *VssV* in *āss-* "favor" < **áns-* and *dāssu-* "strong" < **dé/ónsu-* {7.8.2.}, the third person singular present *hāsi* "gives birth, begets" (e.g. *ha-a-si* KBo VI 26 II 22 (OH+), KBo XVII 60 Rs. 12 (MH), KBo XVII 62 + 63 IV 14 (MH), KUB XLI 8 IV 33 (MH)) and second person singular imperative *hašu* (e.g. *ha-a-su* KBo X 45 IV 35 (MH+) = KUB XLI 8 IV 34) cannot directly continue PA **h₂áns-*. However, *hās-* "open" and *pās-* "take a swallow" would surely have provided adequate models for the analogical replacement of **hass-* < **hans-* by *hās-*. Since the weak stem **h₂n̥s-* should have become **hanz-*, the full-grade **háns-* was presumably extended throughout the paradigm at an early date, and the third person plural present *hassanzi* (e.g. *ha-as-sa-an-zi* KUB XVII 10 I 15 (MH), KBo X 45 IV 34) and the participle (e.g. nom. sg. c. *ha-as-sa-an-za* KUB XII 62 Vs 16 (MH+)) can reflect the regular outcomes of **hass-ánti* and **hass-ónt-*.

### 11.4.4. In unaccented syllable

Eichner, *Lautgesch. u. Etym.* 161–2; Melchert, *SHHP* 31–2 n. 64.

The reflex of **s* appears as single /s/ between unaccented vowels. A clear example is *nēpis-V-*, oblique stem of *nēpis-* "heaven": e.g. gen. sg. *ne-e-pi-sa-as* (OH etc.) = [nēbisas], dat. *ne-pi-si* (OH etc.) = [nēbisi], dir. *ne-e-pi-sa* (OH etc.) = [nēbisa] < IE neuter *s*-stem **nébhes-*, cf. Skt. gen. sg. *nábhasaḥ* : *nábhas* "cloud" and Gk. νέφεος : νέφος id.

Examples *CHD* 4, 448–53.

### 11.4.5. Spellings for enclitics

Enclitic pronouns and particles in initial /s/ are normally spelled with double °Š-Š° after vowels: e.g. from OH with third person singular personal pronoun *-sse*: *a-pe-e-ma-as-se* StBoT 25, 34 I 14, 16 (*apē-ma-sse*), *a-ap-pa-an-da-ma-as-se* StBoT 25, 3 III 4 (*āppanda-ma-sse*), *nu-us-se* KBo VI 2 I 19, 21 etc. (*nu-sse*), *nu-us-se-ka[n* KBo IX 73 L. 14 (*nu-sse-kan*), *tak-ku-us-se* KBo VI 2 II 38, 39 (*takku-sse*); with third person singular possessive pronoun: nom.-acc. sg. n. *a-as-su-us-se-et-ta* KBo VI 2 I 5 (*āssu-ssett-a*), dir. *-ssa*: *par-na-as-sa* StBoT 25, 62 L. 11 (*parna-ssa*), dat.-loc. sg. *-ssi*: *pe-e-di-is-si* KBo III 22 Rs. 48 (*pēdi-ssi*), *kar-di-is-si* StBoT 25, 102 II 6 (*kardi-ssi*), *kat-ti-is-si-ma* StBoT 25, 30 III 10, 11 etc. (*katti-ssi-ma*); with locative particle *-ssan*: *ne-es-sa-an* StBoT 25, 140 Rs. 15 (*nu-e-ssan*), *nu-us-sa-an* passim (*nu-ssan*). Exceptions are rare and may simply be defective spellings, e.g. *ga-ra-ú-ni-s[i* "on its horn" StBoT 25, 4 III 25, *is-tap-pu-ul-li-se-ta* "but its cover" ib. IV 32. Melchert, *AHP* 153–4, assumes general gemination of posttonic /s/ in secondary sequences with enclitics, e.g. **ĝhesri-sí* > *kisri-ssi* "in his hand", and subsequent generalization of the posttonic treatment to cases where the consonant occurred between unaccented vowels.



### 11.4.6. Other examples of intervocalic *ss*

No explanation that has yet been offered adequately explains all examples of intervocalic °Š-Š° that are unlikely to result from assimilation, and, indeed, accounting for intervocalic geminate continuents remains one of the pressing problems of Hittite consonantism. Some may have secondary sources, having been generalized, for example, from forms of a paradigm where /s/ preceded a resonant, or if Melchert is correct, from forms where /s/ preceded any consonant, e.g. *pu-nu-us-ser* "they asked" KUB XXXVI 101 II 3 with *ss* from *pu-nu-us-mi*, *pu-nu-us-su-e-ni*, *pu-nu-us-su-(e)-en* = [punussmi], [punussweni], [punusswen]. In other cases, °Š-Š° may provide a clue to the presence of a consonant cluster written with dead vowel, e.g. *sakuwassar(a)-* "correct, legal" (*sa-ku-wa-as-sa-ra-an* KBo VI 3 II 54, MH) = [sag$^{w}$assra-], perhaps < **sógwosro-* with gemination before /r/.

Cf. Melchert, *JAC* 107–8 w. n. 7 for the etymology.

## 11.5. Preconsonantal *s

### 11.5.1. *s plus stop

Medial clusters of /s/ plus stop were retained.

#### 11.5.1.1. *s plus voiceless stop

*kistant-* "hunger", *kistanziya-* "suffer hunger, starve", *kistuwānt-* "hungry" (*ki-is-t°*, OH etc.), with root [Kist-] < **Kest-* : **Kost-* in *kāsza* "hunger" {2.6.3.}; *hastāi* "bone(s)" (*ha-as-ta-(a)-i*, *ha-as-ta-a-e*, *ha-as-da-i*) = [hastāi] < Pre-Hitt. **h₂ast[H]-ói* : Gk. ὀστέον id. {10.3.2.1.}; iterative suffix *-skē/a-* in e.g. *daskē-* : *dā-* "take", *piskē-* : *pāi-* "give", *malzakē-* = [maltskē-] : *māld-* "recite" = [-skē/a-] < **-ské/ó-*.

There is no evidence for Georgiev's claim (*Orbis* 27 (1978/9) 48) that **sḱ* was sometimes assimilated to *ss* in iteratives in *-issa-* like *halzissa-* : *halzai-* "call, name", *īssa-* "work, do" : *iya-* "make" (with *-ssa-* < **-ska-* < **-sḱo-*). If this were correct then, at the very least, some iteratives should show variation in spelling between °Š-K° and °Š-Š°.

The Luvian reflex of **-ske/o-* is *-zza-*; see Melchert, *Gds Cowgill* 198–201.

### 11.5.1.2. **s* plus voiced stop

It is likely that voiced stops and voiced aspirates merged with voiceless stops after **s*, since there is no distinction in spelling. The reflex of *[zd] = */sd/ is written as °Š° plus dental stop in *hasduēr* "twigs, brush": nom.-acc. pl.-coll.: *ha-as-du-e-er* e.g. KUB XVII 28 IV 44 (OH+), *ha-as-du-er* e.g. KBo III 63 II 18 (OH+) = [hastwēr] < *[h$_2$ozdwḗr] = */h$_2$o-sd-wḗr/, cf. **h$_2$o-zd-o-* in Gk. ὄζος "branch", Arm. *ost* id., Goth. *asts* id. The lack of spellings with °Š-T° seems purely accidental. The reflex of *[sgh] is written °Š-K° in *iskīs-* "back" (*is-ki-(i)-s°*) = [iskīs-] < *[izghís-] : Gk. ἰσχίον "hip(s)" {2.4.4.1.} and in *iskunā(i)-*, *iskunahh-* "disfigure, stain" (*is-ku-n*) = [iskun-] < *[izgh-] : Gk. αἰσχύνω "disfigure, disgrace" {4.5.1.3}. Note that the reflex of **st* is sometimes spelled °Š-D° = [st], e.g. *ha-as-da-i* "bone(s)" 2413/c III 11 (*HED* 3, 234) = [hastāi] < **h$_2$ast[H]ói* {10.3.2.1.}.

