



Universiteit
Leiden

The Netherlands

A historical grammar of Phrygian

Sorgo, A.

Citation

Sorgo, A. (2026, March 24). *A historical grammar of Phrygian*. Retrieved from <https://hdl.handle.net/1887/4297594>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4297594>

Note: To cite this publication please use the final published version (if applicable).

Aljoša Šorgo

A Historical Grammar of Phrygian

A Historical Grammar of Phrygian

Aljoša Šorgo

PhD Dissertation

Universiteit Leiden, The Netherlands

Copyright © 2026: Aljoša Šorgo. All rights reserved.

Cover design by Petra Kokol Kolarič.

Cover photograph: Phrygian inscription °B-07, by Alwin Kloekhorst and Alexander Lubotsky.

A Historical Grammar of Phrygian

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof. dr. S. de Rijcke,
volgens besluit van het college voor promoties
te verdedigen op dinsdag 24 maart 2026
klokke 13.00 uur
door

Aljoša Šorgo

geboren te Maribor, Slovenië,
in 1988

Promotores:

Prof. dr. Alwin Kloekhorst

Prof. dr. Alexander Lubotsky

Promotiecommissie:

Prof. dr. Casper C. de Jonge

Prof. dr. Daniel Kölligan (Universität Würzburg)

Dr. Bartomeu Obrador-Cursach (Universitat de Barcelona)

Prof. dr. Michaël Peyrot

Dr. Willemijn J. I. Waal

The research for this work was carried out as part of the research project *Multilingualism and Minority Languages in Ancient Europe* and was funded by *HERA, Humanities in the European Research Area*, as part of its research programme *Uses of the Past*

Dedicated to my mother

Table of Contents

Images and Tables	xiv
Conventions.....	xviii
Acknowledgements	xxi
I Introduction.....	1
I.1 A brief overview of the history of Phrygia and the Phrygian language 1	
I.2 Attestation of Phrygian	5
I.2.1 The designation of New Phrygian inscriptions in this work	10
I.3 Aim of this work	12
I.4 Methodology	15
I.4.1 Graeco-Phrygian as an interpretative tool.....	23
I.4.1.1 Preliminary evidence for the existence of a Graeco-Phrygian branch.....	24
I.4.2 A note on terminology.....	29
II Phonetics and Phonology.....	31
II.1 Old Phrygian.....	31
II.1.1 Old Phrygian alphabet.....	31
II.1.1.1 Preliminary notes on Old Phrygian phonology	35
II.1.1.2 The grapheme <↑>	37
II.1.1.3 Grapheme <y>.....	41
II.1.1.4 Grapheme <Ψ>.....	41
II.1.1.5 Non-canonical representation of sibilants	52
II.1.2 Synchronic phonological system of Old Phrygian.....	53
II.1.2.1 Restrictions in coda	54
II.1.2.2 Gemination	55
II.1.2.3 Vacillation in spelling	56
II.1.2.4 Vowel raising	59
II.2 New Phrygian	63

II.2.1 New Phrygian writing system.....	63
II.2.1.1 Phonemic system of Koiné Greek at the beginning of the Common Era	66
II.2.2 Preliminary notes on the New Phrygian sound system.....	67
II.2.2.1 New Phrygian metre.....	67
II.2.3 Synchronic phonological system of New Phrygian	69
II.2.3.1 Vocalism.....	70
II.2.3.1.1 Vowels of New Phrygian.....	70
II.2.3.1.2 The reflexes of Old Phrygian <i>ey</i> and <i>ē</i>	72
II.2.3.1.3 Vowels before a final nasal	77
II.2.3.2 Consonantism	80
II.2.3.2.1 Word boundaries and sandhi	80
II.2.3.2.2 Geminate spellings	85
II.2.3.2.3 A relative chronology of New Phrygian inscriptions	99
II.2.3.2.4 Other geminate spellings	102
II.2.4 Inscription from Dokimeion (°W-11).....	105
II.3 Developments from Proto-Indo-European to Phrygian.....	107
II.3.1 Developments from Proto-Indo-European to Proto-Graeco- Phrygian.....	107
II.3.1.1 Vocalism.....	110
II.3.1.1.1 Development of vowels, diphthongs, and syllabic resonants.....	110
II.3.1.1.2 Developments of laryngeals	113
II.3.1.1.3 Development of the syllabic resonants	117
II.3.1.1.4 Development of the syllabic nasals	119
II.3.1.1.5 Laryngeal hardening.....	121
II.3.1.2 Consonantism	123
II.3.1.2.1 Development of stops	123
II.3.1.2.2 Dental-velar clusters in Proto-Graeco-Phrygian and beyond	127
II.3.1.2.3 Development of resonants	132

