Binary phonological and morphological traits

Binary traits

The following table details the binary traits that resulted from the transformation of the characters described in [1] and [2]. For each trait, 0 denotes absence, 1 presence, and ? uncertainty (i.e., the value could be either 0 or 1).

Phonological traits

Label	Character
P1-01	*p...k^{w} > *k^{w}...k^{w}
P1-02	Merger of *p and *k^{w}
P2	Full "satem" development
P3	"RUKI" retraction of *s
P4	Lenition of stops after long vowels and unstressed vowels (only)
P5	Medial *k^{w} > *g^{w} unless *s follows immediately
P6	"Limited" Čop's Law (*éC- > áCC-)
P7	Word-initial *je > *e-
P8	Merger of *i, *e, and *u, and merger of *a and *o (but *a and *o remain distinct)
P9	*mb^{h} > *m
P10	Loss of preconsonantal *d, affrication of remaining *d, and merger of palatalized *d with palatalized dorsals
P11	*tsk > *tk, but *kst > *kəst
P12	Merger of all nonhigh vowels and syllabic nasals
P13	Bartholomae's Law (rightward assimilation of aspiration)
P14	Merger of voiceless aspirated stops and preconsonantal voiceless stops as fricatives
P15	Development of intonation contrast (acute vs. circumflex) in nonfinal heavy syllables
P16	Sequence of changes: (a) Grimm's Law; (b) Verner's Law; (c) shift of stress to initial syllables; (d) merger of unstressed *e with *i unless *r follows immediately
P17	Sequence of changes: (a) loss of intervocalic *j unless *i precedes and does not follow immediately; (b1) *əi > *ai, and (b2) *o V > *o (trimoraic vowel)
P18	Merger of word-final nonnasalized *o with short *u; lowering of *e to *a in stressed syllables, but merger of *eo with *ai in unstressed syllables
P19	Merger of * w and *zw with *ww
P20	Merger of *e with *i ; merger of *o with *u in final syllables (including monosylla- bles), but with *a elsewhere
P21	*p > *k before obstruents, *b before liquids, *w before nasals and after *s, ø
P22	Syncope of short vowels in final syllables next to *s and after semivowels

Morphological traits

Label	Character
M1a	One stem for each lexical verb: 1 one stem for each lexical verb
M1b	One stem for each lexical verb: two conjugations with partly different endings in the active
M1-02	present–aorist–perfect contrast present or clearly reconstructable
M1-03	basic contrast between present, subjunctive, and preterite stems; formation of present and subjunctive stems largely parallel
M1-04	basic contrast between present, preterite, and infinitive stems
M1-05	basic contrast between present and preterite stems, the latter in two conjugations "strong" (reflecting an older perfect) and "weak" (originally periphrastic)
M1-06	basic contrast between present, subjunctive, future, and preterite stems
M1-07	basic contrast between present, subjunctive, and preterite stems, the latter two normally sigmatic
M2	Augment
M3	thematized aorist
M4-01	Productive function of *-sk^{j}é/ó-: Iterative
M4-02	Productive function of *-sk^{j}é/ó-: Inchoative
M4-03	Productive function of *-sk^{j}é/ó-: Causative
M5-01	Mediopassive primary marker (sg. and 3pl.): *-r [ancestral]
M5-02	Mediopassive primary marker (sg. and 3pl.): *-y (= active *-i)
M6-01	Thematic optative: *-ih$_1$-
M6-02	Thematic optative: *-oj-
M6-03	Thematic optative: *-a
M8-01	Most archaic superlative suffix
M8-02	Most archaic superlative suffix
M12	Imperfect subjunctive in *-se -
M13	Gerundive in *-ndo-
M14	Syncretism of 3sg. and 3pl.
M15	Replacement of 2sg. indicative by optative in the strong preterite

Concerning the lexical data, each unique value of a multistate character (i.e., cognate) was transformed into a binary character registering the presence or absence of a word in that cognate set in the language.

References

[1] Donald A. Ringe and Ann Taylor. "Morphological characters". Supplementary material. July 2007. URL: https://www.cs.rice.edu/~nakhleh/CPHL/code-m-07.pdf.

[2] Donald A. Ringe and Ann Taylor. "Phonological characters". Supplementary material. July 2007. URL: https://www.cs.rice.edu/~nakhleh/CPHL/code-p-07.pdf.