

Supplementary materials: data and results

S1

Languages, including latitude and longitude, used in the current study.

Language	Longitude	Latitude
Albanian (Tosk)	19.988251	40.446947
Angloromani	-2.355272	53.779521
Ashkun	70.791057	35.255909
Assamese	91.79022	26.143538
Avestan	55.9499	31.70708
Baluchi	65.03622	26.27794
Bengali	88.36119	22.566866
Breton	-4.102864	47.995619
Bulgarian	23.3535	42.698586
Catalan	2.179642	41.379225
Classical Greek	23.999205	37.696861
Cornish	-5.567517	50.191816
Croatian	15.992661	45.813486
Czech	14.468136	50.071244
Danish	12.583182	55.679885
Dutch	4.898126	52.374367
Elfdalian	14.040485	61.225938
English	-0.100059	51.497728
Faroese	-6.773322	62.009754
French	2.347857	48.854451
Frisian	5.795597	53.20394
Friulian	13.485001	46.127028
German	13.409092	52.520822
Gilaki	49.283999	37.526056
Gothic	20.199324	53.042874
Gujarati	72.139869	22.44456
Hindi	77.224996	28.625252
Hittite	34.621158	40.013951
Icelandic	-21.939672	64.144237
Irish	-9.301101	53.244432
Italian	12.385145	43.115956
Kashmiri	75.939182	34.322996
Kati	71.314571	35.799992
Khowar	72.51658	36.457958
Konkani	72.871066	19.262081
Kurdish (Kurmanji)	43.822746	37.788081

Kurdish (Sorani)	45.728512	35.821161
Ladin	11.923755	46.657384
Latin	12.4923	41.890189
Latvian	24.113274	56.915
Lithuanian	25.255852	54.680183
Low German	9.488653	53.931994
Luwian	36.788273	36.620598
Maithili	86.155454	26.075397
Maldivian	73.511939	4.17191
Manx	-4.484657	54.151988
Marathi	75.494714	19.38701
Middle Breton	-1.532472	47.207854
Middle Dutch	5.959192	52.213073
Middle English	-0.758622	51.313607
Middle Greek	28.997555	41.058644
Middle High German	9.717403	48.742717
Middle Irish	-8.634407	52.658918
Middle Low German	10.68504	53.867783
Middle Persian	51.675883	32.647027
Middle Welsh	-3.380017	52.240359
Modern Armenian	44.527159	40.147389
Modern Greek	23.694334	38.028622
Nepali	89.243625	26.659702
Norwegian (Bokmål)	10.740802	59.912785
Norwegian (Nynorsk)	5.075361	60.330984
Old Church Slavonic	30.453243	50.415519
Old Dutch	5.123259	52.09095
Old English	-1.314163	51.060696
Old French	2.347857	48.854451
Old Frisian	6.567738	53.215696
Old High German	9.962616	49.795477
Old Irish	-6.873827	53.726794
Old Italian	11.249249	43.776281
Old Norse	10.397522	63.426975
Old Persian	52.891196	29.935501
Old Portuguese	-8.629141	41.15818
Old Provençal	6.222519	43.426825
Old Prussian	19.900799	54.436292
Old Russian	31.275345	58.521428
Old Saxon	8.806043	53.07585
Old Spanish	-4.023666	39.857094
Old Swedish	16.321936	58.481083

Oriya	86.278412	20.608549
Ossetian (Iron)	44.675689	43.043802
Pali	83.000379	27.617895
Parachi	69.702595	34.832889
Pashto	68.188804	31.432929
Persian	55.748043	32.735314
Polish	20.994015	52.237892
Portuguese	-9.135132	38.708043
Prakrit	84.727979	25.379098
Prasun	70.741619	35.33661
Provençal	6.222519	43.426825
Punjabi	74.349411	31.536604
Romani (Arli)	19.881168	42.970349
Romani (Bugurdži)	21.222651	42.118106
Romani (Burgenland)	16.377534	47.193164
Romani (Kale)	21.470967	60.972087
Romani (Kelderash)	22.495093	47.187683
Romani (Lovara)	23.090199	47.401544
Romani (Sepečides)	27.131666	38.392804
Romani (Sinte)	10.203424	51.4992
Romanian	26.086373	44.427511
Romansh	9.838341	46.496755
Russian	37.64843	55.677584
Sanskrit	76.28612	23.511415
Sardinian	9.32737	40.31746
Scandoromani	13.158622	59.481307
Scottish Gaelic	-7.368974	57.16276
Serbian	20.472164	44.801327
Shughni	71.503041	38.389635
Sicilian	13.368345	38.115141
Sindhi	69.674802	23.253479
Sinhalese	79.85635	6.935115
Slovene	14.50823	46.050593
Sogdian	66.962682	39.646576
Spanish	-3.703482	40.416881
Swedish	17.438718	59.73823
Swiss German	8.538354	47.36888
Tajik	70.342617	38.663458
Talysh	48.730017	38.854174
Tocharian A	86.154785	41.760336
Tocharian B	81.514435	41.645502=
Ukrainian	30.525414	50.449474

Upper Sorbian	14.425442	51.179914
Urdu	73.018423	33.681135
Wakhi	72.760057	37.219477
Walloon	4.865382	50.464478
Welsh	-4.38518	52.926407
Yiddish	24.031167	49.853028

S2a

List of typological features (from DiACL database <https://diacl.ht.lu.se>) used in the current study.

Grid = topmost organizational unit in database, corresponding to linguistic domain; Feature = second organizational unit in database; Feature description = Description of Feature in database; Variant = lowest organizational unit in database; Variant description = description of variant in database; ID = unique database ID of Variant.

Grid	Feature	Feature description	Variant	Variant description	ID
Word order	Adpositions	Do adpositions normally occur before or after the noun?	Prep	Does the language have a substantial set of prepositions? E.g. English in the house	213
Word order	Adpositions	Do adpositions normally occur before or after the noun?	Post	Does the language have a substantial set of postpositions?	214
Word order	Noun-adjective	Do adjectives normally occur before or after the noun?	NA	Do most adjectives occur after the noun?	215
Word order	Noun-adjective	Do adjectives normally occur before or after the noun?	AN	Do most adjectives occur before the noun?	216
Word order	Noun-relative clause	Do relative clauses normally occur before or after the noun?	NRel	Do most relative clauses occur after the noun?	217
Word order	Noun-relative clause	Do relative clauses normally occur before or after the noun?	RelN	Do most relative clauses occur before the noun?	218
Word order	Noun-possessor	Do possessors normally occur before or after the noun?	N-Poss	Do most possessors occur after the noun they possess? The possessor should be an animate noun, and neither a proper name nor a pronoun!	219

Word order	Noun-possessor	Do possessors normally occur before or after the noun?	Poss-N	Do most possessors occur before the noun they possess? The possessor should be an animate noun, and neither a proper name nor a pronoun!	220
Word order	WH-element	What is the position of the WH-question word?	WH-initial	Is the WH-question word always obligatorily the first element in a question (e.g., it does not trigger inversion)?	221
Word order	WH-element	What is the position of the WH-question word?	WH-V	Does the WH-question word always immediately precede the verb (i.e., stand directly before the verb, either initially or non-initially)?	222
Word order	Main clause	What is the canonical (neutral) word order in a main clause?	SVO	What is the canonical (neutral) word order in a main clause? NB: V2 languages like Swe and Ger do NOT count as SVO even though SVO is most frequent.	223
Word order	Main clause	What is the canonical (neutral) word order in a main clause?	V2	V2 implies that initial adverb triggers V-SUBJ word order (Swedish, German etc.).	224
Word order	Main clause	What is the canonical (neutral) word order in a main clause?	VSO	What is the canonical (neutral) word order in a main clause?	225
Word order	Main clause	What is the canonical (neutral) word order in a main clause?	SOV	What is the canonical (neutral) word order in a main clause?	226
Word order	Subordinate clause	What is the canonical (neutral) word order in a subordinate clause?	SVO	What is the canonical (neutral) word order in a subordinate clause? NB: V2 languages like Swe and Ger do NOT count as SVO even though SVO is most frequent.	227
Word order	Subordinate clause	What is the canonical (neutral) word order in a subordinate clause?	V2	V2 implies that initial adverb triggers V-SUBJ word order (Swedish, German etc.).	228
Word order	Subordinate clause	What is the canonical (neutral) word order in a subordinate clause?	VSO	What is the canonical (neutral) word order in a subordinate clause?	229

Word order	Subordinate clause	What is the SOV canonical (neutral) word order in a subordinate clause?	What is the canonical (neutral) word order in a subordinate clause?	230
Word order	Infinitive	Does the object VO normally occur before or after an infinitive? E.g.: to make pancakes (VO) Pfannkuchen machen (OV)		231
Word order	Infinitive	Does the object OV normally occur before or after an infinitive? E.g.: to make pancakes (VO) Pfannkuchen machen (OV)		232
Word order	Participle	Does the object VO normally occur before or after a participle? E.g.: making pancakes (VO) Pfannkuchen machend (OV)		233
Word order	Participle	Does the object OV normally occur before or after a participle? E.g.: making pancakes (VO) Pfannkuchen machend (OV)		234
Word order	Clitic pronouns finite verb	Does the clitic object pronoun VO normally occur before or after a finite verb? E.g.: Je les fais. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.		235

Word order	Clitic pronouns finite verb	Does the clitic object pronoun normally occur before or after a finite verb? E.g.: Je les fais. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	OV	236
Word order	Clitic pronouns finite verb	Does the clitic object pronoun normally occur before or after a finite verb? E.g.: Je les fais. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	2nd position	Does the clitic pronoun always occur in 2nd position, not specifically before or after the verb? (Wackernagel position)
Word order	Clitic pronouns infinitive	Does the clitic object pronoun normally occur before or after an infinitive? E.g.: Je veux les faire. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	VO	238
Word order	Clitic pronouns infinitive	Does the clitic object pronoun normally occur before or after an infinitive? E.g.: Je veux les faire. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	OV	239

Word order	Clitic pronouns infinitive	Does the clitic object pronoun normally occur before or after an infinitive? E.g.: Je veux les faire. (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	2nd position	Does the clitic pronoun always occur in 2nd position, not specifically before or after the verb?	240
Word order	Clitic pronouns partitive	Does the clitic object pronoun normally occur before or after a participle? E.g.: En les faisant... (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	VO		241
Word order	Clitic pronouns partitive	Does the clitic object pronoun normally occur before or after a participle? E.g.: En les faisant... (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	OV		242

Word order	Cla	tic nouns	pro-par-	Does the clitic object pronoun normally occur before or after a participle? E.g.: En les faisant... (OV) If a language does not have clitic object pronouns, it would be 0 in both OV and VO.	2nd position	Does the clitic pronoun always occur in 2nd position, not specifically before or after the verb?	243
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	O-case	Are there different noun forms for agent and object case? (English: 0 (no cases) Russian: 1 (different noun forms for accusative and nominative) Basque: 1 (different noun forms for ergative and absolute))	244
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	DAT	Is there a specific case form for the recipient, which is different from the case form of, e.g., the object? (E.g. The man gives a book (O) to the child (DAT))	245
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	GEN	Is there a special case form to express genitive, which is different from the agent/object case?	246
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	GEN/DAT	Is there a special noun form to express genitive, which is not the same as dative (recipient) case?	247
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	VOC	Is there a special noun form to express vocative which is not the same as agent or object case?	248
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	OBL-Cases	Are there any cases besides agent, object, genitive, dative, and vocative? (E.g., local cases)	249
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	>7 Cases	Are there more than 7 cases?	250
Nominal morphology	Nominal case	Nominal case		What is the realization of case at nouns (nominal heads)?	AGGL.CASE	Are there cases which are visibly agglutinative, i.e., built up by several distinct, segmentable affixes?	251

Nominal morphology	Nominal case	What is the realization of case at nouns (nominal heads)?	AGGL.CASE.NR	Are plural cases formed by combining an (infixed) plural affix and a case affix in an agglutinative manner?	252
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	A ≠ O	In pronouns, is the marking different for the case of the agent and object?	253
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	DAT ≠ O	In pronouns, is the marking different for the case of the recipient and the object?	254
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	VOC	See Nominal case	255

Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	OBL-Cases	See Nominal case	256
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	>7 Cases	See Nominal case	257
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	AGGL.CASE	See Nominal case	258
Nominal morphology	Pronominal case	What is the realization of case at pronouns (pronominal heads)? Mainly 1st and 2nd person pronouns, ignoring 3rd person pronouns (which often come from demonstratives).	AGGL.CASE.N\$	See Nominal case	259

Nominal morphology	Case marking	On which elements of the NP is the case marking obligatory?	CASE-LAST	Is the case marking obligatory on the last element of the NP (i.e., it is only realized once in the NP, even if it consists of several elements)?	260
Nominal morphology	Case marking	On which elements of the NP is the case marking obligatory?	CASE-FIRST	Is the case marking obligatory on the first element of the NP (i.e., it is only realized once in the NP, even if it consists of several elements)?	261
Nominal morphology	Case marking	On which elements of the NP is the case marking obligatory?	CASE-N	Is the case marking obligatory realized on the noun?	262
Nominal morphology	Case marking	On which elements of the NP is the case marking obligatory?	CASE-ADJ	Is the case marking obligatory on the adjective?	263
Nominal morphology	Case marking	On which elements of the NP is the case marking obligatory?	CASE-ART	Is the case marking realized on the article?	264
Nominal morphology	Gender / noun class	How is gender / noun class realized in the language?	M/F	Is there an obligatory gender distinction between masculine and feminine realized on an agreeing article or adjective? Can be either on the adjective (Russian) or on both the article and the adjective (German), or even on a verb (as in some NE Caucasian languages).	265
Nominal morphology	Gender / noun class	How is gender / noun class realized in the language?	NEUTR	Is there a special neutral gender for nouns realized on an agreeing article, adjective or verb?	266
Nominal morphology	Gender / noun class	How is gender / noun class realized in the language?	ANIM	Is there a special noun class for non-human animates realized on an agreeing article, adjective or verb?	267
Nominal morphology	Gender / noun class	How is gender / noun class realized in the language?	<5 GEN-DER	Are there more than 5 noun classes (or genders)?	268
Nominal morphology	Definiteness marking	How is definiteness marking realized in the language?	DEF-ART	Is there a special word class of definite articles which occur in NPs without adjectives? (E.g.: German, English but not Swedish)	269

Nominal morphology	Definiteness marking	How is definiteness marking realized in the language?	N-DEF	Is there a suffix for definiteness on the noun? (E.g.: Swedish but not English!)	270
Nominal morphology	Definiteness marking	How is definiteness marking realized in the language?	ADJ-DEF	Is there a suffix for definiteness on the adjective? This includes cases when the ADJ has a different form in definite and indefinite NPs (Swe “det stora huset”, Ger “das grosse Haus”).	271
Nominal morphology	Definiteness marking	How is definiteness marking realized in the language?	DEF-LAST	Is the definiteness marking obligatory on the last element of the NP (so it is only realized once in the NP, even if it consists of several elements)? If there is no definiteness marking at all, it will be 0!	272
Nominal morphology	Definiteness marking	How is definiteness marking realized in the language?	DEF-FIRST	Is the definiteness marking obligatory on the first element of the NP (so it is only realized once in the NP, even if it consists of several elements)? If there is no definiteness marking at all, it will be 0!	273
Nominal morphology	Gender agreement	How is gender agreement realized in the language?	PRED-ADJ	Does a predicative adjective agree with the subject of the clause in gender?	274
Nominal morphology	Preposition agreement	How is preposition agreement realized in the language?	PREP-PRON-AGR	Can a preposition agree in person with its object?	275
Verbal morphology	Simple PAST, A	In simple past, how is verbal agreement realized with respect to the agent?	PST:A-AGR-FULL	In simple past: does the verb crossreference the agent in all persons /numbers?	276
Verbal morphology	Simple PAST, A	In simple past, how is verbal agreement realized with respect to the agent?	PST:NO-A-AGR	In simple past: does the verb not crossreference the agent on the verb at all (e.g., Swedish)?	277
Verbal morphology	Simple PAST, A	In simple past, how is verbal agreement realized with respect to the agent?	PST:A-Gender-AGR	In simple past, does the verb agree in gender with the subject of a transitive verb? (e.g., Russian, Polish).	278

Verbal morphology	Simple PAST, O	In simple past, how is verbal agreement realized with respect to the object?	PST:O-AGR-FULL	In simple past: does the verb crossreference the object in all persons /numbers?	279
Verbal morphology	Simple PAST, O	In simple past, how is verbal agreement realized with respect to the object?	PST:NO-O-AGR	In simple past: does the verb not crossreference the object on the verb at all (e.g., Swedish, English, Russian)?	280
Verbal morphology	Simple PAST, O	In simple past, how is verbal agreement realized with respect to the object?	PST:O-Gender-AGR	In simple past, does the verb agree in gender with the object?	281
Verbal morphology	Simple PAST, DAT	In simple past, how is verbal agreement realized with respect to the indirect object of ditransitive verbs?	PST:DAT-AGR-FULL	In simple past: does the verb crossreference the dative in all persons /numbers?	282
Verbal morphology	Simple PAST, DAT	In simple past, how is verbal agreement realized with respect to the indirect object of ditransitive verbs?	PST:NO-DAT-AGR	In simple past: does the verb not crossreference the dative on the verb at all (e.g., Swedish, English, Russian)	283
Verbal morphology	Simple PAST, DAT	In simple past, how is verbal agreement realized with respect to the indirect object of ditransitive verbs?	PST:DAT-Gender-AGR	In simple past, does the verb agree in gender with the indirect object of a ditransitive verb?	284
Verbal morphology	Present progressive, A	In present progressive: how is verbal agreement realized with respect to the agent?	PROG:A-AGR-FULL	In present progressive: does the verb crossreference the agent in all persons /numbers?	285
Verbal morphology	Present progressive, A	In present progressive: how is verbal agreement realized with respect to the agent?	PROG:NO-A-AGR	In present progressive: does the verb not crossreference the agent on the verb at all (e.g., Swedish)	286

Verbal morphology	Present progressive, A	In present progressive: how is verbal agreement realized with respect to the agent?	PROG:A-Gender-AGR	In present progressive, does the verb agree in gender with the subject of a transitive verb?	287
Verbal morphology	Present progressive, O	In present progressive, how is verbal agreement organized with respect to the object?	PROG:O-AGR-FULL	In present progressive: does the verb crossreference the object in all persons /numbers?	288
Verbal morphology	Present progressive, O	In present progressive, how is verbal agreement organized with respect to the object?	PROG:NO-O-AGR	In present progressive: does the verb not crossreference the object on the verb at all (e.g. Swedish, Russian)?	289
Verbal morphology	Present progressive, O	In present progressive, how is verbal agreement organized with respect to the object?	PROG:O-Gender-AGR	In present progressive, does the verb agree in gender with the object of a transitive verb?	290
Verbal morphology	Present progressive, DAT	In present progressive, how is verbal agreement organized with respect to the indirect object of ditransitive verbs?	PROG:DAT-AGR-FULL	In present progressive: does the verb crossreference the indirect object of a ditransitive verb in all persons /numbers?	291
Verbal morphology	Present progressive, DAT	In present progressive, how is verbal agreement organized with respect to the indirect object of ditransitive verbs?	PROG:NO-DAT-AGR	In present progressive: does the verb not crossreference the indirect object of ditransitive verbs at all (e.g. Swedish, English, Russian)?	292
Verbal morphology	Present progressive, DAT	In present progressive, how is verbal agreement organized with respect to the indirect object of ditransitive verbs?	PROG:DAT-Gender-AGR	In the present progressive, does the verb agree in gender with the indirect object of a ditransitive verb?	293

Verbal morphology	Allocutive agreement	Does the verb agree with the receiver (the person one is speaking to) without the speaker being an argument in the sentence (allocutive agreement, probably no for all languages but Basque!)	ALLOC	Does the verb agree with the receiver (the person one is speaking to) without the speaker being an argument in the sentence (allocutive agreement, probably no for all languages but Basque!)	294
Tense	Future	How is future realized in the language?	FUT.AUX	Is there a future formed by an auxiliary? (E.g., will in English?)	295
Tense	Future	How is future realized in the language?	PERF.FUT	Is there a future formed by using the perfective aspect? (0 if the language does not have verbal aspects! E.g., Russian, Georgian)	296
Tense	Future	How is future realized in the language?	FUT.Participle	Is there a future formed by a participle? (E.g., Armenian, Basque)	297
Tense	Future	How is future realized in the language?	FUT.Particle	Is there a future formed by a particle preceding a finite verb? (E.g., Albanian)	298
Tense	Future	How is future realized in the language?	FUT.Synth	Is there a synthetical future? (E.g., French, Spanish)	299
Tense	Continous present	How is present progressive realized in the language?	Present	Is there a synthetic present in progressive function?	300
Tense	Continous present	How is present progressive realized in the language?	Progressive present	Is there a progressive present form constructed by combining a present participle with a finite auxiliary verb?	301
Alignment	Noun: Simple Past	In simple past: how is the marking of subject and object of nouns realized?	N:PST:A=O?	In simple past: Is the noun form for A the same as for O? Ie: Does the noun look the same when it is subject of a transitive clause than when it is object of a transitive clause?	302

Alignment	Noun: Simple Past	In simple past: how is the marking of subject and object of nouns realized?	N:PST:A=Sa?	In simple past: Is the noun form for A the same as for Sa? Ie: Does the noun look the same when it is subject of a transitive clause as when it is subject of an agentive intransitive verb such as "work" or "dance"?	303
Alignment	Noun: Simple Past	In simple past: how is the marking of subject and object of nouns realized?	N:PST:O=So?	In simple past: Is the noun form for O the same as for So? Ie: Does the noun look the same when it is object of a transitive clause as when it is subject of an unaccusative verb such as "fall" or "die"?	304
Alignment	Noun: Simple Past	In simple past: how is the marking of subject and object of nouns realized?	N:PST:Sa=So?	In simple past: Does a noun bear the same case form when it is Sa (subject of e.g. work) or So (subject of e.g. fall or die)? Ie: There does not exist a split into stative and active intransitive verbs.	305
Alignment	Noun: Present Progressive	In present progressive: how is the marking of subject and object of nouns realized?	N:PROG:A=O?	In present progressive: Is the noun form for A the same as for O? I.e.: Does the noun look the same when it is subject of a transitive clause and when it is object of a transitive clause?	306
Alignment	Noun: Present Progressive	In present progressive: how is the marking of subject and object of nouns realized?	N:PROG:A=Sa?	In present progressive: Is the noun form for A the same as for Sa? I.e.: Does the noun look the same when it is subject of a transitive clause and when it is subject of an agentive intransitive verb such as "work" or "dance"?	307
Alignment	Noun: Present Progressive	In present progressive: how is the marking of subject and object of nouns realized?	N:PROG:O=So?	In present progressive: Is the noun form for O the same as for So? I.e.: Does the noun look the same when it is object of a transitive clause and when it is subject of an unaccusative verb such as "fall" or "die"?	308

Alignment	Noun: Present Progressive	In present progressive: how is the marking of subject and object of nouns realized?	N:PROG: Sa=So?	In present progressive: does a noun bear the same case form when it is Sa (subject of e.g., "work") or So (subject of e.g., "fall" or "die")? I.e.: The language does not have a split between stative and active intransitive verbs.	309
Alignment	Pronoun: Simple Past	In present progressive: how is the marking of subject and object of pronouns realized?	P:PST: A=O?	In simple past: Is the pronoun form for A the same as for O? I.e.: Does the pronoun look the same when it is subject of a transitive clause than when it is object of a transitive clause?	310
Alignment	Pronoun: Simple Past	In present progressive: how is the marking of subject and object of pronouns realized?	P:PST: A=Sa?	In simple past: Is the pronoun form for A the same as for Sa? I.e.: Does the pronoun look the same when it is subject of a transitive clause than when it is subject of an agentive intransitive verb such as "work" or "dance"?	311
Alignment	Pronoun: Simple Past	In present progressive: how is the marking of subject and object of pronouns realized?	P:PST: O=So?	In simple past: Is the pronoun form for O the same as for So? I.e.: Does the pronoun look the same when it is object of a transitive clause than when it is subject of an unaccusative verb such as "fall" or "die"?	312
Alignment	Pronoun: Simple Past	In present progressive: how is the marking of subject and object of pronouns realized?	P:PST: Sa=So?	In simple past: Does the pronoun bear the same case form when it is Sa (subject of e.g. work) or So (subject of e.g. fall or die)? I.e.: There does not exist a split into stative and active intransitive verbs.	313
Alignment	Pronoun: Present Progressive	In present progressive: how is the marking of subject and object of pronouns realized?	P:PROG: A=O?	In present progressive: Is the pronoun form for A the same as for O? I.e.: Does the pronoun look the same when it is subject of a transitive clause than when it is object of a transitive clause?	314

Alignment	Pronoun: Present Progressive	In present progressive: how is the marking of subject and object of pronouns realized?	P:PROG: A=Sa?	In present progressive: Is the pronoun form for A the same as for Sa? I.e.: Does the pronoun look the same when it is subject of a transitive clause as when it is subject of an agentive intransitive verb such as “work” or “dance”?	315
Alignment	Pronoun: Present Progressive	In present progressive: how is the marking of subject and object of pronouns realized?	P:PROG: O=So?	In present progressive: Is the pronoun form for O the same as for So? I.e.: Does the pronoun look the same when it is object of a transitive clause than when it is subject of an unaccusative verb such as “die” or “fall”?	316
Alignment	Pronoun: Present Progressive	In present progressive: how is the marking of subject and object of pronouns realized?	P:PROG: Sa=So?	In present progressive: Does a pronoun bear the same case form when it is Sa (subject of e.g. work) or So (subject of e.g. fall or die)? Ie: There does not exist a split into stative and active intransitive verbs.	317
Alignment	Verb: Simple Past	In simple past, how is alignment realized on the verb?	V:PST:A=O?	In simple past: Is the verb affix for A the same as for O? I.e.: Does the verb look the same when it refers to the subject of a transitive clause than when it refers to the object of a transitive clause? If there is no O-marking on the verb, but there is an S-marking, the answer would be no, they do not look the same. (e.g., German, Russian) If there is neither an O, nor an A marking, like in Swedish, the answer would be yes, they look the same!	318
Alignment	Verb: Simple Past	In simple past, how is alignment realized on the verb?	V:PST:A=Sa?	In simple past: Is the verb affix for A the same as for Sa? I.e.: Does the verb look the same when it refers to subject of a transitive clause than when it refers to subject of an agentive intransitive verb like “work” or “dance”?	319

Alignment	Verb: Simple Past	In simple past, how is alignment realized on the verb?	V:PST:O=So? In simple past: Is the verb affix for O the same as for So? I.e.: Does the verb look the same when it refers to the object of a transitive clause as when it refers to the subject of an unaccusative verb (such as “fall” or “die”)?	320
Alignment	Verb: Simple Past	In simple past, how is alignment realized on the verb?	V:PST:Sa=So? In simple past: Is the verb affix the same for Sa (subject of e.g. work) as or So (subject of e.g. fall or die)? I.e., does the verb agreement affix look the same regardless of whether the verb is “work” or “die” (as in German: “arbeitete-st”, “starb-st”). I.e.: There does not exist a split into unaccusative and agentive intransitive verbs.	321
Alignment	Verb: Present Progressive	In present progressive, how is alignment realized on the verb?	V:PROG: A=O? In present progressive: Is the verb affix for A the same as for O? Ie: Does the verb look the same when it refers to the subject of a transitive clause than when it refers to the object of a transitive clause? If there is no O-marking on the verb, but there is an S-marking, the answer would be no, they do not look the same. (e.g. German, Russian) If there is neither an O, nor an A marking like in Swedish, the answer would be yes, they look the same!	322
Alignment	Verb: Present Progressive	In present progressive, how is alignment realized on the verb?	V:PROG: A=Sa? In present progressive: Is the verb affix for A the same as for Sa? Ie: Does the verb look the same when it refers to subject of a transitive clause as when it refers to subject of an agentive intransitive verb such as “work”?	323

Alignment	Verb: Present Progressive	In present pro- gressive, how is alignment realized on the verb?	V:PROG: O=So?	In present progressive: Is the verb affix the same for O as for So? Ie: Does the verb look the same when it refers to the object of a transi- tive clause as when it refers to the subject of an unac- cusative verb (such as “fall” or “die”)?	324
Alignment	Verb: Present Progressive	In present pro- gressive, how is alignment realized on the verb?	V:PROG: Sa=So?	In present progressive: Is the verb affix the same for Sa (subject of e.g. “work”) as or So (subject of e.g. “fall” or “die”)? I.e. does the verb agreement affix look the same regardless of whether the verb is “work” or “die” (as in German: arbeite-t, stirbt-t). I.e.: There does not exist a split into un- accusative and agentive in- transitive verbs.	325
Alignment	Compare PROG- PAST	What is the marking relation between subject and object in present progres- sive and simple past?	PROG_So= PAST_So	Does the subject of e.g. die or fall bear the same case in both progressive present and simple past? (the answer for e.g., Megrelian would be no)	326
Alignment	Compare PROG- PAST	What is the marking relation between subject and object in present progres- sive and simple past?	PROG_A= PAST_O	Does the subject of a transi- tive verb in the present progressive bear the same case form as the object of a transitive verb in the simple past? (e.g. as in Georgian)	327
Alignment	Compare PROG- PAST	What is the marking relation between subject and object in present progres- sive and simple past?	PAST_A= PROG_O	Does the subject of a transi- tive verb in the simple past bear the same case form as the object of a verb in the present progressive? (e.g., Kurdish)	328
Alignment	Reflexive pronoun in transitive clause	What is the align- ment of reflexive pronouns?	REFL-ref-A	In a transitive clause, can O be a reflexive which refers back to A (as in English “herself”, Swedish “sig”)?	329

Alignment	Reflexive pronoun in transitive clause	What is the alignment of reflexive pronouns?	REFL-ref-O	In a transitive clause, can A be a reflexive which refers back to O (as appears to be the case in some Caucasian languages)?	330
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S2b

Matrix of coding of schools with sources of data. ID = Variant ID of database (S2a).

ID	Canonical	Brugmann & Delbrück	Del-	Isolating	Hirt	Active-	Stative	Gamkrelidze	&
213	1	1900:104-109		0	1937:135f.		0	1995:313	
214	1	1900:104-109		1	1937:135f.		1	1995:313	
215	0			1	1937:243		0		
216	1	1900:94-100		1	1937:243		1		
217	0			1	1937:234		0		
218	1	1900:405-406		1	1937:235		1	1995:307	
219	0			1	1937:234		0		
220	1	1900:102-103		1			1	1995:304	
221	1	1900:259-271		NA			NA		
222	0			NA			NA		
223	0			1	1937:227ff		0		
224	0			0	1937:263f.		0		
225	0			1	1937:227ff		0		
226	1	1900:80-83		1	1937:227ff		1	1995:313f	
227	0			1	1937:227ff		0		
228	0			0	1937:263f		0		
229	0			1	1937:227ff		0		
230	1	1900:83-85		1	1937:227ff		1	1995:313f	
231	0			1	1937:267		0		
232	1	1900:80-83		1	1937:267		1	1995:313f	
233	0			1	1937		0		
234	1	1900:80-83		1			1	1995:313f	
235	0			0	1937:228ff		0		
236	0			0	1937:228ff		1	1995:313f	
237	1	1900:416-417. 1893:475		1	1937:228ff		0		
238	NA			NA			NA		
239	NA			NA			NA		
240	NA			NA			NA		
241	NA			NA			NA		
242	NA			NA			NA		
243	NA			NA			NA		
244	1	1893:189-190		0	1934:29ff		1	1995:244f.	
245	1	1893:189-190		0	1934:29ff		0	1995:249	
246	1	1893:185-187		0	1934:29ff		0	1995:245	
247	1	1893:184-187		0	1934:29ff		1	1995:246	
248	1	1893:188		0	1934:29ff		NA		
249	1	1893:180-191		0	1934:29ff		0	1995:245ff	
250	0	1893:180-191		0	1934:29ff		0	1995:245	
251	0			0	1934:29ff		1	1995:245	
252	0			0	1934:29ff		1	1995:245	
253	1	1911: 412-427		0	1937:237		1	1995:253f	
254	1			0	1937:237		0	1995:253f	
255	0			0	1937:237		NA		
256	1			0	1937:237		0	1995:253f	
257	0			0	1937:237		0	1995:253f	
258	0			0	1937:237		NA		
259	0			0	1937:237		NA		
260	0			0	1934:29ff		1	1995:242	

261	0		0	1934:29ff	0	1995:242
262	1	1893:172-400	0	1934:29ff	1	1995:242
263	1	1893:172-400	0	1934:29ff	1	1995:242
264	0		0	1934:29ff	0	1995:242
265	1	1893:132-133	0	1934:27ff	0	1995:243
266	1	1893:132-133	1	1934:27ff	1	
267	1	1893:132-133	1	1934:27ff	1	1995:238
268	0		0	1934:27ff	0	
269	0		1	1937:236f.	0	
270	0		0		0	
271	0		0		0	
272	0		1	1937:236f.	0	
273	0		0		0	
274	1				1	1995:242
275	0		NA		0	
276	1	1916:670-671	0	1928:357ff	0	1995:258
277	0		0		0	1995:258
278	0		0		0	
279	0		NA		0	
280	1		NA		0	
281	0		NA		0	
282	0		NA		0	
283	1		NA		1	
284	0		NA		0	
285	1	1916:595-596	0	1928:357ff	0	1995:258
286	0		0	1928:357ff	0	
287	0		0	1928:357ff	0	
288	0		NA		1	1995:258
289	1		NA		0	
290	0		NA		0	
291	0		NA		NA	
292	1		NA		NA	
293	0		NA		NA	
294	0		NA		0	
295	0	1897:242-255	0	1928:357ff	0	
296	0		0	1928:357ff	0	
297	0		0	1928:357ff	0	
298	0		0	1928:357ff	0	
299	0		0	1928:357ff	0	
300	1	1916:668-669	0	1928:357ff	1	1995:258
301	0		0	1928:357ff	0	
302	0		1		0	
303	1	1893:187-188	1		1	1995:267
304	0		1		1	1995:267f
305	1		1		0	
306	0		1		0	
307	1		1		1	1995:267f
308	0		1		1	1995:267f
309	1		1		0	
310	0		NA		0	
311	1		NA		1	1995:267f
312	0		NA		1	1995:267f
313	1		NA		0	
314	0		NA		0	
315	1		NA		1	1995:267f
316	0		NA		1	1995:267f
317	1		NA		0	
318	0		1	1934:76ff.	0	
319	1		1	1934:76ff.	1	1995:267f
320	0		1	1934:76ff.	1	1995:267f
321	1		1	1934:76ff.	0	
322	0		1	1934:76ff.	0	
323	1		1	1934:76ff.	1	1995:267f
324	0		1	1934:76ff.	1	1995:267f
325	1		1	1934:76ff.	0	

326	1		1	1934:76ff.	1
327	0		0		0
328	0		0		0
329	1	1893:497-498	NA		NA
330	0		NA		NA

S3a

Categorical features and reconstructed probabilities of traits at the root of the tree. For each number or categorical feature in the column “CFID” (Categorical Feature ID), the top-most level of the hierarchically organized features in the original dataset (Grids in the dataset) are given by their name (e.g., Alignment), followed by a vertical line and the name of a Feature (e.g.. Noun: Present Progressive). This Feature may or may not correspond to a categorical feature; for this matter the combination of Grid|Feature may recur in several multistate characters. Each categorical feature has a unique ID number (1-64) and each trait has a unique ID number (A1-WO50). Each categorical feature is described as Grid|Feature|Variant (dataset terms), which are given next to the categorical feature ID. The combination of values (1/0), which represent the unique trait, are given in the row below each cell with a value of a categorical feature. The ID in the row gives the unique trait ID and the unique label describes the trait.

CFID = ID of multistate character block (for reference in text). Label = descriptive property label; ID = unique trait ID (A = alignment, NM = nominal morphology, T = tense, VM = verbal morphology, WO = word order); Variant (1-4) = Variant of multistate character from DiACL, given as Grid|Feature|Variant (see S2a); Result = reconstructed probability of presence for each trait at the protolanguage state.