II.3.1.2.4 Development of semi-vowels	134
II.3.1.2.5 Development of fricatives	135
II.3.2 Developments from Proto-Graeco-Phrygian to Old Phrygian..	137
II.3.2.1 The segmental system of Proto-Graeco-Phrygian.....	137
II.3.2.2 The development of vowels	138
II.3.2.2.1 Vowel raising in non-final position.....	143
II.3.2.2.2 Development of syllabic resonants.....	145
II.3.2.3 Development of the stops	146
II.3.2.3.1 Voiceless stops	147
II.3.2.3.2 Inherited plain voiced stops	148
II.3.2.3.3 Inherited voiced aspirated stops	152
II.3.2.3.4 Palatalization	153
II.3.2.3.5 Iotation.....	162
II.3.2.3.6 Development of the resonants	163
II.3.2.3.7 Development of the fricatives.....	164
II.3.2.3.8 Treatment of clusters	166
II.3.2.3.9 Sequences of nasal and dental	170
II.3.2.3.10 Word final clusters.....	173
II.3.2.3.11 Gemination	173
II.3.3 Developments from Old Phrygian to New Phrygian	174
II.3.3.1 Vowel developments	174
II.3.3.2 The development of consonants.....	182
II.3.3.3 Phrygian dialectology and Eastern New Phrygian.....	183
II.3.4 The Phrygian accent.....	188
III Nominal Morphology	200
III.1 Phrygian nouns	201
III.2 Case endings.....	205
III.2.1 Vocalic type	205
III.2.1.1 Nominative singular.....	206
III.2.1.2 Genitive singular	208

III.2.1.3 Dative singular	210
III.2.1.4 Accusative singular	211
III.2.1.5 Nominative plural	212
III.2.1.6 Genitive plural	213
III.2.1.7 Dative plural.....	214
III.2.1.8 Accusative plural	215
III.2.1.9 Neuter nominative/accusative plural.....	215
III.2.2 Consonantal type	216
III.2.2.1 Nominative singular.....	216
III.2.2.2 Genitive singular	218
III.2.2.3 Dative singular	218
III.2.2.4 Accusative singular	219
III.2.2.5 Nominative plural	220
III.2.2.6 Genitive plural	220
III.2.2.7 Dative plural.....	221
III.2.2.8 Accusative plural	222
III.2.2.9 <i>s</i> -stem contractions.....	223
III.3 Nominal stems.....	224
III.3.1 Thematic stems	226
III.3.1.1 <i>o</i> -stem basics	227
III.3.1.2 <i>a</i> -stem basics	228
III.3.1.3 Simple thematic stems	228
III.3.1.4 <i>-(e/i)jo-</i> suffixed nominal formations and reflexes of <i>*-ih₂-</i> stems	231
III.3.1.5 <i>-(e)vo-</i> suffixed nominal formations	234
III.3.1.6 <i>-(e)to-</i> suffixed nominal formations.....	238
III.3.1.7 <i>-ro-</i> suffixed nominal formations.....	240
III.3.1.8 <i>-elo-</i> suffixed nominal formations	241
III.3.1.9 The adjective <i>meka-</i>	242
III.3.1.10 Masculine <i>a</i> -stems	247