### 11.5.1.3. Gemination of **s* before stops

Melchert, *Sprache* 33 (1987) 26–7, suggests that /s/ was geminated in any cluster; but spellings with geminate /ss/ before stop (-VŠ-ŠA-C) are extremely rare, even in morphologically isolated forms.

One possible example is indicated by the occasional spelling of **sp* as -AŠ-ŠA-P° in *waspa-* "garment" (**wos-p-*), where it is possibly a Luvicism: nom. sg. *wa-as-sa-pa-as* KUB XLII 54 L. 5 (NH), acc. sg. *wa-as-pa-an* KUB XXXI 69 L.5, 6, (U), KBo XVII 93 Vs. 11 (U), case unclear *wa-as-sa-pa[-* KBo VIII 114 Vs. 8 (NH); also CLuv. abl.-inst. *wa-as-sa-pa-ti* KBo XV 13 L. 4 (U), gen. adj. nom. pl. c. *wa-as-pa-an-ta-as-si-in-zi* (DLL 109) and in 3 $^{TUG}$*sar-ri-wa-as-pa-as* "three overgarments" IBoT I 31 Vs. 7 (U) = [wasspa-] from **wospo-* or **wospeh$_2$-*, cf. Lat. *vespillio* "undertaker", ultimately : **wes-* "wear"

See Watkins, *Lang.* 45 (1969) 238–9, Melchert, *SHHP* 11 n. 13 and *CLuv. Lex.* 265 (*waspant-* "wearing shrouds") for etymological discussions.

A sequence [ssk] with geminate [ss] is perhaps indicated in isolated spellings for the iterative of *tīya-* "step": *ti-is-sa-ak-ke-ez-zi* KUB XXIX 8 I 10 (MH), 3 sg. pres. *ti-is-sa-ak-ke-ez-zi* KUB VI 45 III 12 (NH) beside 1 sg. pres. *ti-is-si-ke-mi* KBo III 34 III 4 (OH+, with echo vowel I?, identification uncertain) (Oettinger, *Stammbildung* 324 n.135) and *ti-(i)-is-k°*, e.g. *ti-i-is-ka-an-zi* KUB X 52 I 7 (U) = [tissk-]. See Melchert, *loc. cit.*

## 11.5.2. **s* plus liquid or nasal

Bernabé, *REL* 3/2 (1973) 446–7; Čop, *Linguistica* 6 (1964) 58–9, 62–3, 68–9, 73; Kronasser, *VLFH* 69–70; Melchert, *SHHP* 90 n. 24, *HS* 101 (1988) 212, *AHP* 150–2, 157–8; Puhvel, *KZ* 92 (1978) 102–7 = *AnIE* 393–8.

### 11.5.2.1. **sr*

The reflex of medial **s* is sometimes written double, indicating gemination, before /r/. Comparable spellings in Cuneiform Luvian indicate that gemination was Proto-Anatolian.



*ēs(sa)ri-* "form, shape, fleece" (nom.-acc. sg. *e-es-sa-ri*, MH etc.), beside *e-es-ri*, MH etc.) = [ēssri] < PA **éssri* = **es-* "be" plus nominal suffix **-ri-* {3.2.1.1.}.

*kis(sa)r-*, oblique stem of *kissar* "hand": e.g. dat. *ki-is-sa-ri-i* StBoT 25, 3 I 28, *ki-is-sa-ri* StBoT 25, 3 I 20 = 4 I 15, abl. *kis-is-sa-r[a-az* StBoT 25, 3 II 24 beside *ki-si-r°*, *ke-es-r°* in e.g. inst. *ki-is-ri-it* KUB XXXV 116 I 15 (NH) = [gissr-] < PA oblique stem **gessr-* < IE **ǵhes-r-*, e.g. in gen. **ǵhes-r-é/ós*, dat. **ǵhes-r-éi*.

The accusative singular (*ki-i]s-se-ra-an* StBoT 25, 141 L. 5, *ke-es-si-ra-an* KBo XIX 132 Vs.? 3 (OH+)) = [gisseran] < Pre-Hitt. **ges-ér-an* (analogical for IE **ǵhés-or-m̥*) can have gemination of **s* before an accented vowel. The geminate /ss/ of nom.-acc. sg. *ke-es-sar* KBo VI 3 I 6 (MH), if for *[gēsar] < **ǵhés-ōr* can be analogical from the oblique stem [gissr-]. In the instrumental singular (*ki-is-sar-ta* StBoT 25, 26 Vs. ? I 11 StBoT 25, 105 L. 5, *ke-es-sar-ta* KBo X 45 II 28 (MH+); KBo III 16+ III 7 (OH+)) /ss/ can reflect either regular gemination before the original syllabic resonant (i.e. **ghes-r̥T* > **g(h)essr̥-T* > *kissarta* = [gissarTa] with /i/ from other oblique stem forms) or it can simply reflect analogical extension of the stem [gissr-] from other oblique case forms. For the IE reconstructions, see Schindler, *IF* 72 (1967) 244–9. The inflection of *hasterza*, *hasteran* "star" may have provided a model for the reshaping of the inflection in Anatolian {8.4.1.2.}.

### 11.5.2.2. **sl*

Assimilation of **sl* to *ll* is suggested by Čop, *Linguistica* 6 (1964) 44 n. 65d for *wēllu-* "meadow" < **wés-lu-* : **wes-* "feed, graze, fatten", but **wél-nu-* is a more likely preform {8.6.4.}, especially if **ls* is inherited in **als-* (ptcp. *alsant-*) "give allegiance to" and *palsa-* "way, time" < **bel-so-* or **bl̥so-* {11.6.2.}.

### 11.5.2.3. **sn*

Gemination of **sn* to [ssn] is sometimes indicated by doubling.

Oblique stem forms of neuters in *-ēssar* and derivatives: e.g. gen. *ha-an-ni-is-sa-na-as* KUB XXX 11 Rs. 22 (MH), abl. *ha-an-ni-is-na-an-za* KUB XIX 67 I 5 (NH), dat.-loc. *ha-an-na-as-sa-ni* KBo III 6 I 34 (NH), beside *ha-an-ne-es-*, *ha-an-ni-is-* : *han-nessar* "judgement"; *ma-al-ti-es-sa-na-la-an*, accusative singular of *maltēs(sa)nala-* "recipient of *maltēssar*" beside *ma-al-ti-es-na-la-an* (*CHD* 3, 135) and *ma-al-te-es-na-*, oblique stem of *maltēssar* (*CHD* 3, 136–7). The suffix should be [-ēssn-] from **-és-n-*. The geminate *ss* of the nominative-accusative *-ēssar* = [-ēssar], ultimately from **-é-sr̥*, can be analogical from the oblique stem, or it reflects gemination before the syllabic resonant.

Gemination also occurred in oblique stem forms of *ēshar* "blood" (e.g. gen. *i-e-es-na-as* KUB XVII 18 II 31, NH) = [ēssna]- < **h$_1$ésn-* < **h$_1$ésh$_2$n-* {10.1.1.1.}.

The nominative-accusative singular *ēssar* (*e-es-sar* KUB XLI 8 II 36, III 9 (MH+), *i-e-es-sar-ra* e.g. KUB XXIV 13 II 24 (MH+), *i-e-es-sar* KUB XLI 21 IV 4, MH+) = [ēssar] is analogical from *ēs(sa)na-*.

*is(sa)na-* "dough": acc. sg. *is-sa-na-an* (MH+), gen. *is-sa-na-as* (MH+, Pre-NH), *es-sa-na-as* (MH), beside *is-na-(a)-* = [issnā-] < **yesnó-* {2.4.4.2.}.

*us(sa)niya-* "sell, exchange": 3 sg. pres. *us-sa-ni-ya-zi* (MH(?)+), 2 pl. *us-ni-ya-at-te-ni* (MH(?)+), 3 sg. pret. *us-sa-ni-ya-at* (NH), *us-sa-ni-ya-ú-en* (NH), 3 sg. imp. *us-sa-ni-ya-ad-du* (MH(?)+), beside it. *us-ne-es-k°* (OH, MH), *us-ni-is-k°* (NH); the stem [ussne-] is from a denominative **usne-yé/ó-* to a base **usno-* "price", cf. with independent but parallel development Skt. *vasnayáti*, Gk. ὠνέομαι (Melchert, *SHHP* 36–7) {3.11.1.2.}.