Label	ID	(Feature 1)	(Feature 2)	(Feature 3)	(Feature 4)
Present-Past		ALIGNMENT; Compare PROG-PAST; PAST_A=PROG_O	ALIGNMENT; Compare PROG-PAST; PROG_A=PST_O	ALIGNMENT; Compare PROG-PAST; PROG_So=PST_So	
Present-Past: No marking difference	A1	0	0	0	
Present-Past: A marking in Present Progressive and Past	A2	0	0	1	
Present-Past: Active-ergative in Present Prog and Past	A3	0	1	1	
Present-Past: All systems	A4	1	1	1	
Alignment; Noun: Present Progressive Noun, Present progressive: Tripartite	A5	ALIGNMENT; Noun: Present Progressive; N:PROG: O=So?	ALIGNMENT; Noun: Present Progressive; N:PROG:A=O?	ALIGNMENT; Noun: Present Progressive; N:PROG:A=Sa?	ALIGNMENT; Noun: Present Progressive; N:PROG:Sa=So? 1

Noun, Present	A6	0	0	1	1
progressive: Nominative- accusative					
Noun, Present progressive: No marking	A7	1	1	1	1
Alignment; Noun: Simple Past		ALIGNMENT; Noun: Simple Past; N:PST: O=So?	ALIGNMENT; Noun: Simple Past; N:PST:A=O?	ALIGNMENT; Noun: Simple Past; N:PST:A=Sa?	ALIGNMENT; Noun: Simple Past; N:PST:Sa=So?
Noun, Simple past: Tripartite	A8	0	0	0	1
Noun, Simple past:	A9	0	0	1	1
Nominative- accusative					
Noun, Simple past: Ergative	A10	1	0	0	1
Noun, Simple past: No marking	A11	1	1	1	1
Alignment; Pronoun: Present		ALIGNMENT; Pronoun: Present	ALIGNMENT; Pronoun: Present	ALIGNMENT; Pronoun: Present	ALIGNMENT; Pronoun: Present
Progressive		Progressive; P:PROG: O=So?	Progressive; P:PROG:A=O?	Progressive; P:PROG:A=Sa?	Progressive; P:PROG:Sa=So?
Pronoun, Present	A13	0	0	1	1
progressive: Nominative- accusative					
Pronoun, Present	A14	1	1	1	1
progressive: No marking					
Alignment; Pronoun: Simple Past		ALIGNMENT; Pronoun: Simple Past; P:PST: O=So?	ALIGNMENT; Pronoun: Simple Past; P:PST:A=O?	ALIGNMENT; Pronoun: Simple Past; P:PST:A=Sa?	ALIGNMENT; Pronoun: Simple Past; P:PST:Sa=So?
Pronoun, Simple past: Tripartite	A15	0	0	0	1
Pronoun, Simple past: Nominative- accusative	A16	0	0	1	1
Pronoun, Simple past: Ergative	A18	1	0	0	1
Pronoun, Simple past: No marking	A19	1	1	1	1
Alignment; Reflexive pronoun in transitive clause, A		ALIGNMENT; Reflexive Pronoun in trans. Clause; REFL-ref-A			
Reflexive not with Agent	A20	0			
Reflexive with Agent	A21	1			

Alignment; Reflexive pronoun in transitive clause, O	ALIGNMENT; Reflexive Pronoun in trans. Clause; REFL-ref-O				
Reflexive not with Object	A22	0			
Reflexive with Object	A23	1			
Alignment; Verb: Present Progressive Verb, Present progressive: Tripartite	ALIGNMENT; Verb: Present Progressive; V:PROG: O=So?	ALIGNMENT; Verb: Present Progressive; V:PROG:A=O?	ALIGNMENT; Verb: Present Progressive; V:PROG:A=Sa?	ALIGNMENT; Verb: Present Progressive; V:PROG:Sa=So?	
Verb, Present progressive: Nominative- Accusative	A24	0	0	0	1
Verb, Present progressive: No marking	A25	0	0	1	1
Alignment; Verb: Simple Past	ALIGNMENT; Verb: Simple Past; V:PST: O=So?	ALIGNMENT; Verb: Simple Past; V:PST:A=O?	ALIGNMENT; Verb: Simple Past; V:PST:A=Sa?	ALIGNMENT; Verb: Simple Past; V:PST:Sa=So?	
Verb, Simple past: Tripartite	A27	0	0	0	1
Verb, Simple past:	A28	0	0	1	1
Nominative- accusative					
Verb, Simple past: Ergative	A29	1	0	0	1
Verb, Simple past: No marking	A30	1	1	1	1
Nominal morphology; Case on adjective	NM1	0			
No case on adjective	NM2	1			
Nominal morphology; Case on article	NM3	0			
No case on article	NM4	1			
Nominal morphology; Case on NP	NM5	0			
No rule of case on last/first member of NP	NM6	0	1		
Nominal morphology; Case on noun					

No case on noun	NM7	0
Case on noun	NM8	1
Nominal morphology; Definite suffix on adjective		Nominal morphology; Definiteness marking; ADJ-DEF
No definite suffix on adjective	NM9	0
Definite suffix on adjective	NM10	1
Nominal morphology; Definiteness obligatory		Nominal morphology; Definiteness marking; DEF-FIRST
No obligatory definiteness	NM11	0
Obligatory definiteness on last member of NP	NM12	0
Obligatory definiteness on first member of NP	NM13	1
Nominal morphology; Definite article		Nominal morphology; Definiteness marking; DEF.ART
No definite article	NM14	0
Definite article	NM15	1
Nominal morphology; Definite suffix noun		Nominal morphology; Definiteness marking; N-DEF
No definite suffix on noun	NM16	0
Definite suffix on noun	NM17	1
Nominal morphology; 5 genders		Nominal morphology; Gender / Noun class; <5 GENDER
Fewer than five genders	NM18	0
More than five genders	NM19	1
Nominal morphology; Noun class for animates		Nominal morphology; Gender / Noun class; ANIM
No noun class for animates	NM20	0
Noun class for animates	NM21	1
Nominal morphology; Masculine/feminine		Nominal morphology; Gender / Noun class; M/F

No masculine/feminine distinction	NM22 0		
Masculine/feminine distinction	NM23 1		
Nominal morphology; Neuter	Nominal morphology; Gender / Noun class; NEUTR		
No neuter gender	NM24 0		
Neuter gender	NM25 1		
Nominal morphology; Gender on predicative adjective	Nominal morphology; Gender agreement; PRED-ADJ		
No gender on predicative adjective	NM26 0		
Gender on predicative adjective	NM27 1		
Nominal morphology; More than 7 cases	Nominal morphology; Nominal cases; <7 Cases		
Not more than 7 cases	NM28 0		
More than 7 cases	NM29 1		
Nominal morphology; Agglutination for number	Nominal morphology; Nominal cases; AGG.CASE.NR		
No agglutination for number	NM30 0		
Agglutination for number	NM31 1		
Nominal morphology; Agglutination for case	Nominal morphology; Nominal cases; AGGL.CASE		
No agglutination for case	NM32 0		
Agglutination for case	NM33 1		
Nominal morphology; Genitive/dative	Nominal morphology; Nominal cases; DAT	Nominal morphology; Nominal cases; GEN	Nominal morphology; Nominal cases; GEN/DAT
No genitive or dative	NM34 0	0	0
Genitive but no dative	NM35 0	1	0
Genitive but no dative	NM36 0	1	1
Dative but no genitive	NM37 1	0	0

Genitive and dative	NM38 1	1	1
Nominal morphology; Case difference A/O	Nominal morphology; Nominal cases; O-case		
No case difference A and O	NM39 0		
Case difference A and O	NM40 1		
Nominal morphology; Peripheral cases	Nominal morphology; Nominal cases; OBL-Cases		
No peripheral cases	NM41 0		
Peripheral cases	NM42 1		
Nominal morphology; Vocative	Nominal morphology; Nominal cases; VOC		
No Vocative	NM43 0		
Vocative	NM44 1		
Nominal morphology; Agreement on prepositions	Nominal morphology; Preposition agreement; PRON-AGR		
No agreement on prepositions	NM45 0		
Agreement on prepositions	NM46 1		
Nominal morphology; More tha 7 pronominal cases	Nominal morphology; Pronominal Cases; <7 Cases		
Less than 7 pronominal cases (pronouns)	NM47 0		
More than 7 pronominal cases (pronouns)	NM48 1		
Nominal morphology; Agglutination for cases (pronouns)	Nominal morphology; Pronominal Cases; AGGL.CASE		
No agglutination for number (pronouns)	NM49 0		
Agglutination for number (pronouns)	NM50 1		
Nominal morphology; Agglutination for case (pronouns)	Nominal morphology; Pronominal Cases; AGGL.CASE.NR		

Agglutination for case (pronouns) No agglutination for case (pronouns)	NM51 0 NM52 1
Nominal morphology; Difference A/O (pronouns) No difference A and O (pronouns) Difference A and O (pronouns)	Nominal morphology; Pronominal Cases; A \neq O NM53 0 NM54 1
Nominal morphology; Difference O/DAT (pronouns) No difference O and Dative (pronouns) Difference, O and Dative (pronouns)	Nominal morphology; Pronominal Cases; DAT \neq O NM55 0 NM56 1
Nominal morphology; Peripheral cases (pronouns) No peripheral cases (pronouns) Peripheral cases (pronouns)	Nominal morphology; Pronominal Cases; OBL-Cases NM57 0 NM58 1
Nominal morphology; Vocative (pronouns) No Vocative (pronouns) Vocative (pronouns)	Nominal morphology; Pronominal Cases; VOC NM59 0 NM60 1
Tense; Synthetic Present progressive No synthetic Present progressive Synthetic Present progressive	TENSE; Continous present; Present ? T1 0 T2 1
Tense; Present progressive by auxiliary No Present progressive by auxiliary	TENSE; Continous present; Progressive present T3 0

Present progressive by auxiliary	T4	1		
Tense; Future by auxiliary		TENSE; Future; FUT.AUX		
No Future by auxiliary	T5	0		
Future by auxiliary	T6	1		
Tense; Future by participle		TENSE; Future; FUT.Participle		
No Future by participle	T7	0		
Future by participle	T8	1		
Tense; Future by particle		TENSE; Future; FUT.Particle		
No Future by particle	T9	0		
Future by particle	T10	1		
Tense; Synthetic future		TENSE; Future; FUT.Synth		
No synthetic Future	T11	0		
Synthetic Future	T12	1		
Tense; Future by perfect		TENSE; Future; PERF.FUT		
No Future by perfect	T13	0		
Future by perfect	T14	1		
Verbal morphology; Present progressive A Agreement		Verbal morphology; present progressive, A; PROG:A-AGR-FULL	Verbal morphology; present progressive, A; PROG:A-Gender-AGR	Verbal morphology; present progressive, A; PROG:NO-A-AGR
Present progressive: Syncretic A Agreement	VM1	0	0	0
Present progressive: No A Agreement	VM2	0	0	1
Present progressive: Gender A Agreement	VM3	0	1	0
Present progressive: Full A Agreement	VM4	1	0	0
Present progressive: Full and Gender A Agreement	VM5	1	1	0

Verbal morphology; Present progressive Dative Agreement	Verbal morphology; present progressive, DAT; PROG:DAT-AGR-FULL	Verbal morphology; present progressive, DAT; PROG:DAT-Gender-AGR	Verbal morphology; present progressive, DAT; PROG:NO-DAT-AGR
Present progressive: Syncretic Dative Agreement	VM6 0	0	0
Present progressive: No Dative Agreement	VM7 0	0	1
Present progressive: Full Dative Agreement	VM8 1	0	0
Verbal morphology; Present progressive O Agreement	Verbal morphology; present progressive, O; PROG:NO-O-AGR	Verbal morphology; present progressive, O; PROG:O-AGR-FULL	Verbal morphology; present progressive, O; PROG:O-Gender-AGR
Present progressive: Syncretic O Agreement	VM9 0	0	0
Present progressive: Full O Agreement	VM10 0	1	0
Present progressive: No O Agreement	VM11 1	0	0
Verbal morphology; Simple past A Agreement	Verbal morphology; simple PAST, A; PST:A-AGR-FULL	Verbal morphology; simple PAST, A; PST:A-Gender-AGR	Verbal morphology; simple PAST, A; PST:NO-A-AGR
Simple past: Syncretic A Agreement	VM12 0	0	0
Simple past: No A Agreement	VM13 0	0	1
Simple past: Gender A Agreement	VM14 0	1	0
Simple past: Full A Agreement	VM16 1	0	0
Simple past: Full and Gender A Agreement	VM17 1	1	0
Verbal morphology; Simple past Dative Agreement	Verbal morphology; simple PAST, DAT; PST:DAT-AGR-FULL	Verbal morphology; simple PAST, DAT; PST:DAT-Gender-AGR	Verbal morphology; simple PAST, DAT; PST:NO-DAT-AGR
Simple past: Syncretic Dative Agreement	VM18 0	0	0

Simple past: No Dative Agreement	VM19 0	0	1
Simple past: Gender Dative Agreement	VM20 0	1	0
Simple past: Full Dative Agreement	VM21 1	0	0
Verbal morphology; Simple past O Agreement	Verbal morphology; simple PAST, O; PST:NO-O-AGR	Verbal morphology; simple PAST, O; PST:O-AGR-FULL	Verbal morphology; simple PAST, O; PST:O-Gender-AGR
Simple past: Syncretic O Agreement	VM22 0	0	0
Simple past: Gender O Agreement	VM23 0	1	0
Simple past: Gender and full O Agreement	VM24 0	1	1
Simple past: No O Agreement	VM25 1	0	0
Word order; Postpositions No Postpositions	Word order; Adpositions; Post WO1 0		
Postpositions Postpositions	WO2 1		
Word order; Prepositions No Prepositions Prepositions	Word order; Adpositions; Prep WO3 0		
	WO4 1		
Word order; Clitic finite V Category irrelevant	Word order; Clitic pronouns finite verb; 2nd position WO5 0	Word order; Clitic pronouns finite verb; OV	Word order; Clitic pronouns finite verb; VO
Clitic finite V: VO	WO6 0	0	1
Clitic finite V: OV	WO7 0	1	0
Clitic finite V: VO and OV	WO8 0	1	1
Clitic finite V: V2	WO9 1	0	0
Word order; Infinitive V Clitic Infinitive V: Category irrelevant	Word order; Clitic pronouns infinitive; 2nd position WO10 0	Word order; Clitic pronouns infinitive; OV	Word order; Clitic pronouns infinitive; VO
Clitic Infinitive V: VO	WO11 0	0	1
Clitic Infinitive V: OV	WO12 0	1	0
Clitic Infinitive V: VO and OV	WO13 0	1	1
Clitic Infinitive V: V2	WO14 1	0	0

Word order; Clitic particle V	Word order; Clitic pronouns participle; 2nd position	Word order; Clitic pronouns participle; OV	Word order; Clitic pronouns participle; VO
Clitic Participle V: Category irrelevant	WO15 0	0	0
Clitic Participle V: VO	WO16 0	0	1
Clitic Participle V: OV	WO17 0	1	0
Clitic Participle V: VO and OV	WO18 0	1	1
Clitic Participle V: V2	WO19 1	0	0
Word order; Infinitive	Word order; Infinitive; OV	Word order; Infinitive; VO	
Infinitive: Category irrelevant	WO20 0	0	
Infinitive: VO	WO21 0	1	
Infinitive: OV	WO22 1	0	
Infinitive: OV and VO	WO23 1	1	
Word order; Main clause	Word order; Main clauses; SOV	Word order; Main clauses; SVO	Word order; Main clauses; V2
Main clause: VSO	WO24 0	0	0
Main clause: V2	WO25 0	0	1
Main clause: SVO	WO26 0	1	0
Main clause: SOV	WO27 1	0	0
Main clause: SOV/SVO	WO28 1	1	0
Word order; Posessor-Noun	Word order; Noun-Possessor; N-Poss	Word order; Noun-Possessor; Poss-N	
Possessor - Noun	WO29 0	1	
Noun - Possessor	WO30 1	0	
Possessor – Noun and Noun – Possessor	WO31 1	1	
Word order; Noun-Adjective	Word order; Noun-adjective; AN	Word order; Noun-adjective; NA	
Noun – Adjective	WO32 0	1	
Adjective - Noun	WO33 1	0	
Adjective – Noun and Noun – Adjective	WO34 1	1	
Word order; Nound - Relative	Word order; Noun-relative clause; NRel	Word order; Noun-relative clause; RelN	
NRel: Category irrelevant	WO35 0	0	
NRel: Relative - Noun	WO36 0	1	
NRel: Noun - Relative	WO37 1	0	

Noun and Noun
- Relative

Word order; Participle	Word order; Participle; OV	Word order; Participle;
Participle - O	WO39 0	1
O - Participle	WO40 1	0
Participle - O and O - Participle	WO41 1	1
Word order; Subordinate clause	Word order; Subordinate clause; SOV	Word order; Subordinate clause; SVO
Subordinate clause: VSO	WO42 0	0
Subordinate clause: V2	WO43 0	0
Subordinate clause: SVO	WO44 0	1
Subordinate clause: SOV	WO45 1	0
Subordinate clause: SOV and SVO	WO46 1	1
Word order; WH - Verb No WH - Verb (initial or not)	Word order; WH-element; WH-V WO47 0	Word order; Subordinate clause; V2
WH - Verb (initial or not)	WO48 1	Word order; Subordinate clause; VSO
Word order; WH-initial	Word order; WH-element; WH-initial	
No WH-initial (no inversion)	WO49 0	
WH-initial (no inversion)	WO50 1	

S3b

Coded variants of S2b (different schools) transformed into the traits of S3a, organized by their categorical features. ID = trait ID of S3a.

ID	Label	Canonical	Isolating	Active-stative
A1	Present-Past: No marking difference	0	0	0
A2	Present-Past: A marking in Present Progressive and Past	1	1	1
A3	Present-Past: Active-ergative in Present Prog and Past	0	0	0
A4	Present-Past: All systems	0	0	0
A5	Noun, Present progressive: Tripartite	0	0	0
A6	Noun, Present progressive: Nominitive-accusative	1	0	0
A7	Noun, Present progressive: No marking	0	1	0
A8	Noun, Simple past: Tripartite	0	0	0
A9	Noun, Simple past: Nominitive-accusative	1	0	0
A10	Noun, Simple past: Ergative	0	0	0
A11	Noun, Simple past: No marking	0	1	0
A13	Pronoun, Present progressive: Nominitive-accusative	1	NA	0
A14	Pronoun, Present progressive: No marking	0	NA	0
A15	Pronoun, Simple past: Tripartite	0	NA	0
A16	Pronoun, Simple past: Nominitive-accusative	1	NA	0

A18	Pronoun, Simple past: Ergative	0	NA	0
A19	Pronoun, Simple past: No marking	0	NA	0
A20	Reflexive not with Agent	0	NA	NA
A21	Reflexive with Agent	1	NA	NA
A22	Reflexive not with Object	1	NA	NA
A23	Reflexive with Object	0	NA	NA
A24	Verb, Present progressive: Tripartite	0	0	0
A25	Verb, Present progressive: Nominitive-Accusative	1	0	0
A26	Verb, Present progressive: No marking	0	1	0
A27	Verb, Simple past: Tripartite	0	0	0
A28	Verb, Simple past: Nominative-accusative	1	0	0
A29	Verb, Simple past: Ergative	0	0	0
A30	Verb, Simple past: No marking	0	1	0
NM1	No case on adjective	0	1	0
NM2	Case on adjective	1	0	1
NM3	No case on article	1	1	1
NM4	Case on article	0	0	0
NM5	No rule of case on last/first member of NP	1	1	0
NM6	Case on last member of NP	0	0	1
NM7	No case on noun	0	1	0
NM8	Case on noun	1	0	1
NM9	No definite suffix on adjective	1	1	1
NM10	Definite suffix on adjective	0	0	0
NM11	No obligatory definiteness	1		1
NM12	Obligatory definiteness on last member of NP	0	1	0
NM13	Obligatory definiteness on first member of NP	0	0	0
NM14	No definite article	1	0	1
NM15	Definite article	0	1	0
NM16	No definite suffix on noun	1	1	1
NM17	Definite suffix on noun	0	0	0
NM18	Less than five genders	1	1	1
NM19	More than five genders	0	0	0
NM20	No noun class for animates	0	0	0
NM21	Noun class for animates	1	1	1
NM22	No masculine/feminine distinction	0	1	1
NM23	Masculine/feminine distinction	1	0	0
NM24	No neuter gender	0	0	0
NM25	Neuter gender	1	1	1
NM26	No gender on predicative adjective	0	NA	0
NM27	Gender on predicative adjective	1	NA	1
NM28	Not more than 7 cases	0	0	0
NM29	More than 7 cases	1	1	1
NM30	No agglutination for number	1	1	0
NM31	Agglutination for number	0	0	1
NM32	No agglutination for case	1	1	0
NM33	Agglutination for case	0	0	1
NM34	No genitive or dative	0	1	0
NM35	Genitive but no dative	0	0	0
NM36	Genitive but no dative	0	0	0
NM37	Dative but no genitive	0	0	0
NM38	Genitive and dative	1	0	0
NM39	No case difference A and O	0	1	0
NM40	Case difference A and O	1	0	1
NM41	No peripheral cases	0	1	1
NM42	Peripheral cases	1	0	0
NM43	No Vocative	0	1	NA
NM44	Vocative	1	0	NA
NM45	No agreement on prepositions	1	NA	1
NM46	Agreement on prepositions	0	NA	0
NM47	Less than 7 pronominal cases (pronouns)	1	1	1
NM48	More than 7 pronominal cases (pronouns)	0	0	0
NM49	No agglutination for number (pronouns)	1	1	NA
NM50	Agglutination for number (pronouns)	0	0	NA

NM51	Agglutination for case (pronouns)	0	0	NA
NM52	No agglutination for case (pronouns)	1	1	NA
NM53	No difference A and O (pronouns)	0	1	0
NM54	Difference A and O (pronouns)	1	0	1
NM55	No difference O and Dative (pronouns)	0	1	1
NM56	Difference, O and Dative (pronouns)	1	0	0
NM57	No peripheral cases (pronouns)	0	1	1
NM58	Peripheral cases (pronouns)	1	0	0
NM59	No Vocative (pronouns)	1	1	NA
NM60	Vocative (pronouns)	0	0	NA
T1	No synthetic Present progressive	1	1	1
T2	Synthetic Present progressive	0	0	0
T3	No Present progressive by auxiliary	1	1	1
T4	Present progressive by auxiliary	0	0	0
T5	No Future by auxiliary	1	1	1
T6	Future by auxiliary	0	0	0
T7	No Future by participle	1	1	1
T8	Future by participle	0	0	0
T9	No Future by particle	1	1	1
T10	Future by particle	0	0	0
T11	No synthetic Future	1	1	1
T12	Synthetic Future	0	0	0
T13	No Future by perfect	1	1	1
T14	Future by perfect	0	0	0
VM1	Present progressive: Syncretic A Agreement	0	1	0
VM2	Present progressive: No A Agreement	0	0	0
VM3	Present progressive: Gender A Agreement	0	0	0
VM4	Present progressive: Full A Agreement	1	0	1
VM5	Present progressive: Full and Gender A Agreement	0	0	0
VM6	Present progressive: Syncretic Dative Agreement	0	NA	NA
VM7	Present progressive: No Dative Agreement	1	NA	NA
VM8	Present progressive: Full Dative Agreement	0	NA	NA
VM9	Present progressive: Syncretic O Agreement	0	NA	1
VM10	Present progressive: Full O Agreement	0	NA	0
VM11	Present progressive: No O Agreement	1	NA	0
VM12	Simple past: Syncretic A Agreement	0	1	1
VM13	Simple past: No A Agreement	0	0	0
VM14	Simple past: Gender A Agreement	0	0	0
VM16	Simple past: Full A Agreement	1	0	0
VM17	Simple past: Full and Gender A Agreement	0	0	0
VM18	Simple past: Syncretic Dative Agreement	0	NA	0
VM19	Simple past: No Dative Agreement	1	NA	1
VM20	Simple past: Gender Dative Agreement	0	NA	0
VM21	Simple past: Full Dative Agreement	0	NA	0
VM22	Simple past: Syncretic O Agreement	0	NA	1
VM23	Simple past: Gender O Agreement	0	NA	0
VM24	Simple past: Gender and full O Agreement	0	NA	0
VM25	Simple past: No O Agreement	1	NA	0
WO1	No Postpositions	0	0	0
WO2	Postpositions	1	1	1
WO3	No Prepositions	0	0	0
WO4	Prepositions	1	0	0
WO5	Ctic finite V: Category irrelevant	0	0	0
WO6	Ctic finite V: VO	0	0	0
WO7	Ctic finite V: OV	0	0	1
WO8	Ctic finite V: VO and OV	0	0	0
WO9	Ctic finite V: V2	0	0	0
WO10	Ctic Infinitive V: Category irrelevant	NA	NA	NA
WO11	Ctic Infinitive V: VO	NA	NA	NA
WO12	Ctic Infinitive V: OV	NA	NA	NA
WO13	Ctic Infinitive V: VO and OV	NA	NA	NA
WO14	Ctic Infinitive V: V2	NA	NA	NA
WO15	Ctic Participle V: Category irrelevant	NA	NA	NA

WO16	Cltic Participle V: VO	NA	NA	NA
WO17	Cltic Participle V: OV	NA	NA	NA
WO18	Cltic Participle V: VO and OV	NA	NA	NA
WO19	Cltic Participle V: V2	NA	NA	NA
WO20	Infinitive: Category irrelevant	0	0	0
WO21	Infinitive: VO	0	1	0
WO22	Infinitive: OV	1	1	1
WO23	Infinitive: OV and VO	0	1	0
WO24	Main clause: VSO	0	1	0
WO25	Main clause: V2	0	0	0
WO26	Main clause: SVO	0	1	0
WO27	Main clause: SOV	1	1	1
WO28	Main clause: SOV/SVO	0	1	0
WO29	Possessor - Noun	1	1	1
WO30	Noun - Possessor	0	1	0
WO31	Possessor ? Noun and Noun ? Possessor	0	1	0
WO32	Noun ? Adjective	0	1	0
WO33	Adjective - Noun	1	1	1
WO34	Adjective ? Noun and Noun ? Adjective	0	1	0
WO35	NRel: Category irrelevant	0	0	0
WO36	NRel: Relative - Noun	1	1	1
WO37	NRel: Noun - Relative	0	1	0
WO38	NRel: Relative - Noun and Noun - Relative	0	1	0
WO39	Participle - O	0	1	0
WO40	O - Participle	1	1	1
WO41	Participle - O and O - Participle	0	1	0
WO42	Subordinate clause: VSO	0	1	0
WO43	Subordinate clause: V2	0	0	0
WO44	Subordinate clause: SVO	0	1	0
WO45	Subordinate clause: SOV	1	1	1
WO46	Subordinate clause: SOV and SVO	0	1	0
WO47	No WH - Verb (initial or not)	1	NA	NA
WO48	WH - Verb (initial or not)	0	NA	NA
WO49	No WH-initial (no inversion)	0	NA	NA
WO50	WH-initial (no inversion)	1	NA	NA

S4

Reconstruction probabilities for values of each variable.

ID	Value	SP	Dir	Unif
A1	Present-Past: A marking in Present Progressive and Past	0.781	0.312	0.311
A2	Present-Past: Active-ergative in Present Progressive and Past	0.101	0.200	0.200
A3	Present-Past: All systems	0.091	0.251	0.251
A4	Present-Past: No marking difference	0.027	0.236	0.237
A5	Noun, Present progressive: No marking	0.315	0.315	0.312
A6	Noun, Present progressive: Nominative-accusative	0.654	0.363	0.361
A7	Noun, Present progressive: Tripartite	0.031	0.321	0.328
A8	Noun, Simple past: Ergative	0.125	0.189	0.187
A9	Noun, Simple past: No marking	0.303	0.272	0.274
A10	Noun, Simple past: Nominative-accusative	0.538	0.297	0.302
A11	Noun, Simple past: Tripartite	0.035	0.242	0.238
A12	Pronoun, Present progressive: No marking	0.092	0.463	0.461
A13	Pronoun, Present progressive: Nominative-accusative	0.908	0.537	0.539

A14	Pronoun, Simple past: Ergative	0.082	0.143	0.146
A15	Pronoun, Simple past: No marking	0.061	0.197	0.197
A16	Pronoun, Simple past: Nominative-accusative	0.831	0.446	0.447
A17	Pronoun, Simple past: Tripartite	0.027	0.214	0.211
A18	Reflexive not with Agent	0.041	0.505	0.505
A19	Reflexive with Agent	0.959	0.495	0.495
A20	Reflexive not with Object	0.958	0.547	0.548
A21	Reflexive with Object	0.042	0.453	0.452
A22	Verb, Present progressive: A=O/So=O	0.025	0.241	0.242
A23	Verb, Present progressive: No marking	0.060	0.244	0.244
A24	Verb, Present progressive: Nominative-Accusative	0.874	0.276	0.277
A25	Verb, Present progressive: Tripartite	0.041	0.239	0.237
A26	Verb, Simple past: Double oblique	0.031	0.192	0.194
A27	Verb, Simple past: Ergative	0.106	0.168	0.175
A28	Verb, Simple past: No marking	0.105	0.202	0.197
A29	Verb, Simple past: Nominative-accusative	0.675	0.251	0.252
A30	Verb, Simple past: Tripartite	0.084	0.186	0.182
NM1	Case on adjective	0.559	0.618	0.609
NM2	No case on adjective	0.441	0.382	0.391
NM3	Case on article	0.267	0.618	0.621
NM4	No case on article	0.733	0.382	0.379
NM5	Case on last member of NP	0.076	0.121	0.124
NM6	No rule of case on last/first member of NP	0.924	0.879	0.876
NM7	Case on noun	0.745	0.517	0.522
NM8	No case on noun	0.255	0.482	0.478
NM9	Definite suffix on adjective	0.076	0.301	0.303
NM10	No definite suffix on adjective	0.924	0.699	0.697
NM11	No obligatory definiteness	0.857	0.556	0.563
NM12	Obligatory definiteness on first member of NP	0.076	0.096	0.098
NM13	Obligatory definiteness on last member of NP	0.067	0.348	0.339
NM14	Definite article	0.059	0.087	0.085
NM15	No definite article	0.941	0.913	0.915
NM16	Definite suffix on noun	0.088	0.197	0.195
NM17	No definite suffix on noun	0.912	0.803	0.805
NM18	Fewer than five genders	0.987	0.582	0.588
NM19	More than five genders	0.013	0.418	0.412
NM20	No noun class for animates	0.913	0.591	0.588
NM21	Noun class for animates	0.087	0.409	0.412
NM22	Masculine/feminine distinction	0.684	0.597	0.598
NM23	No masculine/feminine distinction	0.316	0.403	0.402
NM24	Neuter gender	0.855	0.966	0.968
NM25	No neuter gender	0.145	0.034	0.032

NM26	Gender on predicative adjective	0.673	0.624	0.620
NM27	No gender on predicative adjective	0.327	0.376	0.380
NM28	More than 7 cases	0.416	0.950	0.949
NM29	Not more than 7 cases	0.584	0.050	0.051
NM30	Agglutination for number	0.229	0.361	0.356
NM31	No agglutination for number	0.771	0.639	0.644
NM32	Agglutination for case	0.218	0.429	0.426
NM33	No agglutination for case	0.782	0.571	0.574
NM34	Dative but no genitive	0.070	0.251	0.252
NM35	Genitive and dative	0.608	0.399	0.405
NM36	Genitive but no dative	0.138	0.235	0.234
NM37	No genitive or dative	0.184	0.116	0.110
NM38	Case difference A and O	0.715	0.561	0.561
NM39	No case difference A and O	0.285	0.439	0.439
NM40	No peripheral cases	0.017	0.003	0.003
NM41	Peripheral cases	0.983	0.997	0.997
NM42	No Vocative	0.115	0.054	0.053
NM43	Vocative	0.885	0.946	0.947
NM44	Agreement on prepositions	0.032	0.111	0.109
NM45	No agreement on prepositions	0.968	0.889	0.891
NM46	Fewer than 7 pronominal cases (pronouns)	0.969	0.544	0.546
NM47	More than 7 pronominal cases (pronouns)	0.031	0.456	0.454
NM48	Agglutination for number (pronouns)	0.081	0.190	0.185
NM49	No agglutination for number (pronouns)	0.919	0.810	0.815
NM50	Agglutination for case (pronouns)	0.962	0.760	0.759
NM51	No agglutination for case (pronouns)	0.038	0.240	0.241
NM52	Difference A and O (pronouns)	0.934	0.743	0.741
NM53	No difference A and O (pronouns)	0.066	0.257	0.259
NM54	Difference, O and Dative (pronouns)	0.429	0.529	0.519
NM55	No difference O and Dative (pronouns)	0.571	0.471	0.481
NM56	No peripheral cases (pronouns)	0.077	0.013	0.011
NM57	Peripheral cases (pronouns)	0.922	0.987	0.989
NM58	No Vocative (pronouns)	0.985	0.549	0.551
NM59	Vocative (pronouns)	0.015	0.451	0.449
T1	No synthetic Present progressive	0.078	0.382	0.379
T2	Synthetic Present progressive	0.922	0.618	0.621
T3	No Present progressive by auxiliary	0.676	0.562	0.559
T4	Present progressive by auxiliary	0.324	0.438	0.441
T5	Future by auxiliary	0.372	0.425	0.427
T6	No Future by auxiliary	0.628	0.575	0.573
T7	Future by participle	0.276	0.762	0.768
T8	No Future by participle	0.724	0.238	0.232

T9	Future by particle	0.107	0.368	0.368
T10	No Future by particle	0.893	0.632	0.632
T11	No synthetic Future	0.731	0.661	0.662
T12	Synthetic Future	0.270	0.339	0.338
T13	Future by perfect	0.020	0.272	0.279
T14	No Future by perfect	0.980	0.728	0.721
VM1	Present progressive: Full A Agreement	0.657	0.329	0.327
VM2	Present progressive: Full and Gender A Agreement	0.025	0.190	0.194
VM3	Present progressive: Gender A Agreement	0.041	0.190	0.190
VM4	Present progressive: No A Agreement	0.065	0.183	0.179
VM5	Present progressive: Syncretic A Agreement	0.212	0.107	0.110
VM6	Present progressive: Full Dative Agreement	0.020	0.304	0.308
VM7	Present progressive: No Dative Agreement	0.922	0.420	0.420
VM8	Present progressive: Syncretic Dative Agreement	0.057	0.277	0.272
VM9	Present progressive: Full O Agreement	0.022	0.302	0.308
VM10	Present progressive: No O Agreement	0.920	0.418	0.416
VM11	Present progressive: Syncretic O Agreement	0.058	0.280	0.276
VM12	Simple past: Full A Agreement	0.031	0.201	0.203
VM13	Simple past: Full and Gender A Agreement	0.270	0.198	0.200
VM14	Simple past: Gender A Agreement	0.049	0.200	0.200
VM15	Simple past: No A Agreement	0.056	0.195	0.199
VM16	Simple past: Syncretic A Agreement	0.207	0.207	0.199
VM17	Simple past: Full A Agreement	0.387	0.201	0.203
VM18	Simple past: Full Dative Agreement	0.022	0.240	0.237
VM19	Simple past: Gender Dative Agreement	0.021	0.237	0.238
VM20	Simple past: No Dative Agreement	0.893	0.302	0.303
VM21	Simple past: Syncretic Dative Agreement	0.064	0.222	0.222
VM22	Simple past: Gender and full O Agreement	0.028	0.189	0.183
VM23	Simple past: Gender O Agreement	0.036	0.185	0.183
VM24	Simple past: No O Agreement	0.785	0.289	0.296
VM25	Simple Past: Syncretic and gender A Agreement	0.067	0.172	0.171
VM26	Simple past: Syncretic O Agreement	0.083	0.165	0.168
WO1	No Postpositions	0.151	0.052	0.050
WO2	Postpositions	0.849	0.948	0.950
WO3	No Prepositions	0.738	0.819	0.817
WO4	Prepositions	0.262	0.181	0.183
WO5	Ctic finite V: Category irrelevant	0.442	0.171	0.168
WO6	Ctic finite V: OV	0.141	0.165	0.164
WO7	Ctic finite V: V2	0.161	0.269	0.270
WO8	Ctic finite V: VO	0.181	0.183	0.186
WO9	Ctic finite V: VO and OV	0.074	0.212	0.212
WO10	Ctic Infinitive V: Category irrelevant	0.434	0.137	0.136

WO11	Clitic Infinitive V: OV	0.189	0.208	0.206
WO12	Clitic Infinitive V: V2	0.162	0.249	0.254
WO13	Clitic Infinitive V: VO	0.169	0.205	0.210
WO14	Clitic Infinitive V: VO and OV	0.046	0.200	0.195
WO15	Clitic Participle V: Category irrelevant	0.418	0.140	0.149
WO16	Clitic Participle V: OV	0.198	0.201	0.196
WO17	Clitic Participle V: V2	0.148	0.241	0.237
WO18	Clitic Participle V: VO	0.181	0.208	0.214
WO19	Clitic Participle V: VO and OV	0.054	0.210	0.204
WO20	Infinitive: Category irrelevant	0.063	0.262	0.262
WO21	Infinitive: OV	0.806	0.405	0.404
WO22	Infinitive: OV and VO	0.039	0.246	0.248
WO23	Infinitive: VO	0.092	0.087	0.086
WO24	Main clause: SOV	0.905	0.640	0.638
WO25	Main clause: SOV/SVO	0.010	0.134	0.137
WO26	Main clause: SVO	0.034	0.028	0.029
WO27	Main clause: V2	0.030	0.058	0.056
WO28	Main clause: VSO	0.021	0.140	0.139
WO29	Noun - Possessor	0.347	0.338	0.337
WO30	Possessor - Noun	0.585	0.285	0.289
WO31	Possessor - Noun and Noun - Possessor	0.068	0.377	0.374
WO32	Adjective - Noun	0.870	0.536	0.538
WO33	Adjective - Noun and Noun - Adjective	0.054	0.306	0.306
WO34	Noun - Adjective	0.076	0.158	0.156
WO35	NRel: Category irrelevant	0.040	0.280	0.282
WO36	NRel: Noun - Relative	0.627	0.118	0.113
WO37	NRel: Relative - Noun	0.292	0.316	0.316
WO38	NRel: Relative - Noun and Noun - Relative	0.041	0.286	0.289
WO39	O - Participle	0.894	0.619	0.618
WO40	Participle - O	0.050	0.054	0.054
WO41	Participle - O and O - Participle	0.057	0.327	0.327
WO42	Subordinate clause: SOV	0.899	0.558	0.560
WO43	Subordinate clause: SOV and SVO	0.012	0.162	0.160
WO44	Subordinate clause: SVO	0.037	0.025	0.027
WO45	Subordinate clause: V2	0.014	0.092	0.089
WO46	Subordinate clause: VSO	0.038	0.163	0.163
WO47	No WH - Verb (initial or not)	0.778	0.801	0.800
WO48	WH - Verb (initial or not)	0.222	0.199	0.200
WO49	No WH-initial (no inversion)	0.212	0.178	0.176
WO50	WH-initial (no inversion)	0.788	0.822	0.824

S5

Transition rates for features, organized by category (S3a).

Feature 1	Feature 1	Rate(F1→F2)
Present-Past: A marking in Present Progressive and Past	Present-Past: Active-ergative in Present Progressive and Past	0.090
Present-Past: A marking in Present Progressive and Past	Present-Past: All systems	0.237
Present-Past: A marking in Present Progressive and Past	Present-Past: No marking difference	0.057
Present-Past: Active-ergative in Present Progressive and Past	Present-Past: A marking in Present Progressive and Past	0.563
Present-Past: Active-ergative in Present Progressive and Past	Present-Past: All systems	0.609
Present-Past: Active-ergative in Present Progressive and Past	Present-Past: No marking difference	0.330
Present-Past: All systems	Present-Past: A marking in Present Progressive and Past	1.663
Present-Past: All systems	Present-Past: Active-ergative in Present Progressive and Past	0.906
Present-Past: All systems	Present-Past: No marking difference	0.462
Present-Past: No marking difference	Present-Past: A marking in Present Progressive and Past	1.552
Present-Past: No marking difference	Present-Past: Active-ergative in Present Progressive and Past	1.569
Present-Past: No marking difference	Present-Past: All systems	1.526
Noun, Present progressive: No marking	Noun, Present progressive: Nominative-accusative	1.044
Noun, Present progressive: No marking	Noun, Present progressive: Tripartite	0.175
Noun, Present progressive: Nominative-accusative	Noun, Present progressive: No marking	0.593
Noun, Present progressive: Nominative-accusative	Noun, Present progressive: Tripartite	0.082
Noun, Present progressive: Tripartite	Noun, Present progressive: No marking	1.563
Noun, Present progressive: Tripartite	Noun, Present progressive: Nominative-accusative	1.819
Noun, Simple past: Ergative	Noun, Simple past: No marking	0.365
Noun, Simple past: Ergative	Noun, Simple past: Nominative-accusative	0.533
Noun, Simple past: Ergative	Noun, Simple past: Tripartite	0.310

Noun, Simple past: No marking	Noun, Simple past: Ergative	0.282
Noun, Simple past: No marking	Noun, Simple past: Nominative-accusative	1.105
Noun, Simple past: No marking	Noun, Simple past: Tripartite	0.194
Noun, Simple past: Nominative-accusative	Noun, Simple past: Ergative	0.113
Noun, Simple past: Nominative-accusative	Noun, Simple past: No marking	0.751
Noun, Simple past: Nominative-accusative	Noun, Simple past: Tripartite	0.095
Noun, Simple past: Tripartite	Noun, Simple past: Ergative	1.455
Noun, Simple past: Tripartite	Noun, Simple past: No marking	1.336
Noun, Simple past: Tripartite	Noun, Simple past: Nominative-accusative	1.629
Pronoun, Present progressive: No marking	Pronoun, Present progressive: Nominative-accusative	0.807
Pronoun, Present progressive: Nominative-accusative	Pronoun, Present progressive: No marking	0.118
Pronoun, Simple past: Ergative	Pronoun, Simple past: No marking	0.301
Pronoun, Simple past: Ergative	Pronoun, Simple past: Nominative-accusative	0.326
Pronoun, Simple past: Ergative	Pronoun, Simple past: Tripartite	0.311
Pronoun, Simple past: No marking	Pronoun, Simple past: Ergative	0.828
Pronoun, Simple past: No marking	Pronoun, Simple past: Nominative-accusative	0.641
Pronoun, Simple past: No marking	Pronoun, Simple past: Tripartite	0.502
Pronoun, Simple past: Nominative-accusative	Pronoun, Simple past: Ergative	0.061
Pronoun, Simple past: Nominative-accusative	Pronoun, Simple past: No marking	0.140
Pronoun, Simple past: Nominative-accusative	Pronoun, Simple past: Tripartite	0.057
Pronoun, Simple past: Tripartite	Pronoun, Simple past: Ergative	1.547
Pronoun, Simple past: Tripartite	Pronoun, Simple past: No marking	1.156
Pronoun, Simple past: Tripartite	Pronoun, Simple past: Nominative-accusative	1.261
Reflexive not with Agent	Reflexive with Agent	0.888
Reflexive with Agent	Reflexive not with Agent	0.042
Reflexive not with Object	Reflexive with Object	0.035
Reflexive with Object	Reflexive not with Object	0.548
Verb, Present progressive: A=O/So=O	Verb, Present progressive: No marking	1.299

Verb, Present progressive: A=O/So=O	Verb, Present progressive: Nominative-Accusative	progressive: 1.546
Verb, Present progressive: A=O/So=O	Verb, Present progressive: Tripartite	1.192
Verb, Present progressive: No marking	Verb, Present progressive: A=O/So=O	0.587
Verb, Present progressive: No marking	Verb, Present progressive: Nominative-Accusative	1.552
Verb, Present progressive: No marking	Verb, Present progressive: Tripartite	0.734
Verb, Present progressive: Nominative-Accusative	Verb, Present progressive: A=O/So=O	0.037
Verb, Present progressive: Nominative-Accusative	Verb, Present progressive: No marking	0.129
Verb, Present progressive: Nominative-Accusative	Verb, Present progressive: Tripartite	0.044
Verb, Present progressive: Tripartite	Verb, Present progressive: A=O/So=O	0.734
Verb, Present progressive: Tripartite	Verb, Present progressive: No marking	0.963
Verb, Present progressive: Tripartite	Verb, Present progressive: Nominative-Accusative	1.214
Verb, Simple past: Double oblique	Verb, Simple past: Ergative	1.480
Verb, Simple past: Double oblique	Verb, Simple past: No marking	1.291
Verb, Simple past: Double oblique	Verb, Simple past: Nominative-accusative	1.431
Verb, Simple past: Double oblique	Verb, Simple past: Tripartite	1.443
Verb, Simple past: Ergative	Verb, Simple past: Double oblique	0.374
Verb, Simple past: Ergative	Verb, Simple past: No marking	0.463
Verb, Simple past: Ergative	Verb, Simple past: Nominative-accusative	0.536
Verb, Simple past: Ergative	Verb, Simple past: Tripartite	0.705
Verb, Simple past: No marking	Verb, Simple past: Double oblique	0.437
Verb, Simple past: No marking	Verb, Simple past: Ergative	0.753
Verb, Simple past: No marking	Verb, Simple past: Nominative-accusative	1.485
Verb, Simple past: No marking	Verb, Simple past: Tripartite	0.775
Verb, Simple past: Nominative-accusative	Verb, Simple past: Double oblique	0.053
Verb, Simple past: Nominative-accusative	Verb, Simple past: Ergative	0.064
Verb, Simple past: Nominative-accusative	Verb, Simple past: No marking	0.371