III.3.1.11 Non-native thematic stems.....	249
III.3.1.12 Thematic nominals not otherwise specified.....	251
III.3.2 <i>e</i> -stems	251
III.3.3 <i>i</i> -stems.....	254
III.3.3.1 <i>ti</i> -stems	255
III.3.3.2 <i>sti</i> -stems	257
III.3.3.3 “Unexpected” <i>i</i> -stems and <i>i</i> -stem endings	259
III.3.4 <i>u</i> -stems.....	270
III.3.4.1 The masculine personal suffix <i>-avos</i>	275
III.3.5 <i>r</i> -stems	284
III.3.6 <i>n</i> -stems.....	289
III.3.6.1 Neuter nouns with a suffix <i>-m(e)n</i>	290
III.3.6.2 <i>n</i> -stems originating from <i>nt</i> -stems	294
III.3.6.2.1 Personal names with the suffix <i>-evan-</i>	294
III.3.6.2.2 Other <i>nt</i> -stem nominals	295
III.3.6.3 <i>n</i> -stem nominals not otherwise characterized	296
III.3.7 <i>l</i> -stems.....	299
III.3.8 <i>m</i> -stems	302
III.3.9 <i>s</i> -stems	305
III.3.10 Stop-final stems	313
III.3.10.1 Dental stems.....	313
III.3.10.1.2 <i>iT</i> -stems	318
III.3.10.2 Velar stems.....	325
IV The Pronominal System	328
IV.1 The types of pronominal endings in Phrygian	328
IV.1.1 The PIE anaphoric pronoun * <i>h₁i-/h₁e-</i> and the <i>i</i> -type pronominal endings.....	330
IV.1.2 The thematic type endings.....	331
IV.1.3 The <i>e</i> -type endings	332
IV.2 The pronoun <i>i/e-</i> in Phrygian	332

IV.3 Demonstrative pronoun <i>si-/so-</i>	335
IV.3.1 Development of the stem.....	335
IV.3.2 Masculine and neuter forms	340
IV.3.3 Feminine forms.....	347
IV.3.4 <i>si</i> as a proclitic	352
IV.4 Anaphoric pronoun <i>to-</i>	353
IV.5 Demonstrative/reflexive pronoun <i>avto-</i>	357
IV.6 Relative pronoun <i>jo-</i>	360
IV.7 Indefinite pronoun <i>ko-</i>	367
IV.8 Interrogative pronoun <i>ki-</i>	369
IV.9 Enclitic pronoun (<i>j</i>) <i>o-</i>	372
IV.10 Reflexive pronouns <i>ve-</i> and <i>ibe-</i>	374
IV.11 Possessive pronoun <i>vo-</i>	384
IV.12 Personal pronouns	385
IV.13 Bound pronouns and pronominal chains.....	386
V Verbal Morphology	388
V.1 The Verbal System of Phrygian	388
V.1.1 The attested verbal categories of Phrygian.....	391
V.1.2 The meanings of attested verbal categories	393
V.1.3 The middle voice	402
V.2 Personal endings.....	408
V.2.1 Primary active endings	410
V.2.1.1 The development of the primary active endings.....	415
V.2.2 Secondary active endings	417
V.2.3 Middle endings	423
V.2.3.1 The development of the Phrygian medial endings.....	425
V.2.4 The imperative endings.....	429
V.2.5 The perfect endings.....	436
V.3 The Phrygian verbal stems	438

V.3.1 The present stem	439
V.3.1.1 The root present	439
V.3.1.2 The thematic present	440
V.3.1.3 The reduplicated present	447
V.3.1.4 The <i>ske</i> -presents	449
V.3.2 The aorist stem.....	451
V.3.2.1 The root and sigmatic aorist active	452
V.3.2.2 The root aorist middle	470
V.3.2.3 The thematic aorist.....	474
V.3.3 The perfect stem	477
V.3.4 The sigmatic optative.....	483
V.3.4.1 The consonantal element.....	487
V.3.4.2 The vocalic element	491
V.3.4.3 The origin of <i>*-sī-</i>	493
V.3.5 Denominal verbs	496
V.3.6 The imperative mood.....	503
V.3.7 The optative mood	505
V.3.8 The subjunctive mood.....	507
V.3.9 The root <i>dā-/dāk-</i>	509
V.3.9.1 The stem <i>dā/e-</i>	509
V.3.9.1.1 The stem <i>deda-</i> : <i>dedasitiy</i> and <i>δεδασσιννι</i>	510
V.3.9.1.2 The stem <i>daΨe-</i>	511
V.3.9.1.3 The stem <i>daske/o-</i>	512
V.3.9.2 The neo-root <i>dāk-</i>	513
V.3.9.3 The split of <i>*dā-</i> and <i>*dāk-</i>	516
V.4 Non-finite formations	521
V.4.1 The present medial participle.....	522
V.4.2 The perfect medial participle	523
V.5 The verb in conditional sentences	524
V.5.1 Protasis	526