*par(as)snā(i)-* "squat": *par-as-sa-n°* in e.g. ptcp. nom. pl. c. *par-as-sa-na-an-te-es* KUB XXV 1 II 8 (OH+) beside *par-as-n°* in e.g. inf. *par-as-na-u-wa-an-ti* ib. VI 3 or 3 KUB XXV 1 II 8 (OH+) beside *par-as-n°* in e.g. inf. *par-as-na-u-wa-an-ti* ib. VI 3 or 3 sg. pres. *par-as-na-ạ-[iz-zi* StBoT 25, 153 III 16, ptcp. nom.-acc. sg. n. *par-sa-na-a-an* StBoT 25, 27 Rs.! 16 = [parssnā(i)-], denominative from *pars(e)na-* "thigh" < **per-sneh₂-* {3.2.2.1.}.

An anaptytic front vowel is sporadically inserted in synchronic sequences of [sn]: *pi-se-(e)-n°* "man" (OH etc.) beside *pi-is-na-a-as* (OH); *par-si-(e)-n°*; *par-se-(e)-n°* "thigh, buttocks, cheek (of the face)" beside *par-(as)-na-(a)-i-* "squat"; *kalwess(e)na-*, *galwes(se)na-*, *galwisan*, *kalwi(s)sana-*, a plant; *kalmisena-*, *kalmisina-*, *kalmi(s)san* "log, thunderbolt" {3.9.3.}.

### 11.5.2.4. **sm*

Puhvel proposes that **sm* became *m(m)* and adduces two examples: *tamāi-* "other, another" (OH etc.), *damāi-*, *tamē-*, *damē-* (OH etc.; NH also *dam-ma-i-*, *dam-me-* {1.12.2.}), < **dwoyosmoi* : **d(u)wō* "two" with pronominal suffix **-smoi-* (cf. Umb. *me-* {1.12.2.}), < **dwoyosmoi* : **d(u)wō* "two" with pronominal suffix **-smoi-* (cf. Umb. dem. pro. *esmei* etc.), and *namma* "moreover" (*nam-ma* OH etc.) from **nu* plus enclitic particle *(s)sma* (sic), cf. Vedic particle *sma*.

As Puhvel notes, if this development is correct, synchronic sequences of [sm], which are not numerous, have to be explained as analogical or secondary. The first person singular present of *ēs-* "be", *ēsmi*, can have analogical [sm]. The conjunction *nasma* "or" is clearly a syncopated version of *nassu-ma*, attested from OH (see Pedersen, *Hitt.* 200, Puhvel, *loc. cit.*, Melchert, *SHHP* 27, and *CHD* 3, 401–5, 405–6), and the second and third person plural enclitic personal pronoun, dat.-acc. *-smas*, can, as Puhvel suggests, be a reduced version of non-enclitic *sumēs*, acc. *sumās* "you" (see also Neu, *Heth. u. Idg.* 193 n. 54, and Melchert, *SHHP* 27). Puhvel (*loc. cit.* and *HED* 1, 216–18) derives *āsma*, glossed as "lo, behold, look there!" and *kāsma* id. via syncope from **āsa-ma* and **kāsa-ma* from the demonstrative pronouns *-a-* and *kā-* plus the particle *-ma* "but". However, Puhvel's base forms **kāsa* and **āsa* might themselves be composed of nom. sg. c. *kās* and **ās* plus the particle *-a* "but", and *āsma* and *kāsma* might be directly derivable from **ās* plus *-ma* and *kās* plus *-ma*, formed after the change of **sm* to *m* (the latter analysis goes back to Hrozný; see *HEG* 3, 532–3 w. refs.). See also Melchert, *AHP* 158.

Kronasser also posits **sm* > *m(m)*, deriving 1 pl. pres. *umēni* "we see" from **usmen(i)*, but *um* is from **uw* here {9.7.1.}.

## 11.5.3. **s* plus glide

Čop, *Linguistica* 6 (1964), 58–9, 62–3, 68–9, 73; Georgiev, *Orbis* 27 (1978/9) 46–7.

### 11.5.3.1. **sy*

**Vsy* resulted in [Vsy] in morphologically isolated forms. Derivatives have geminate /ss/ or single /s/ after their bases. The suggestion of Georgiev that **sy* resulted in /ss/ is contradicted by e.g. *wesiya-* "graze" < **wés-ye/o-* (see also Čop 68–9, 73).

The geminate *ss* of *pēssiya-* "throw" and *ūssiya-* "draw curtains" is from **h₁s* {11.6.3.1.}; for *āssiya-* "be favored, dear" < **ánṣ-ye/o-* see {7.8.2.}.



### 11.5.3.2. **sw*

Čop (58–9, 62–3) suggests that the normal treatment is *sw* = [sw] with single /s/ and that [ssw] is restricted to derivatives with suffixes in [w] from bases with geminate /ss/, e.g. *apēnissuwant-* "of such kind" : *apēnissan* "thus", *hassuē-* "be(come) king" : *hassu-* "king". At least one set of derivationally related words, however, shows variation between single and double °Š°, suggesting that **sw* might have resulted in [ssw].

*huis(s)uē-* "be/stay alive"; with °Š-Š°: 3 sg. pres. *hu-is-su-ez-zi* KBo XIX 44 Rs. 19 (Supp. I) = *hu-u-is-su-u-ez-zi* in NH dup. KBo V 3 III 31; with °Š°: *hu-is-ú-e-ez-zi* KUB XLVIII 106 L. 11 (MH), *hu-is-ú-ez-zi* KUB XXXVI 75 IV 3 (MH), 2 pl. pret. *hu-is-ú-e-te-en-na* KUB XIV 1 Vs. 12 (MH) = [hwisswē-] < **h₂wesw-éh₁-* {3.11.1.2.}; *hwis(s)uwant-* "alive" = [hwisswānt-] (with analogical full-grade < **h₂wes-wént-* {3.11.1.2.}) shows variation between °Š° and °Š-Š° even within individual OH texts; with °Š-Š°: *hu-is-s[u-wa-an-za* StBoT 25, 124 II 13; nom. pl. c. *hu-is-su-wa-a[n-te-es*(?) StBoT 25, 124 II 15; with °S°: nom. sg. c. *hu-is-w[a-an-za]* StBoT 25, 124 II 8, *hu]-i-su-wa-an-za* ib. II 16, *hu-is-wa-an-za* KUB XXIX 34 IV 13 (OH+), *hu-i[s-w]a-an-za* KUB XXX 10 Vs. 21, *h[u-is-w]a-an-za* ib. Vs. 22, acc sg. c. *hu-u-i-is-wa-an-da-an* KBo III 38 Rs. 25 (OH+), nom. pl. c. *h]u-i-su-wạ-an-t[e-es* StBoT 25, 117 Rs.! 7; cf. *huswant-* "alive": nom. sg. c. *hu-su-wa-an-za* StBoT 25, 112 II 4, acc. sg. c. *hu-su-wa-an-da-an* StBoT 25, 4 II 14 = *hu-s[u-* in dup. StBoT 25, 3 II 5, *hu-s[u-wa-an-t/da-an* KBo III 22 Vs. 43 (OH), *hu-su-wa-an-ta-an* KBo XXII 2 Rs. 9 (OH) *hu]-i-su-wa-an-za* ib. II 16, nom.-acc. sg. n. *hu-us-wa-an-da-an* KBo VI 3 III 69 (MH) and *huisu-*, *huesu-* "alive, raw"; oblique stem *huisuwa-* (always with °Š°).