Verb, Simple past: Nominative-accusative	Verb, Simple past: Tripartite	0.073
Verb, Simple past: Tripartite	Verb, Simple past: Double oblique	0.508
Verb, Simple past: Tripartite	Verb, Simple past: Ergative	1.002
Verb, Simple past: Tripartite	Verb, Simple past: No marking	0.676
Verb, Simple past: Tripartite	Verb, Simple past: Nominative-accusative	0.811
Case on adjective	No case on adjective	0.562
No case on adjective	Case on adjective	0.408
Case on article	No case on article	0.722
No case on article	Case on article	0.182
Case on last member of NP	No rule of case on last/first member of NP	0.258
No rule of case on last/first member of NP	Case on last member of NP	0.138
Case on noun	No case on noun	0.316
No case on noun	Case on noun	0.718
Definite suffix on adjective	No definite suffix on adjective	0.274
No definite suffix on adjective	Definite suffix on adjective	0.061
No obligatory definiteness	Obligatory definiteness on first member of NP	0.093
No obligatory definiteness	Obligatory definiteness on last member of NP	0.182
Obligatory definiteness on first member of NP	No obligatory definiteness	0.185
Obligatory definiteness on first member of NP	Obligatory definiteness on last member of NP	0.132
Obligatory definiteness on last member of NP	No obligatory definiteness	1.551
Obligatory definiteness on last member of NP	Obligatory definiteness on first member of NP	0.639
Definite article	No definite article	0.135
No definite article	Definite article	0.102
Definite suffix on noun	No definite suffix on noun	0.308
No definite suffix on noun	Definite suffix on noun	0.124
Fewer than five genders	More than five genders	0.017
More than five genders	Fewer than five genders	0.650
No noun class for animates	Noun class for animates	0.070
Noun class for animates	No noun class for animates	0.508
Masculine/feminine distinction	No masculine/feminine distinction	0.214
No masculine/feminine distinction	Masculine/feminine distinction	0.373
Neuter gender	No neuter gender	0.361

No neuter gender	Neuter gender	0.094
Gender on predicative adjective	No gender on predicative adjective	0.311
No gender on predicative adjective	Gender on predicative adjective	0.395
More than 7 cases	Not more than 7 cases	0.728
Not more than 7 cases	More than 7 cases	0.057
Agglutination for number	No agglutination for number	0.353
No agglutination for number	Agglutination for number	0.187
Agglutination for case	No agglutination for case	0.520
No agglutination for case	Agglutination for case	0.218
Dative but no genitive	Genitive and dative	1.332
Dative but no genitive	Genitive but no dative	1.218
Dative but no genitive	No genitive or dative	0.859
Genitive and dative	Dative but no genitive	0.165
Genitive and dative	Genitive but no dative	0.346
Genitive and dative	No genitive or dative	0.161
Genitive but no dative	Dative but no genitive	0.579
Genitive but no dative	Genitive and dative	0.930
Genitive but no dative	No genitive or dative	0.737
No genitive or dative	Dative but no genitive	0.164
No genitive or dative	Genitive and dative	0.137
No genitive or dative	Genitive but no dative	0.238
Case difference A and O	No case difference A and O	0.355
No case difference A and O	Case difference A and O	0.583
No peripheral cases	Peripheral cases	0.046
Peripheral cases	No peripheral cases	0.150
No Vocative	Vocative	0.128
Vocative	No Vocative	0.253
Agreement on prepositions	No agreement on prepositions	0.110
No agreement on prepositions	Agreement on prepositions	0.039
Fewer than 7 pronominal cases (pronouns)	More than 7 pronominal cases (pronouns)	0.038
More than 7 pronominal cases (pronouns)	Fewer than 7 pronominal cases (pronouns)	0.740
Agglutination for number (pronouns)	No agglutination for number (pronouns)	0.324
No agglutination for number (pronouns)	Agglutination for number (pronouns)	0.132
Agglutination for case (pronouns)	No agglutination for case (pronouns)	0.058
No agglutination for case (pronouns)	Agglutination for case (pronouns)	0.434
Difference A and O (pronouns)	No difference A and O (pronouns)	0.085
No difference A and O (pronouns)	Difference A and O (pronouns)	0.396
Difference, O and Dative (pronouns)	No difference O and Dative (pronouns)	0.535

No difference O and Dative (pronouns)	Difference, O and Dative (pronouns)	0.381
No peripheral cases (pronouns)	Peripheral cases (pronouns)	0.056
Peripheral cases (pronouns)	No peripheral cases (pronouns)	0.236
No Vocative (pronouns)	Vocative (pronouns)	0.019
Vocative (pronouns)	No Vocative (pronouns)	0.721
No synthetic Present progressive	Synthetic Present progressive	0.522
Synthetic Present progressive	No synthetic Present progressive	0.071
No Present progressive by auxiliary	Present progressive by auxiliary	0.270
Present progressive by auxiliary	No Present progressive by auxiliary	0.440
Future by auxiliary	No Future by auxiliary	0.463
No Future by auxiliary	Future by auxiliary	0.383
Future by participle	No Future by participle	0.653
No Future by participle	Future by participle	0.093
Future by particle	No Future by particle	0.581
No Future by particle	Future by particle	0.132
No synthetic Future	Synthetic Future	0.165
Synthetic Future	No synthetic Future	0.206
Future by perfect	No Future by perfect	0.360
No Future by perfect	Future by perfect	0.023
Present progressive: Full A Agreement	Present progressive: Full and Gender A Agreement	0.077
Present progressive: Full A Agreement	Present progressive: Gender A Agreement	0.112
Present progressive: Full A Agreement	Present progressive: No A Agreement	0.097
Present progressive: Full A Agreement	Present progressive: Syncretic A Agreement	0.207
Present progressive: Full and Gender A Agreement	Present progressive: Full A Agreement	1.548
Present progressive: Full and Gender A Agreement	Present progressive: Gender A Agreement	1.269
Present progressive: Full and Gender A Agreement	Present progressive: No A Agreement	1.367
Present progressive: Full and Gender A Agreement	Present progressive: Syncretic A Agreement	1.598
Present progressive: Gender A Agreement	Present progressive: Full A Agreement	1.350
Present progressive: Gender A Agreement	Present progressive: Full and Gender A Agreement	0.763
Present progressive: Gender A Agreement	Present progressive: No A Agreement	1.095

Present progressive:	Gender A	Present progressive:	Syncretic A	1.322
Agreement		Agreement		
Present progressive:	No A Agreement	Present progressive:	Full A Agreement	1.047
Present progressive:	No A Agreement	Present progressive:	Full and Gender A Agreement	0.586
Present progressive:	No A Agreement	Present progressive:	Gender A	0.807
Present progressive:	No A Agreement	Present progressive:	Syncretic A	1.355
Present progressive:	Syncretic A Agreement	Present progressive:	Full A Agreement	0.115
Present progressive:	Syncretic A Agreement	Present progressive:	Full and Gender A Agreement	0.109
Present progressive:	Syncretic A Agreement	Present progressive:	Gender A	0.147
Present progressive:	Syncretic A Agreement	Present progressive:	No A Agreement	0.352
Present progressive:	Full Dative Agreement	Present progressive:	No Dative Agreement	1.441
Present progressive:	Full Dative Agreement	Present progressive:	Syncretic Dative Agreement	1.328
Present progressive:	No Dative Agreement	Present progressive:	Full Dative Agreement	0.032
Present progressive:	No Dative Agreement	Present progressive:	Syncretic Dative Agreement	0.069
Present progressive:	Syncretic Dative Agreement	Present progressive:	Full Dative Agreement	0.457
Present progressive:	Syncretic Dative Agreement	Present progressive:	No Dative Agreement	0.669
Present progressive:	Full O Agreement	Present progressive:	No O Agreement	1.435
Present progressive:	Full O Agreement	Present progressive:	Syncretic O Agreement	1.329
Present progressive:	No O Agreement	Present progressive:	Full O Agreement	0.032
Present progressive:	No O Agreement	Present progressive:	Syncretic O Agreement	0.069
Present progressive:	Syncretic O Agreement	Present progressive:	Full O Agreement	0.454
Present progressive:	Syncretic O Agreement	Present progressive:	No O Agreement	0.661

Simple past: Full A Agreement	Simple past: Full and Gender A Agreement	1.733
Simple past: Full A Agreement	Simple past: Gender A Agreement	1.217
Simple past: Full A Agreement	Simple past: No A Agreement	1.299
Simple past: Full A Agreement	Simple past: Syncretic A Agreement	1.729
Simple past: Full and Gender A Agreement	Simple past: Full A Agreement	0.179
Simple past: Full and Gender A Agreement	Simple past: Gender A Agreement	0.236
Simple past: Full and Gender A Agreement	Simple past: No A Agreement	0.284
Simple past: Full and Gender A Agreement	Simple past: Syncretic A Agreement	0.822
Simple past: Gender A Agreement	Simple past: Full A Agreement	0.748
Simple past: Gender A Agreement	Simple past: Full and Gender A Agreement	1.432
Simple past: No A Agreement	Simple past: No A Agreement	1.011
Simple past: No A Agreement	Simple past: Syncretic A Agreement	1.422
Simple past: No A Agreement	Simple past: Full A Agreement	0.725
Simple past: No A Agreement	Simple past: Full and Gender A Agreement	1.524
Simple past: No A Agreement	Simple past: Gender A Agreement	0.923
Simple past: No A Agreement	Simple past: Syncretic A Agreement	1.527
Simple past: Syncretic A Agreement	Simple past: Full A Agreement	0.265
Simple past: Syncretic A Agreement	Simple past: Full and Gender A Agreement	1.143
Simple past: Syncretic A Agreement	Simple past: Gender A Agreement	0.364
Simple past: Syncretic A Agreement	Simple past: No A Agreement	0.443
Simple past: Full Dative Agreement	Simple past: Gender Dative Agreement	1.016
Simple past: Full Dative Agreement	Simple past: No Dative Agreement	1.462
Simple past: Full Dative Agreement	Simple past: Syncretic Dative Agreement	1.347
Simple past: Gender Dative Agreement	Simple past: Full Dative Agreement	1.005
Simple past: Gender Dative Agreement	Simple past: No Dative Agreement	1.490
Simple past: Gender Dative Agreement	Simple past: Syncretic Dative Agreement	1.378
Simple past: No Dative Agreement	Simple past: Full Dative Agreement	0.033
Simple past: No Dative Agreement	Simple past: Gender Dative Agreement	0.035

Simple past: No Dative Agreement	Simple past: Syncretic Dative Agreement	0.069
Simple past: Syncretic Dative Agreement	Simple past: Full Dative Agreement	0.468
Simple past: Syncretic Dative Agreement	Simple past: Gender Dative Agreement	0.461
Simple past: Syncretic Dative Agreement	Simple past: No Dative Agreement	0.678
Simple past: Gender and full O Agreement	Simple past: Gender O Agreement	1.097
Simple past: Gender and full O Agreement	Simple past: No O Agreement	1.109
Simple past: Gender and full O Agreement	Simple Past: Syncretic and gender A Agreement	1.350
Simple past: Gender and full O Agreement	Simple past: Syncretic O Agreement	1.355
Simple past: Gender O Agreement	Simple past: Gender and full O Agreement	0.924
Simple past: Gender O Agreement	Simple past: No O Agreement	1.008
Simple past: Gender O Agreement	Simple Past: Syncretic and gender A Agreement	1.268
Simple past: Gender O Agreement	Simple past: Syncretic O Agreement	1.285
Simple past: No O Agreement	Simple past: Gender and full O Agreement	0.052
Simple past: No O Agreement	Simple past: Gender O Agreement	0.056
Simple past: No O Agreement	Simple Past: Syncretic and gender A Agreement	0.073
Simple past: No O Agreement	Simple past: Syncretic O Agreement	0.092
Simple Past: Syncretic and gender A Agreement	Simple past: Gender and full O Agreement	0.584
Simple Past: Syncretic and gender A Agreement	Simple past: Gender O Agreement	0.653
Simple Past: Syncretic and gender A Agreement	Simple past: No O Agreement	0.623
Simple Past: Syncretic and gender A Agreement	Simple past: Syncretic O Agreement	0.886
Simple past: Syncretic O Agreement	Simple past: Gender and full O Agreement	0.474
Simple past: Syncretic O Agreement	Simple past: Gender O Agreement	0.530
Simple past: Syncretic O Agreement	Simple past: No O Agreement	0.439
Simple past: Syncretic O Agreement	Simple Past: Syncretic and gender A Agreement	0.733

No Postpositions	Postpositions	0.034
Postpositions	No Postpositions	0.085
No Prepositions	Prepositions	0.060
Prepositions	No Prepositions	0.037
Clitic finite V: Category irrelevant	Clitic finite V: OV	0.076
Clitic finite V: Category irrelevant	Clitic finite V: V2	0.117
Clitic finite V: Category irrelevant	Clitic finite V: VO	0.543
Clitic finite V: Category irrelevant	Clitic finite V: VO and OV	0.097
Clitic finite V: OV	Clitic finite V: Category irrelevant	0.376
Clitic finite V: OV	Clitic finite V: V2	0.123
Clitic finite V: OV	Clitic finite V: VO	0.174
Clitic finite V: OV	Clitic finite V: VO and OV	0.130
Clitic finite V: V2	Clitic finite V: Category irrelevant	0.762
Clitic finite V: V2	Clitic finite V: OV	0.242
Clitic finite V: V2	Clitic finite V: VO	0.612
Clitic finite V: V2	Clitic finite V: VO and OV	0.431
Clitic finite V: VO	Clitic finite V: Category irrelevant	1.187
Clitic finite V: VO	Clitic finite V: OV	0.240
Clitic finite V: VO	Clitic finite V: V2	0.563
Clitic finite V: VO	Clitic finite V: VO and OV	0.364
Clitic finite V: VO and OV	Clitic finite V: Category irrelevant	0.833
Clitic finite V: VO and OV	Clitic finite V: OV	0.517
Clitic finite V: VO and OV	Clitic finite V: V2	0.836
Clitic finite V: VO and OV	Clitic finite V: VO	0.778
Clitic Infinitive V: Category irrelevant	Clitic Infinitive V: OV	0.096
Clitic Infinitive V: Category irrelevant	Clitic Infinitive V: V2	0.062
Clitic Infinitive V: Category irrelevant	Clitic Infinitive V: VO	0.097
Clitic Infinitive V: Category irrelevant	Clitic Infinitive V: VO and OV	0.081
Clitic Infinitive V: OV	Clitic Infinitive V: Category irrelevant	0.316
Clitic Infinitive V: OV	Clitic Infinitive V: V2	0.625
Clitic Infinitive V: OV	Clitic Infinitive V: VO	0.668
Clitic Infinitive V: V2	Clitic Infinitive V: VO and OV	0.388
Clitic Infinitive V: V2	Clitic Infinitive V: Category irrelevant	0.563
Clitic Infinitive V: V2	Clitic Infinitive V: OV	0.626
Clitic Infinitive V: V2	Clitic Infinitive V: VO	0.412
Clitic Infinitive V: V2	Clitic Infinitive V: VO and OV	0.426

Clitic Infinitive V: VO	Clitic Infinitive V: Category irrelevant	0.170
Clitic Infinitive V: VO	Clitic Infinitive V: OV	0.940
Clitic Infinitive V: VO	Clitic Infinitive V: V2	0.345
Clitic Infinitive V: VO	Clitic Infinitive V: VO and OV	0.272
Clitic Infinitive V: VO and OV	Clitic Infinitive V: Category irrelevant	1.434
Clitic Infinitive V: VO and OV	Clitic Infinitive V: OV	1.263
Clitic Infinitive V: VO and OV	Clitic Infinitive V: V2	1.191
Clitic Infinitive V: VO and OV	Clitic Infinitive V: VO	1.054
Clitic Participle V: Category irrelevant	Clitic Participle V: OV	0.139
Clitic Participle V: Category irrelevant	Clitic Participle V: V2	0.090
Clitic Participle V: Category irrelevant	Clitic Participle V: VO	0.116
Clitic Participle V: Category irrelevant	Clitic Participle V: VO and OV	0.101
Clitic Participle V: OV	Clitic Participle V: Category irrelevant	0.494
Clitic Participle V: OV	Clitic Participle V: V2	0.433
Clitic Participle V: OV	Clitic Participle V: VO	0.595
Clitic Participle V: OV	Clitic Participle V: VO and OV	0.361
Clitic Participle V: V2	Clitic Participle V: Category irrelevant	0.604
Clitic Participle V: V2	Clitic Participle V: OV	0.759
Clitic Participle V: V2	Clitic Participle V: VO	0.561
Clitic Participle V: V2	Clitic Participle V: VO and OV	0.475
Clitic Participle V: VO	Clitic Participle V: Category irrelevant	0.233
Clitic Participle V: VO	Clitic Participle V: OV	0.821
Clitic Participle V: VO	Clitic Participle V: V2	0.512
Clitic Participle V: VO	Clitic Participle V: VO and OV	0.408
Clitic Participle V: VO and OV	Clitic Participle V: Category irrelevant	0.864
Clitic Participle V: VO and OV	Clitic Participle V: OV	1.317
Clitic Participle V: VO and OV	Clitic Participle V: V2	1.111
Clitic Participle V: VO and OV	Clitic Participle V: VO	1.687
Infinitive: Category irrelevant	Infinitive: OV	0.545
Infinitive: Category irrelevant	Infinitive: OV and VO	0.532
Infinitive: Category irrelevant	Infinitive: VO	0.577
Infinitive: OV	Infinitive: Category irrelevant	0.038

Infinitive: OV	Infinitive: OV and VO	0.038
Infinitive: OV	Infinitive: VO	0.075
Infinitive: OV and VO	Infinitive: Category irrelevant	1.365
Infinitive: OV and VO	Infinitive: OV	0.567
Infinitive: OV and VO	Infinitive: VO	0.757
Infinitive: VO	Infinitive: Category irrelevant	0.106
Infinitive: VO	Infinitive: OV	0.080
Infinitive: VO	Infinitive: OV and VO	0.151
Main clause: SOV	Main clause: SOV/SVO	0.047
Main clause: SOV	Main clause: SVO	0.043
Main clause: SOV	Main clause: V2	0.035
Main clause: SOV	Main clause: VSO	0.031
Main clause: SOV/SVO	Main clause: SOV	1.082
Main clause: SOV/SVO	Main clause: SVO	1.547
Main clause: SOV/SVO	Main clause: V2	1.331
Main clause: SOV/SVO	Main clause: VSO	0.969
Main clause: SVO	Main clause: SOV	0.048
Main clause: SVO	Main clause: SOV/SVO	0.078
Main clause: SVO	Main clause: V2	0.197
Main clause: SVO	Main clause: VSO	0.057
Main clause: V2	Main clause: SOV	0.086
Main clause: V2	Main clause: SOV/SVO	0.133
Main clause: V2	Main clause: SVO	0.423
Main clause: V2	Main clause: VSO	0.145
Main clause: VSO	Main clause: SOV	0.419
Main clause: VSO	Main clause: SOV/SVO	0.451
Main clause: VSO	Main clause: SVO	0.540
Main clause: VSO	Main clause: V2	0.491
Noun - Possessor	Possessor - Noun	0.154
Noun - Possessor	Possessor - Noun and Noun - Possessor	0.159
Possessor - Noun	Noun - Possessor	0.088
Possessor - Noun	Possessor - Noun and Noun - Possessor	0.054
Possessor - Noun and Noun - Possessor	Noun - Possessor	0.929
Possessor - Noun and Noun - Possessor	Possessor - Noun	0.689
Adjective - Noun	Adjective - Noun and Noun - Adjective	0.086
Adjective - Noun	Noun - Adjective	0.024
Adjective - Noun and Noun - Adjective	Adjective - Noun	0.775

Adjective - Noun and Noun - Adjective	Noun - Adjective	1.035
Noun - Adjective	Adjective - Noun	0.079
Noun - Adjective	Adjective - Noun and Noun - Adjective	0.253
NRel: Category irrelevant	NRel: Noun - Relative	1.470
NRel: Category irrelevant	NRel: Relative - Noun	1.526
NRel: Category irrelevant	NRel: Relative - Noun and Noun - Relative	1.045
NRel: Noun - Relative	NRel: Category irrelevant	0.046
NRel: Noun - Relative	NRel: Relative - Noun	0.030
NRel: Noun - Relative	NRel: Relative - Noun and Noun - Relative	0.030
NRel: Relative - Noun	NRel: Category irrelevant	0.160
NRel: Relative - Noun	NRel: Noun - Relative	0.210
NRel: Relative - Noun	NRel: Relative - Noun and Noun - Relative	0.221
NRel: Relative - Noun and Noun - Relative	NRel: Category irrelevant	0.962
NRel: Relative - Noun and Noun - Relative	NRel: Noun - Relative	1.271
NRel: Relative - Noun and Noun - Relative	NRel: Relative - Noun	1.595
O - Participle	Participle - O	0.081
O - Participle	Participle - O and O - Participle	0.036
Participle - O	O - Participle	0.091
Participle - O	Participle - O and O - Participle	0.066
Participle - O and O - Participle	O - Participle	0.392
Participle - O and O - Participle	Participle - O	0.334
Subordinate clause: SOV	Subordinate clause: SOV and SVO	0.048
Subordinate clause: SOV	Subordinate clause: SVO	0.059
Subordinate clause: SOV	Subordinate clause: V2	0.054
Subordinate clause: SOV	Subordinate clause: VSO	0.028
Subordinate clause: SOV and SVO	Subordinate clause: SOV	1.322
Subordinate clause: SOV and SVO	Subordinate clause: SVO	1.398
Subordinate clause: SOV and SVO	Subordinate clause: V2	1.053
Subordinate clause: SOV and SVO	Subordinate clause: VSO	1.012
Subordinate clause: SVO	Subordinate clause: SOV	0.078
Subordinate clause: SVO	Subordinate clause: SOV and SVO	0.064
Subordinate clause: SVO	Subordinate clause: V2	0.053
Subordinate clause: SVO	Subordinate clause: VSO	0.051
Subordinate clause: V2	Subordinate clause: SOV	0.311

Subordinate clause: V2	Subordinate clause: SOV and SVO	0.407
Subordinate clause: V2	Subordinate clause: SVO	0.992
Subordinate clause: V2	Subordinate clause: VSO	0.309
Subordinate clause: VSO	Subordinate clause: SOV	0.303
Subordinate clause: VSO	Subordinate clause: SOV and SVO	0.247
Subordinate clause: VSO	Subordinate clause: SVO	0.199
Subordinate clause: VSO	Subordinate clause: V2	0.208
No WH - Verb (initial or not)	WH - Verb (initial or not)	0.267
WH - Verb (initial or not)	No WH - Verb (initial or not)	0.253
No WH-initial (no inversion)	WH-initial (no inversion)	0.213
WH-initial (no inversion)	No WH-initial (no inversion)	0.219

S6

Entry and exit (gain and loss) rates of features. Type = A (alignment), NM (nominal morphology), T (tense), VM (verbal morphology), WO (word order).

Type	Feature	Gain/entry rate	Loss/exit rate
A1	Present-Past: A marking in Present Progressive and Past	1.087	0.385
A2	Present-Past: Active-ergative in Present Progressive and Past	0.232	1.503
A3	Present-Past: All systems	0.333	3.032
A4	Present-Past: No marking difference	0.136	4.647
A5	Noun, Present progressive: No marking	0.642	1.219
A6	Noun, Present progressive: Nominative-accusative	1.112	0.675
A7	Noun, Present progressive: Tripartite	0.115	3.383
A8	Noun, Simple past: Ergative	0.231	1.209
A9	Noun, Simple past: No marking	0.692	1.582
A10	Noun, Simple past: Nominative-accusative	0.959	0.960
A11	Noun, Simple past: Tripartite	0.162	4.421
A12	Pronoun, Present progressive: No marking	0.118	0.807
A13	Pronoun, Present progressive: Nominative-accusative	0.807	0.118
A14	Pronoun, Simple past: Ergative	0.224	0.938
A15	Pronoun, Simple past: No marking	0.217	1.973
A16	Pronoun, Simple past: Nominative-accusative	0.527	0.259
A17	Pronoun, Simple past: Tripartite	0.154	3.964
A18	Reflexive not with Agent	0.042	0.888
A19	Reflexive with Agent	0.888	0.042
A20	Reflexive not with Object	0.548	0.035
A21	Reflexive with Object	0.035	0.548
A22	Verb, Present progressive: A=O/So=O	0.101	4.038
A23	Verb, Present progressive: No marking	0.195	2.874
A24	Verb, Present progressive: Nominative-Accusative	1.446	0.211

A25	Verb, Present progressive: Tripartite	0.120	2.912
A26	Verb, Simple past: Double oblique	0.183	5.646
A27	Verb, Simple past: Ergative	0.303	2.078
A28	Verb, Simple past: No marking	0.448	3.451
A29	Verb, Simple past: Nominative-accusative	0.981	0.562
A30	Verb, Simple past: Tripartite	0.298	2.998
NM1	Case on adjective	0.408	0.562
NM2	No case on adjective	0.562	0.408
NM3	Case on article	0.182	0.722
NM4	No case on article	0.722	0.182
NM5	Case on last member of NP	0.138	0.258
NM6	No rule of case on last/first member of NP	0.258	0.138
NM7	Case on noun	0.718	0.316
NM8	No case on noun	0.316	0.718
NM9	Definite suffix on adjective	0.061	0.274
NM10	No definite suffix on adjective	0.274	0.061
NM11	No obligatory definiteness	0.431	0.275
NM12	Obligatory definiteness on first member of NP	0.149	0.318
NM13	Obligatory definiteness on last member of NP	0.165	2.191
NM14	Definite article	0.102	0.135
NM15	No definite article	0.135	0.102
NM16	Definite suffix on noun	0.124	0.308
NM17	No definite suffix on noun	0.308	0.124
NM18	Fewer than five genders	0.650	0.017
NM19	More than five genders	0.017	0.650
NM20	No noun class for animates	0.508	0.070
NM21	Noun class for animates	0.070	0.508
NM22	Masculine/feminine distinction	0.373	0.214
NM23	No masculine/feminine distinction	0.214	0.373
NM24	Neuter gender	0.094	0.361
NM25	No neuter gender	0.361	0.094
NM26	Gender on predicative adjective	0.395	0.311
NM27	No gender on predicative adjective	0.311	0.395
NM28	More than 7 cases	0.057	0.728
NM29	Not more than 7 cases	0.728	0.057
NM30	Agglutination for number	0.187	0.353
NM31	No agglutination for number	0.353	0.187
NM32	Agglutination for case	0.218	0.520
NM33	No agglutination for case	0.520	0.218
NM34	Dative but no genitive	0.225	3.409
NM35	Genitive and dative	0.440	0.673
NM36	Genitive but no dative	0.358	2.247

NM37	No genitive or dative	0.367	0.540
NM38	Case difference A and O	0.583	0.355
NM39	No case difference A and O	0.355	0.583
NM40	No peripheral cases	0.150	0.046
NM41	Peripheral cases	0.046	0.150
NM42	No Vocative	0.253	0.128
NM43	Vocative	0.128	0.253
NM44	Agreement on prepositions	0.039	0.110
NM45	No agreement on prepositions	0.110	0.039
NM46	Fewer than 7 pronominal cases (pronouns)	0.740	0.038
NM47	More than 7 pronominal cases (pronouns)	0.038	0.740
NM48	Agglutination for number (pronouns)	0.132	0.324
NM49	No agglutination for number (pronouns)	0.324	0.132
NM50	Agglutination for case (pronouns)	0.434	0.058
NM51	No agglutination for case (pronouns)	0.058	0.434
NM52	Difference A and O (pronouns)	0.396	0.085
NM53	No difference A and O (pronouns)	0.085	0.396
NM54	Difference, O and Dative (pronouns)	0.381	0.535
NM55	No difference O and Dative (pronouns)	0.535	0.381
NM56	No peripheral cases (pronouns)	0.236	0.056
NM57	Peripheral cases (pronouns)	0.056	0.236
NM58	No Vocative (pronouns)	0.721	0.019
NM59	Vocative (pronouns)	0.019	0.721
T1	No synthetic Present progressive	0.071	0.522
T2	Synthetic Present progressive	0.522	0.071
T3	No Present progressive by auxiliary	0.440	0.270
T4	Present progressive by auxiliary	0.270	0.440
T5	Future by auxiliary	0.383	0.463
T6	No Future by auxiliary	0.463	0.383
T7	Future by participle	0.093	0.653
T8	No Future by participle	0.653	0.093
T9	Future by particle	0.132	0.581
T10	No Future by particle	0.581	0.132
T11	No synthetic Future	0.206	0.165
T12	Synthetic Future	0.165	0.206
T13	Future by perfect	0.023	0.360
T14	No Future by perfect	0.360	0.023
VM1	Present progressive: Full A Agreement	0.408	0.494
VM2	Present progressive: Full and Gender A Agreement	0.159	5.784
VM3	Present progressive: Gender A Agreement	0.211	4.530
VM4	Present progressive: No A Agreement	0.293	3.796
VM5	Present progressive: Syncretic A Agreement	0.491	0.724

VM6	Present progressive: Full Dative Agreement	0.068	2.770
VM7	Present progressive: No Dative Agreement	0.842	0.102
VM8	Present progressive: Syncretic Dative Agreement	0.103	1.127
VM9	Present progressive: Full O Agreement	0.068	2.764
VM10	Present progressive: No O Agreement	0.833	0.101
VM11	Present progressive: Syncretic O Agreement	0.102	1.116
VM12	Simple past: Full A Agreement	0.247	7.639
VM13	Simple past: Full and Gender A Agreement	0.766	2.130
VM14	Simple past: Gender A Agreement	0.308	5.932
VM15	Simple past: No A Agreement	0.352	6.085
VM16	Simple past: Syncretic A Agreement	0.784	2.993
VM17	Simple past: Full Dative Agreement	0.091	3.825
VM18	Simple past: Gender Dative Agreement	0.092	3.874
VM19	Simple past: No Dative Agreement	0.978	0.138
VM20	Simple past: Syncretic Dative Agreement	0.134	1.607
VM21	Simple past: Gender and full O Agreement	0.194	4.912
VM22	Simple past: Gender O Agreement	0.211	4.485
VM23	Simple past: No O Agreement	0.673	0.273
VM24	Simple Past: Syncretic and gender A Agreement	0.270	2.748
VM25	Simple past: Syncretic O Agreement	0.287	2.177
VM26	No Postpositions	0.085	0.034
WO1	Postpositions	0.034	0.085
WO2	No Prepositions	0.037	0.060
WO3	Prepositions	0.060	0.037
WO4	Clitic finite V: Category irrelevant	0.786	0.835
WO5	Clitic finite V: OV	0.165	0.805
WO6	Clitic finite V: V2	0.254	2.048
WO7	Clitic finite V: VO	0.493	2.355
WO8	Clitic finite V: VO and OV	0.192	2.965
WO9	Clitic Infinitive V: Category irrelevant	0.429	0.338
WO10	Clitic Infinitive V: OV	0.358	1.999
WO11	Clitic Infinitive V: V2	0.252	2.029
WO12	Clitic Infinitive V: VO	0.281	1.729
WO13	Clitic Infinitive V: VO and OV	0.197	4.943
WO14	Clitic Participle V: Category irrelevant	0.471	0.447
WO15	Clitic Participle V: OV	0.414	1.884
WO16	Clitic Participle V: V2	0.285	2.400
WO17	Clitic Participle V: VO	0.360	1.975
WO18	Clitic Participle V: VO and OV	0.241	4.980
WO19	Infinitive: Category irrelevant	0.119	1.655
WO20	Infinitive: OV	0.196	0.152
WO21	Infinitive: OV and VO	0.112	2.691

WO22	Infinitive: VO	0.166	0.339
WO23	Main clause: SOV	0.115	0.158
WO24	Main clause: SOV/SVO	0.089	4.931
WO25	Main clause: SVO	0.211	0.381
WO26	Main clause: V2	0.153	0.788
WO27	Main clause: VSO	0.077	1.902
WO28	Noun - Possessor	0.154	0.313
WO29	Possessor - Noun	0.228	0.142
WO30	Possessor - Noun and Noun - Possessor	0.091	1.618
WO31	Adjective - Noun	0.223	0.110
WO32	Adjective - Noun and Noun - Adjective	0.133	1.811
WO33	Noun - Adjective	0.118	0.333
WO34	NRel: Category irrelevant	0.082	4.043
WO35	NRel: Noun - Relative	0.458	0.107
WO36	NRel: Relative - Noun	0.103	0.592
WO37	NRel: Relative - Noun and Noun - Relative	0.080	3.829
WO38	O - Participle	0.132	0.118
WO39	Participle - O	0.109	0.158
WO40	Participle - O and O - Participle	0.049	0.726
WO41	Subordinate clause: SOV	0.161	0.191
WO42	Subordinate clause: SOV and SVO	0.082	4.786
WO43	Subordinate clause: SVO	0.178	0.246
WO44	Subordinate clause: V2	0.082	2.020
WO45	Subordinate clause: VSO	0.068	0.958
WO46	No WH - Verb (initial or not)	0.253	0.267
WO47	WH - Verb (initial or not)	0.267	0.253
WO48	No WH-initial (no inversion)	0.219	0.213
WO49	WH-initial (no inversion)	0.213	0.219

S7

List of pairwise organized features, which are identified to be in a relation by a marking hierarchy. Feature 1 = Trait higher in hierarchy (more frequent, unmarked); Feature 2 = trait lower in hierarchy (less frequent, marked); Type = type of property distinguishing hierarchical relation between traits.

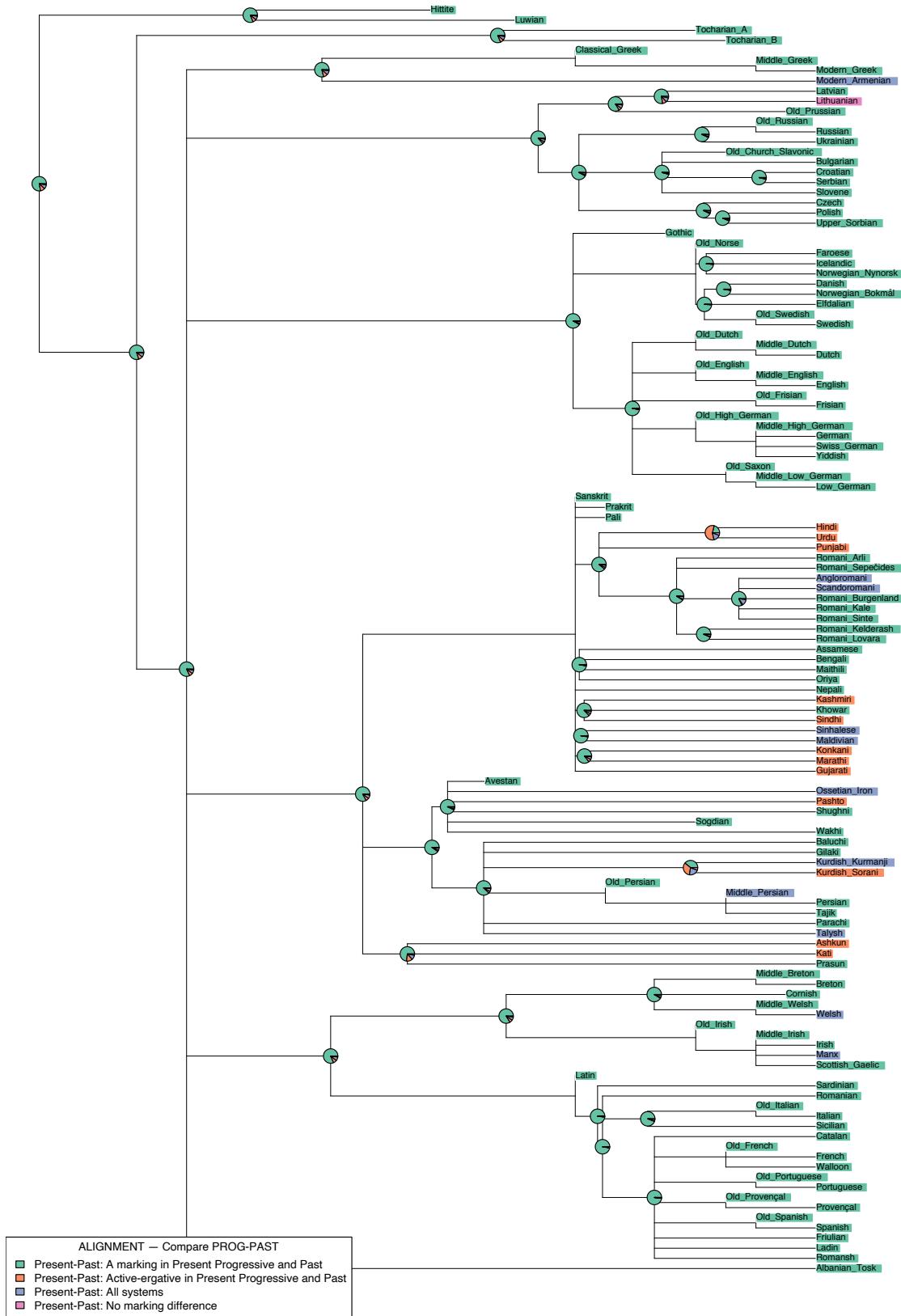
Feature 1 (Unmarked)	ID 1	Feature 2 (Marked)	ID 2	Type
Pronoun, Present progressive: No marking	A13	Noun, Present progressive: No marking	A6	pronoun < noun
Present progressive: Nominative-accusative	A14	Noun, Present progressive: No marking	A7	pronoun < noun

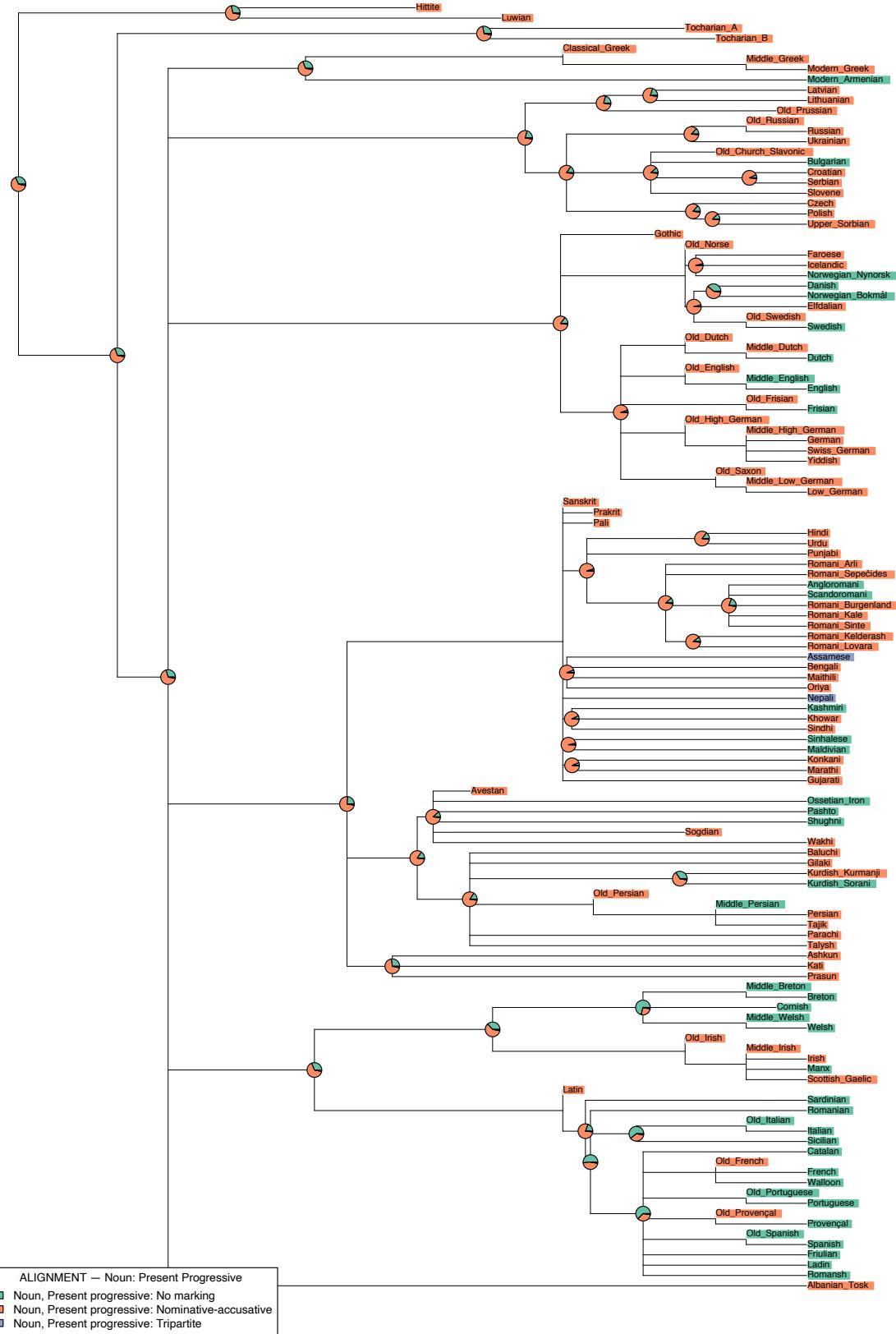
Pronoun, Simple past: Nominative-accusative	A16	Noun, Simple past: Nominative-accusative	A9	pronoun < noun
Pronoun, Simple past: No marking	A19	Noun, Simple past: No marking	A11	pronoun < noun
Pronoun, Simple past: Ergative	A18	Noun, Simple past: Ergative	A10	pronoun < noun
Pronoun, Simple past: Tripartite	A15	Noun, Simple past: Tripartite	A8	pronoun < noun
Agglutination for case (pronouns)	NM51	Agglutination for case	NM33	pronoun < noun
Agglutination for number (pronouns)	NM50	Agglutination for number	NM31	pronoun < noun
No agglutination for case (pronouns)	NM52	No agglutination for case	NM32	pronoun < noun
No agglutination for number (pronouns)	NM49	No agglutination for number	NM30	pronoun < noun
Difference A and O (pronouns)	NM54	Case difference A and O	NM40	pronoun < noun
No peripheral cases (pronouns)	NM57	Peripheral cases	NM42	pronoun < noun
Difference, O and Dative (pronouns)	NM56	No peripheral cases	NM41	pronoun < noun
Vocative (pronouns)	NM60	Vocative	NM44	pronoun < noun
No Vocative (pronouns)	NM59	No Vocative	NM43	pronoun < noun
More than 7 pronominal cases	NM48	More than 7 cases	NM29	pronoun < noun
Less than 7 pronominal cases	NM47	Not more than 7 cases	NM28	pronoun < noun
Synthetic Present progressive	T2	Synthetic Future	T12	present < future
No synthetic Present progressive	T1	No synthetic Future	T11	present < future
Present progressive by auxiliary	T4	Future by auxiliary	T6	present < future
No Present progressive by auxiliary	T3	No Future by auxiliary	T5	present < future
Pronoun, Present progressive: Nominative-accusative	A13	Pronoun, Simple past: Nominative-accusative	A16	present < past
Pronoun, Present progressive: No marking	A14	Pronoun, Simple past: No marking	A19	present < past
Noun, Present progressive: Nominative-accusative	A6	Noun, Simple past: Nominative-accusative	A9	present < past