V.5.2 Apodosis.....	532
VI Other Parts of Speech.....	537
VI.1 Prepositions and preverbs	537
VI.1.1 The preposition αδ.....	537
VI.1.2 The preposition ας	541
VI.1.3 The preverb <i>en</i>	543
VI.1.4 The preposition ις	544
VI.1.5 The preposition <i>met/με</i>	546
VI.1.6 The preverbs οδ and στ.....	551
VI.1.7 The preverb οπ.....	553
VI.1.8 The preposition <i>por/πουρ</i>	553
VI.1.9 The preverb <i>tit</i>	556
VI.1.10 Other possible prepositions and preverbs.....	558
VI.2 Particles and conjunctions.....	558
VI.2.1 The conjunctions <i>ai</i> and <i>aini</i>	558
VI.2.2 The enclitic conjunction <i>ke</i>	559
VI.2.3 The modal particles <i>ni/vi, av, κε</i>	560
VI.2.4 The intensive particle <i>ti</i>	569
VI.3 Phrygian numerals.....	571
VI.4 Phrygian adverbs.....	572
Appendix 1: Selected Old Phrygian Inscriptions	578
Appendix 2: New Phrygian Inscriptions	593
Bibliography.....	618
Samenvating in het Nederlands.....	641
Curriculum vitae.....	645

Images and Tables

Images

Image #1: <k> in *knays* °B-07

Image #2: <Ψ> in *anivaΨeti* °B-07

Image #3: <k> in *ke* °B-07

Image #4: A drawing of the Areyastis monument

Tables

Table #1: The areas in which New Phrygian inscriptions have been found

Table #2: The alphabetic signs of Phoenician, Greek, and Phrygian

Table #3: The consonantal segments of Old Phrygian

Table #4: The vocalic segments of Old Phrygian

Table #5: The values of alphabetic signs in Koiné Greek at the beginning of the Common Era

Table #6: The consonantal segments of Koiné Greek at the beginning of the Common Era

Table #7: The short vowels of Koiné Greek at the beginning of the Common Era

Table #8: The long vowels of Koiné Greek at the beginning of the common era

Table #9: The consonantal segments of New Phrygian

Table #10: The vocalic segments of New Phrygian

Table #11: A possible relative chronology of the language varieties used in the New Phrygian inscriptions

Table #12: The consonantal phonemes of Late PIE

Table #13: The vocalic segments of Late PIE

Table #14: Possible developments of the word for ‘man’ in Phrygian

Table #15: The consonantal segments of Proto-Graeco-Phrygian

Table #16: The vocalic segments of Proto-Graeco-Phrygian

Table #17: The vocalic-type nominal endings of Phrygian

Table #18: The consonantal-type nominal endings of Phrygian

Table #19: The attested case forms of the Phrygian lexeme *meka-* ‘great, big’

Table #20: The *e*-stem endings of Phrygian

Table #21: The *i*-stem endings of Phrygian

Table #22: The *u*-stem endings of Phrygian

Table #23: The development of the case forms of the PIE noun **diēus*

Table #24: The *r*-stem endings of Phrygian

Table #25: The *n*-stem endings of Phrygian

Table #26: The *l*-stem endings of Phrygian

Table #27: The *m*-stem endings of Phrygian

Table #28: The *s*-stem endings of Phrygian

Table #29: The *t*-stem endings of Phrygian

Table #30: The distribution of the ablaut grades in the Greek and Phrygian words for ‘foot’

Table #31: Attested forms of the noun *knays* ‘wife, woman’