## 11.5.4. **s* plus laryngeal

### 11.5.4.1. **sh₁*

Intervocalic **sh₁* yielded /s/ in **sēsar* "filter" in *sesariya-* "filter" (it. 2 pl. imp. *se-sa-ri-is-ke-ten* KUB XIII 3 III 23, MH) and $^{GIŠ}$*sesarul-* "sieve" (inst. *se-sa-ru-li-it* ib. III 23) with stem [sēsar] < **sesh₁-r̥* : IE **seh₁-* "press". The verb *si(s)sa-* "press, seal, collide" (2 sg. pres. act. *si-is-at-ti* KUB I 16 III 58 (OH+), 3 pl. pres. midd. *si-is-sa-an-da-ri* KUB VIII 22 II 7 (OH+), 3 pl. imp. *si-is-sa-an-du* KUB XI 1 III 10 (OH+) = KBo III 67 + KUB XXXI 2 III 10 (both OH+)) with stem [sissa-] can be from **sí-sh₁-so-*, iterative in *-ssa-* with reduplication from the same root (Kimball, *Gds Cowgill* 179).

### 11.5.4.2. **sh₂*

Medial **sh₂* remained as *sh* in *ēshar* "blood" = [ēshar] < **h₁ésh₂-r̥* or **h₁ésh₂-ōr* {10.1.1.1.}.

Another example would be *sesha-* "arrange, order": 1 sg. pres. *se-es-ha-ah-hi* e.g. KUB XV 11 III 11 (NH), 3 sg. *se-es-ha-a-i* KBo V 9 III 6 (NH), 3 pl. *se-es-ha-an-zi* KUB IX 15 III 19 (NH), KUB XLII 91 II 9 (NH), *se-es-[h]a-an-zi* ib. II 21, 3 sg. pret. *se-es-ha-as* KUB XXXVI 67 II 30 (NH), KUB XXXIII 120 II 46 (NH, cf. *se-es-ha-at-ta* with Luvian ending ib. II 36), 1 pl. *si-i]s-hu-en* KBo XXIII 106 Rs. 10 (U) = [sesha-] ([sēsha-]?),

reduplicated verb ultimately from **seh₂(i)-* "bind". Oettinger, *Stammbildung* 498–9, reconstructs a perfect **se-sh₂oh₁-* : **se-sh₂h₁-* (in *sishuen*). Melchert, *SIHP* 153 n. 124, suggests that *sesha-* (for OH **sisha-*) could continue **si-sh₂-*, a *hi*-verb with *i*-reduplication. If NH *seshatta* is genuine Luvian rather than Luvicized Hittite, then the verb had *i*-reduplication rather than *e*-reduplication, and the latter alternative is correct.

Inherited **sh₂* may also occur in *ishā-* "master, lord": nom. sg. *is-ha-a-as*, e.g. KBo VI 2 II 14, III 33 etc. (OH), *is-ha-as* e.g. ib. I 43, 46, III 56 etc., acc. sg. *is-ha-a-an* KBo XIII 31 III 9 (MH), gen. *is-ha-a-as* KBo VI 2 II 41, dat. *is-hi*, e.g. KBo VI 2 IV 13, 57, *is-hi-i* KUB XXVI 17 II 5 (MH), *es-he* KBo III 34 I 25 (OH+), voc. *is-ha-a*, e.g. KUB XXX 10 Rs. 10 (MH), if the stem is [ishā-] < **(h₁)esh₂-ó-* : Lat. *erus* "master".

Cf., however, Oettinger, *Stammbildung* 499, Tischler, *HEG* 3, 372–3, and Puhvel, *HED* 2, 385–90 for various alternatives.

### 11.5.5. *s* plus *z* ([tṣ])

Eichner, *MSS* 31 (1973) 88 n. 23; Joseph, *Sprache* 30 (1984) 1–15; Oettinger, *StBoT* 22, 33 w. n. 46.

The sequence [stṣi], usually spelled °Š-ZI, is sporadically reduced to -ZI- (probably = [tṣi] with loss of the */s/*) in third person singular present forms of *mi*-verbs with stems in final */s/*: *a-ar-zi* KBo X 45 IV 39 (MH+) (cf. MH KUB XLIII 58 II 15 with *a-ar-as-zi*), KUB XV 42 II 3 (NH), for *a-ar-as-zi* : *ārs-* "flow"; *iḫs-ta-ma-zi* KUB XIX 26 I 25 (Supp.I) for *is-ta-ma-as-zi*, *is-dam-ma-as-zi* : *ista(m)mass-* "listen, hear"; *pa-ap-par-zi*! (**text** *pa-ap-par-si* sic) KBo XXIII 23 Vs. 30 (MH) for *pa-ap-par-as-zi* : *papparss-* "sprinkle"; *tak-ki-iz-zi* KBo VI 34 II 25 (MH+) for *tak-ki-is-zi* : *tak(ki)s-* "put together". Some of these spellings could be mistakes with accidental omission of a sign (i.e. *a-ar-*<*as*>*-zi* etc.), and a few of the examples that have been cited may reflect alternate stem forms beside the stem in *-s* (e.g. *mi-ya-hu-un-te-zi* KUB VIII 28 I 2 (OH+) may be from an *ē*-stative *miyahuntē-* beside the fientive *miyahuntēss-*). But there are enough examples to suggest a genuine phonological process which may be viewed either as sporadic reduction reflecting actual variation in speech or as spellings that reflect a sound change that was reversed at least in spelling, and perhaps in speech, by analogy to other forms of the paradigm (Oettinger, *StBoT* 22, 33 w. n. 46, *Stammbildung* 122 n. 71, Eichner, *MSS* 31 (1973) 88 n. 23).

The examples Eichner cites of hypercorrect spellings with unetymological -Š-(Š)- from stems not in final */s/*, *lu-uk-ki-si-zi* beside *lu-uk-ke-ez-zi* "sets afire" and *par-ku-e-es-zi* beside *par-ku-e-zi* "be/prove pure, be innocent" are probably fientives in *-ēss*.

EGIR-*pa par-as-za* KUB IX 4 II 29 "backwards"= [parstṣ] is probably analogical for *parza* (MH+) on the model of *tāpusza* "to the side", reanalyzed as *tāpu-sza* (Joseph, *Sprache* 30 (1984) 6–7).



## 11.6. Postconconantal **s*

### 11.6.1. Stop plus *s*

#### 11.6.1.1. Dental stop plus **s*

Most clusters of stop plus **s* remain. In a few words, doubling of a stop indicates that voiced stops were devoiced before *s*.

Sequences of dental stop plus */s/* are written with -ZA- and occasionally with -ZA-AŠ- in productive formations (cf. Oettinger, *Stammbildung* 321–2 w. refs.). These are the normal spellings for iteratives from verb stems in final dental stop: e.g. *māld-* "recite solemnly": 1 sg. pret. *m]a-al-za-as-ke-nu-u[n* KUB XIV 10 I 25, *[ma-al]-za-ke-nu-un* ib. I 25 = *ma-a]l-za-as-ke-nu-un* in dup. KUB XIV 11 I 18 (both Pre-NH) = [maltsk-]; *ḫu(war)t-* "curse": 2 sg. pres. *ḫur-za-ke-si* KUB XXXIII 120 III 71 (NH), 3 sg. *ḫur-za-ke-ez-zi* KBo IV 8 III 16 (NH), KUB XXXIII 120 III 70, 2 pl. imp. *ḫur-za-ke-et-ten* KUB XII 34 I 17 (MH+) = *ḫu-u-ur-za-ke-et-te-en* in dup. 2308/c Vs. 2 (*HED*), vbl. noun nom.-acc. sg. *ḫu-u-wa-ar-za-ke-u-ar* KBo I 45 II 2 (NH, vocab.)) = [hurtsk-]; *ispānt-*, *sipānt-* "make a libation": e.g. 3 sg. pres. *is-pa-an-za-as-ke-[ez-zi* StBoT 25, 66 I 3, *is-pa-an-za-ke-zi* KBo XX 34 Rs. 6 (MH), 3 pl. *si-pa-a]n-za-kan-zi* StBoT 24, 104 II 18 (for the restoration see StBoT 26 p. 86) = [spantsk-]. The form *mamalzik-* in *ma-am-ma-al-zi-kan-ta* KUB XXX 68 Rs. 9 (*māld-* "recite") occurs in an entry in a NH catalog describing NH copies of rituals dating back to the OH period (edited CTH 173–4) and looks like a partially Luvicized hybrid with Luvian reduplication but the Hittite iterative suffix. For Pre-OH anaptyxis in *az-zi-(ik)-k°*, it. of *ēd-* "eat", see Oettinger, *Stammbildung* 322. The unique spelling *a*!*-az-za-ku-wa-an-du* in KBo XX 73 IV 10 (MH): *ēd-* "eat" (Puhvel, *HED* 2, 319) looks like a garbled spelling after preceding *akkuskandu*).