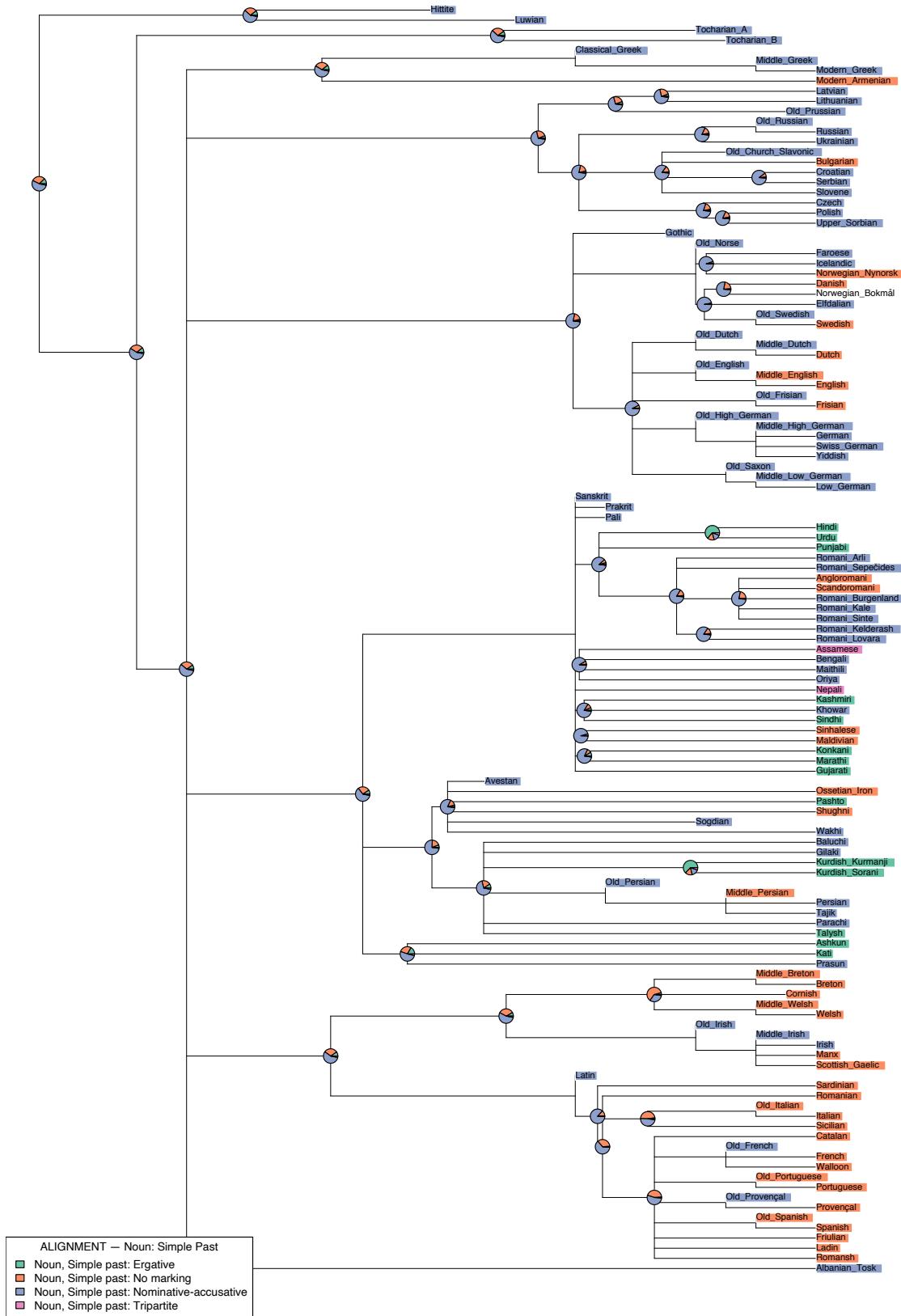
Noun, Present progressive: No marking	A7	Noun, Simple past: marking	No	A11	present < past
Noun, Present progressive: Tripartite	A5	Noun, Simple past: Tripartite	A8		present < past
Verb, Present progressive: Nominative-Accusative	A25	Verb, Simple past: Nominative-accusative	A28		present < past
Verb, Present progressive: No marking	A26	Verb, Simple past: No marking	A30		present < past
Verb, Present progressive: Tripartite	A24	Verb, Simple past: Tripartite	A27		present < past
Present progressive: Syncretic A Agreement	VM1	Simple past: Syncretic Agreement	A	VM12	present < past
Present progressive: No A Agreement	VM2	Simple past: No A Agreement	A	VM13	present < past
Present progressive: Gender A Agreement	VM3	Simple past: Gender Agreement	A	VM14	present < past
Present progressive: Full A Agreement	VM4	Simple past: Full A Agreement	A	VM16	present < past
Present progressive: Full and Gender A Agreement	VM5	Simple past: Full and Gender A Agreement	A	VM17	present < past
Present progressive: Syncretic Dative Agreement	VM6	Simple past: Syncretic Dative Agreement	A	VM18	present < past
Present progressive: No Dative Agreement	VM7	Simple past: No Dative Agreement	A	VM19	present < past
Present progressive: Full Dative Agreement	VM8	Simple past: Full Dative Agreement	A	VM21	present < past
Present progressive: Syncretic O Agreement	VM9	Simple past: Syncretic O Agreement	A	VM22	present < past
Present progressive: No O Agreement	VM11	Simple past: No O Agreement	A	VM25	present < past
Reflexive with Agent	A21	Reflexive with Object	A	A23	agent < object
Reflexive not with Agent	A20	Reflexive not with Object	A	A22	agent < object
Case difference A and O	NM40	Genitive and dative	A	NM38	agent/object < oblique
Difference A and O (pronouns)	NM54	Difference, O and Dative (pronouns)	A	NM56	agent/object < oblique
No difference A and O (pronouns)	NM53	No difference O and Dative (pronouns)	A	NM55	agent/object < oblique
Masculine/feminine distinction	NM23	Neuter gender	A	NM25	masculine/feminine < neuter
No masculine/feminine distinction	NM22	No neuter gender	A	NM24	masculine/feminine < neuter

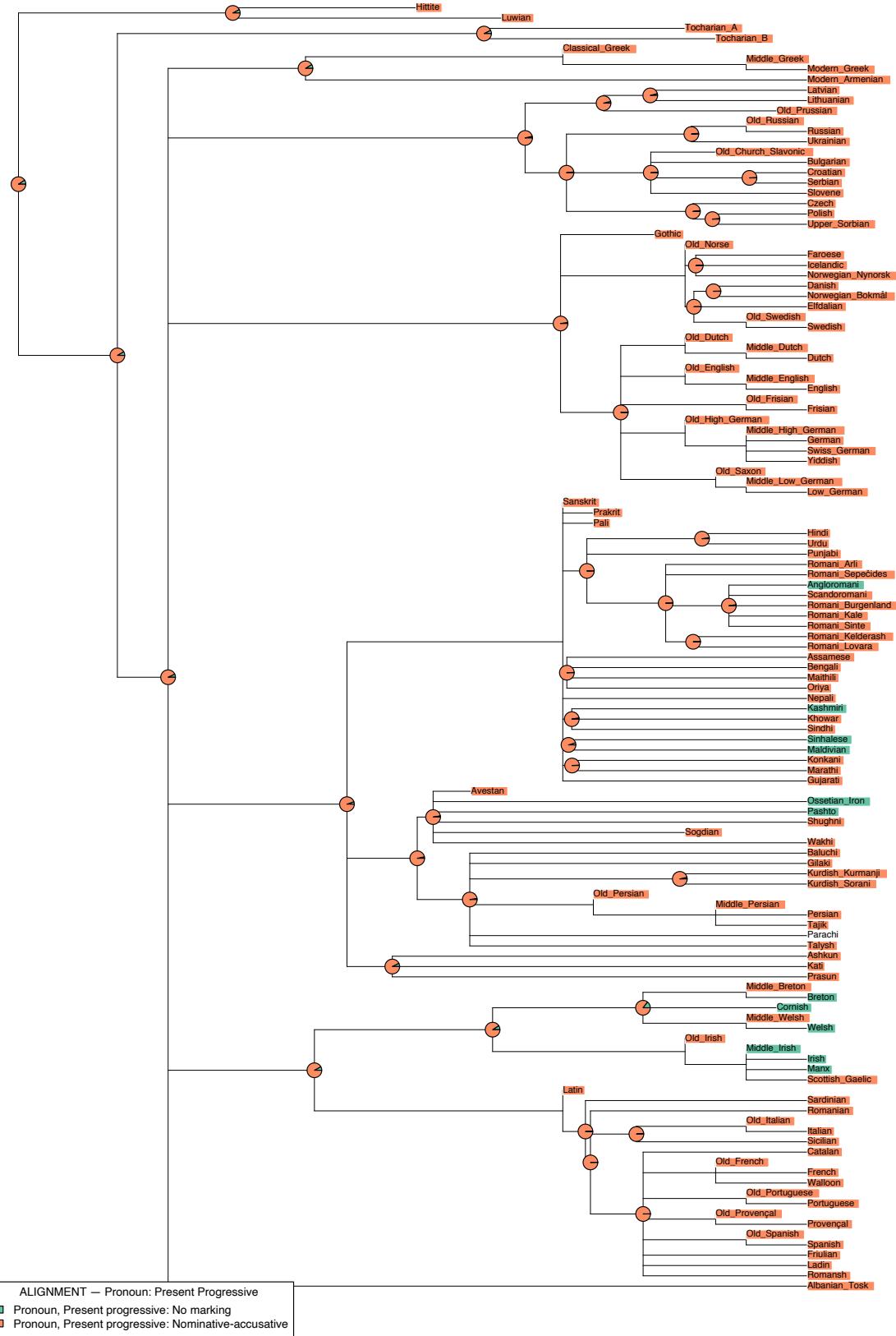
S8

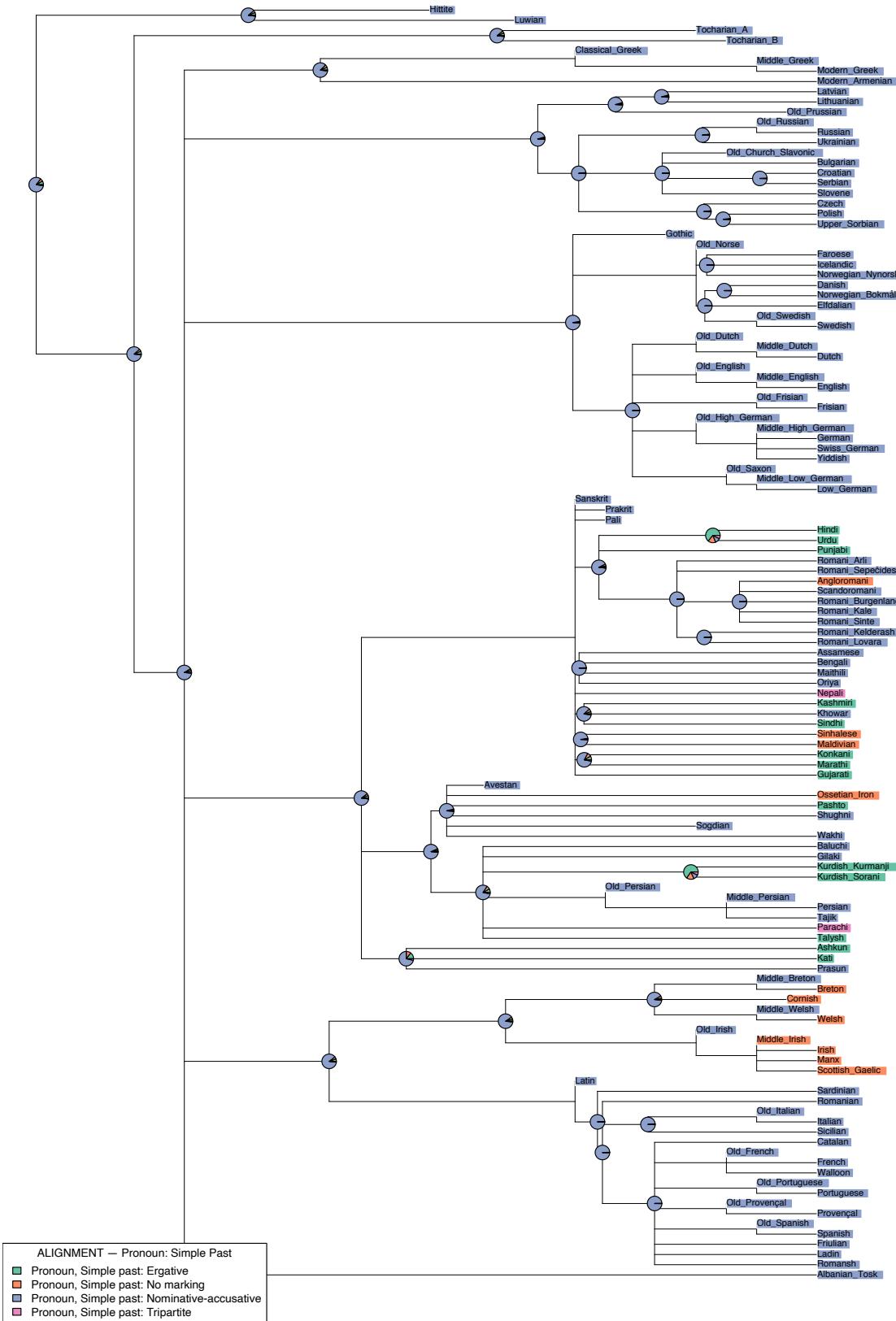
Reconstructed probability distributions of variables in our data set over all nodes of the phylogeny, visualized on a maximum clade credibility (MCC) tree of Indo-European.