Table #32: The *i*- and *e*-type pronominal endings in Phrygian

Table #33: The thematic type pronominal endings in Phrygian

Table #34: The declension of the PIE anaphoric pronoun **hi-/hi-*

Table #35: The attested forms of the demonstrative pronoun *si-/so-* in Phrygian

Table #36: The attested forms of the anaphoric pronoun *to-* in Phrygian

- Table #37: The attested forms of the pronoun *avto-* in Phrygian
- Table #38: The attested forms of the pronouns *ve-* and *ibe-* in Phrygian
- Table #39: The attested forms of the possessive pronoun *vo-* in Phrygian
- Table #40: Phrygian verbal forms decomposed into constituent elements
- Table #41: Types of Phrygian verbal formations, types of clauses in which they appear, and their semantic values
- Table #42: The endings appearing with types of Phrygian verbal stems
- Table #43: The primary active endings in Phrygian
- Table #44: The primary 3sg active desinences of Phrygian and Attic Greek
- Table #45: The primary 3sg active desinences of Proto-Graeco-Phrygian
- Table #46: The secondary active endings in Phrygian
- Table #47: The re-creation of the Phrygian secondary verbal ending *-t*
- Table #48: The middle endings in Phrygian
- Table #49: The imperative endings in Phrygian
- Table #50: The perfect endings in Phrygian
- Table #51: The chronology of the creation of the *es*-aorist in Phrygian, option 1
- Table #52: The chronology of the creation of the *es*-aorist in Phrygian, option 2
- Table #53: The sigmatization of the thematic aorists
- Table #54: The phonological development of sigmatic aorists in Phrygian
- Table #55: The distribution of the aorist desinences in Proto-Phrygian
- Table #56: The adoption of the aorist desinence *-es-* in the 2sg and 3sg active forms
- Table #57: The development of the 3sg indicative active aorist desinence
- Table #58: The Proto-Greek development of *θηκ- in the aorist and perfect systems

Table #59: The Proto-Phrygian development of **dā-* and **dāk-* in the aorist and perfect systems

Table #60: A decomposition of the verbal form *podaskai*

Table #61: The Proto-Graeco-Phrygian paradigm of the verb **d^hē-*

Table #62: A comparison of the Greek part of inscription °96^W to the standard Phrygian malediction formula *protasis*

Conventions

Abbreviations

acc., A – accusative	nom., N – nominative
act. – active	NPh. – New Phrygian
aor. – aorist	obl. – oblique
athem. – athematic	OPh. – Old Phrygian
cf. – <i>confer</i>	opt. – optative
dat., D – dative	p.c. – personal communication
DN – divine name	perf. – perfect
e.g. – <i>exempli gratia</i>	PG – Proto-Greek
fem. – feminine	PGPh. – Proto-Graeco-Phrygian
gen., G – genitive	PIE – Proto-Indo-European
Gr. – Greek	pl., Pl – plural
ibid. – <i>ibidem</i>	PN – personal name
id. – <i>idem</i>	PPh. – Proto-Phrygian
i.e. – <i>id est</i>	pres. – present
impf. – imperfect	prim. – primary
impv. – imperative	pron. – pronominal
inst., I – instrumental	sec. – secondary
loc., L – locative	sg., Sg – singular
masc. – masculine	subj. – subjunctive
mid. – middle	them. – thematic
MPh. – Middle Phrygian	<i>vel sim.</i> – <i>vel similia</i>
neut. – neuter	

Symbols

>	develops into by regular phonological development
<	derives from by regular phonological development
>>	develops into not by regular phonological development
<<	derives from not by regular phonological development
*	reconstructed form
**	incorrect form
+	unattested synchronic form
/X/	the phoneme X
[X]	the phonetic segment X; in syntactic analysis, the clause X
<X>	the grapheme X; spelt as X
°X	inscription designated X
#	word-initial or word-final position
##	pausa
X-Y	morpheme boundary between X and Y
X=Y	clitic or adposition binding between X and Y
[...]	omitted element(s)
?	uncertain
XXX	word does not belong to discussed category

Epigraphical conventions

- X poorly legible letter
[X] letters missing due to lacuna, restored by editor
[.] letters missing due to lacuna, not restored
(X) letters corrected by editor
{X} letters deleted by editor