The sequence [sts] is spelled °Š-ZA-, e.g. in *ka-a-as-za* "hunger" = [Kāsts] < **Kóst-s*.

#### 11.6.1.2. Labiovelar plus **s*

Čop, *Linguistica* 5 (1963) 37; Melchert, *AHP* 151.

The reflex of **s* is doubled after the labial element of a labiovelar in *e-ku-us-si* KUB I 16 III 29 (OH+) = [ēk$^{w}$ssi], second person singular present of *eku-* = [ēg$^{w}$-] "drink" (presumably with devoicing of the voiced labiovelar preceding the */s/* {6.11.1.}) and in *te-(e)-ek-ku-us-si-(ya)-* "point out, show" = [dek$^{w}$ss-] < **dek$^{w}$s-* : Av. *daxš-* "teach", pres. *daxša-*, *daxšaya-* {6.5.1.}.

### 11.6.2. Resonant plus **s*

Bernabé Pajares, *REL* 3/2 (1973) 447; Carruba, *StBoT* 2, 35–6; Melchert, *Sprache* 33 (1987) 126–7, *HS* 101 (1988) 212, *AHP* 150–2, 158.

Inherited **ns* became *ss*, while **nz* resulted in *nz* = [nts] {7.8.2., 7.8.3.}. For the development of **ms* to [nss] see {7.8.4.}. Intervocalic **rs* became *rr* after an accented vowel, but before consonants and between unaccented vowels **rs* was retained {8.6.5.}. Many synchronic sequences of *ars* = [ărss] are from **ṛs* {8.6.5}.

Geminate /ss/ is sometimes indicated after *r* or *l*. There is no support for Carruba's analysis of the vowel °A° in spellings in *-ra-as-s* as a genuine anaptyctic vowel.

*kar(as)s-* "cut" = [karss-]: e.g. ptcp. nom.-acc. pl. *kar-as-sa-a[n-da]* KUB VIII 19 I 16 (OH+?/MH+?), beside *kar-sa-an-ta/da* (OH+), 1 sg. pret. *kar-as-su-un* KUB XXXII 129 Rs. 7 (NH), beside *kar-su-un* (MH), *kar-sa-nu-nu-un* KBo XIII 162+ Vs. 3 (U), 3 sg. imp. *kar-as[-sa-ru* KBo XII 139 L. 5 (U), beside *kar-sa-a-ru* 1/i III 5, *kar-s[a-a-ru* ib. L. 6 (StBoT 5, 82, OH+); caus. *kar(as)sanu-*, e.g. 3 pl. pret. *kar-as-sa-nu-er* IBoT II 129 Vs. 13 (NH) beside *kar-sa-nu-er* ib. II 15 < **kers-C-* or **kṛs-*; *par(as)s-* "flee" = [parss-]: ptcp. acc. sg. c. *par-as-sa-an-da-an* KUB XVII 29 II 15 (U) beside *par-sV-* (OH etc.) < **pers-C-* or **pṛs-*; *pappar(as)s-* "sprinkle" = [paparss-]: e.g. ptcp. nom. sg. c. *pa-ap-par-as-sa-an-za* KUB XXXIIII 8 III 17 (MH+), *pa-ap-pa-<ar>-as-sa-an-ta* KUB XVII 10 II 29 (MH) beside *pa-ap-par-sV-* (MH etc.) : IE **pers-*, **pṛs-* in e.g. Skt. *pṛṣant-* "spotted"; *warss-* "wipe" = [warss-]: e.g. 3 sg. pres. *wa-ar-as-se* KUB XXIX 30 II 4 (OH), beside *wa-ar-sa-an-zi* KBo XV 10 III 42 (MH), 1 sg. pret. *wa-ar-su-un* KUB XXXIII 66 III 10 (MH) < **wers-C-*, **wors-*.

Inherited **ls* or **l̥s* may occur in *palsa-* "way, time": e.g. dat.-loc. *pal-si* KBo II 4 IV 16 (OH+), KBo III 2 Rs! 3 (MH+), KBo III 5 I 24, III 20 (MH+), *pa[l-si* KBo XV 25 Rs 15 (MH+) = [balssa-] < **bel-so-* or **bl̥so-*, original meaning "way, passage" : IE **bel-* "split, cut out, excavate" in e.g. Arm. *pelem* "hole", O.Ir. *belach* "cleft, passage, way". Another example might be *als-* "give allegiance to" = [alss-]?, attested only in the participle: nom. sg. c. *al-sa-an-za* KUB XXVI 85 II 4 (U), *al-s[a-an-za*? KBo III 22 Vs. 4 (OH, reading uncertain), acc. sg. c. *al-sa-an-da-an* KUB XXIII 11 II 34 (MH+), vbl. noun nom.-acc. sg. *al-su-wa-ar* e.g. KUB XV 34 II 24 (MH), but this word has no reliable etymology.

See *HEG* 1, 19–20 and *HED* 1, 41 for various interpretations.

[lss] from **l̥s* is continued in *gulss-* "engrave, write" (e.g. 1 sg. pret. *gul-as-su-un*, NH) beside *gul-sV-* and *gul-as-C-* < **kʷl̥s-* {5.4.2.}; for *gul-z°* with Luv. *lz* see {11.8.2.3.}.

## 11.6.3. Laryngeal plus *s*

Bernabé Pajares, *REL* 3/2 (1973) 425–9; Čop, *Linguistica* 6 (1964) 49–50; Kimball, *Gds Cowgill* 178–9; Melchert, *SHHP* 92 n. 31, 100–1; Oettinger, *Stammbildung* 479.

### 11.6.3.1. **h₁s*

The sequence **Vh₁sV* resulted in [VssV], and the vowel, if accented, was lengthened: e.g. *hāssa-*, *hassā-* "hearth" = [hāssa-], [hassā-] < **h₂éh₁s-*, **h₂(e)h₁s-ó-* {10.3.2.1}; *hissa-* "axle" = [hissa-] or [hissā-] < **h₃ih₁s-ó-* or **h₃ih₁s-éh₂-* {10.2.3., 10.3.3.1.}; *pēssiya-* "throw" = [pēssya-] < **pé-h₁sye/o-*; *ūssiya-* "draw curtains" = [ūssya-] < **(o)ú-h₁sye/o-* (Kimball); iteratives in *-issa-* < **-ih₁so-* (e.g. *halzissa-* : *halzai-* "call, name", *īssa-* "work, do") < **(yi)-ih₁s-o-* (Kimball, cf. Melchert 100).

### 11.6.3.2. **h₂s*

Inherited **h₂s* remained: e.g. *pah(ha)s-* "protect" (*pa-ah-ha-as-*, *pa-ah-sV-*) = [pāhs-] < **péh₂s-* or *nahsar(r)att-* "fear" (*na-ah-sa-ra-at-t°*, *na-as-sar-ra-at-t°*), *nahsar(r)iya-* "fear, be afraid" (*na-ah-sa-ri-ya-*, *na-ah-sar-ri-ya-* etc.) = [nahsrat-], [nahsryo-] < **neh₂sro-*, **neh₂sryo-* {10.5.2.2.}.



### 11.6.3.3. **h₃s*

Accented **-éh₃s-* shows up as [ās] in *pāsi* "takes a swallow" = [pāsi] and **-eh₃sV-* shows up as [ass] in $^{LÚ}$*passantāla-* "taster" < **peh₃-s-* "drink" {11.4.3.}, while **-éh₃s-* shows up as *-ess-* in *ganess-* = [gnēss-]? "recognize" < **ĝnéh₃s-* {2.9.5.2., 10.5.3.}.