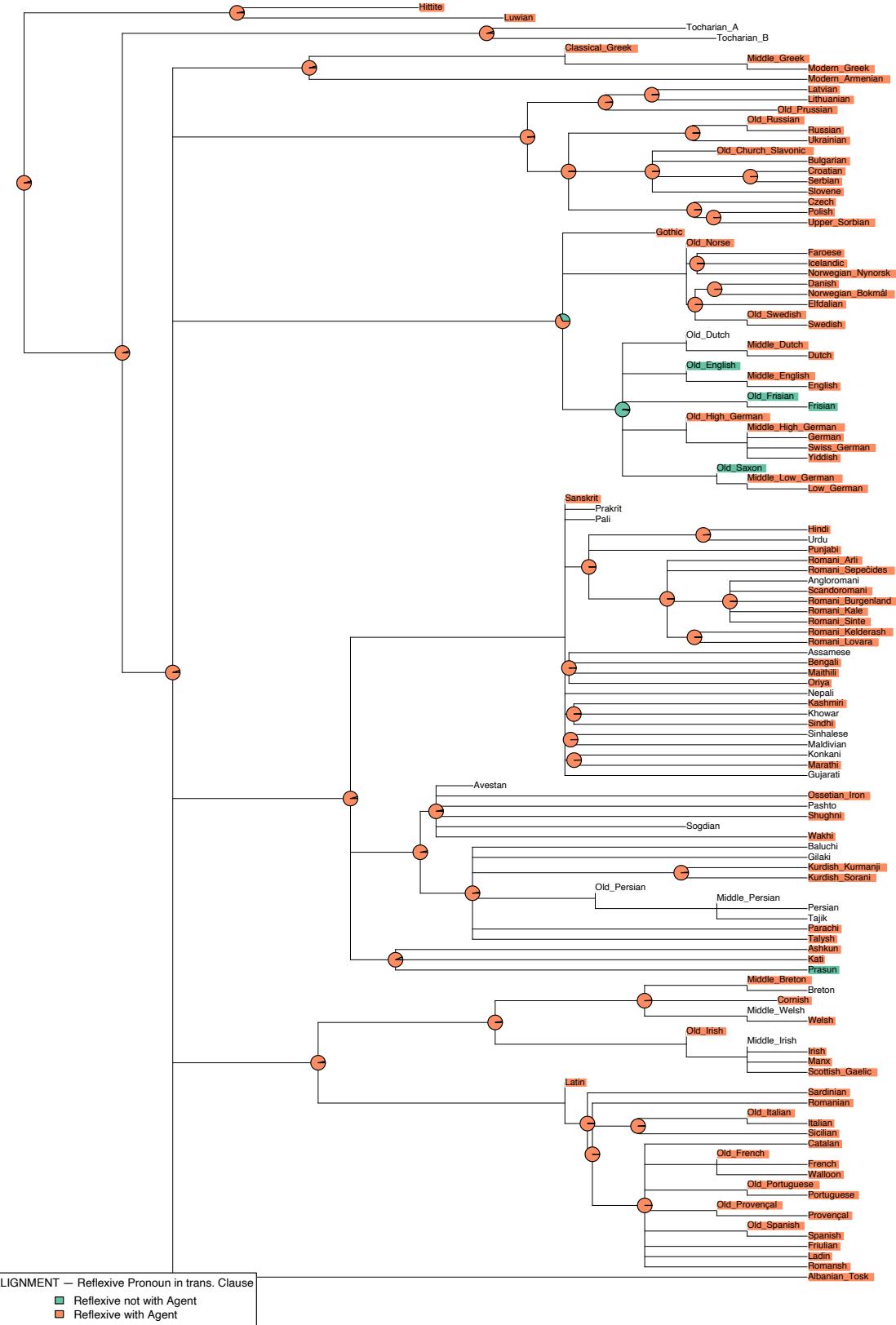


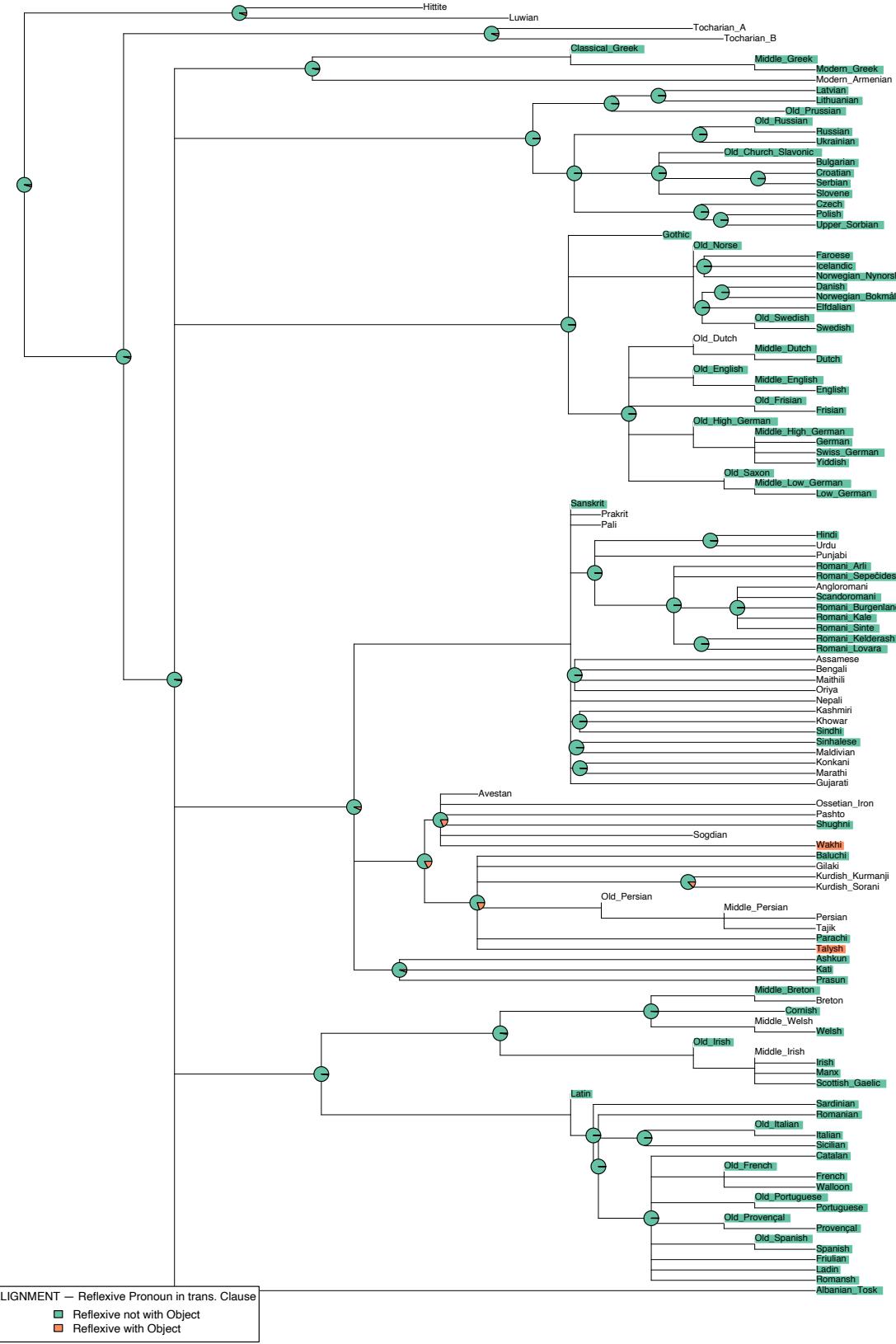


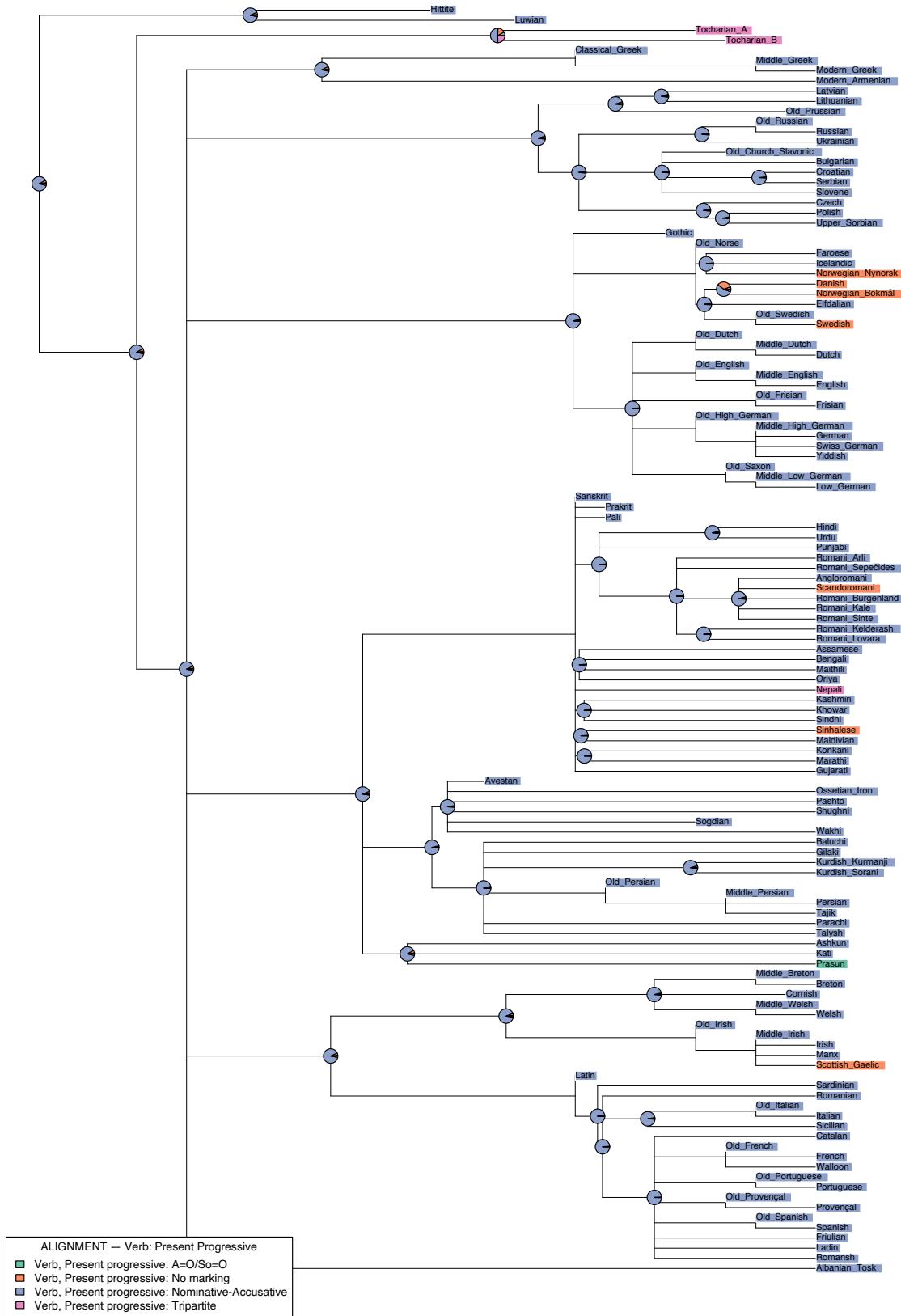




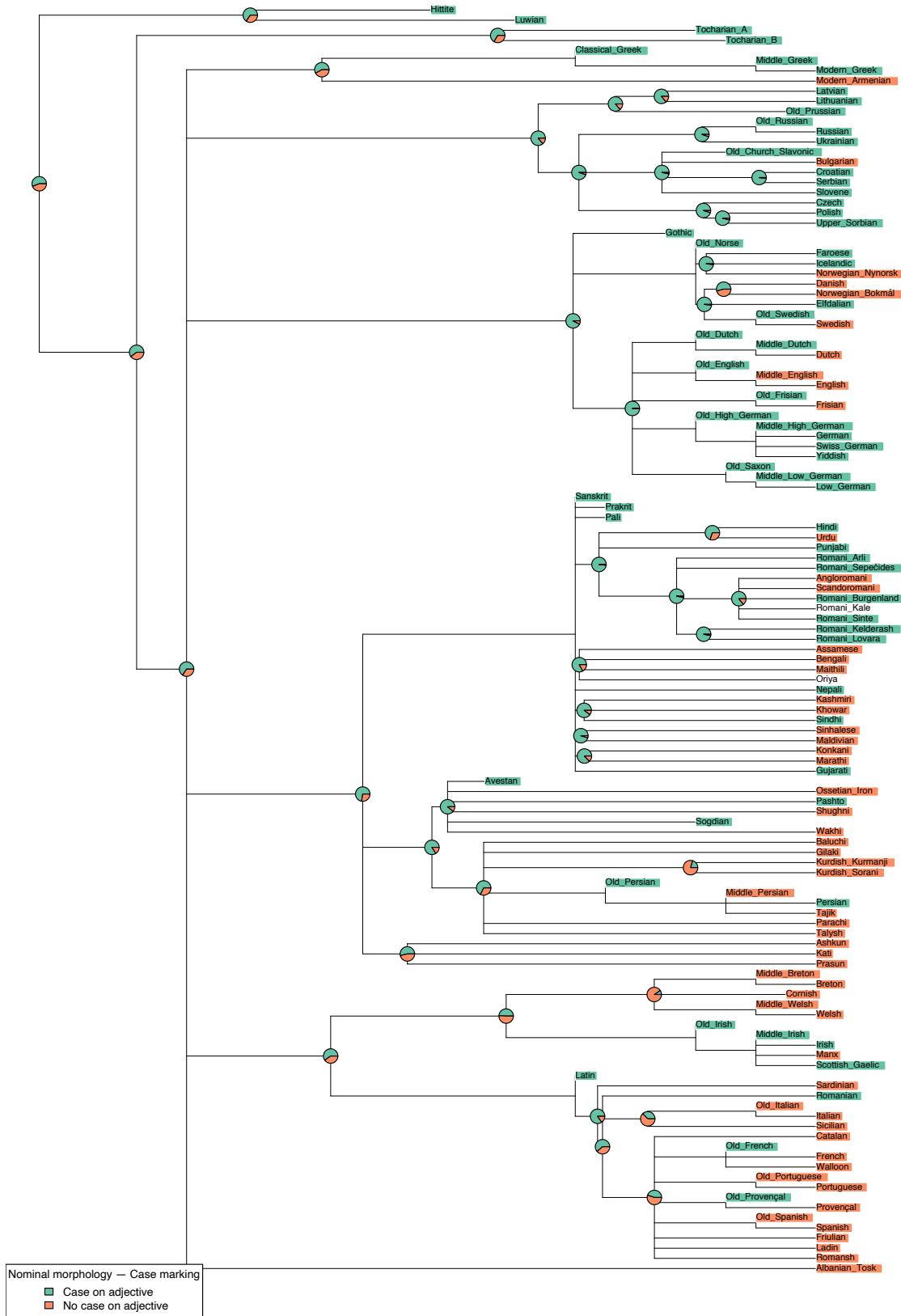


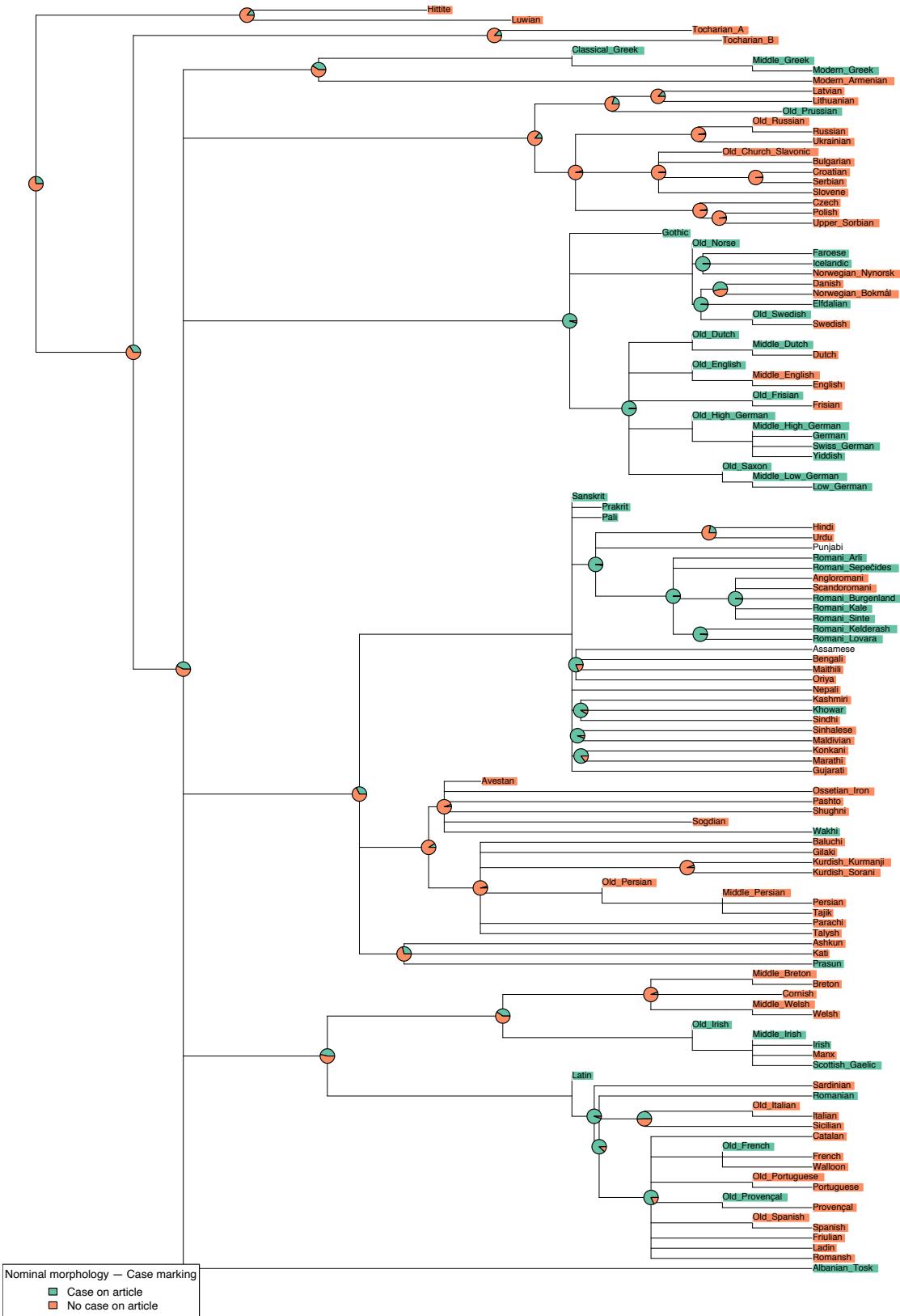


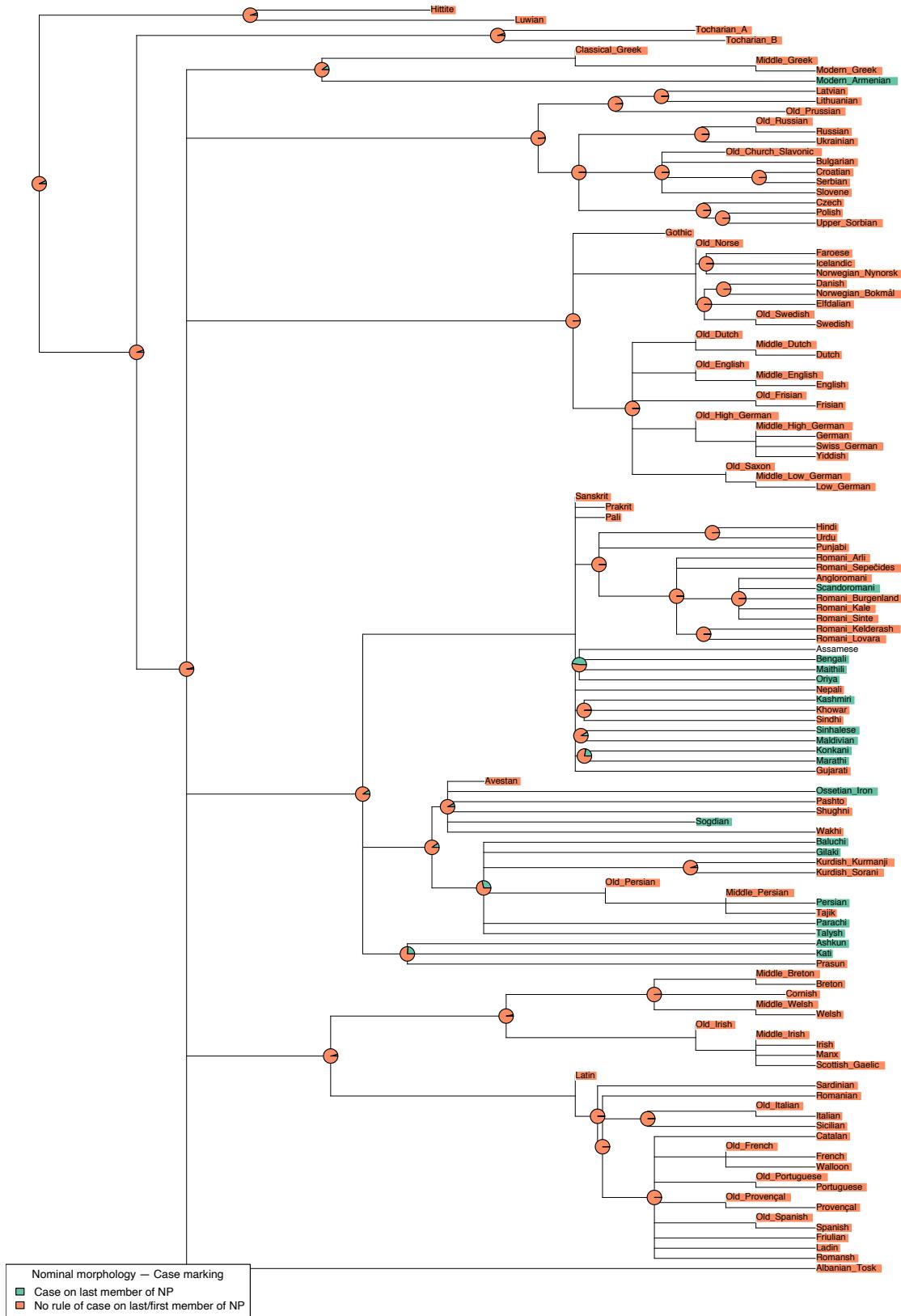


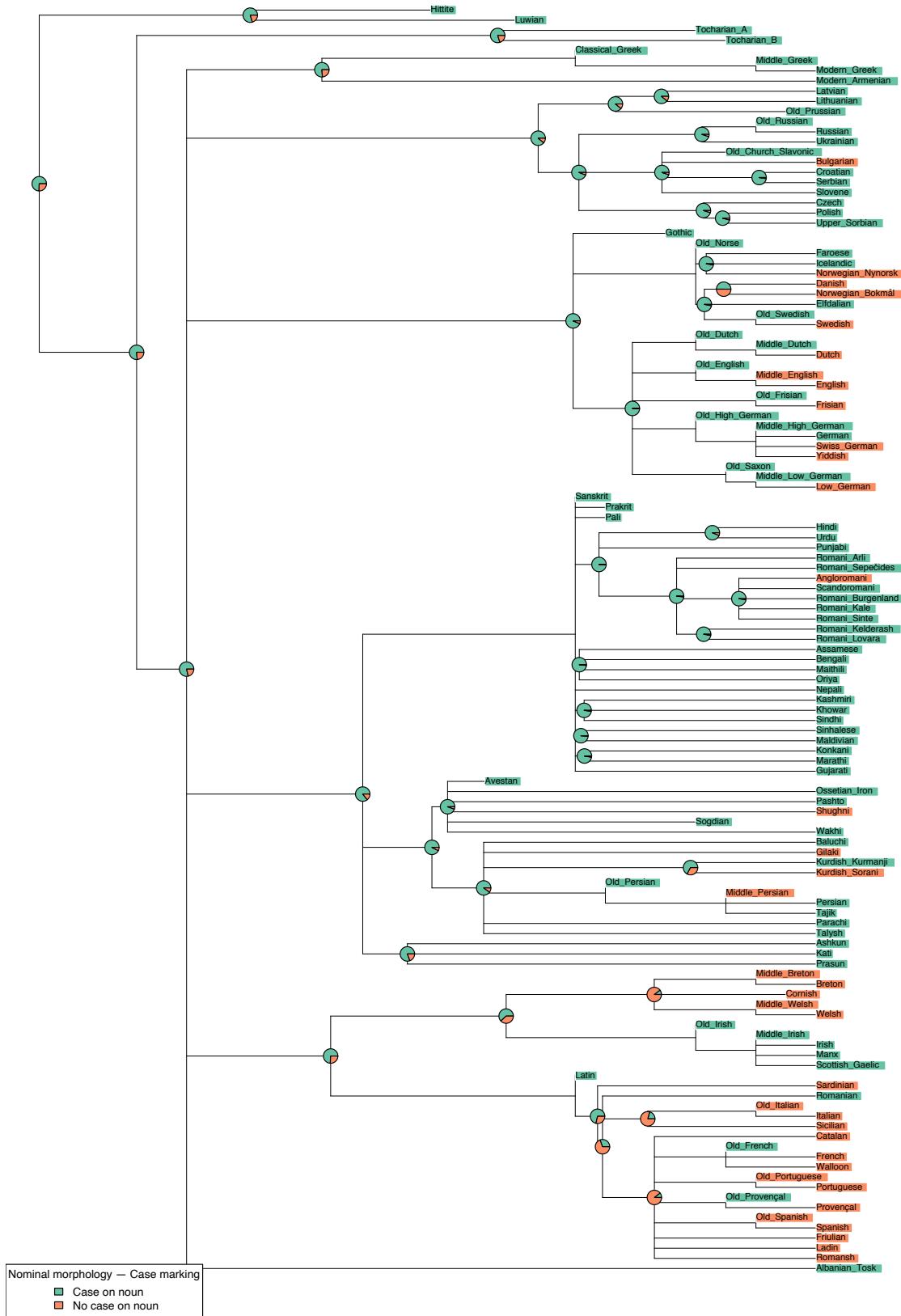


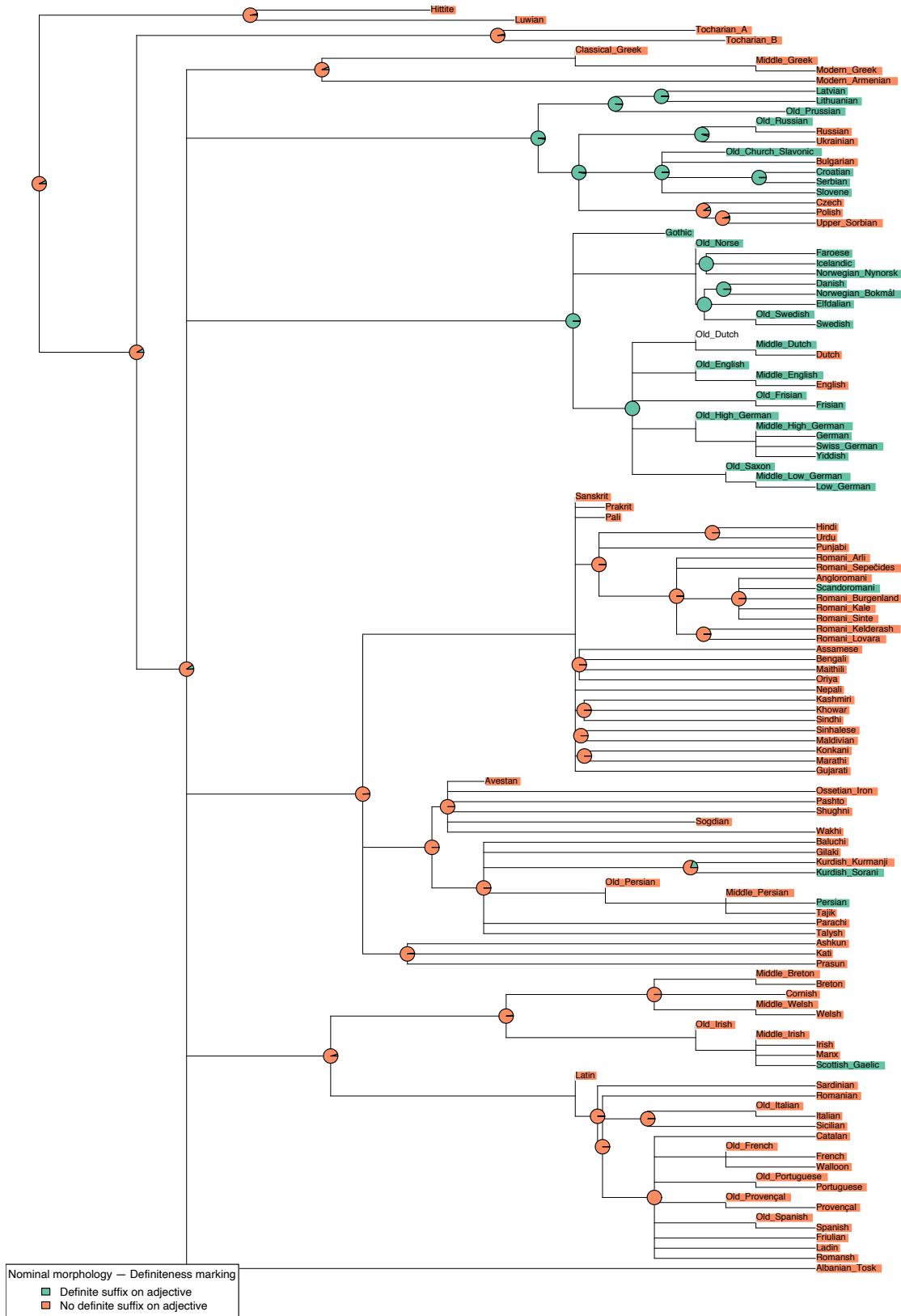


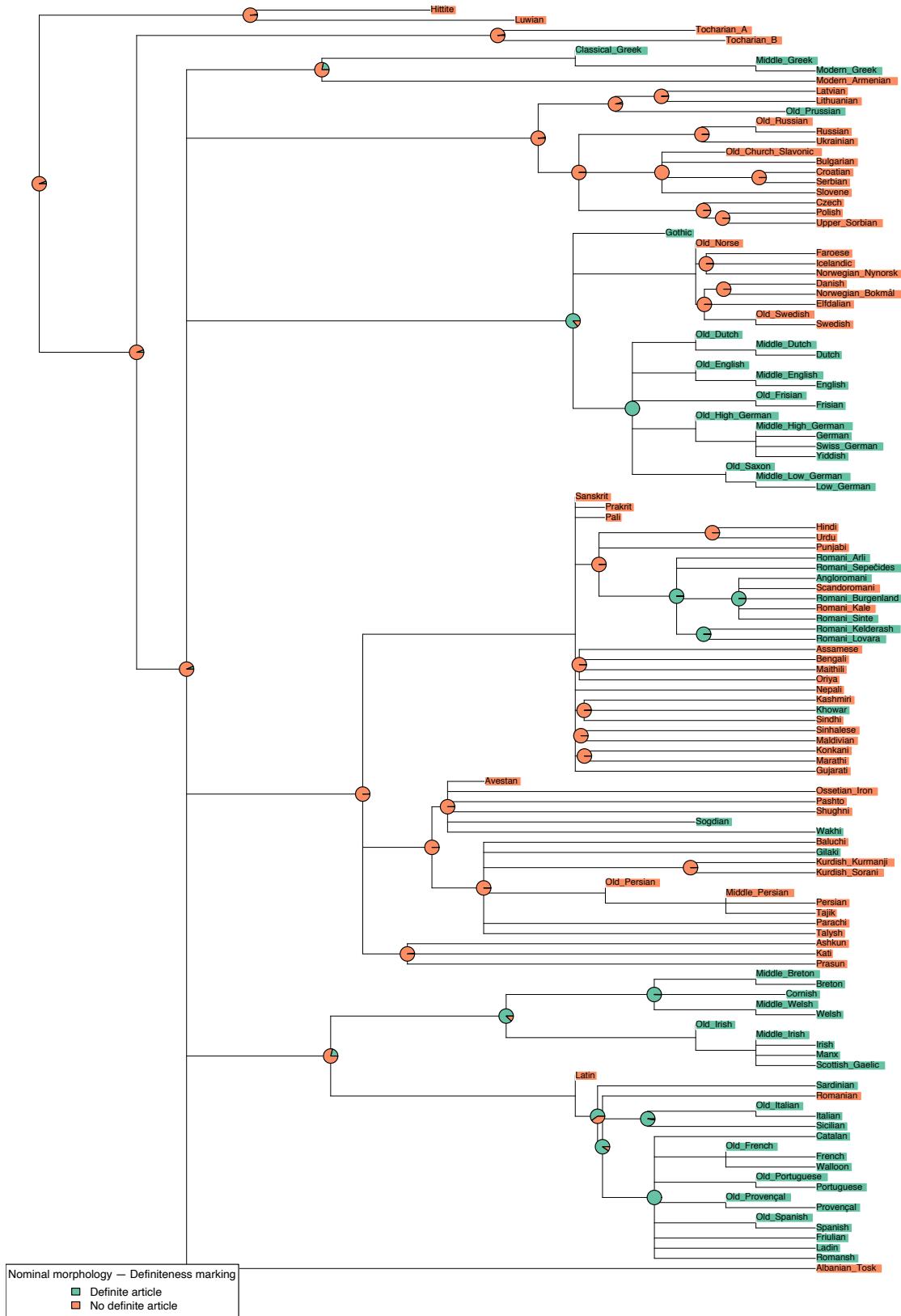


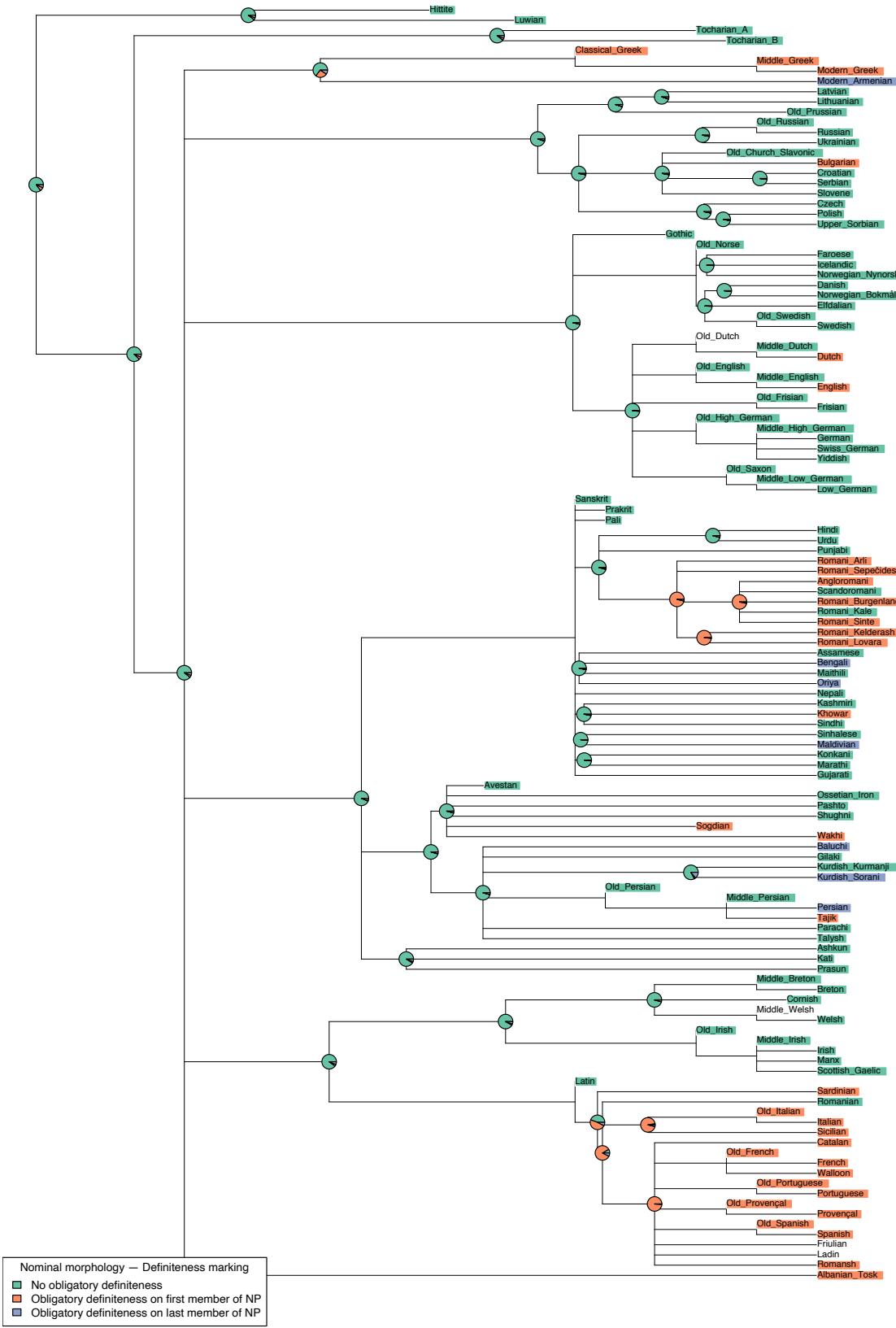


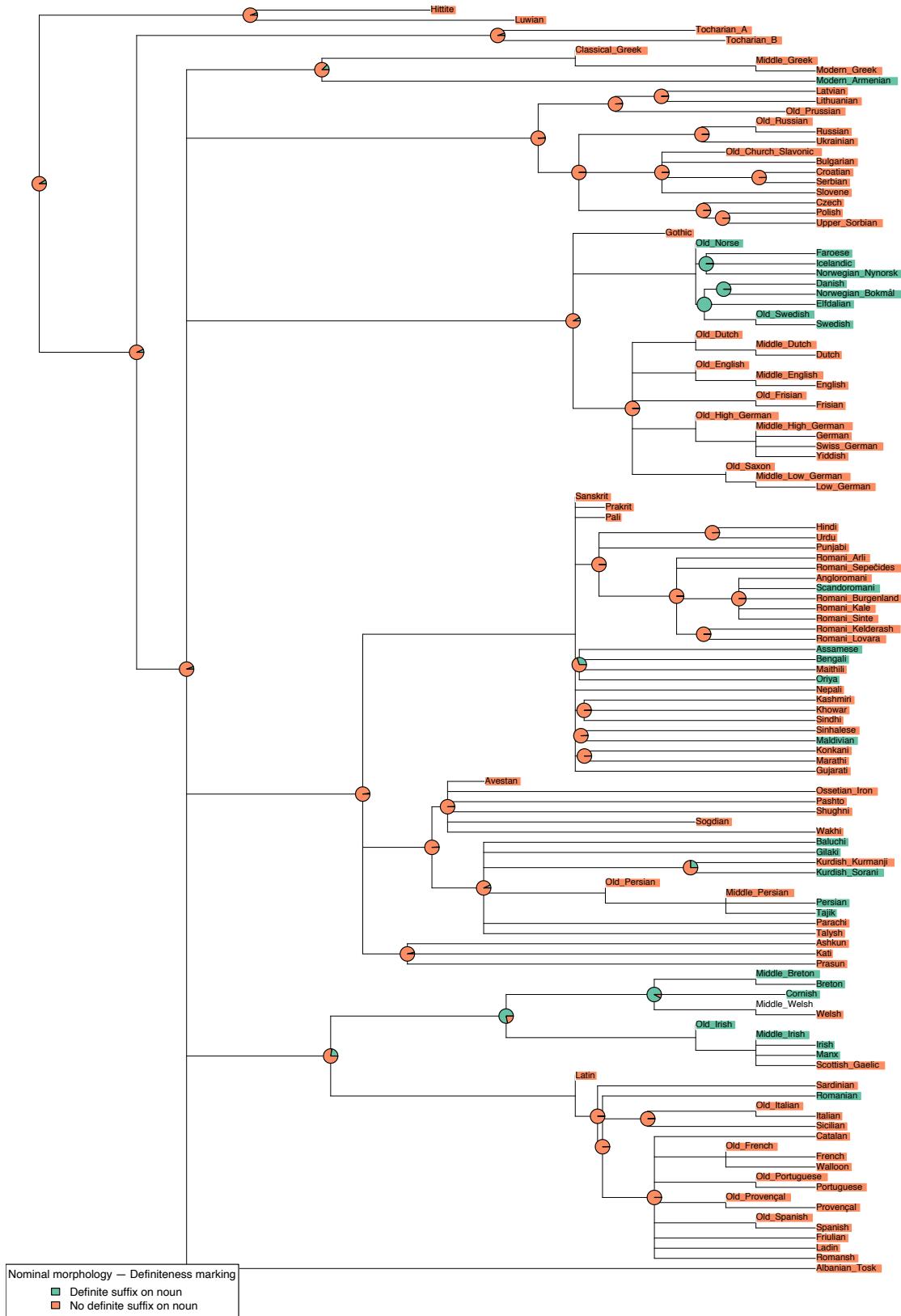


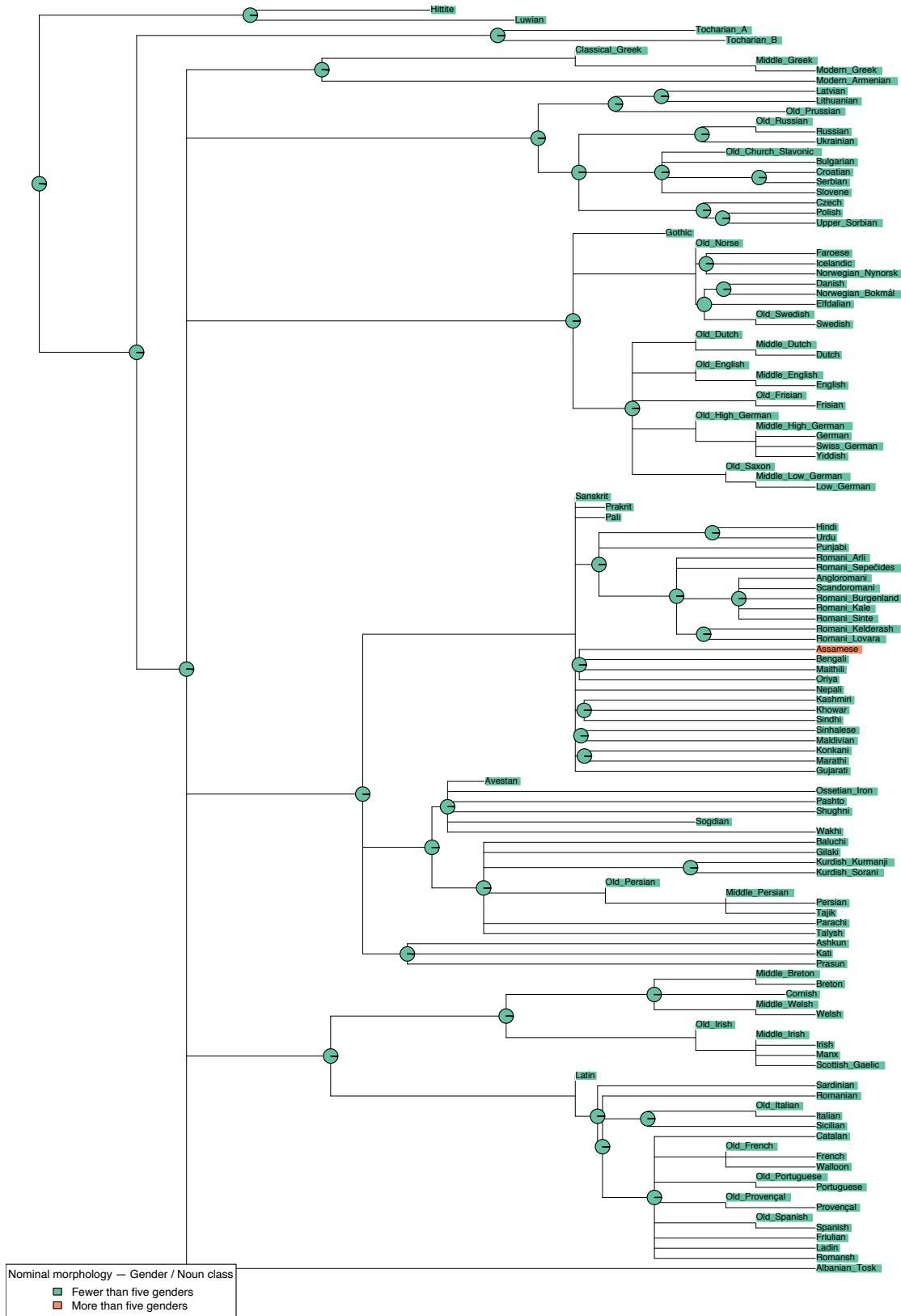


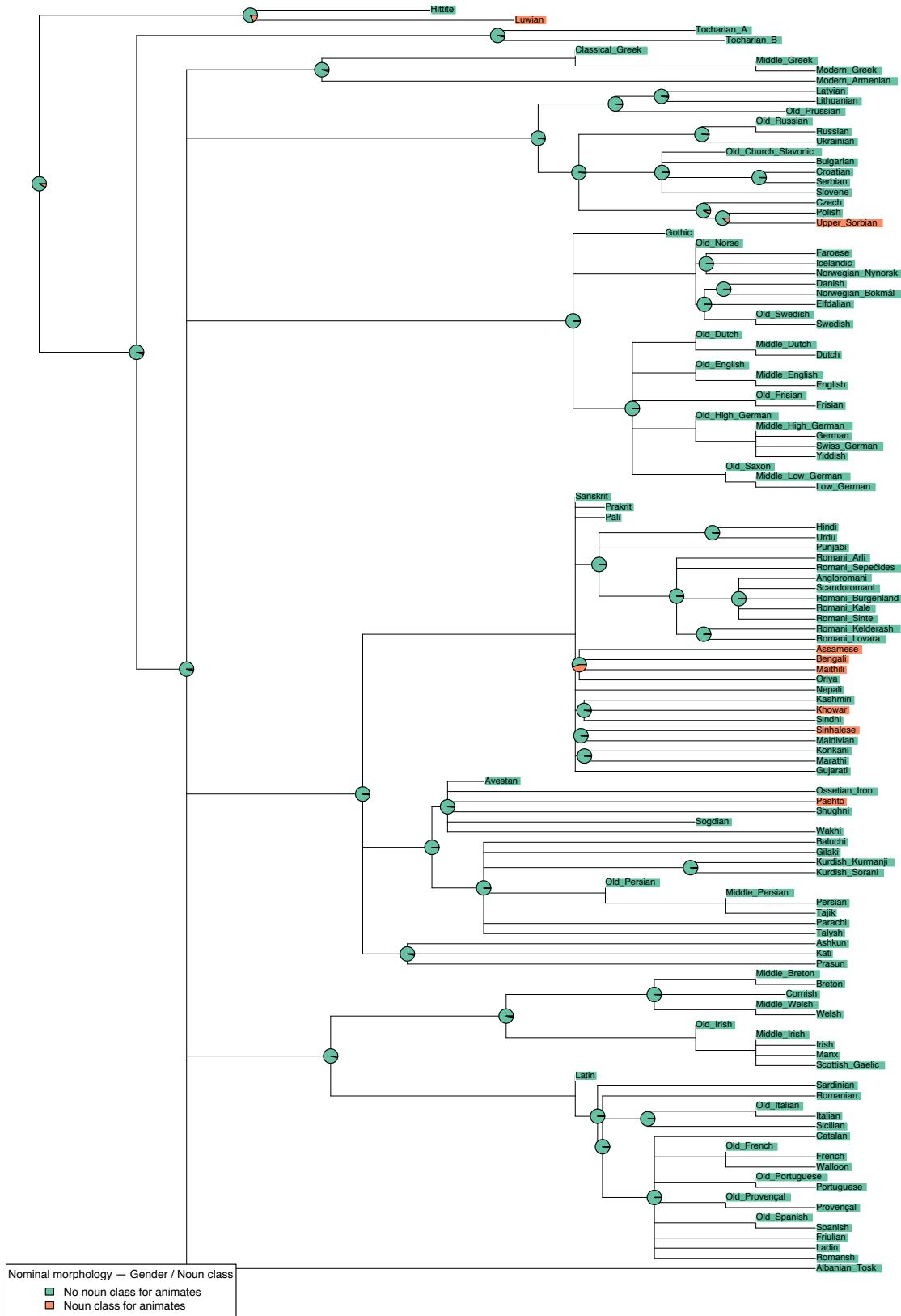