Diacritics

- \bar{X} long vowel
 \breve{X} short vowel
 \acute{X} accented vowel
 \tilde{X} nasalized vowel
 \tilde{X} raised vowel
 $\underset{\sim}{X}$ lowered vowel
 $\underset{\sim}{X}$ fronted consonant
 $\underset{\sim}{X}$ retracted consonant
 $\underset{\circ}{X}$ syllabic consonant
 $\underset{\sim}{X}$ non-syllabic segment
 X^h aspirated consonant
 X^w labialized consonant
 X^j palatalized consonant
 \vec{X} consonant with no audible release
 $\underset{\sim}{X}$ breathy-voiced consonant

Acknowledgements

As my PhD journey draws to a close and I recollect the years spent on it, I cannot but feel profoundly fortunate to have been surrounded by such wonderful people during this time.

No words are sufficient to express my gratitude to my supervisors, Sasha Lubotsky and Alwin Kloekhorst. Their willingness to stick by me through the years, as well as their patience, limitless empathy, and scholarly prowess, are the primary reasons this dissertation has seen the light of day.

I wish to express my appreciation and thanks to my ‘imperishable’ gang who made my time in Leiden so enjoyable: Kate (‘kætəʃín’) Bellamy, Chams (‘Cham-cham’) Bernard, Louise (‘Loeloe’) Skydsberg Friis, Rasmus (‘*hires-mōn’) Thorsø Nielsen, and Andrew (‘*ŋ-dreu’) Wigman. I also wish to thank all my linguist friends and all those in Leiden who shaped my life during the past ten years: Oscar Billing, Juan Briceño Villalobos, Andrej Dvornik, Sašo Grozdanov, Sampsa Holopainen, Anastasiia Ionova, Katja Lubina, Morana Lukač, Axel Palmér, Alex Reuneker, Yuri Robbers, Þorbjörg Þorvaldsdóttir, Xander Vertegaal, and the crew of Meneer Jansen (on whose terrace many pages of this dissertation were written).

I am grateful to the many excellent scholars with whom I was fortunate enough to become acquainted and who have helped me grow as a researcher: Romain Garnier, Guus Kroonen, Jenny Larsson, Orsat Ligorio, Craig Melchert, Bartomeu Obrador-Cursach, Michaël Peyrot, Tijmen Pronk, Elisabeth Rieken, Velizar Sadovski, Lucien van Beek, and Ilya

Yakubovich. I am much obliged to the staff, past and present, at the Department of Comparative and General Linguistics at the University of Ljubljana where I first entered the exciting world of Indo-European linguistics, particularly my former classmate Luka Repanšek and my first mentor, Metka Furlan.

My sincerest gratitude goes to my Slovenian friends who have never failed to stick by me: Mitja Kočevar, Maja Dobnik Kočevar, Petra Kokol Kolarič, Tadej Jambrovič, Sašo Cmrečnjak, and Izidor Gavez, as well as to Matija Bobičič, Jernej Cvetek, Lucija Govedić, Ida Harc, Ariela Herček, Simona Jelen, Jure Kirbiš, Boštjan Kmetec, Marko Kolarič, Nejc Kop, Matjaž Lorber, Polona Majcenovič, Petra Maruško, Nina Medved, Lenart Skoberne, Gregor Stamejčič, Ana Šela, Kim Šmid, Jona Vizjak, Jan Vrhovski, and Ondina Zupan.

I would especially like to thank my two linguistic ‘besties’, Stefan (*‘iš-te-e-ep-pa-an’*) Norbruis, with whom I bless the rains down in Africa, and Ola Wikander, *il miglior fabbro*, who can write a washing bill in Babylonian cuneiform, both of whom have spent countless hours discussing with me all matters personal and linguistic. The contribution of their willingness to engage with me on the minutiae of this dissertation cannot be overstated.

Finally, I thank my family for their love and support, my uncles Andrej and Arjan, my aunts Karmen and Marija, my grandmother Marija, and all the rest. My biggest thanks go to my grandparents Drago and Marjeta, to my father Peter, and to my mother Agica, who has always been willing to let me choose my own path in life. I would not be where I am today without your unwavering belief in me.