## 11.6.4. /s/ plus /s/

A postvocalic, preconsonantal sequence /s#s/ is usually simplified, at least graphically, to °Š° (Oettinger, *Stammbildung* 9, 319–20), e.g. iteratives to stems in final *-s*: such as *sēsk-* : *sēs-* "sleep" = /sēs-sk-/; *pask-* : *pās-* "take a swallow" = /pas-sk-/; *tusk-* "rejoice" and its derivative *tuskaratt-* "joy" with [tusk-] < PA **tus-ské/ó-*, primary formation in **-ské/o-* from **tus-* also in Skt. *tuṣyati* "is pleased" and *toṣaḥ* "joy" (see Mayrhofer, *KEWA* I 517). Note however, that [sēssk-] etc. would be awkward to spell (** *se-(e)-es-sa-k°* ?, *se-(e)-es-si-ik-* ?). Postvocalic [ss] arising in the course of inflection is spelled -VŠ-Š° in the second person singular present forms *e-es-si* (OH) "you sit" (Neu, *StBoT* 26 n. 213 w. refs.) and *is-ta-ma-as-si* "your hear" KBo VII 28 Vs. 8, 9, 10 (MH) : *istamass-*. It is unclear whether these should be regarded as examples of regular phonological development of **-s#s* to [ss] or as analogical replacements for *-s#-s*, which became *[s] with simplification of the geminate in IE (Oettinger, *Stammbildung* 9 w.n. 7).

Mayrhofer, *Idg. Gr.* I/2, 120–1, regards simplification of *s#s* across morpheme boundaries as Common IE; cf. Ved. *asi*, Av. *ahi*, Gk. εἶ (Ion. ἐῖς), Lith. *esi* < **h₁ési* for /*h₁és-si/ : **h₁es-* "be"; forms with *-ss-* (e.g. Dor. ἐσσί, O.Lat. *ess*) are, by contrast, readily explained as analogical. The *mi*-conjugation second person singular present ending *-si* is often replaced by *-ti* from the *hi*-conjugation in verbs with stem-final *-s*, e.g. NH *is-ta-ma-as-ti* "you hear" (Oettinger 9).

## 11.7. *z* for **s*

Benveniste, *BSL* 50 (1954) 29–38; Carnoy, *Orbis* I (1952) 423–6, *La Nouvelle Clio* 6 (1954) 233–5; Čop, *Linguistica* 9/1 (1969) 43–8; Ehelolf, *ZA* 43 (1936) 186 n. 1; Friedrich *ZA. NF* 15 (1949) 252 n. 1, *HE* 32; Gamkrelidze *Ar. Or.* 29 (1961) 409 w. n. 13; Georgiev, *KZ* 92 (1978) 93–7; Hart, *TPS* 1983, 150 n. 5; Josephson, *Heth. u. Idg.* 99–100; Kronasser, *VLFH* 68–9, *EHS* 50–2; Kuryłowicz, *PICL* 8, 223; Laroche, *RHA* 11/52 (1950) 40–1; Melchert, *AHP* 172; Oettinger, *Stammbildung* 152 n. 40, 249 n. 23; Petersen, *Mel. Pedersen* 471–4; Sturtevant, *Language* 4 (1929) 227–31.

This treatment is assured only for secondary sequences of **ns*, which resulted in a sequence spelled *nz* (probably [nts]) {7.8.3.}, and for secondary **rs* in *hasterza* "star" = [h(a)sterts] < **h₂stḗr* + *-s* {8.6.5.4.}. IE *[z] from **s* before voiced stops is spelled °Š° {11.5.1.2.}. In some words, spellings with °Z° seem to be attempts to represent consonant clusters (e.g. spellings for dental stop plus /s/ such as *ma-al-za-ak-* = [maltsk-], iterative of *māld-* "vow, pray"). Several words seem to show a development of IE **s* to to a sound spelled with °Z° in other contexts. Most of the best examples with possible IE sources involve initial **s*. In a few examples the reflex of IE **s* is written both as °Š° and with signs of the Z-series. There are also a few attractive-looking etymologies that imply **s* became the sound written °Z° before vowels and that do not show

alternative spellings with °Š°. These, however, are found beside many more examples that clearly show that the normal reflex of prevocalic *s was /s/. The conditioning behind this sound change, if it is in fact a sound change and not simply a matter of variant spellings, is obscure. Several examples may involve voicing assimilation of *s to /z/ before or after a consonantal resonant. These have parallels in Cuneiform Luvian spellings of *s as °Z° after resonants. If the Hittite spellings with °Z° are attempts to indicate voicing assimilation, however, they are not consistent. Alternatively, the spellings with °Z° might, in some cases, reflect sporadic epenthesis of [t] comparable to the epenthesis in *ns > [nts].

## 11.7.1. Substratum influence

An alternation between °Š° and °Z° after *h* may reflect substratum influence from Hattic (Eheloff, Friedrich Gamkrelidze; see Kammenhuber, *HdO* 449 on variation °Š°/°Z° and °Š°/°Z°/°T° in Hattic texts). This variation occurs, for example in place names such as $^{URU}$*Li-ih-si-na*: KUB VI 46 II 58 (NH) beside $^{URU}$*Li-ih-zi-na* KUB XIV 13 I 11 (Pre-NH), $^{URU}$*Li-ih-zi-na* KBo VI 23 Rs. 33 (NH), *Li-ih-zi-na-az* $^{URU}$ KUB XXXIII 66 III 6 (MH?), $^{URU}$*Li-ih-zi-ni-w[a* ib. III 9; cf. Hattic $^{URU}$*Lahanza* (Eheloff).

## 11.7.2. From IE *s

### 11.7.2.1. Certain examples

There are two certain examples in which the reflex of IE *s is written °Z°, *zama(n)kur* "beard" and *zakkar* "excrement".

*zama(n)kur* "beard": nom.-acc. sg. *za-ma-an-kur* KUB XXIV 12 II 21, III 7, 34 (NH), KBo XXI 20 I 25 (NH), *za-ma-kur* KUB XXXI 127 I 11 (MH+), beside *saman-kurwant-* "bearded": nom. pl. c. *sa-ma-an-ku-ur-wa-an-te-es* KBo III 8 III 25 (Pre-NH), acc. pl. *s[a-m]a-an-kur-wa-du-us* ib. III 7 = [zmākur] < *smók$^{u}$r̥ "beard", cf. Skt. *śmaśru* id. < *smókru (with assimilation of the initial *s) < *smók$^{u}$r̥ with metathesis of *u̯r̥ to *ru before word boundary (Mayrhofer, *Idg. Gr.* I/2, 160–2).

*za-ak-kar* "excrement": KBo I 45 I 9 (NH, vocab.), KUB XIII 4 III 67 (MH(?)+), beside the more common spelling *sa-ak-(k°)*: e.g. nom.-acc. sg. n. *sa-ak-kar* KUB XVII 28 I 5 (OH+), inst. sg. *sa-kan-da* KBo XXII 2 Vs. 2 (OH) = [sākar] < *sók-r̥, inst. [sakanda] < *s(o)k-n̥-d (for the inflection see Schindler, *BSL* 70 (1972) 5). The spelling with °Z° is also found in nom. *za-as-ga-ra-is* "anus", dat.-loc. *za-as-ga-ri* in KBo XVII 61 Rs. 14 (MH) = *zasgar* = [tskār]?, [skār]?) "excrement" < coll. *skór, also in Gk. σκῶρ "dung", plus *āis* "mouth" (11.3.2.).

### 11.7.2.2. Less certain examples

Other examples that have been cited have less certain etymologies and lack variant spellings with °Š°.