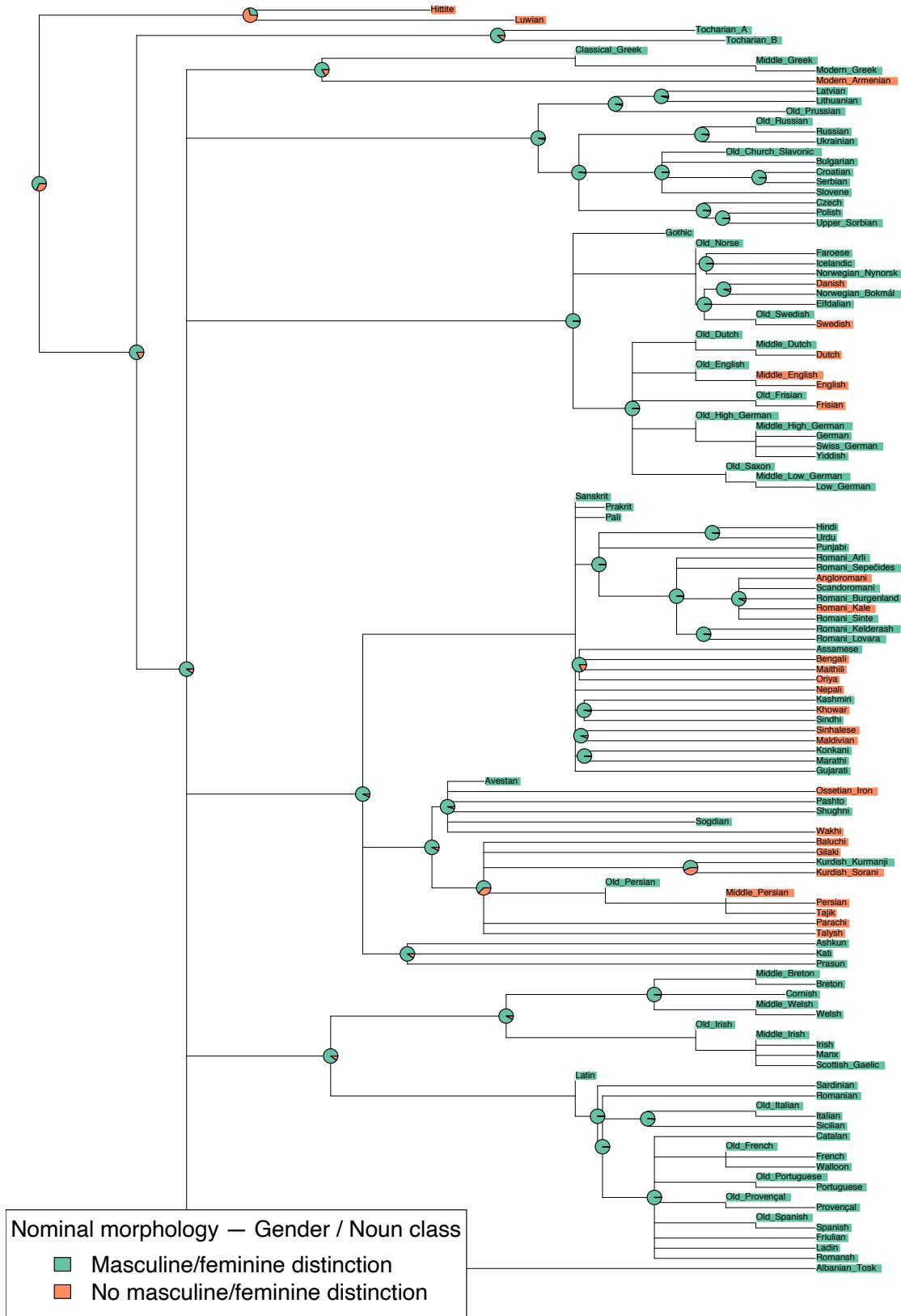


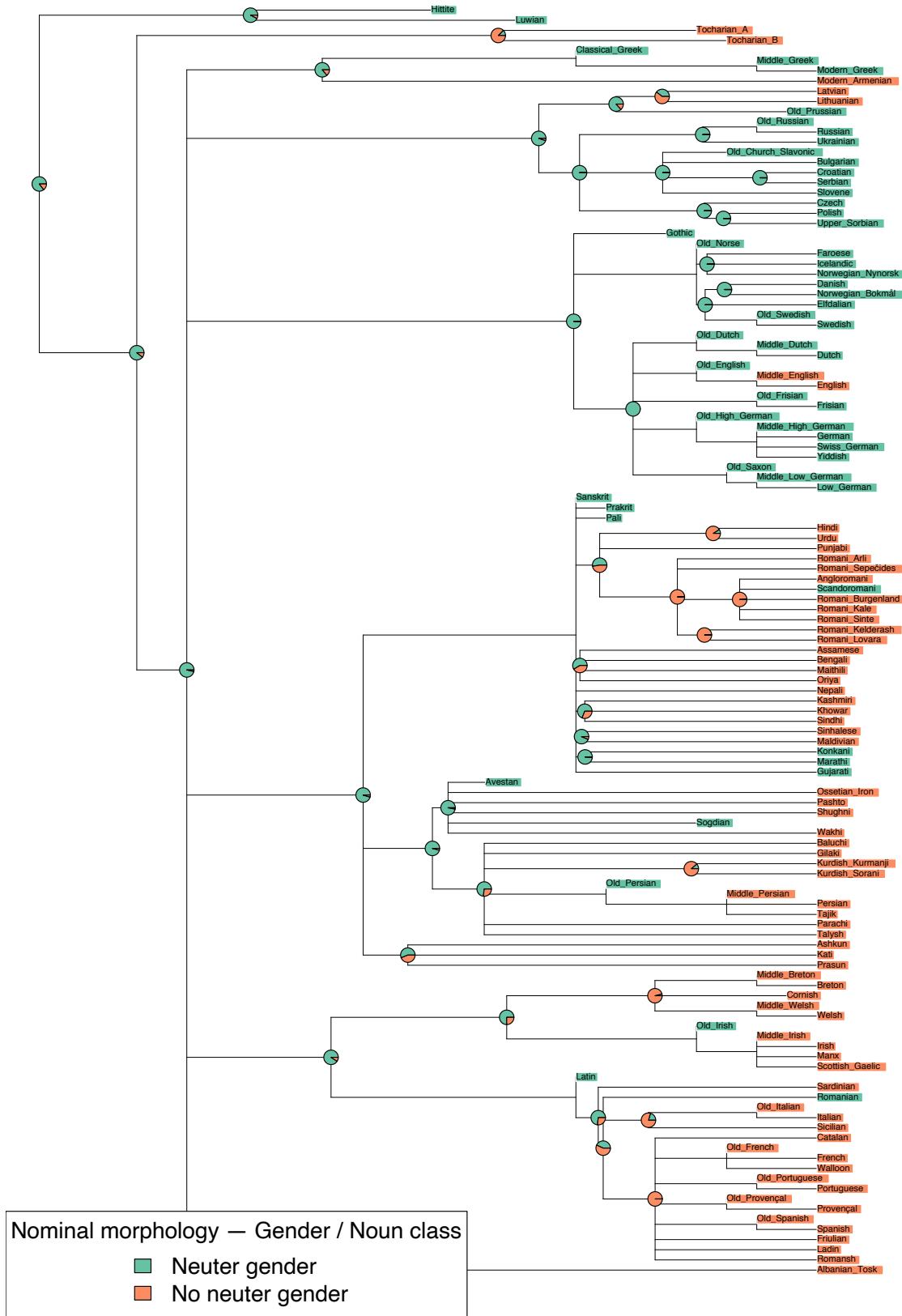


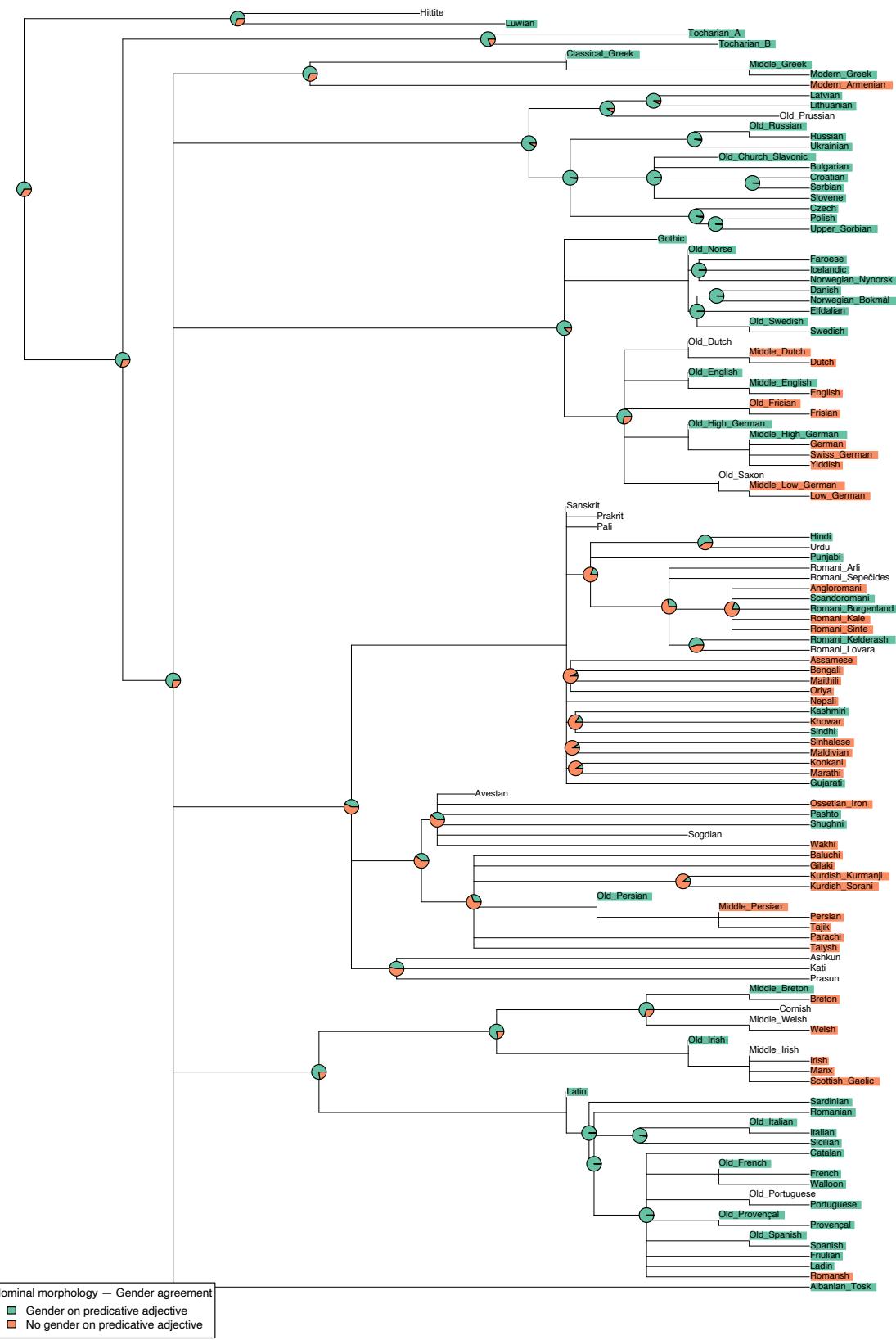


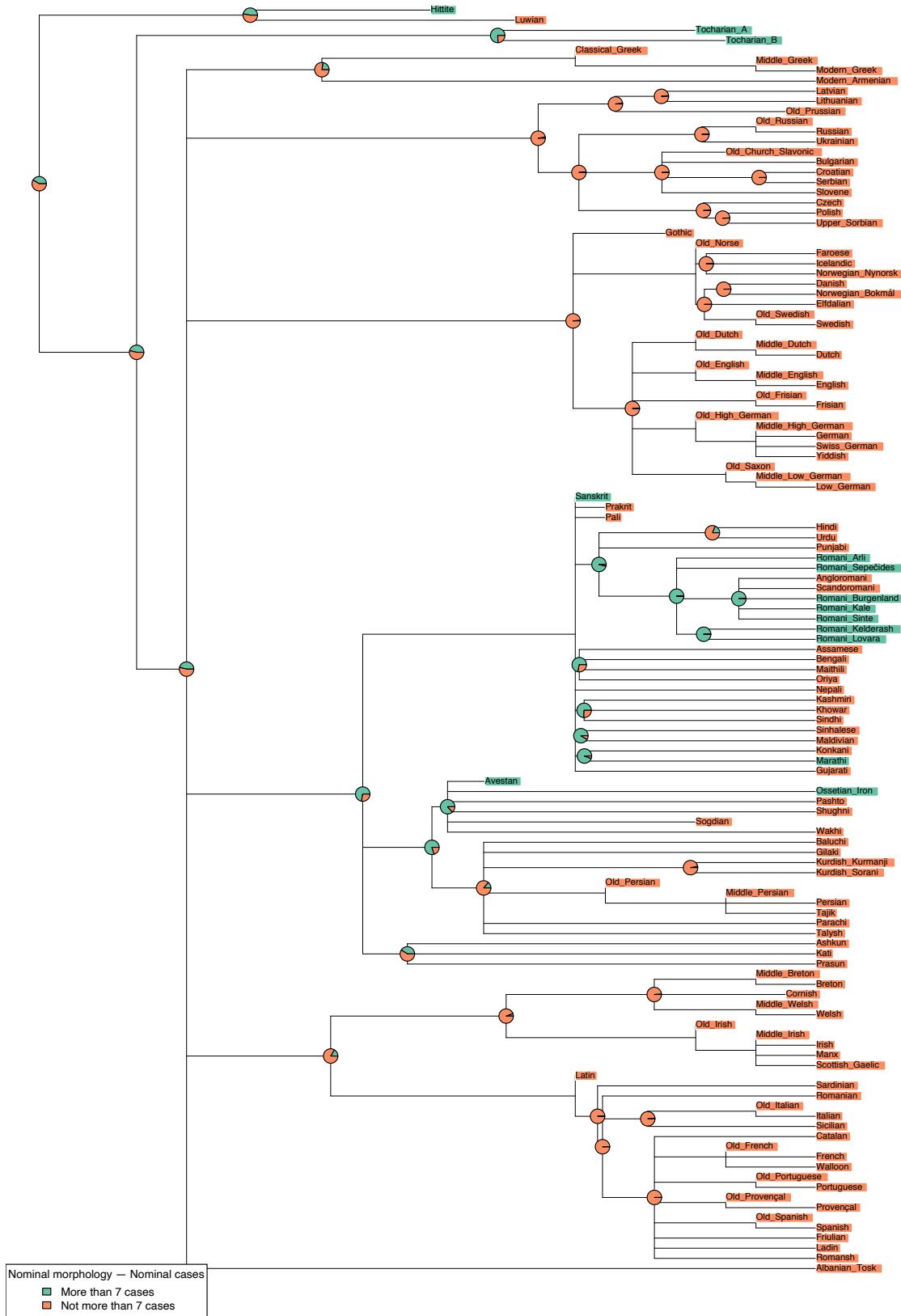


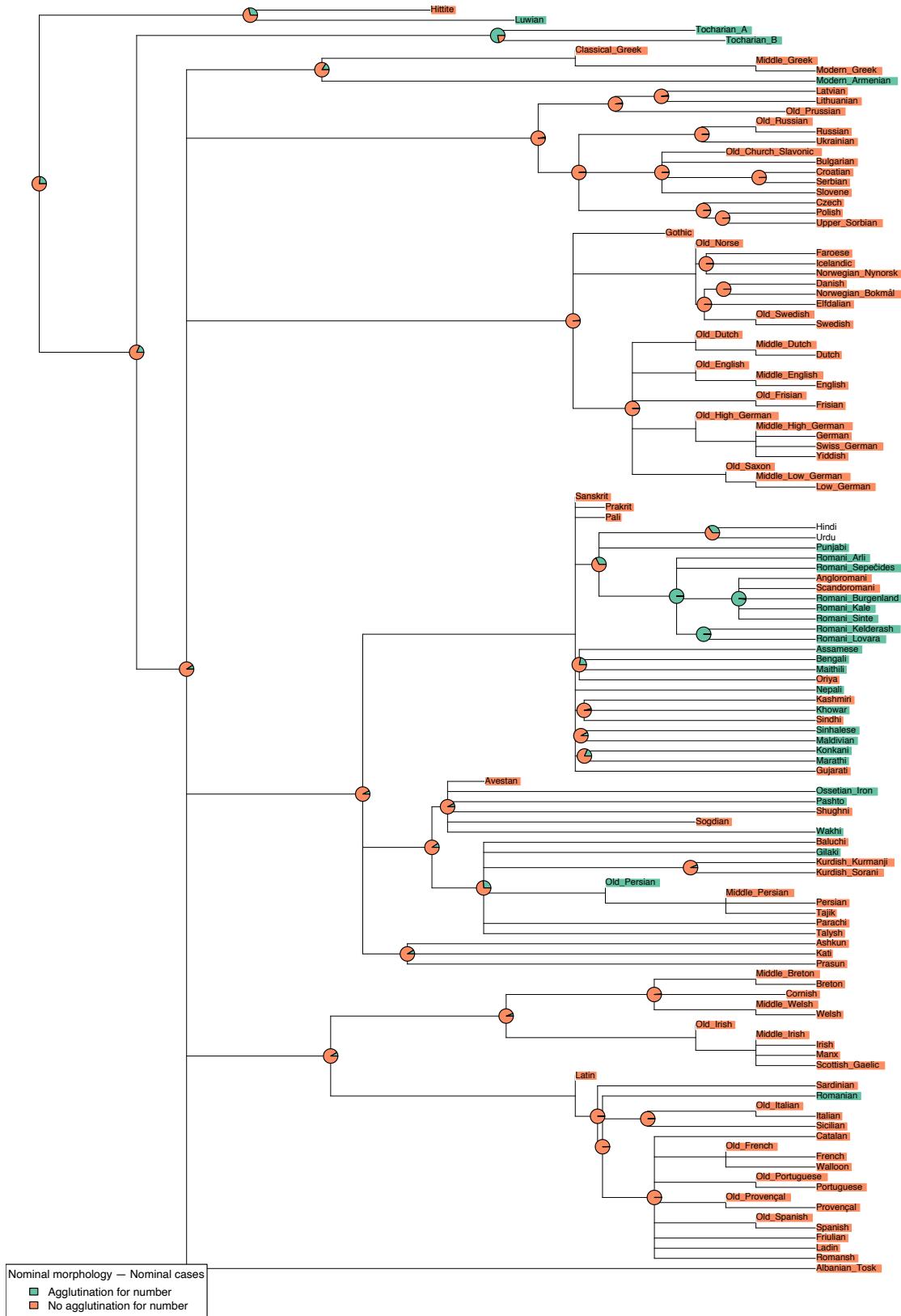


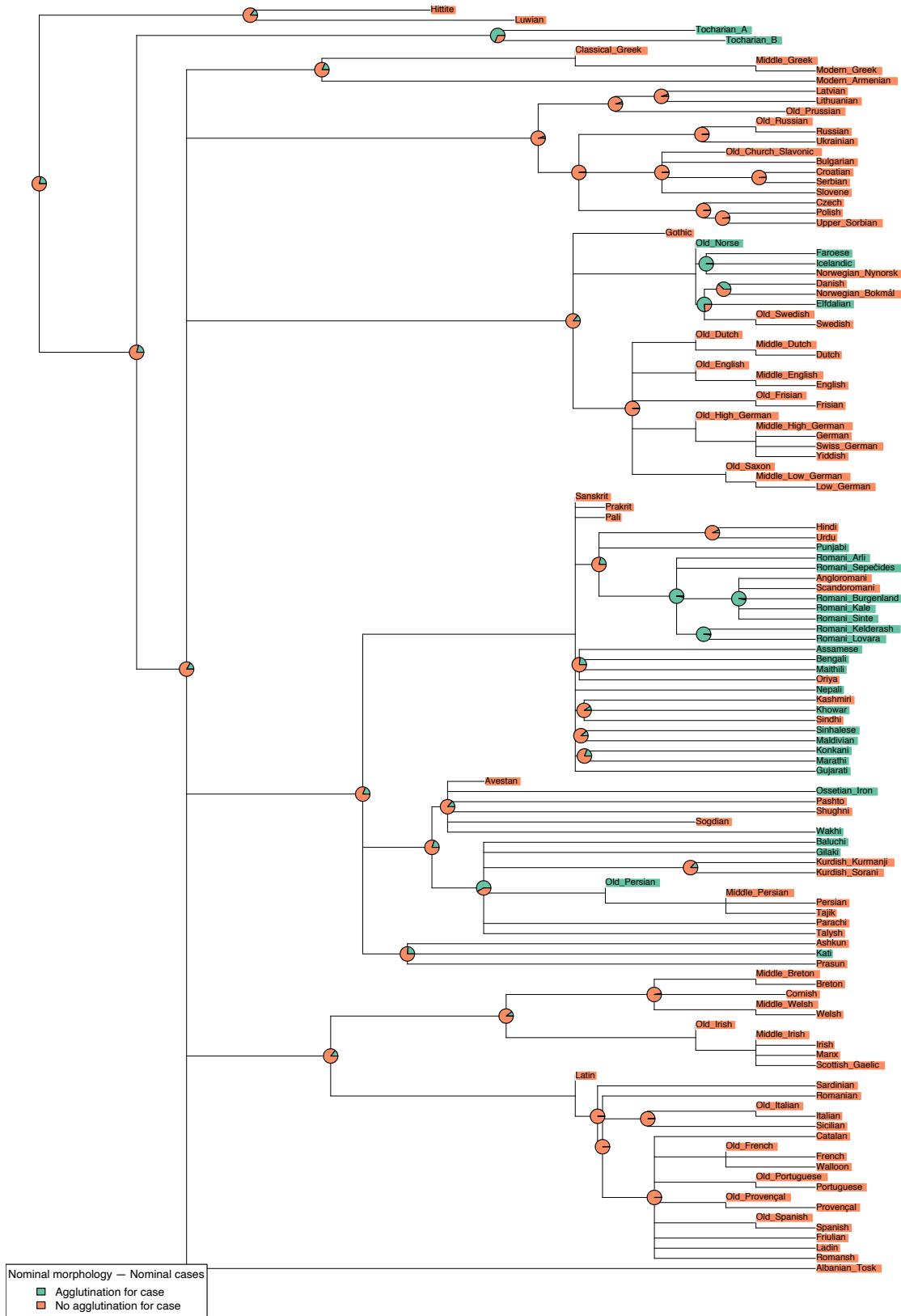


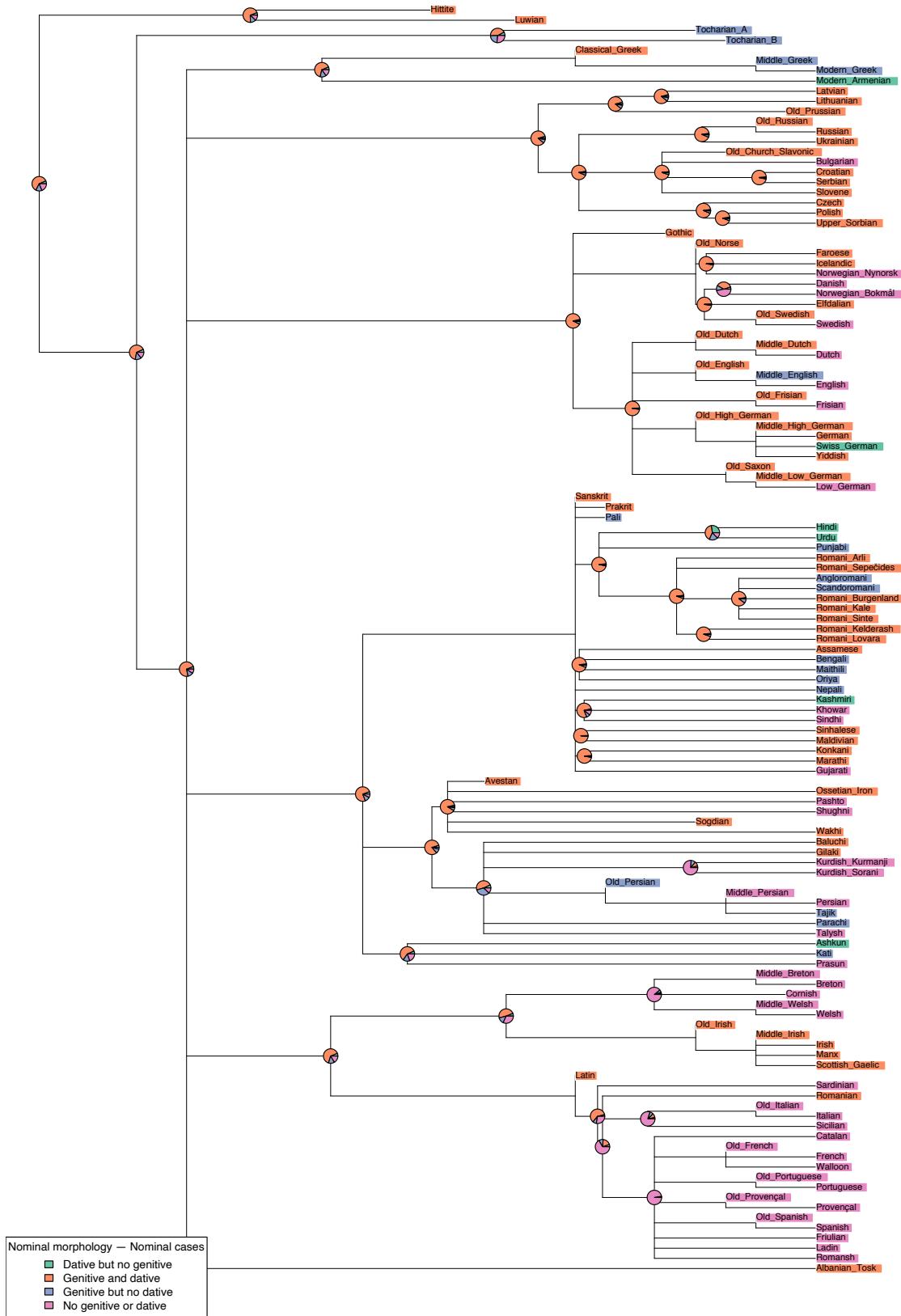


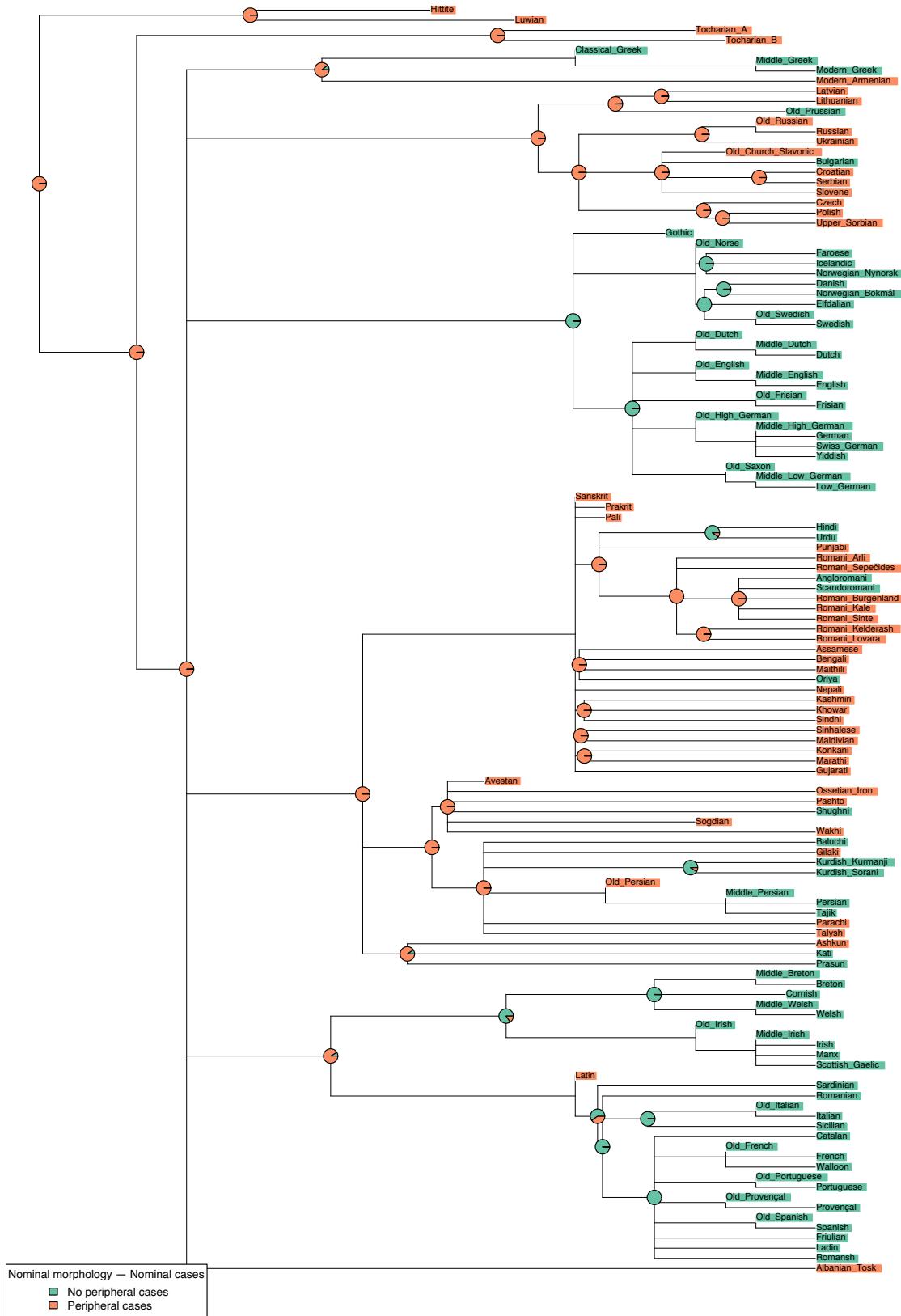


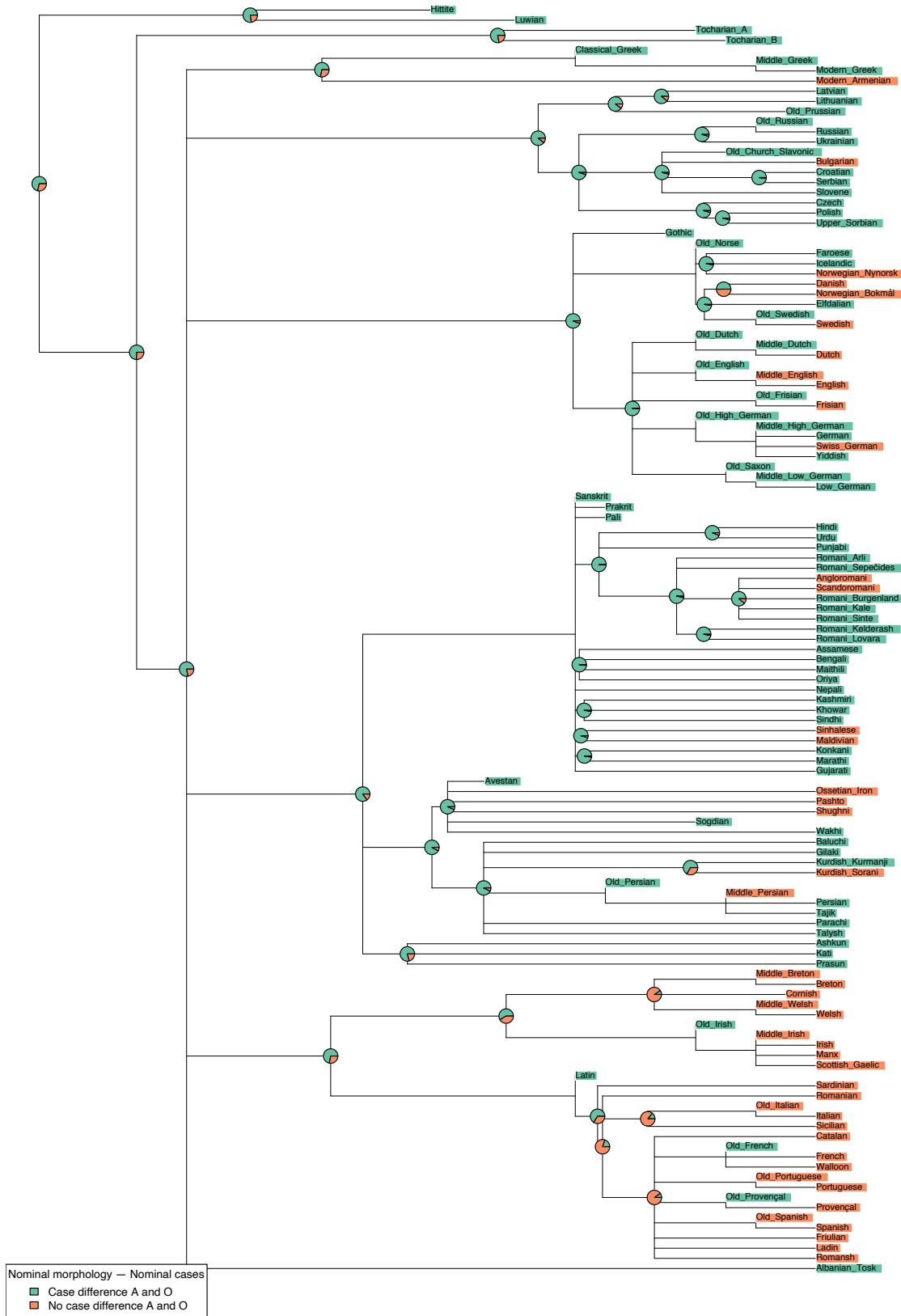


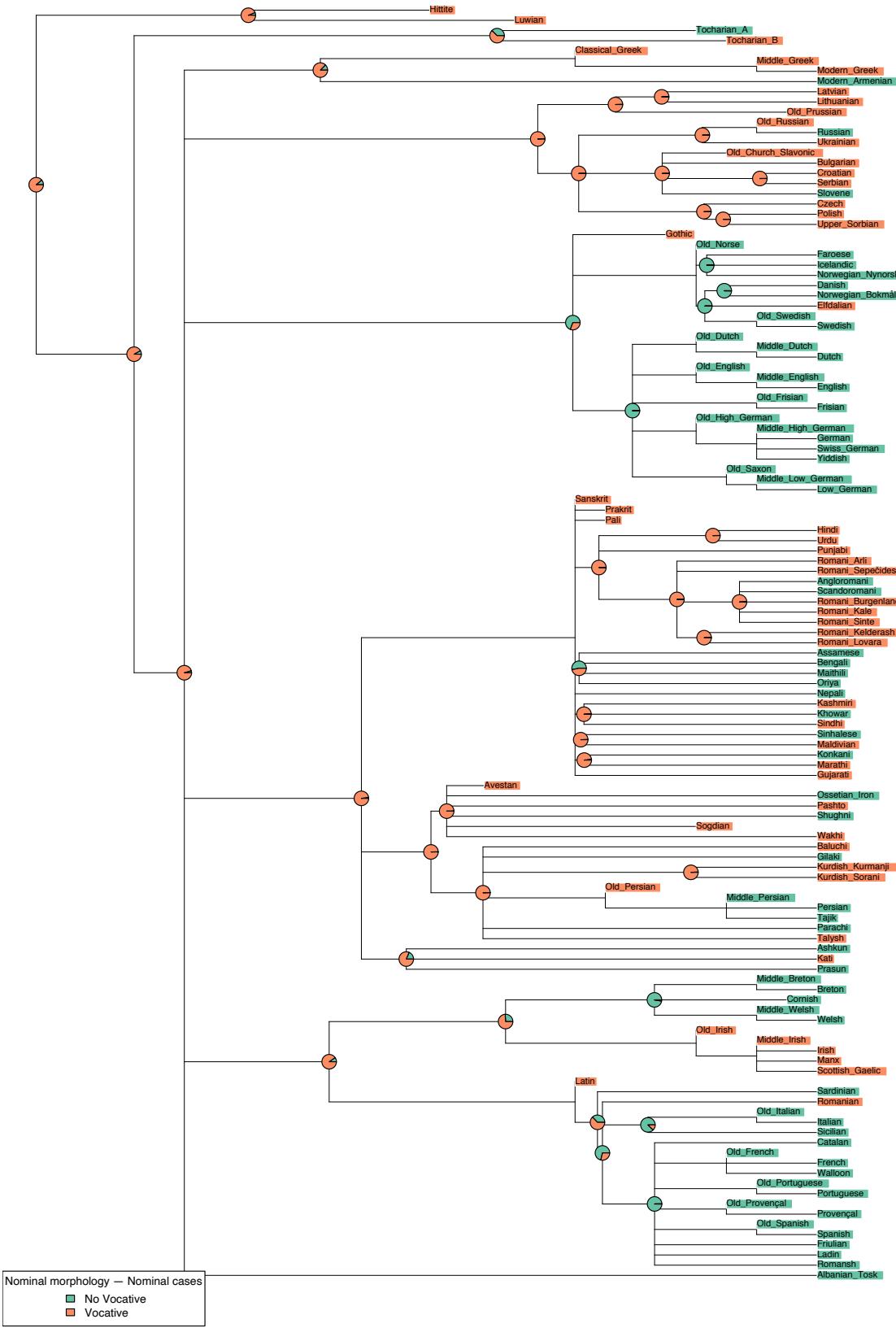


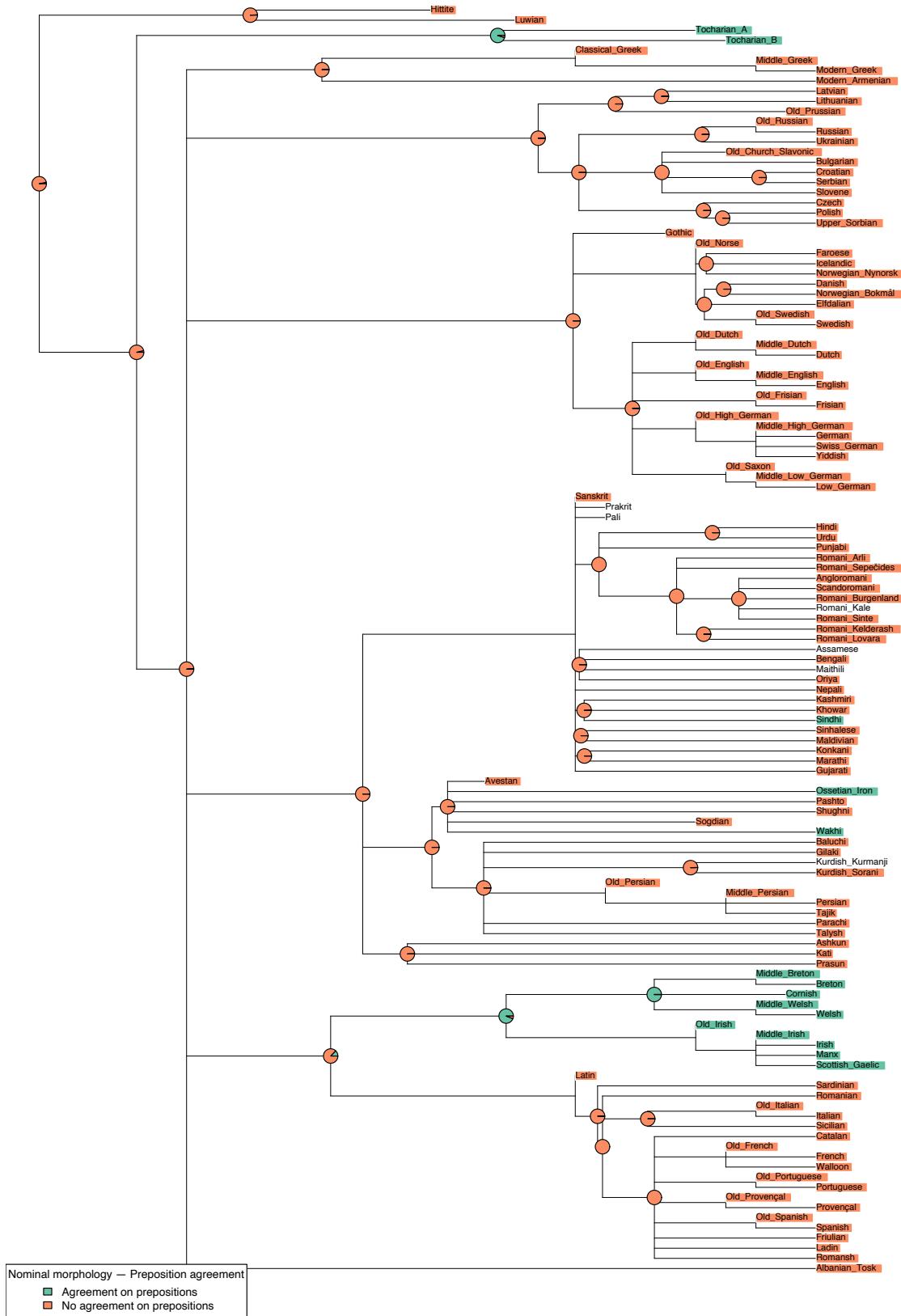


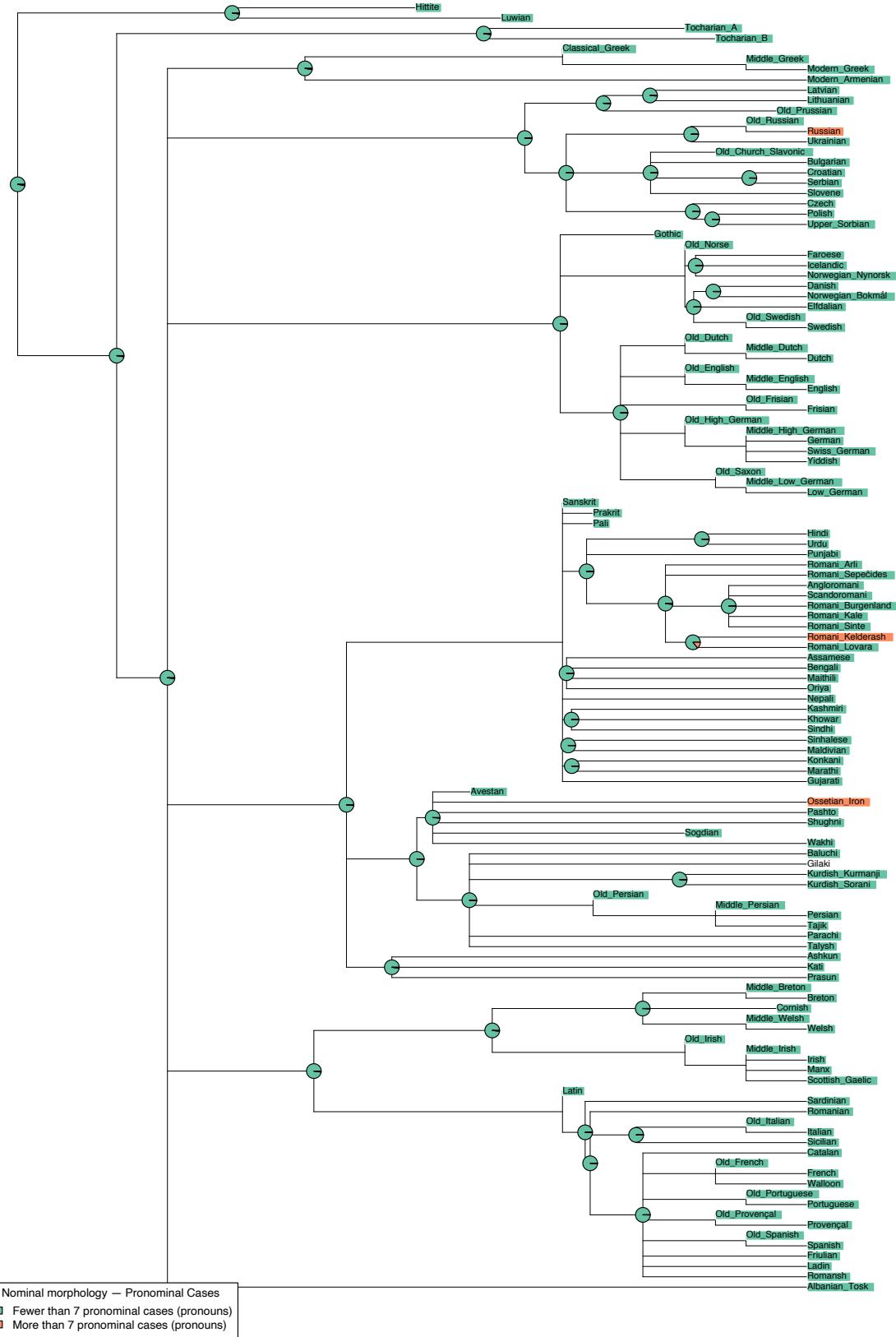


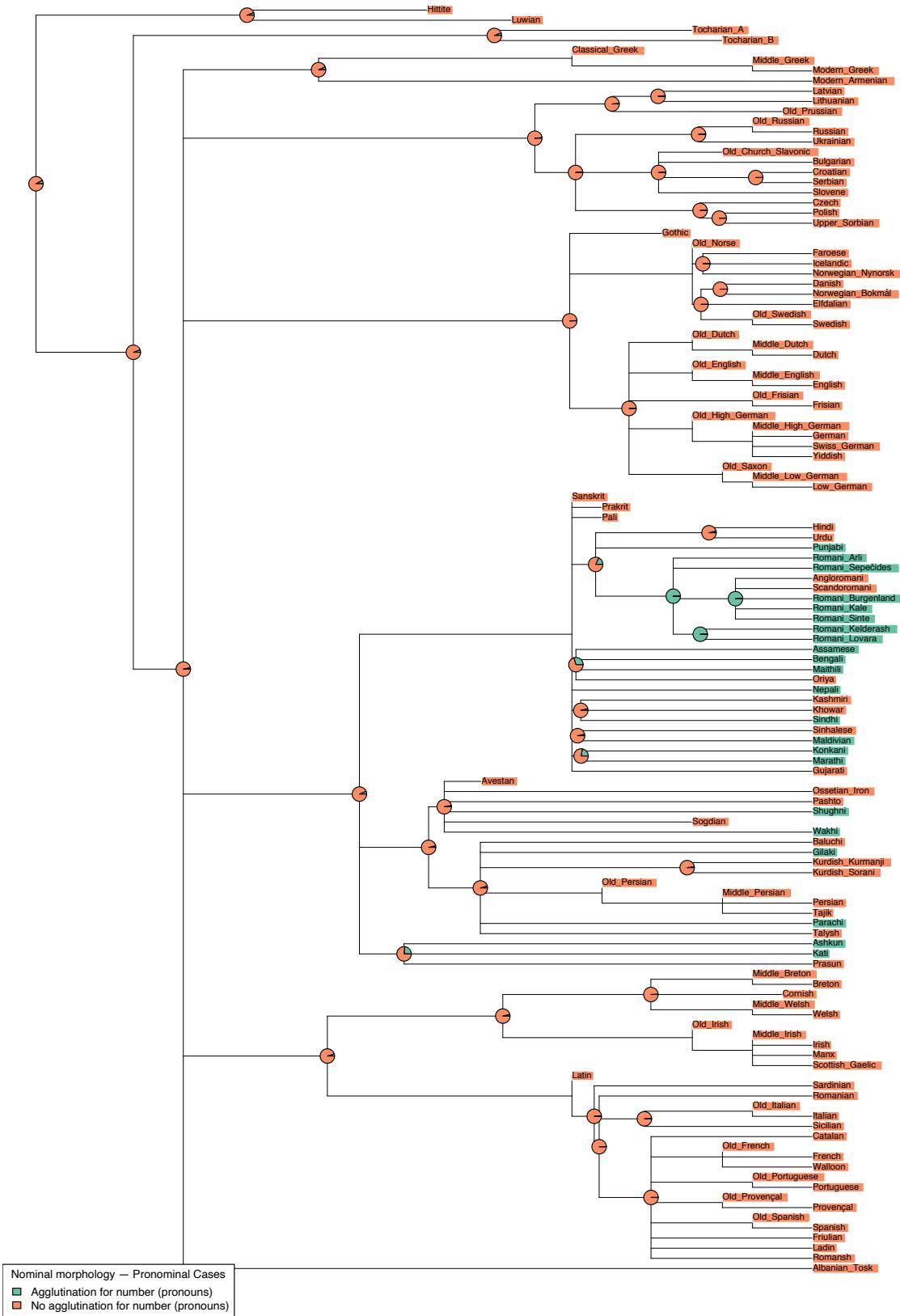


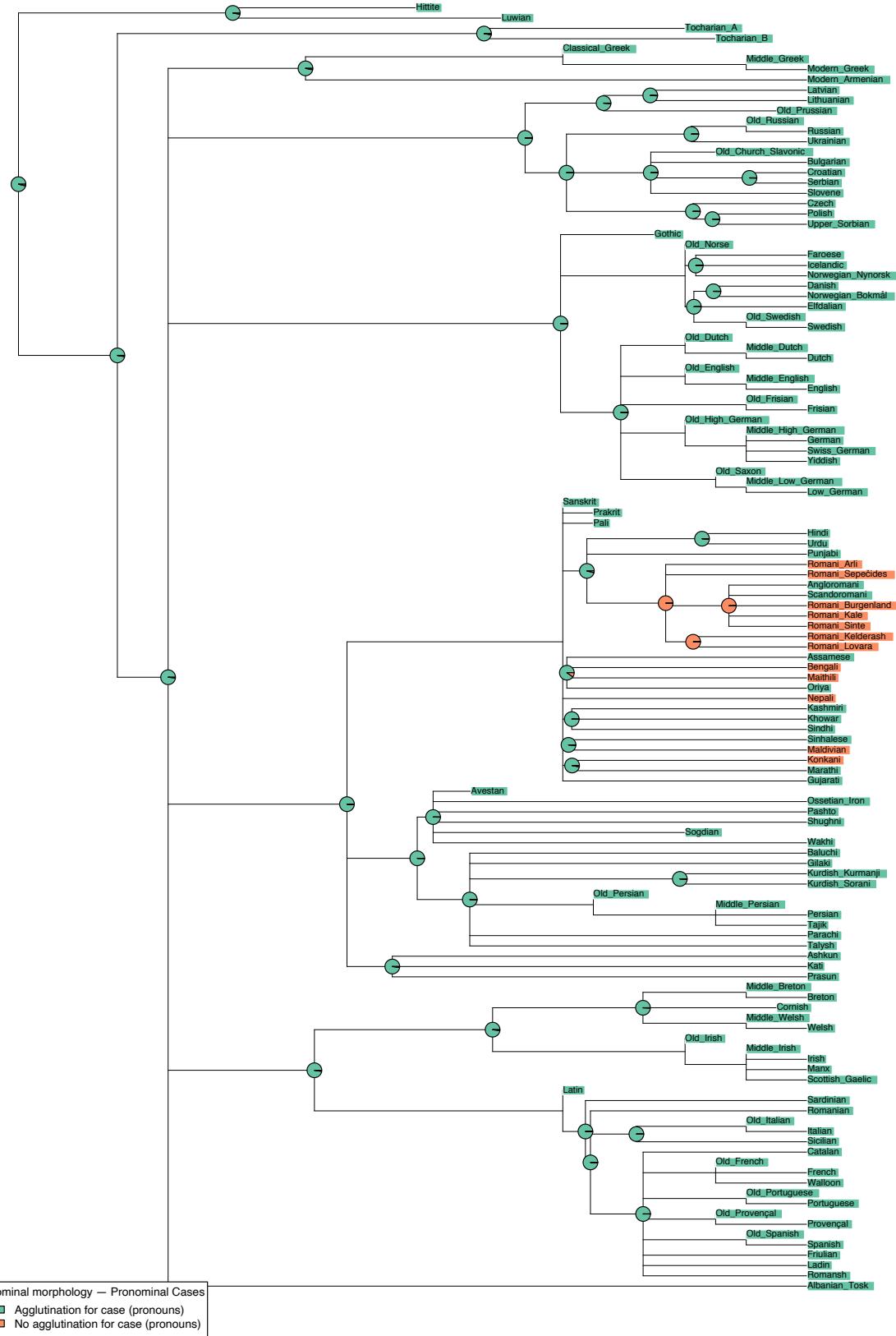


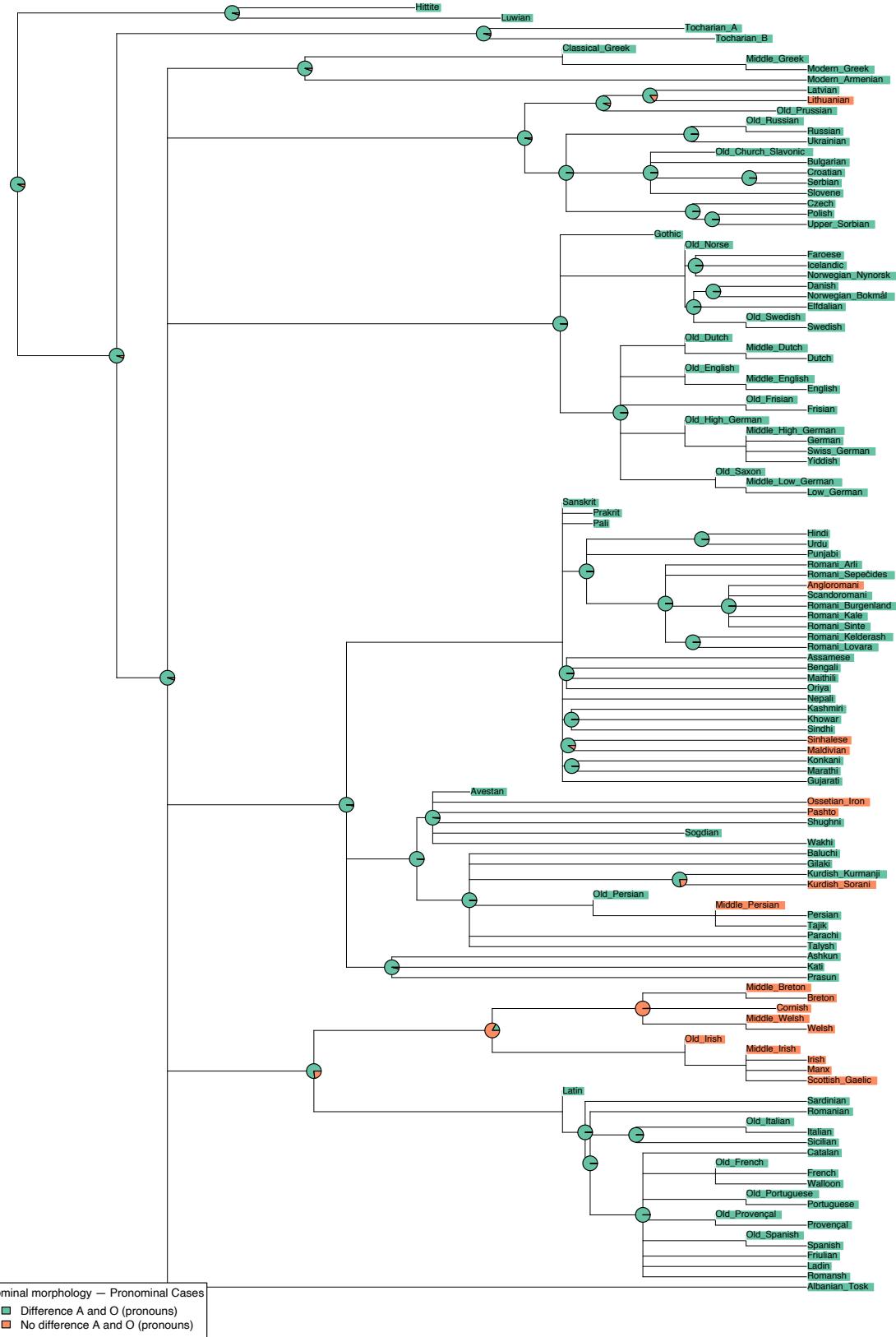


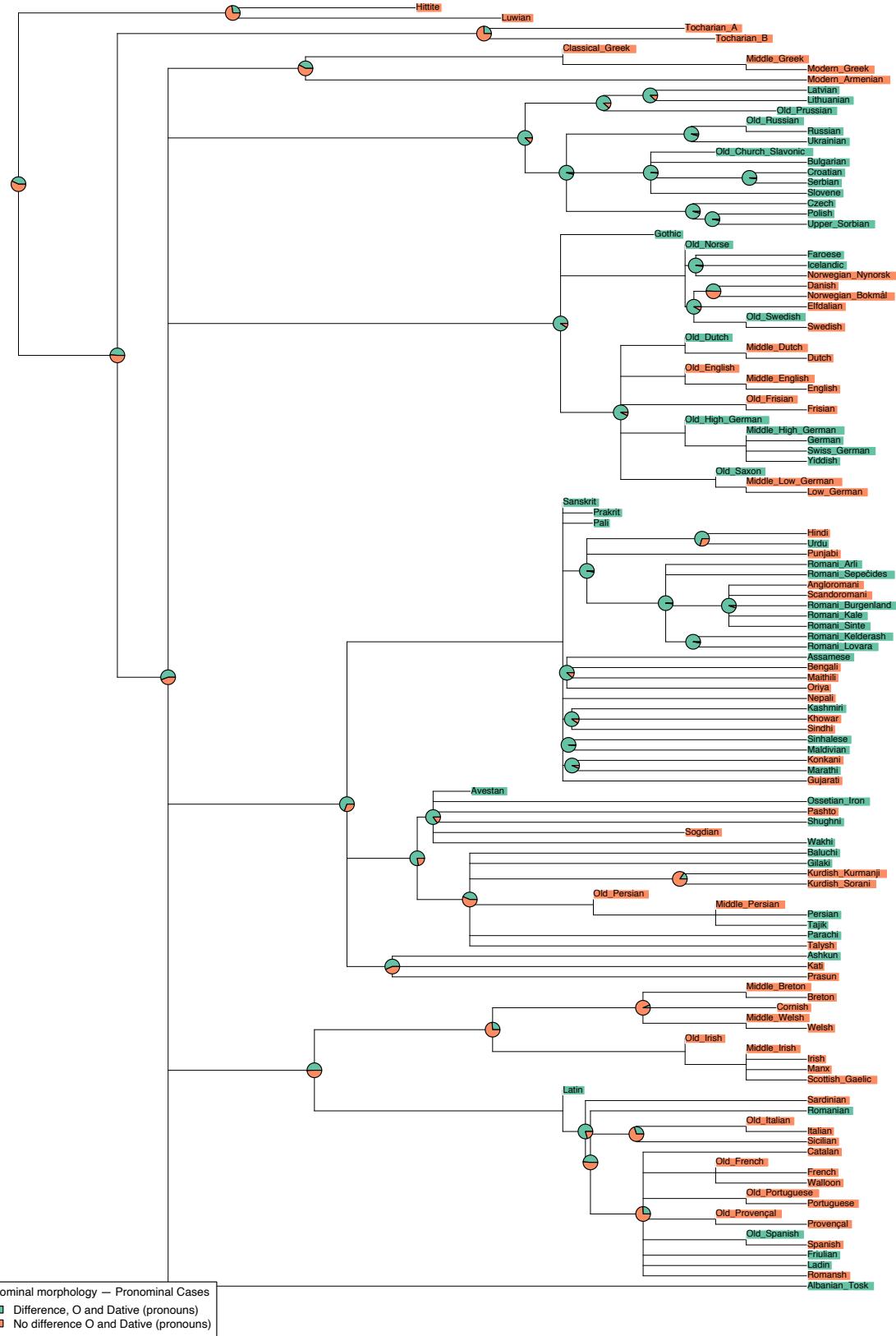


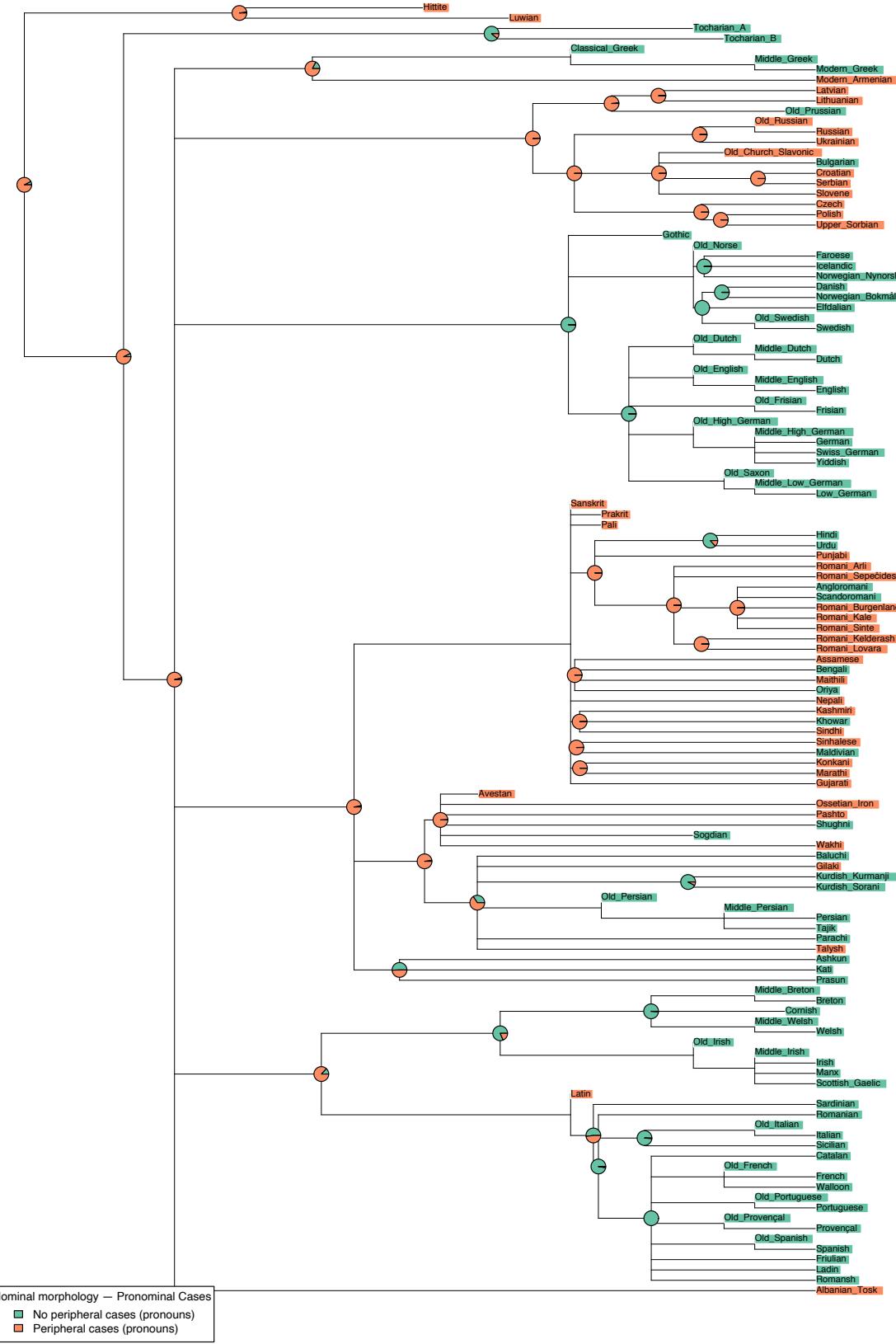


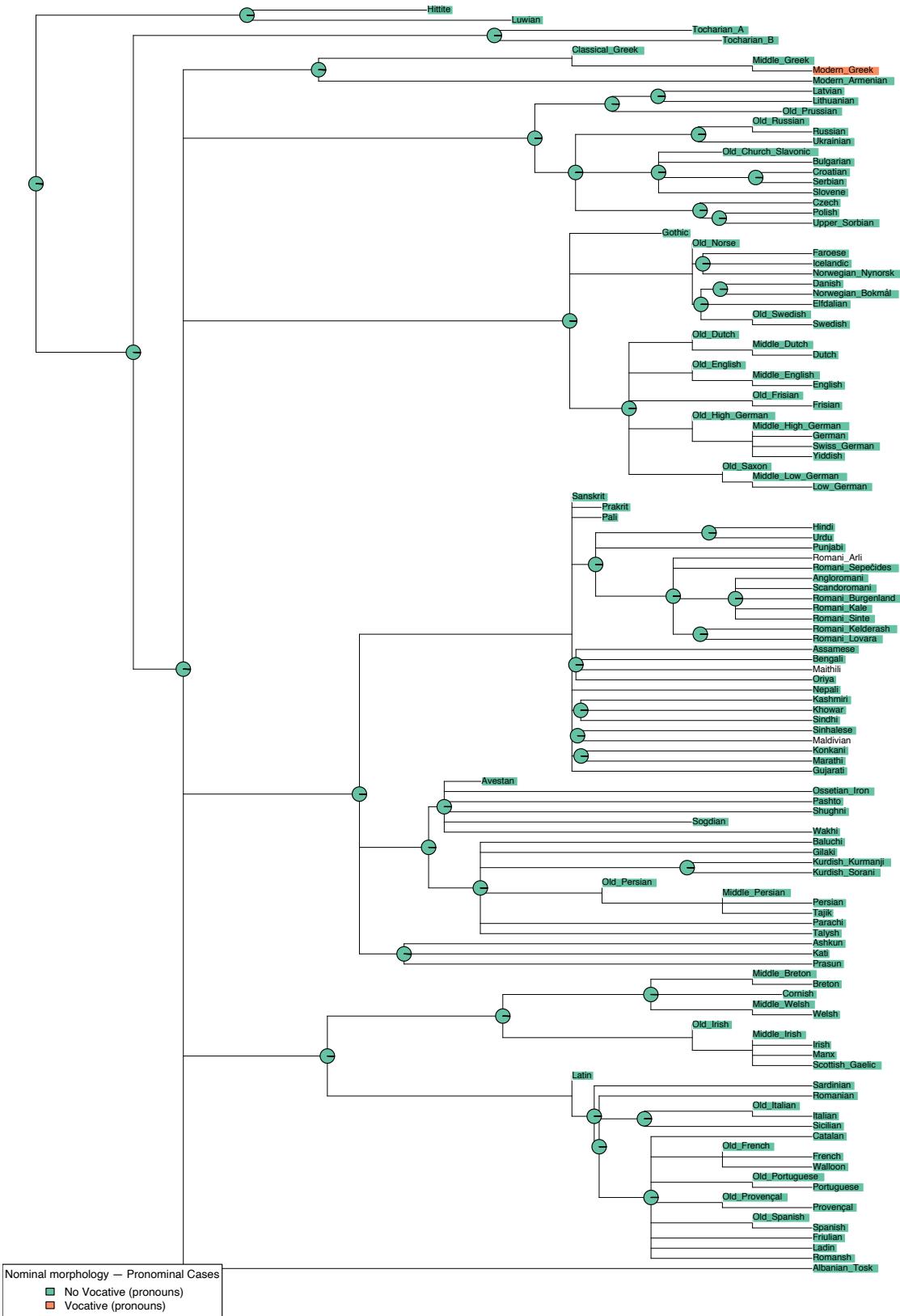


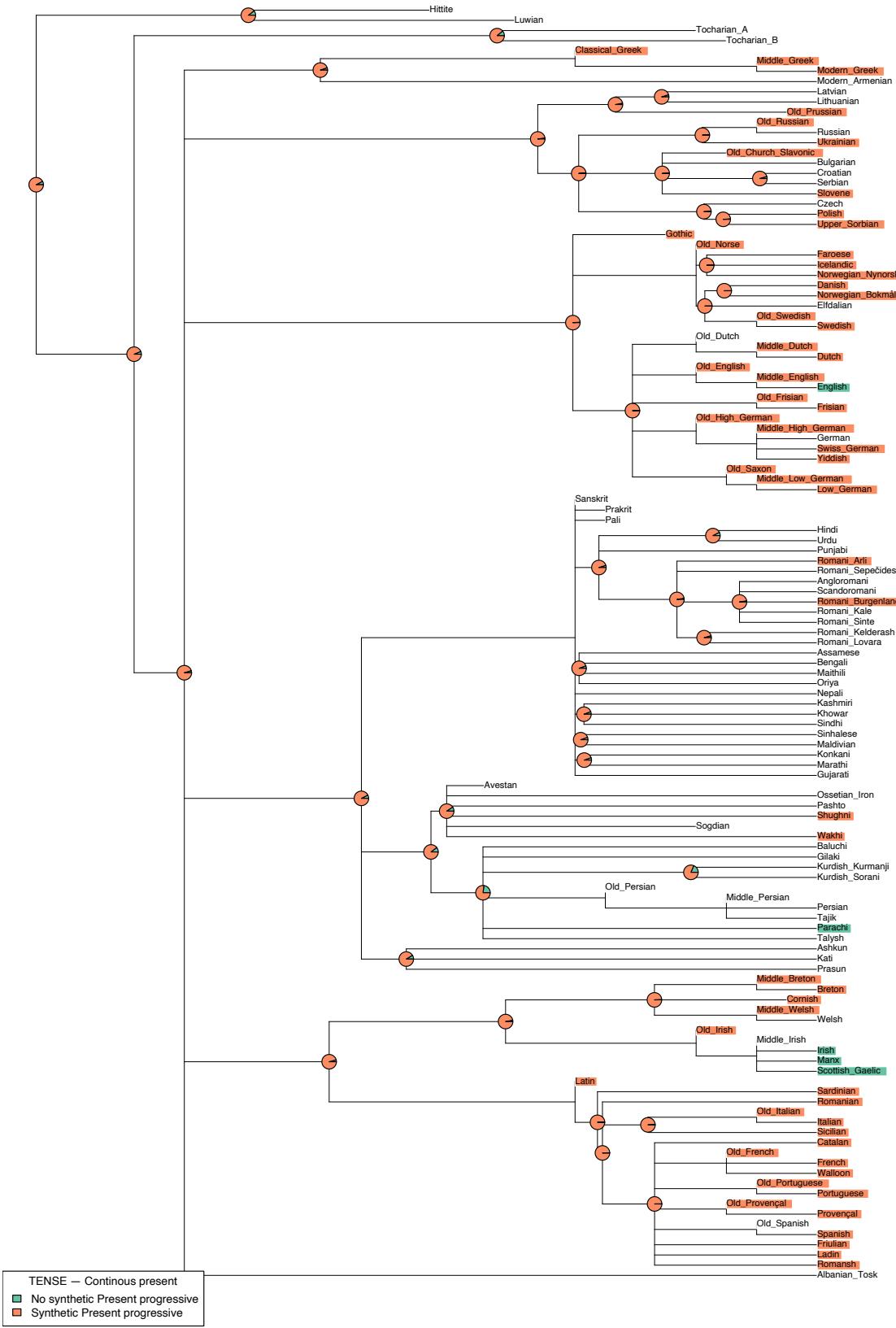


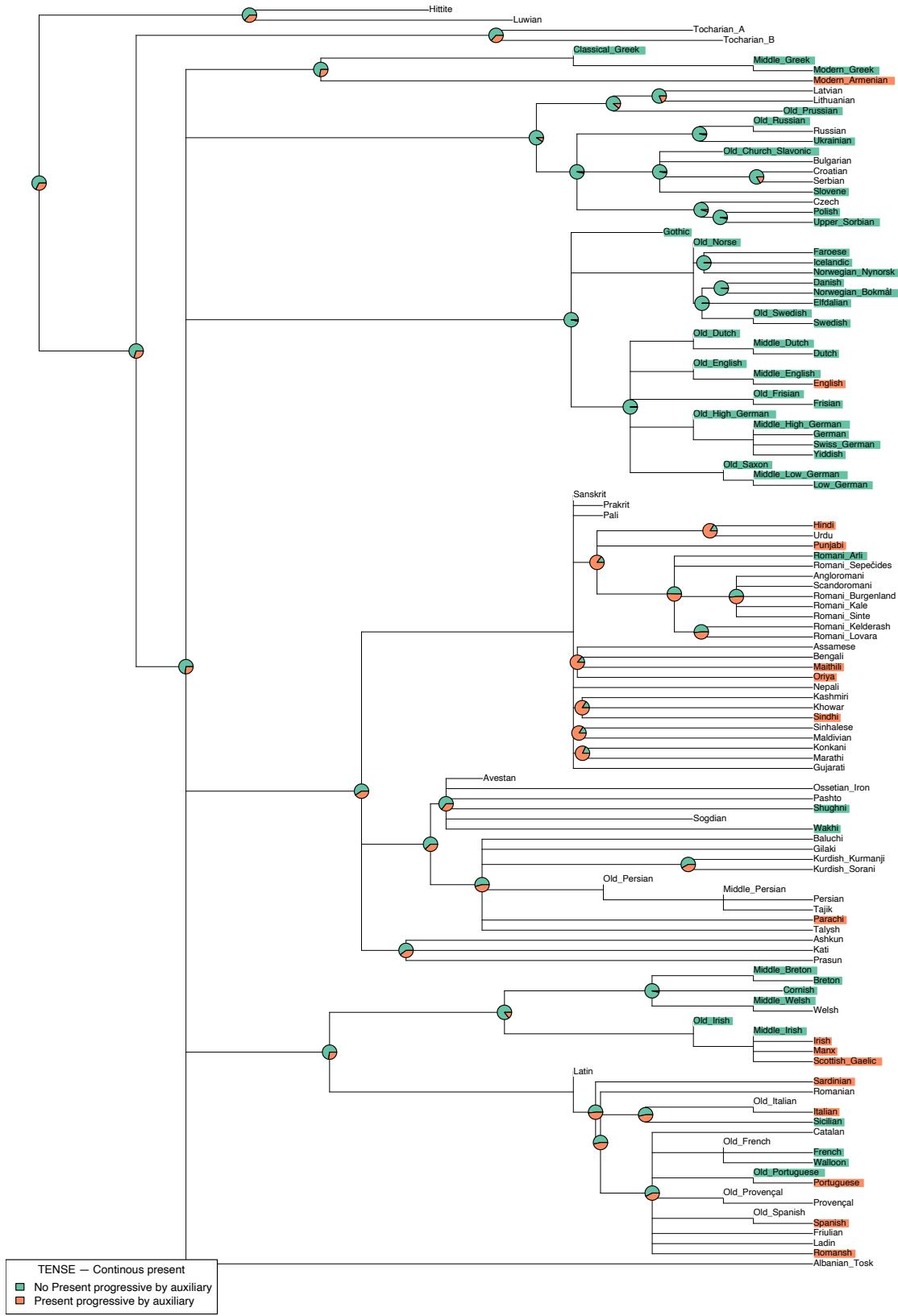


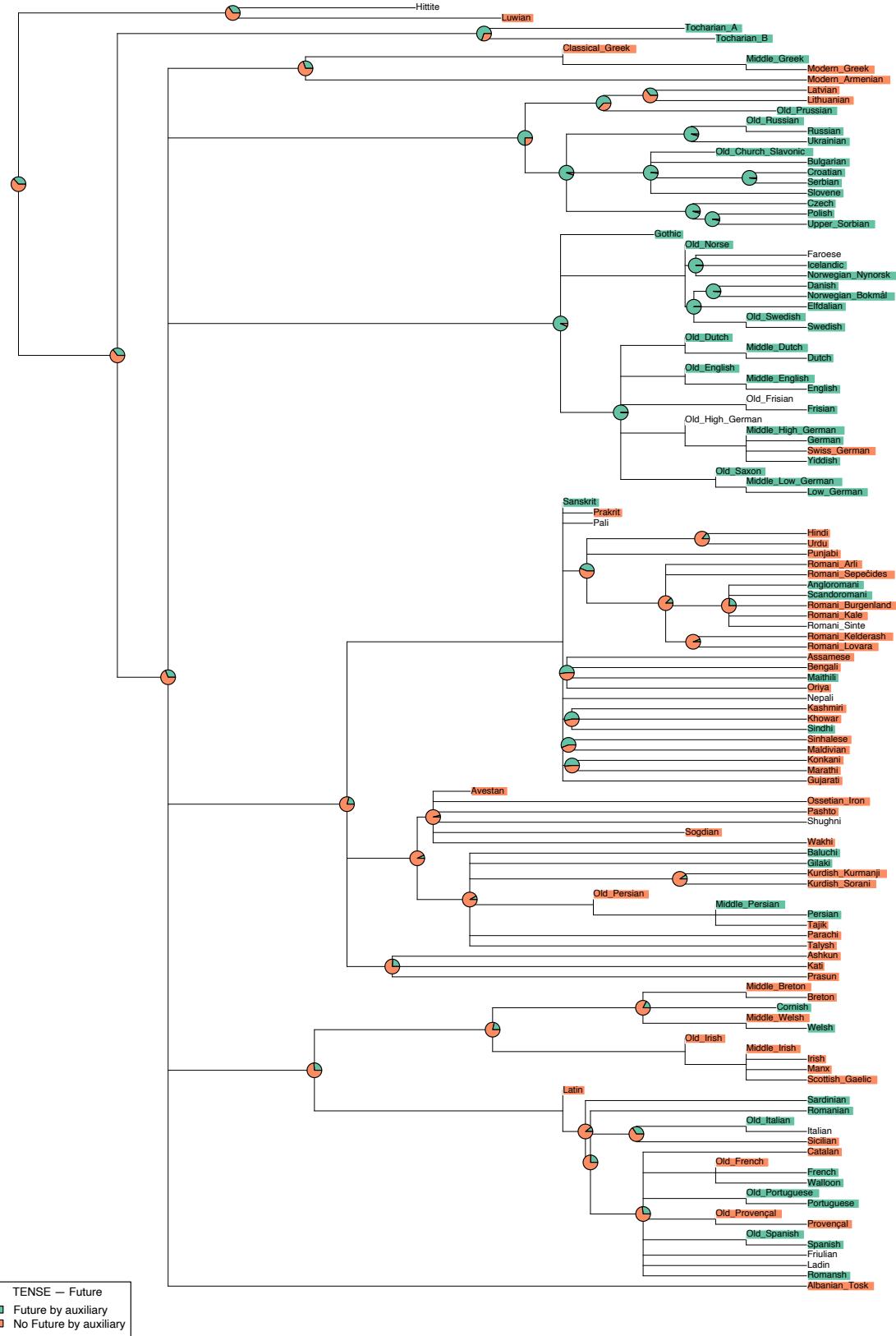


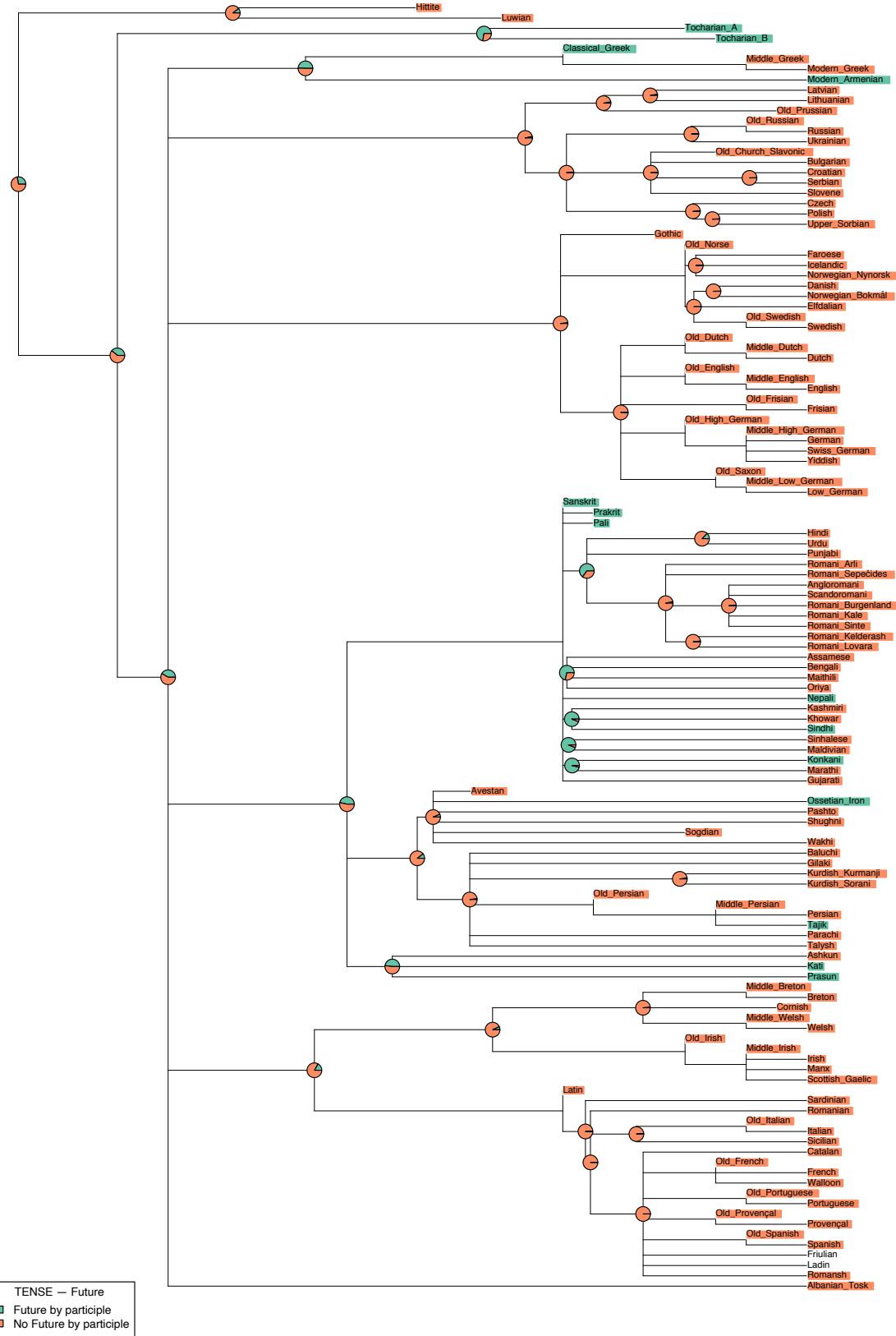


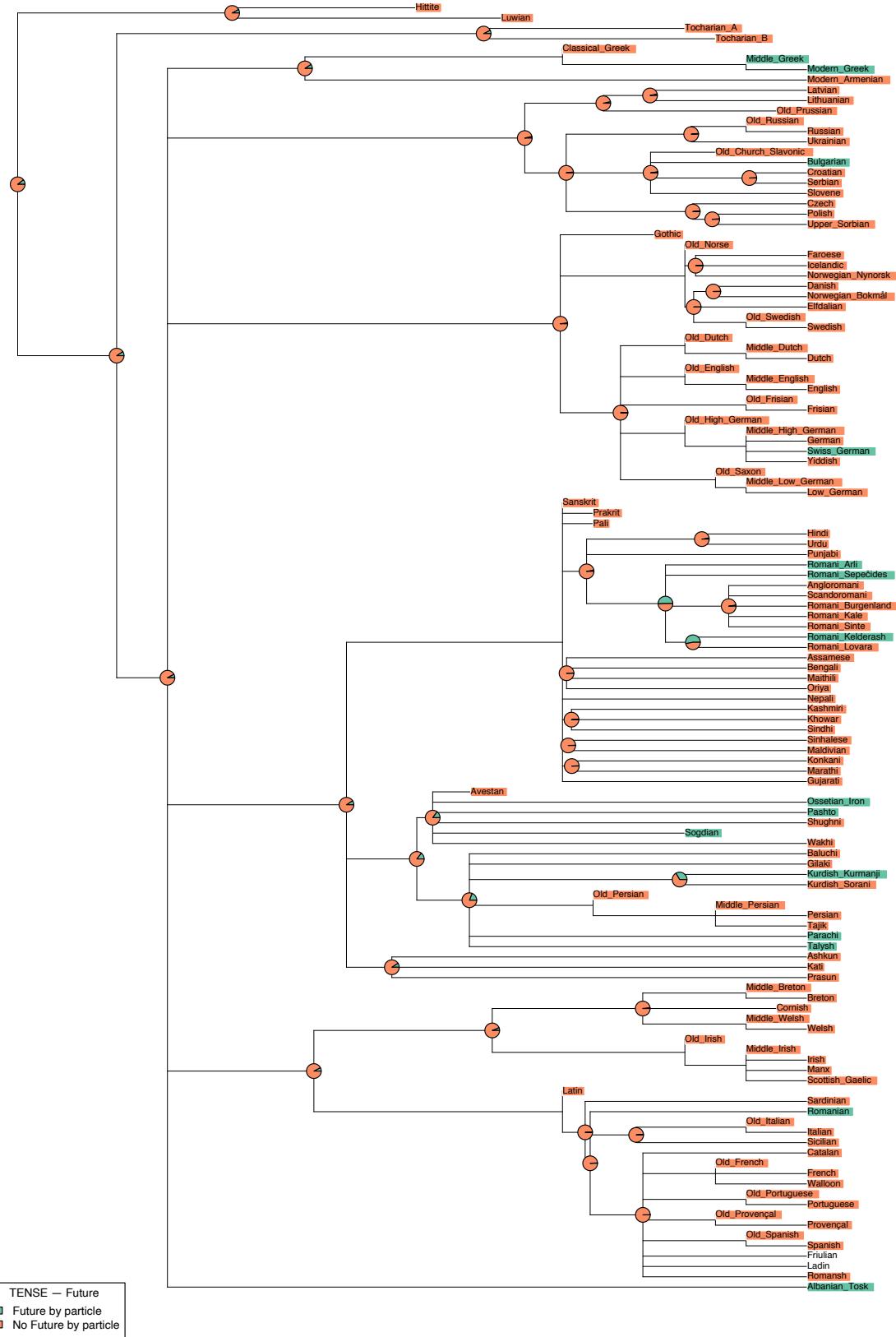


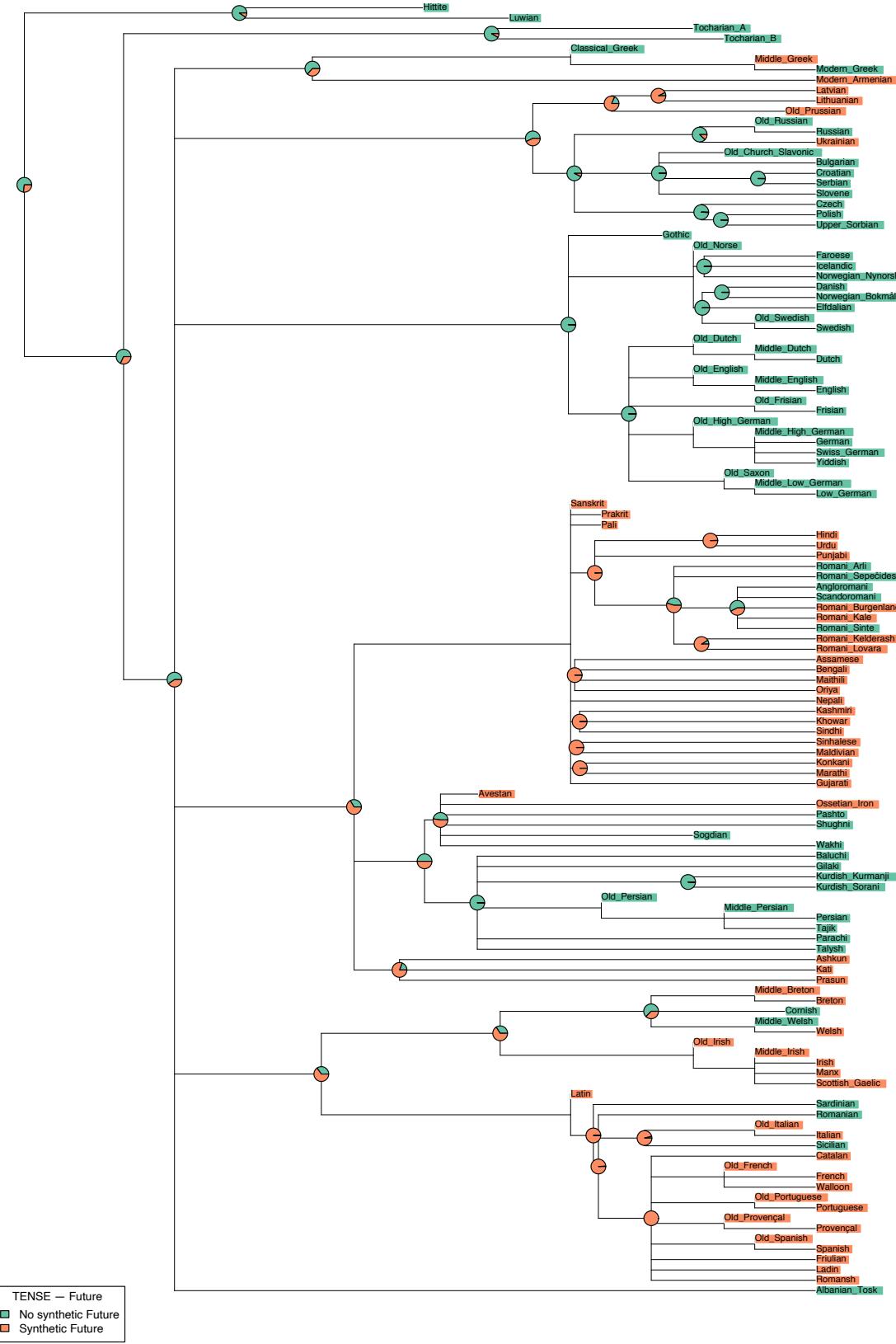


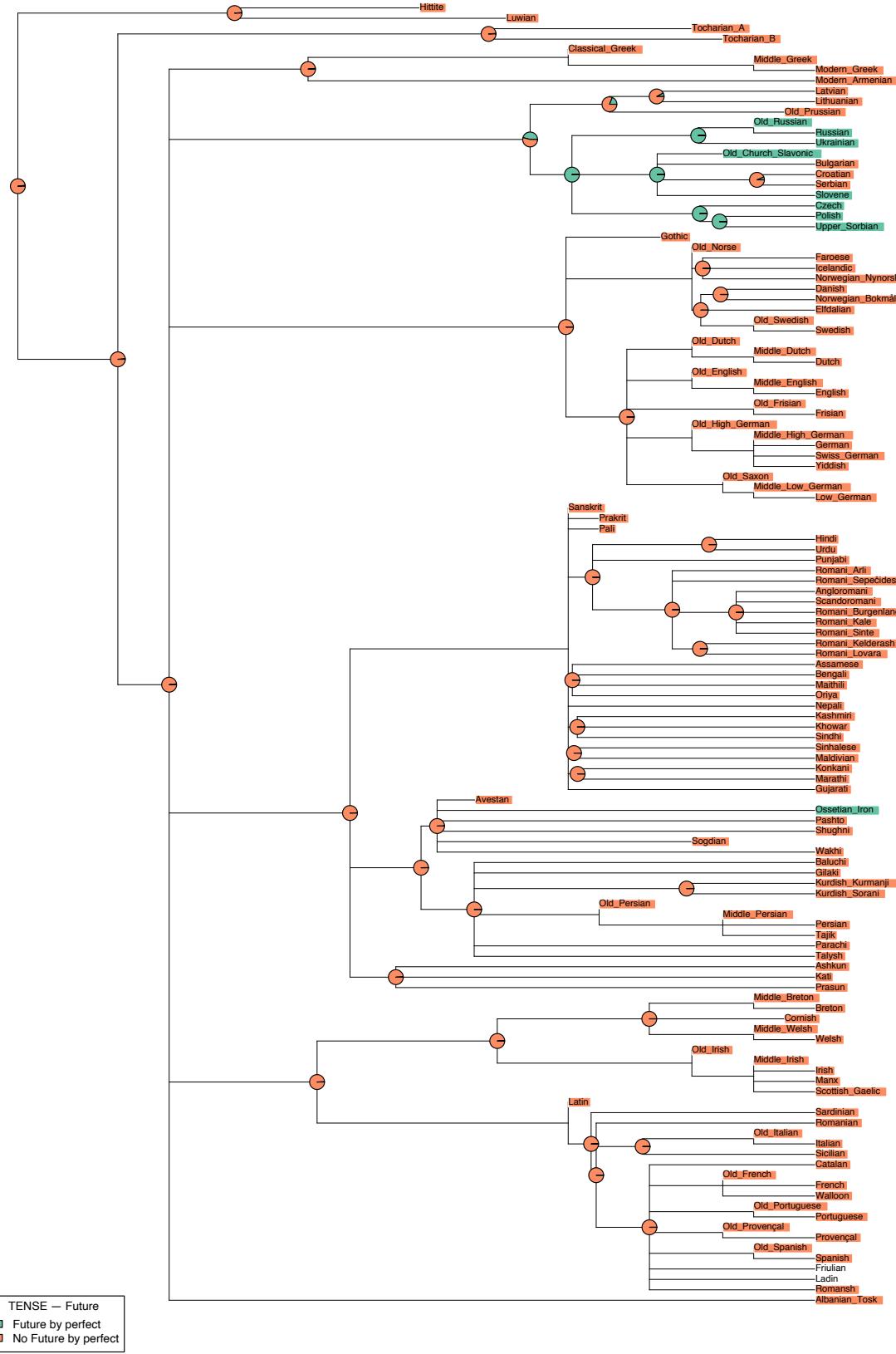