A *zaluki* or *zaluga-* "long, prolonged, extended" ([zlugi/a-]?), is implied by derivatives: *zalukess-* "become long": 3 sg. pret. *za-lu-ke-es-ta* KUB XXII 44 I 1 (U), *zaluganu-* "lengthen, prolong, stretch out": 3 sg. pres. act. *za-lu-uk-nu-zi* KUB XXVI 17 I 9 (MH), *za-lu-ga-nu-zi* KUB XIII 20 I 12 (MH+), 3 pl. pres. midd. *za-al$^{!}$-qa-nu-an-ta-ri* KUB XIII 1 IV 22 (MH), 1 pl. pret. *za-lu-ga-nu-me-en* KUB XVIII 36 L. 12 (U), vbl. noun nom.-acc. sg. *za-lu-ga-nu-m[ar]* KUB XXI 38 I 34 (NH), *za$^{!}$-lu-ga-nu-mar-ra* (+ *-(y)a-* "and") ib. I 36. These forms are paralleled by *dalugēss-* "become long" and *daluganu-* beside *dalūki* "long" and were compared by Laroche to Gk. λιγύς "delay" and Lat. *languēre*, implying a root *$sleh_1g$-, *$s\underline{l}h_1g$-* "long", and suggesting a reconstruction *$s\underline{l}h_1g$-*, parallel to that of *dalūki-* < *$d\underline{l}h_1gi$-.

The *u* can continue vocalized *$h_1$ (10.9.2.1.).

*zinni/a-* "finish" (*zi-in-ni-*, OH etc.), *zi-in-na-* (OH etc.) may be from *$si$-n-$h_1$-*, weak stem of a nasal present *$si$-ne-$h_1$-* (cf. Lat. *sinere* "let go of") (10.8.5.), while the related *zēa-* "be cooked" < *"be done" (3 sg. pres. *zi-e-a*, OH etc., *ze-e-a-ri*, Pre-NH, NH, *ze-a-ri*, MH?, *zi-ya-ri*, NH, ptcp. acc. sg. c. *ze-e-an-t°/d°*, OH etc.) could continue an acrostatic middle *$séih_1$-o* (4.3.2.1.).

*zāi-* "cross over": 2 sg. pres. *za-a-iṭ-ti* KBo V 13 II 31 (NH), *za-a-ṣi* KUB XXXIII 124 IV 1 (NH), 3 sg. *za-a-i* KBo VI 2 II 31 (OH), 3 sg. pret. *za-a-is* KUB V 1 I 67, *za-a-[i]s*, ib. 82 (NH), 1 pl. *za-i-u-en* KUB XXXXI 101 L. 11 (U), 3 pl. *za-a-er* KUB XVIII 24 III 16 (NH), 2 pl. imp. *za-i-it-te-en* KUB XXXI 101 L. 7, it. 3 sg. pret. *za-a-is-ke-et* KUB VIII 50 II 10 (NH), *za-hi-is-ke[-* KBo III 41 Rs. 7 (OH+); caus. *zīnu-*: 3 pl. pret. *zi-nu-er* KBo III 46 Vs. 19 (OH+), it. 3 sg. pres. *zi-i-nu-us-ke-ez-zi* KBo VI 2 II 30; *zāi-* and *zīnu-* are derived by Melchert, *SHHP* 101 from *$seh_1(i)$-* "go forward, advance", cf. Gk. ἰθύς "straight" < *$sih_1$-dhú-*, ἰθύνω "press forward" and Skt. *sādhu-* "leading to success", *sādhati* "goes forward, reaches a goal, succeeds"; for the metathesis in the causative *$sh_1i$- > *$sih_1$- see (10.1.2.).

Examples *Stammbildung* 484.

*zēna-* "autumn": e.g. gen. sg. *ze-e-na-as* KUB XXXVIII 32 Rs. 21 (NH), *ze-e-na-a[s]* IBoT II 93 L 8 (OH+), dat.-loc. *ze-e-ni* KUB XII 2 II 9 (NH), KUB XLII 100 I 10, IV 25 (NH), *ze-ni* KUB XXV 30 I 10 (U); extended form *zēnant-*: nom. sg. *ze-e-na-an-za* KUB XXVII 16 I 10 (NH), gen. *ze-e-na-an-da-as* KBo XI 50 VI 18 (OH+), *ze-e-na-an-ta-as* KBo XXIV 118 VI 7 (NH), (= *ze-e-na-an-da-[as]* in dup. KUB XXII 2 IV 24), *ze-na-an-da-as* KUB XXIV 3 I 7 (MH+). The word is derived by Oettinger (152 n. 40) from *séno- "year" from *sen-* "old" (in e.g. Skt. *sánaḥ* "old", Gk. ἕνος id., Lat. *senex* id. and in Hitt. *zinni/a-* "end") and by Benveniste (32–5).

*zankil* "recompense" in *zankilā(i)-*, *zankilai-* "make recompense": 3 sg. pres. *za-an-ki-la-i* KBo II 4 L. edge 4 (OH+), 3 pl. *za-an-ki-la-a-an-zi* KUB XVI 2 IV 7, 12, *za-an-ki-la-an-zi* KBo XIV 21 II 62 (NH), KUB XIII 4 IV 10 (MH(?)+), KUB XVI 39 II 43 (MH+), 3 pl. imp. *za-an-ki-la-a-an-du* KUB IX 15 II 22 (NH), verbal noun, nom.-acc. sg. "*za$^{!}$-an-ki-la-tar* KUB XVI 77 II 47 (U), *za-an-ki-l[a-tar* KBo XIV 21 II 7, *za-an-ki-la-tar* ib. II 15, 23, *za-an-k[i-l]a-tar* ib. II 58, dat.-loc. *za-an-ki-la-an-ni* KUB V 5 IV 15 (U), nom.-acc. pl. *za-an-ki-la-tar*$^{HI.A}$ KUB V 6 II 48. This word is compared by Oettinger, *Stammbildung* 152 n. 40, with Lat. *sancīre* "to consecrate", *sanctus* "consecrated", but note *sāklāi-* "rite, custom" : Lat. *sacer* "sacred", probably from the same root (Ernout-Meillet, *Dict. ét.* 587).

Pedersen's derivation of the reflexive particle *-za* (*-az*) from a sandhi variant of IE reflexive **se* or **swe* (*Hitt.* 76, *MS* 80–3) will not work, because as the Luvian cognates, CLuv., HLuv. *ti*, and Lyc. *ti* show, its PA source was **ti*.

### 11.7.2.3. Explanations

Čop (47–8) considers °Z° = [ts] for /s/ expressive, onomatopoeia, or sound symbolism in *zakkar* and *zappiya-* "drip, drop". Most researchers, however, have attempted to explain apparent examples of °Z° from **s* as the result of conditioned sound change. Benveniste suggests that Hitt. *z* = /ts/ beside /s/ reflects a phonemic distinction between an IE **s* which became /s/ in Hittite and the other IE languages and an affricate **c* (or **ts*) which became Anatolian **z* but **s* in the other IE languages (see also Kuryłowicz). Several of the etymologies on which this idea is based, however, are incorrect. Note especially that the ablative ending *-z, -az* = [-(a)ts] is from PA **-(ā)-ti* and cannot have had IE **c* (**ts*) {3.8.1., 6.7.2.2.}, and that the reflexive particle *-z(a)* continues PA **ti*, not the IE reflexive **se* or the second person singular pronoun **tē*.

Laroche explained the °Z° of *zama(n)kur* and *zaluki* as reflecting voicing assimilation in the initial clusters **sm* (i.e. **smoḱu̯r̥* > [zmākur]) and **sl* (in *[zaluki-] < **sl̥h₁g-*). If the latter etymology is correct, voicing assimilation would have to precede the vocalization of **l̥* (i.e. **sl̥h₁g-* > **zl̥h₁g-* > *zalug-*). Note, however, that **sm* is spelled ŠA-M° and ŠE-M° in *samenzi, semenzi* "passes in review, withdraws" etc. {11.3.3.2.}. Oettinger, *Stammbildung* 152 n. 40, suggests that **s* became *z* (= /z/ or /ts/?) in the neighborhood of **n* or **m* in *zinne/a-, zēna-, zankil,* and *zama(n)kur* by distant voicing assimilation, but note, e.g. *sīna-* "figure" (OH *si-i-na-*, Post-OH also *se-e-na-*), which is never spelled with Z°.

A common source of doublets in other languages is dialect borrowing (cf. e.g. Mod. Eng. *vixen* vs. *fox* with (southern) /v/ vs. (midland, northern) /f/ < Gmc. **f*), and it is possible that some examples of **s* > *z* represent dialect borrowings; but in the absence of firm evidence about dialects in Hittite, such conclusions remain speculative. In Luvian **s* is written °Z° after resonants (e.g. in forms of the Luvian *sa*-case such as *ādduwālza* = *adduwāl-sa* "evil", *hantilza* = *hantil-sa* "first", *parsulza* = *parsul-sa* "crumbs"; see Laroche, *DLL* 133), and it is possible that some examples, e.g. *nah(h)si-, nahzi-*, a measurement of capacity or weight (nom. sg. *na-ah-ha-si-is, na-ah-si-is* beside *na-ah-zi-is* (4 ex. Tischler, *HEG* 7, 251–2 w. refs.; examples and definition *CHD* 3, 341–2), show Luvian or Palaic influence or are borrowings from these languages.

If the spelling IŠ-K° represents initial [sk] < **sk* and not *[isk-] with anaptyctic {1.15.3.}, it is possible that ZA-AŠ-K° in *za-as-ga-ra-is* and perhaps the Z° of *za-ak-kar* are alternative representations for initial [sk], in which case *zasgar* and *zakkar* might represent [skār] < collective **skṓr* as in Gk. σκῶρ beside *sakkar* [sākar] < singular **sóḱr̥* (cf. Oettinger, *Stammbildung* 249 n. 23, who reads [tˢkar]).

OH *saknās* is now interpreted by Hoffner, *HS* 107 (1994) 222–30, as genitive of a *sakna-* "oil".

### 11.7.2.4. z from a source other than *s

Various attempts to derive z in some of the words discussed above from an IE dental stop or source other than IE **s* do not work. *zashāi-* "dream" = [ts(a)shāi-] reflects **dhh₁-sh₂o-* with zero-grade root beside *tēsha-* id. = [dēsha-] < **dheh₁-sh₂o-* with full-grade.

Oettinger, *Stammbildung* 239 n. 23, suggests that **zaluki/a-* can be derived from **dl̥h₁gh-* as in Skt. *dhīrgha-* "long" beside *o*-grade **dolh₁gh-* in *dalūki-* [dalūgi-] and Gk. δολιχός. The °Z° of *zalukēss-, zaluganu-* etc. would be a representation of a cluster [dl], but since syllabic resonants otherwise develop preceding anaptyctic vowels (i.e. **R̥* > [aR]), this analysis is unlikely.

Attempts to derive *z* from dental plus **w* (Carnoy, Georgiev) are contradicted by e.g. *tuēkka-* "body, self" < **twéko-* {2.4.4.}, *tuwān (... tuwān)* "from here (... there)" < **dwām* {2.5.2.}, *dān* "second(ly) < **dwoyóm* {9.3.1.1.}, and *antuwahha-, antuhsa-* "human being" < **en-dhweh₂-os, *endhuh₂s-* {3.7.4.2.}. Carnoy (*Orbis* 1) proposes initial **dhy-V-* became *z-V* and **dy-V-* became *z*, but the etymologies on which this claim is based are not supportable; note also *sīus* "god" < **d(i)yḗus* or **d(i)yḗus* {4.8.3., 6.7.3.}.

Josephson, *Heth. u. Idg.* 99–100, proposes that initial **y* was palatalized to *z* (**y* > **dy* > *z*) but this is contradicted by, e.g. *iukan* "yoke" < **yugóm* {6.4.2.3., 9.2.1.3.} and *eka-* "ice" < **yégo-* {6.4.2.3., 2.1.1.}. Similarly, Petersen's attempt (*Mel. Pedersen* 471–4) to derive *z* from velar plus *þ (e.g. *zinni/a-* "end : Skt. *kṣināti* "destroys" and Gk. φθίνω) is contradicted by e.g. *hartagga-* "bear" = [hartka-] < **h₂r̥tko-* or **h₂ertko-* : Skt. *ṛkṣa-* "bear" < **r̥kpós* {1.10.2.1., 6.1.3.}.

## 11.8. Final *s

Final **-s* was retained. After vowels it is spelled -VŠ as in the nominative singular animate ending *-s*, e.g. dem. pro. *apās* (*a-pa-a-as*) < **h₁obhós*. Final [-Vt-s] is usually spelled -VZ, more rarely -VZ-ZA, e.g. *ne-ku-uz* "night" (MH etc.), *ne-ku-uz-za* (NH) = [neg$^{w}$ts]; nominative singular of animate *(-t)t*-stems: e.g. *si-i-wa-az* "day" (OH etc.) = [sīwats], *ku-(ú)-uz-za* "wall" = [gūts] < **ǵhéut-s; ka-ra-i-iz* "flood" (OH), *ge-re-ez* id. (OH+) = [grāits], [grets]. Final [-Ct-s] is usually spelled VC-ZA: e.g. nominative singular animate ending in participles and adjectives in *-nt*, such as *ap-pa-(a)-an-za* "taken, seized" = [apānts], nouns in [°st-] such as *ka-a-as-za* (MH etc.) = [Kāsts] : *kāst-* "hunger, or *hi*-conjugation third person singular preterits in *-s* to stems in final dental, e.g. *hu-u-wa-ar-za* KUB XXXV 92 IV 23 (NH) = [hwarts] : *huwart-* "curse"; cf. the variant spelling *hu-wa-ar-ta-as* in KUB XXII 70 Vs. 86 (NH). A spelling °R-ZA for **-r-s* occurs in *ha-as-te-er-za* "star" {8.6.5.4.}, suggesting that final **-r-s* developed an anaptyctic /t/, i.e. [h(a)sterts] < **h₂stḗr* plus animate ending **-s*. In *hi*-conjugation third person singular preterits from stems in final *-r*, however, the ending is spelled -AŠ, or -ŠA: e.g. *a-ar-as* "arrived" KUB XXXVI 101 Vs.? II 2 (OH+), *ar-as* (OH+ etc), *ạ-[ar]-ṣa* KBo XXII 2 Rs. 7 (OH), presumably = [ārs], analogical for *[ārts].

In third person singular preterits of *hi*-verbs in stem final velar or *hh* an epenthetic vowel develops between the stem final consonant and the ending *-s*, e.g. *a-ak-ki-is* "died" (OH), *wa-ak-ki-is* "bit" (NH), *wa-a-ki-is* 963/u L. 4 (*Stammbildung*), *sa-ak-ki-is* "knew" (OH+), *ma-ni-ya-ah-hi-is* "administered" (OH+). The epenthetic vowel here was presuably produced by the same rule that generated epenthetic /i/ in iteratives in *-sk-* to stems in final labial, velar or *(h)h* {3.9.3.}. After stems in final labial

stop the usual spelling for the *hi*-conjugation third person singular preterit is -C'A-AŠ (more rarely -C-ŠA) with dead vowel °A°, e.g. *ka-re-pa-as* (NH) "devoured" = [grēps], presumably analogical for *[grēpis].

Final *-*n-s* from *-*n* plus the animate nominative singular ending *-*s* in *n*-stems shows up as *-nz*, probably [-nts] with anaptyctic /t/, e.g. *su-ma-an-za* "cord" < *$suh_1$-$mḗ$n* + *-*s*.

The final -*s* of *ha-a-ra-as* "eagle" (OH etc.) and Pal. *harās* id. suggests that the nominative was reshaped as *$h_2orō$ + *-*s* within PA and without generalization of the stem final -*n*; see Melchert, *Sprache* 29 (1983), 6, 10.

Final /-s-s/ is spelled -ŠA-AŠ in *a-ar-sa-as* KUB XXXVI 89 Rs. 12 (NH), third person singular preterit of *ārs-* "flow", but as -AŠ in *a-an-as* KUB XXXI 41 I 14 (U), third person singular preterit of *āns-* "wipe", suggesting that these forms are to be read as [ārs] and [āns] with dead vowel.