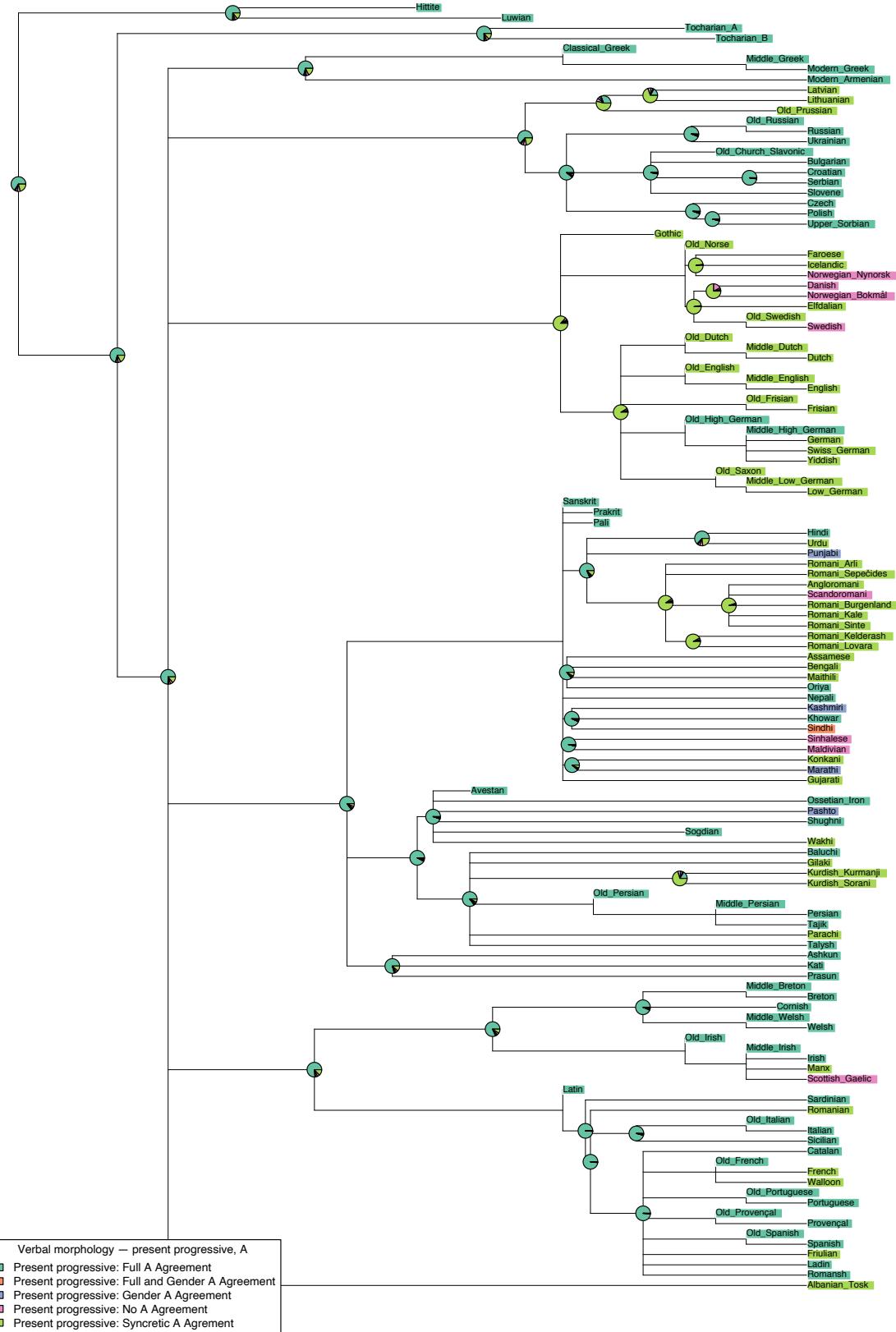


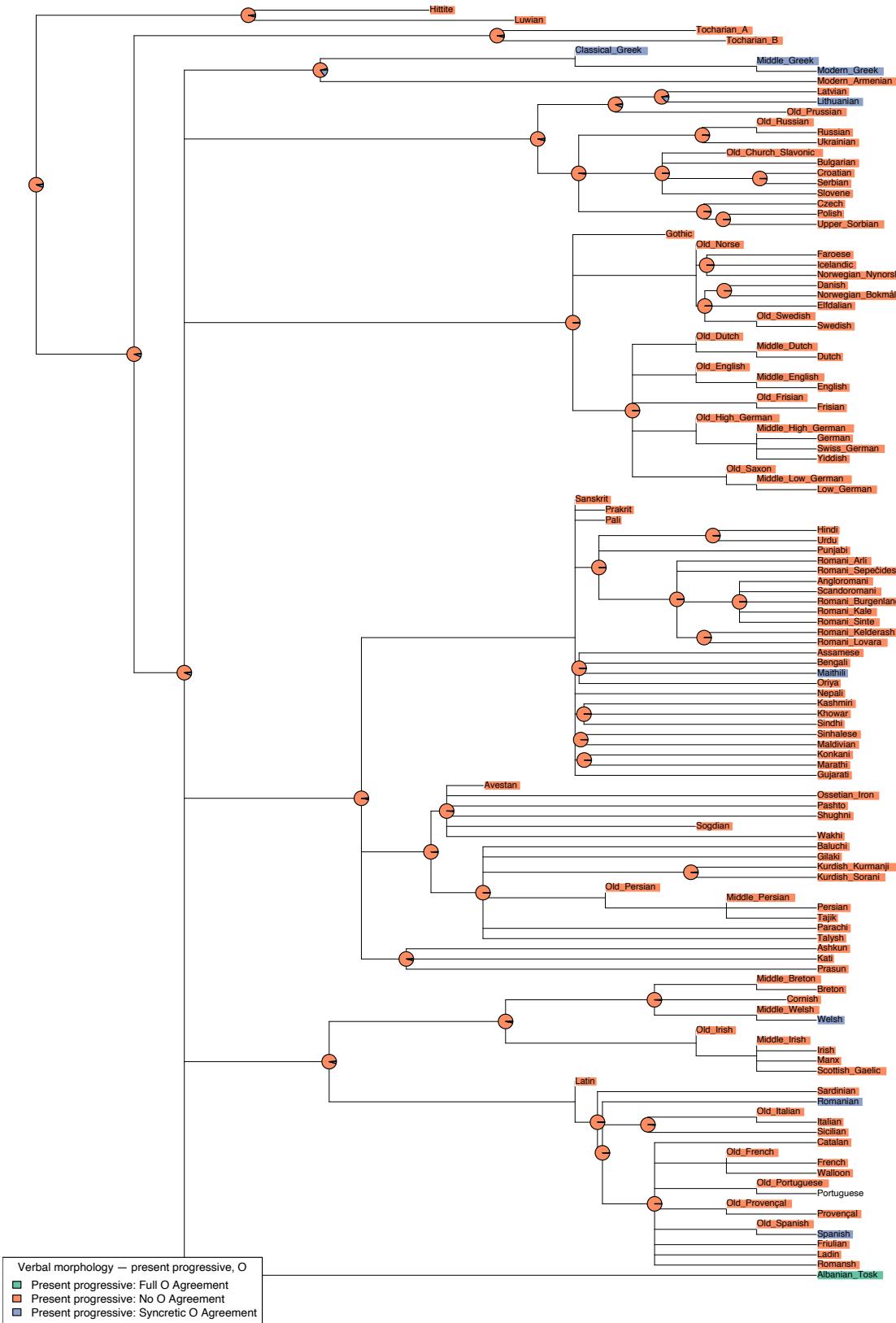


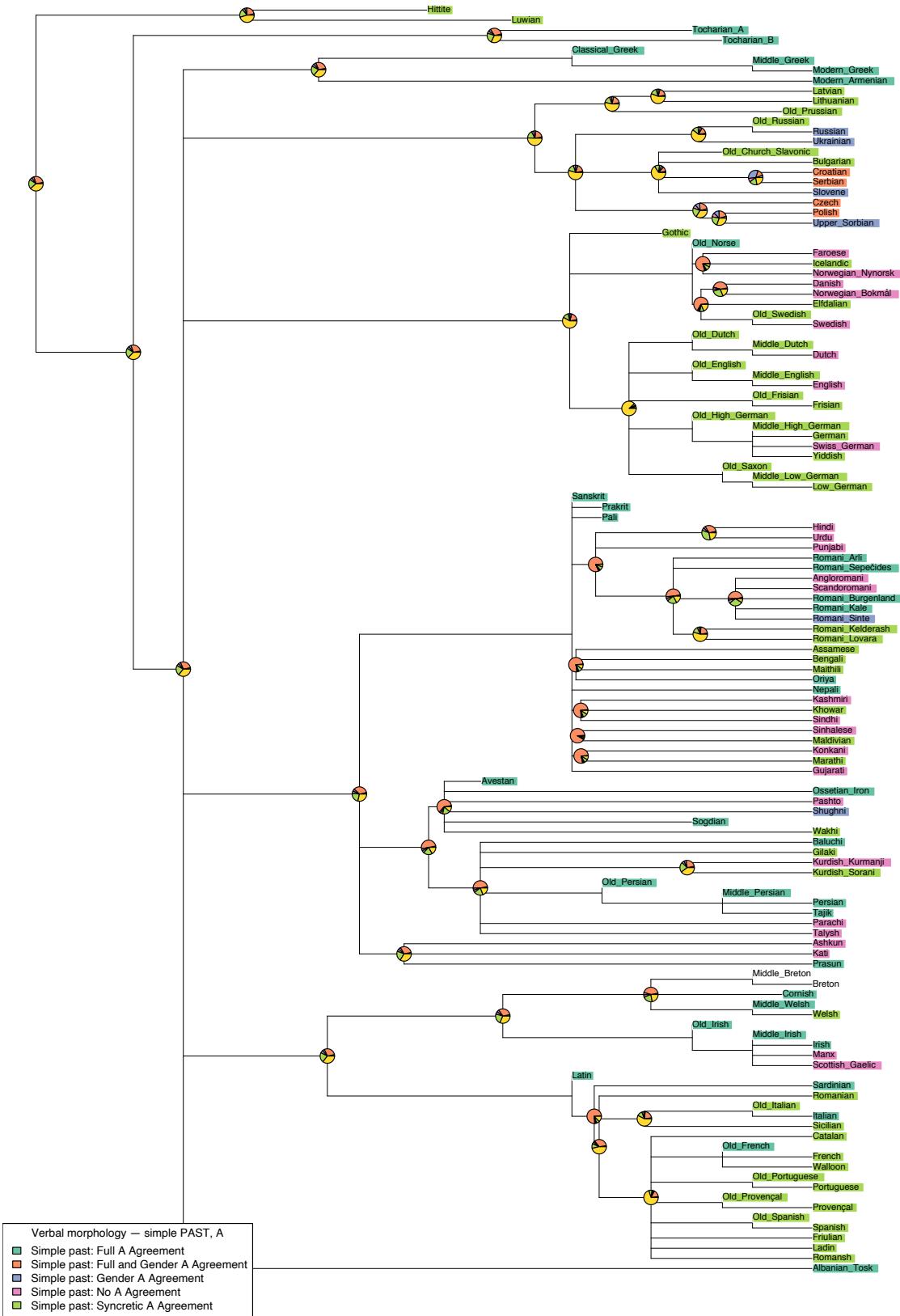


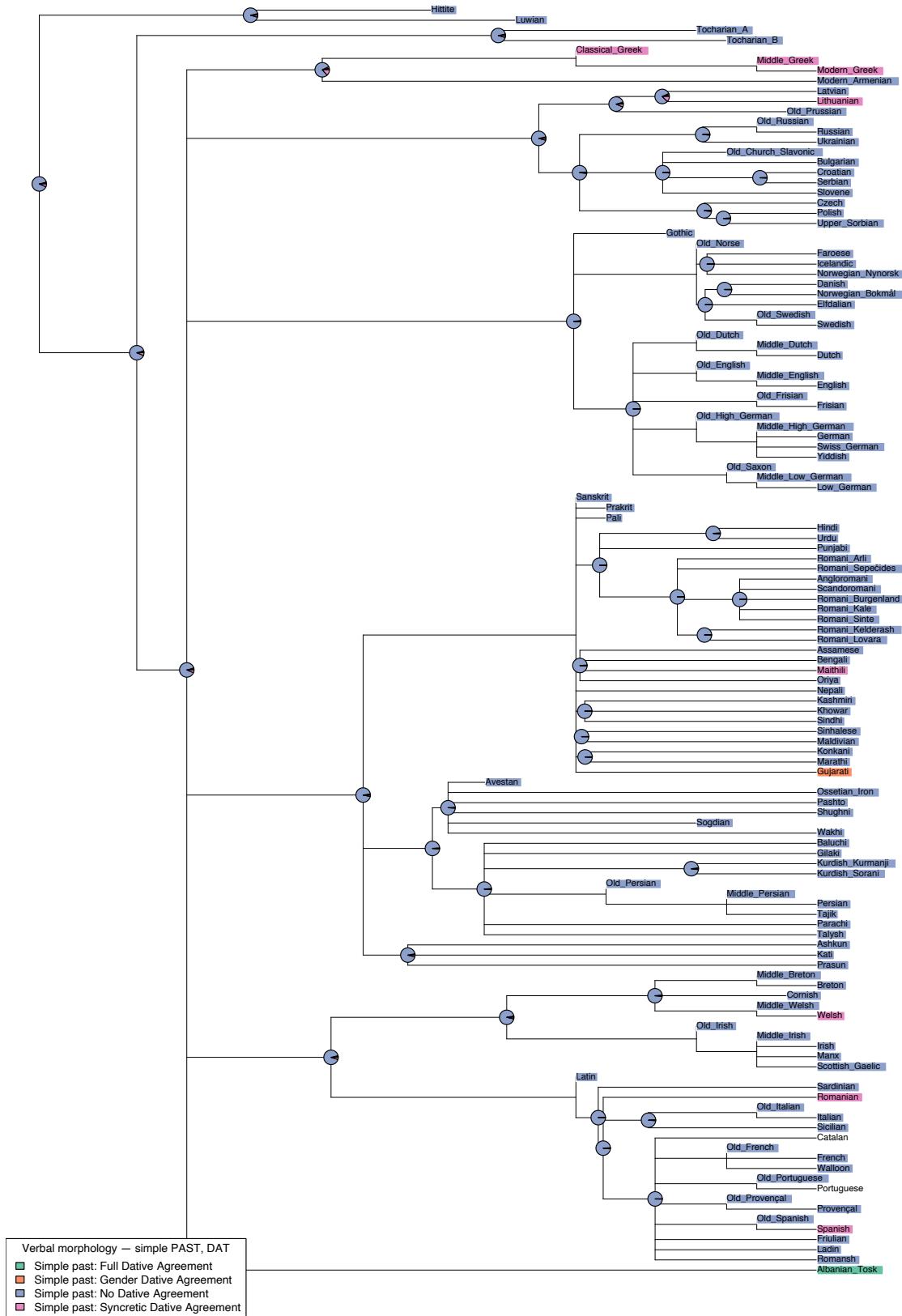


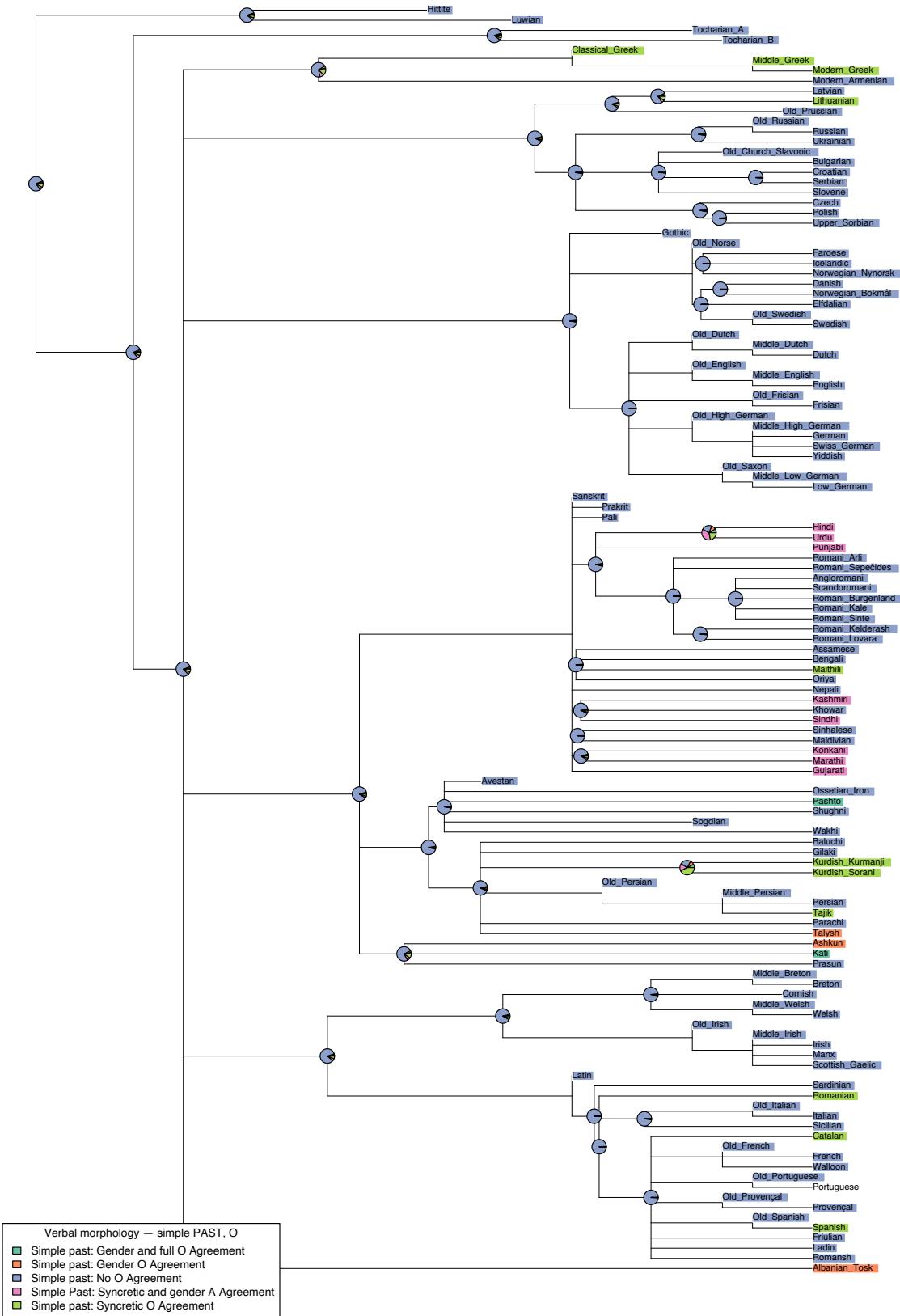


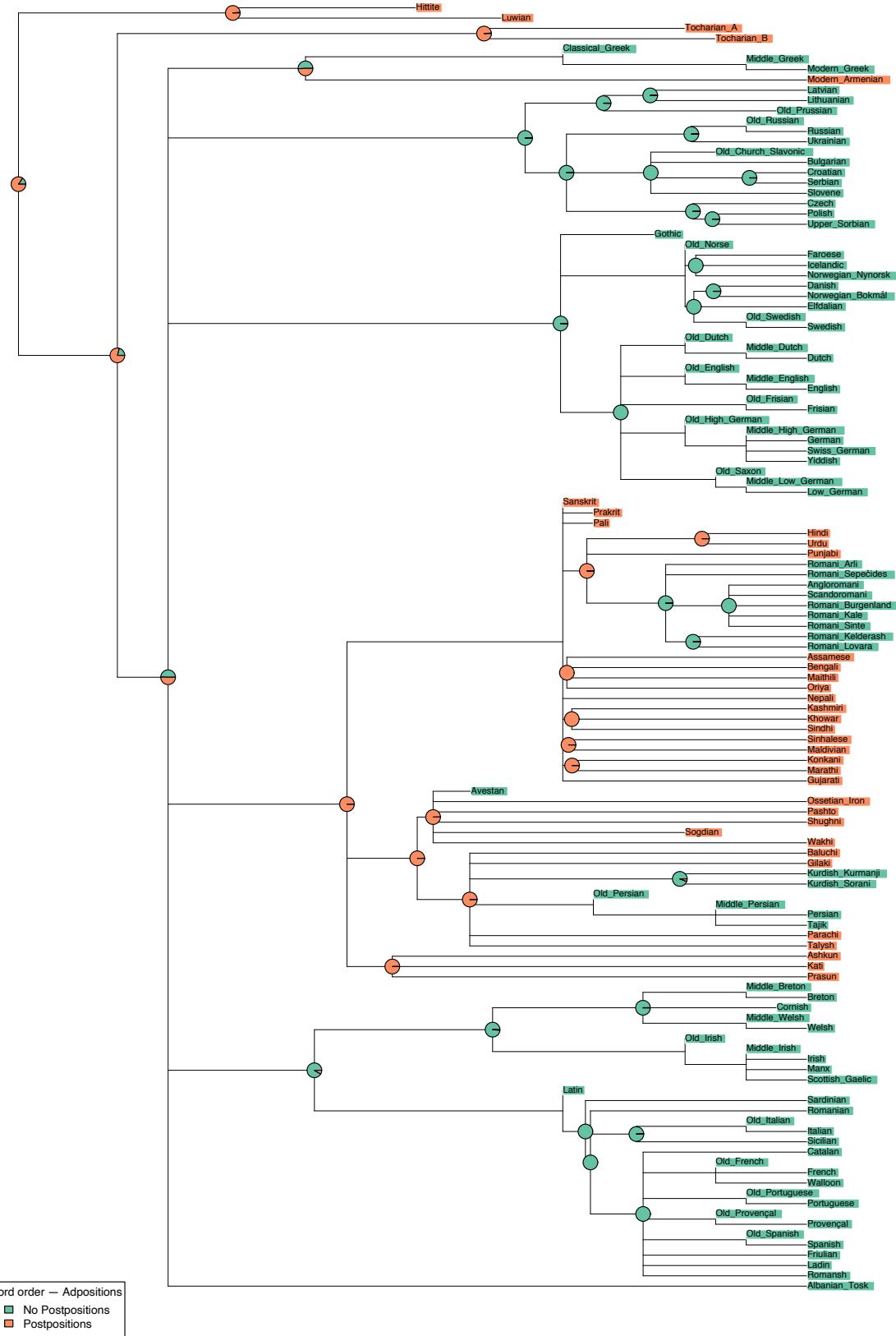


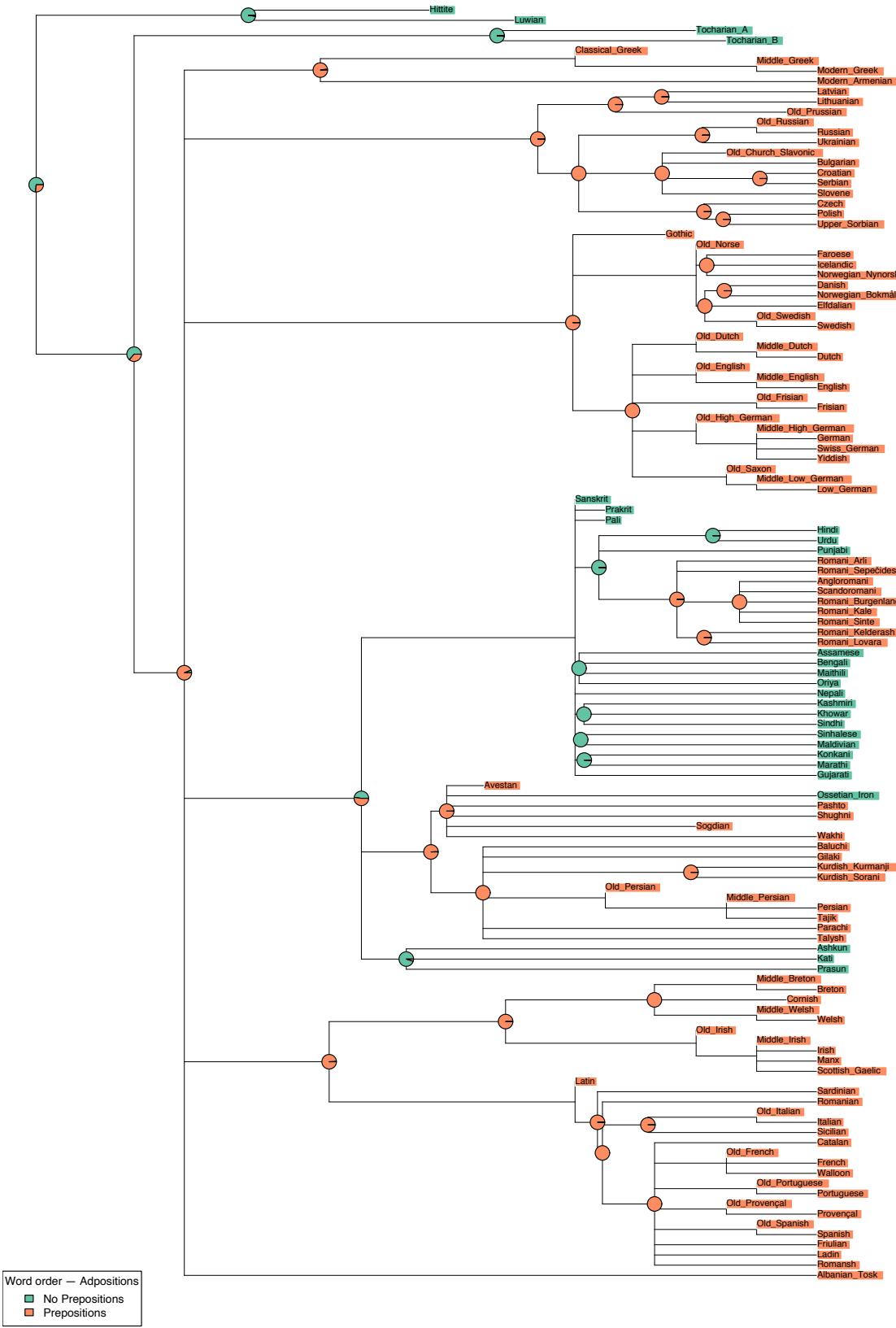


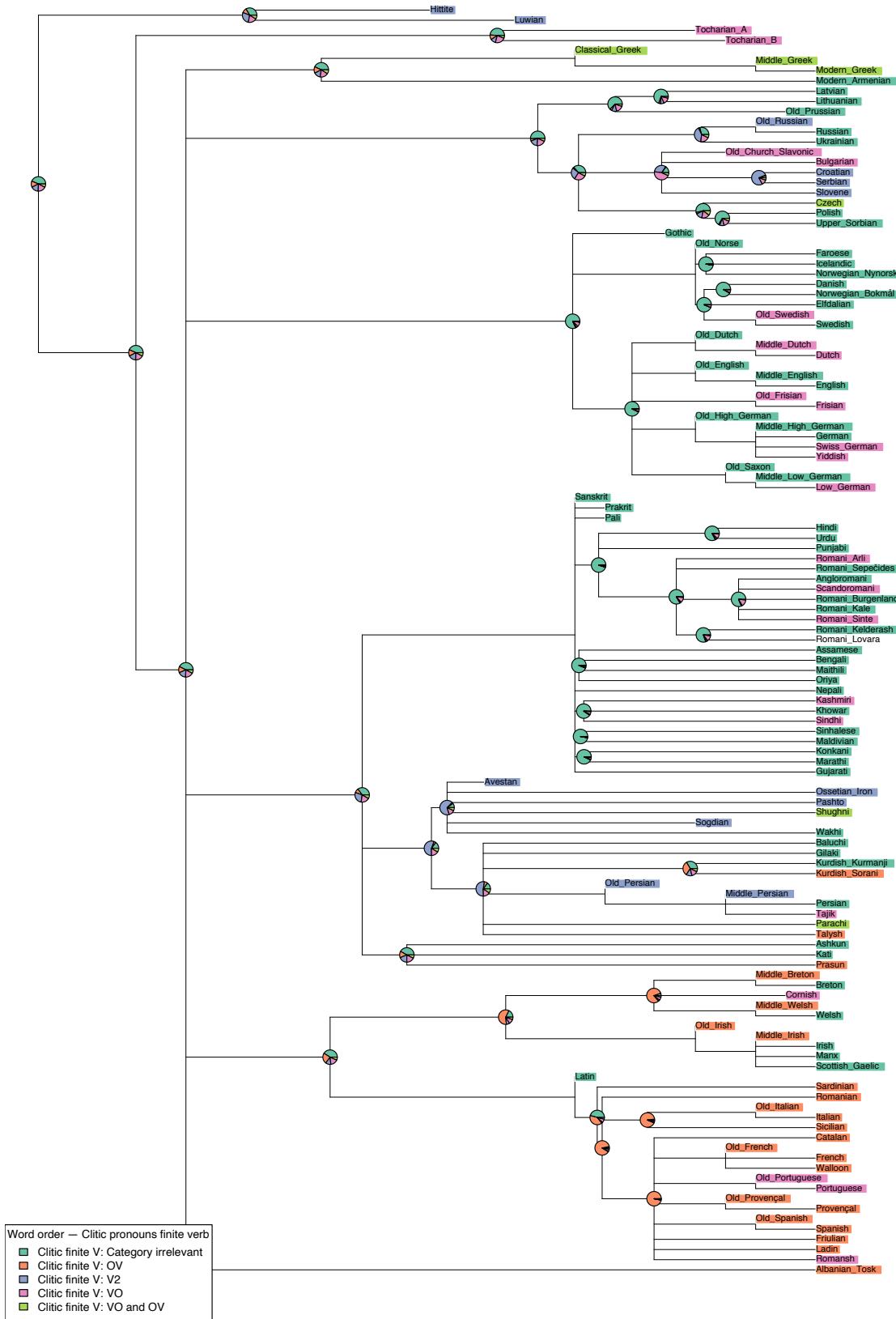


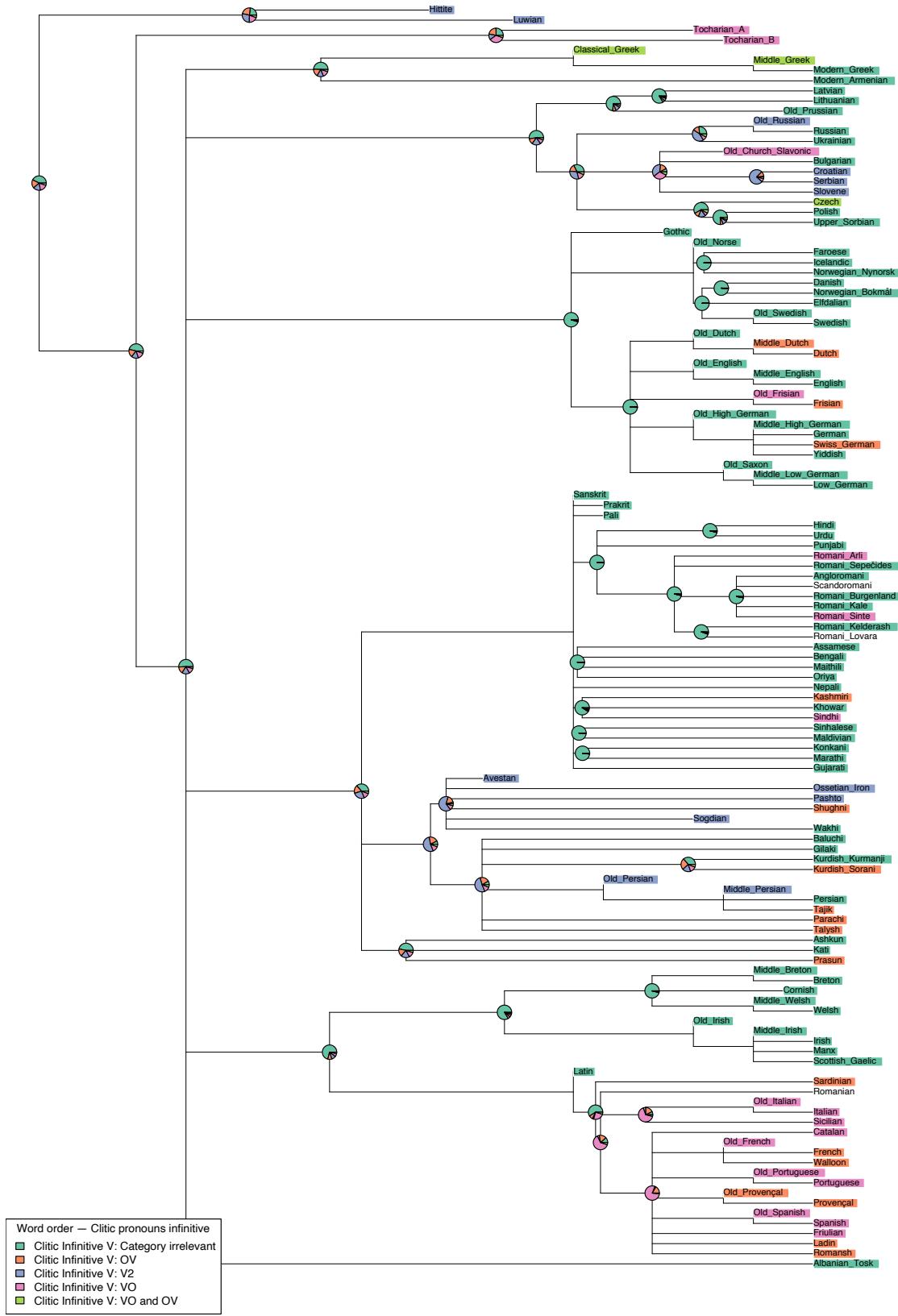


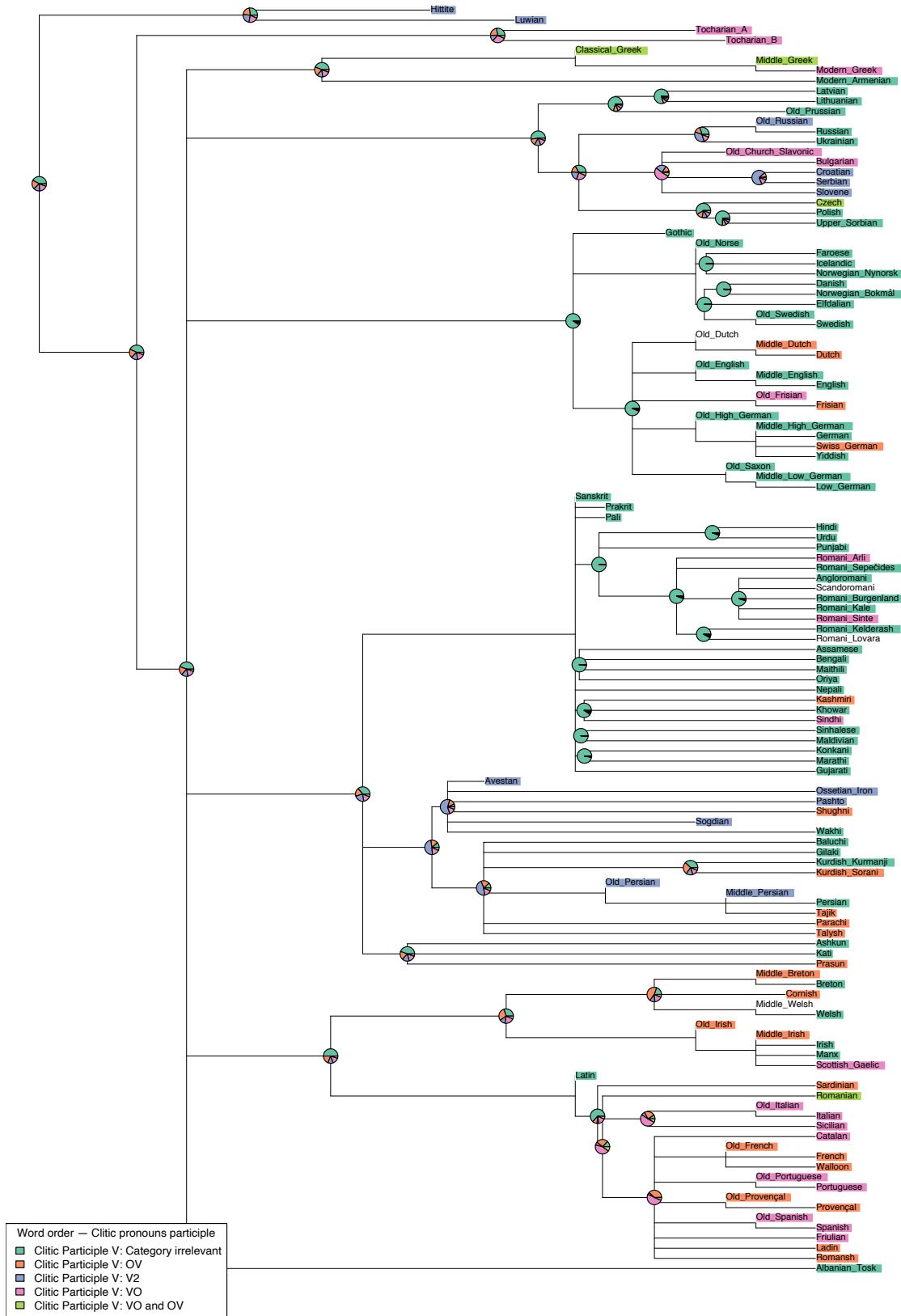


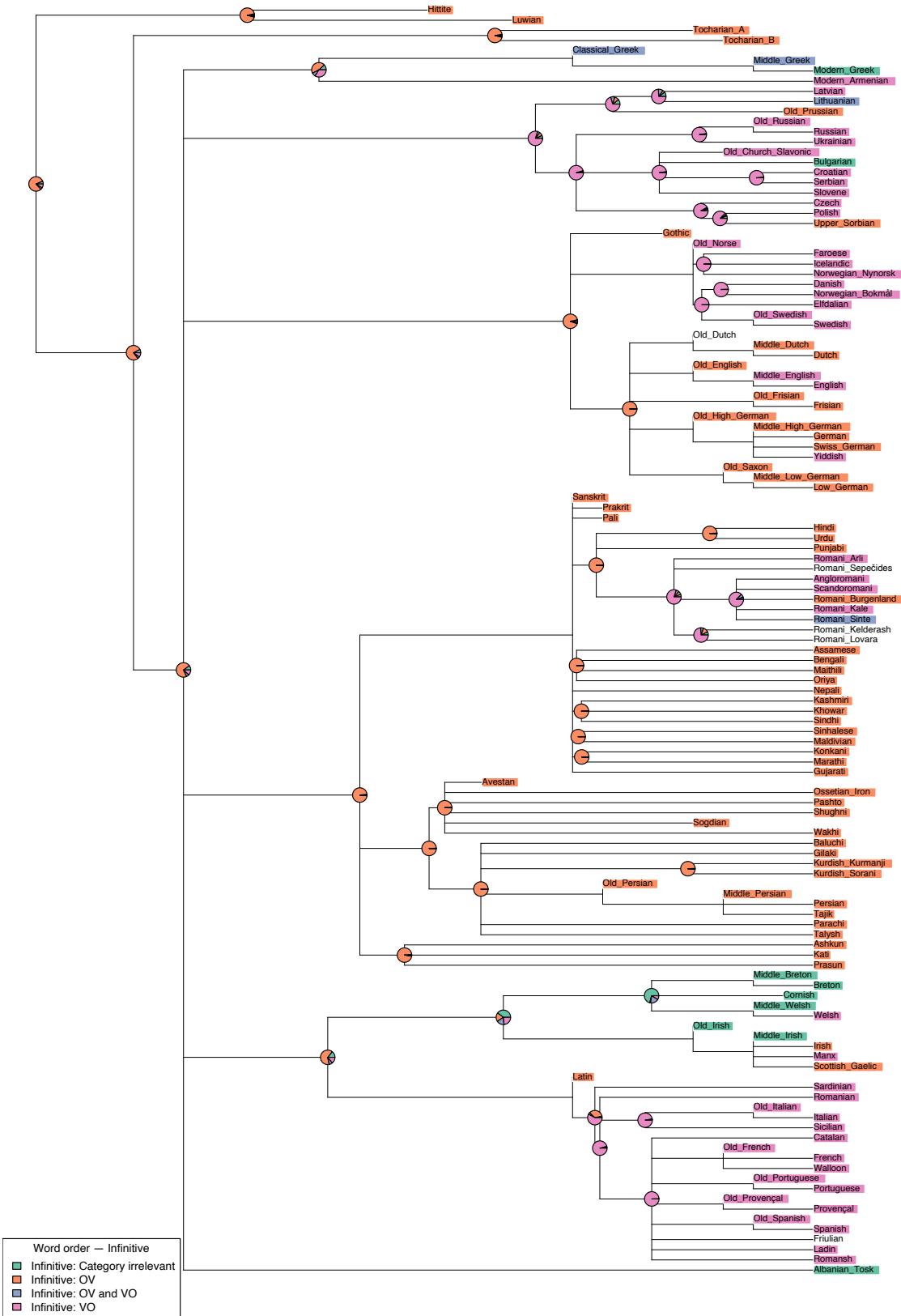


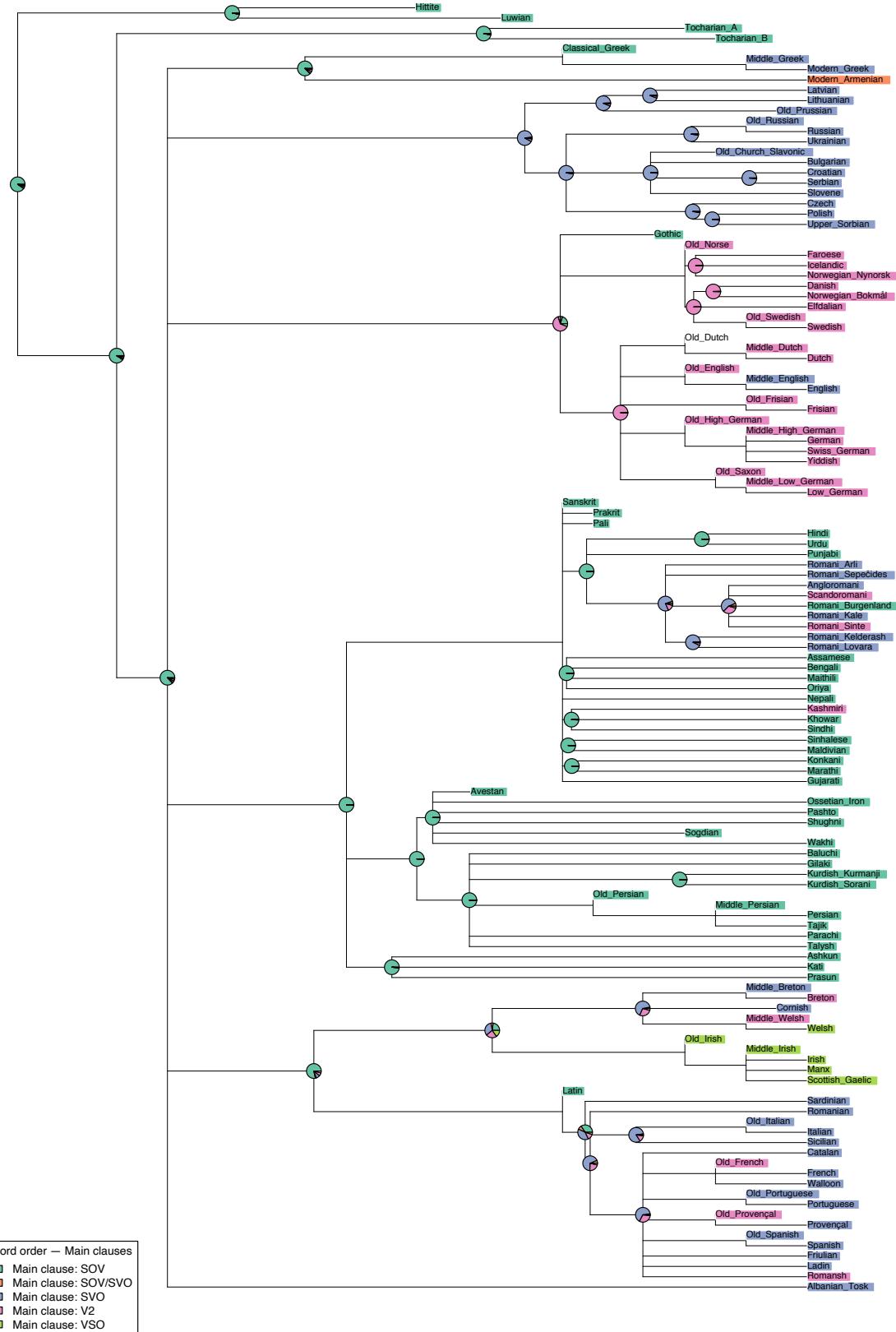


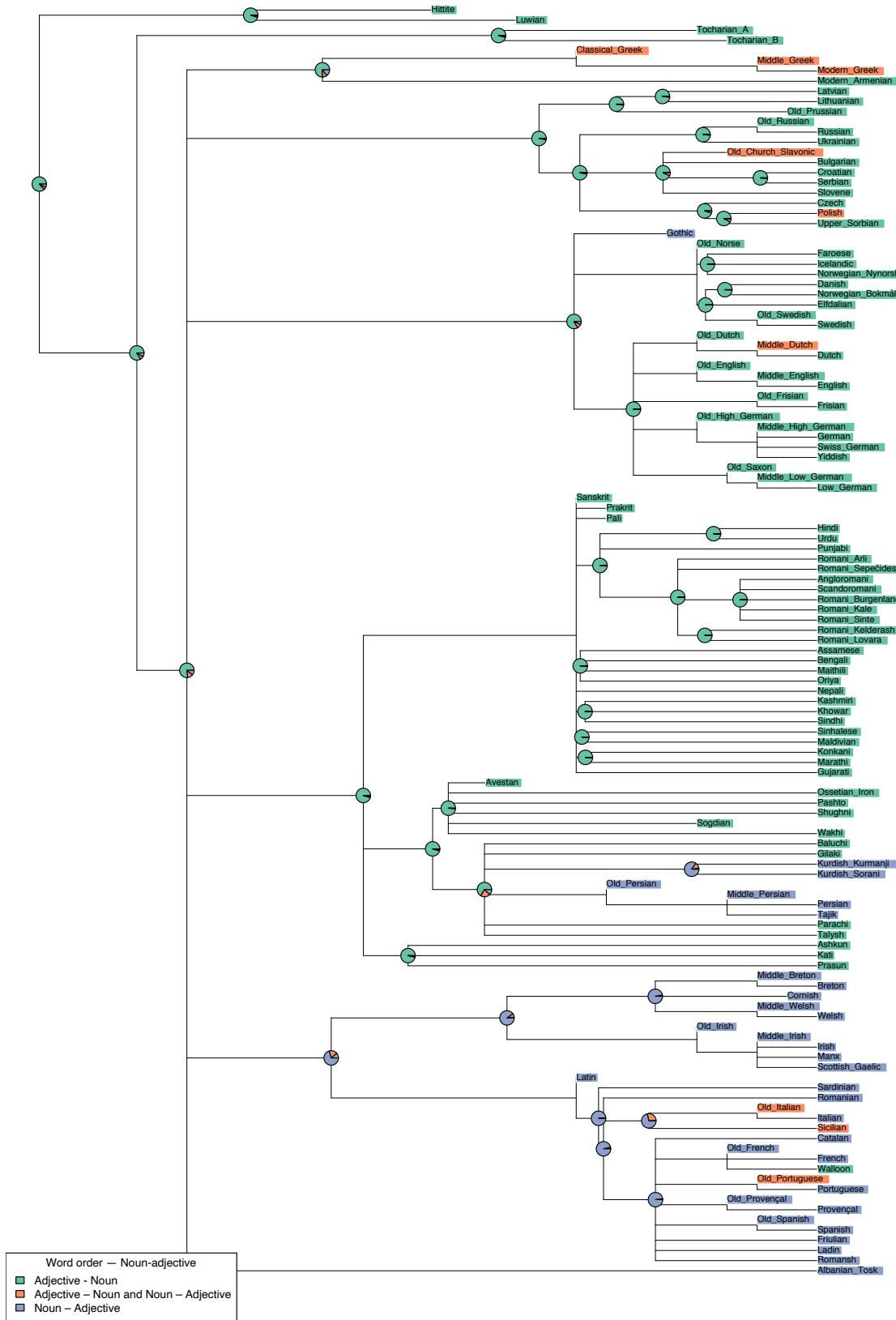


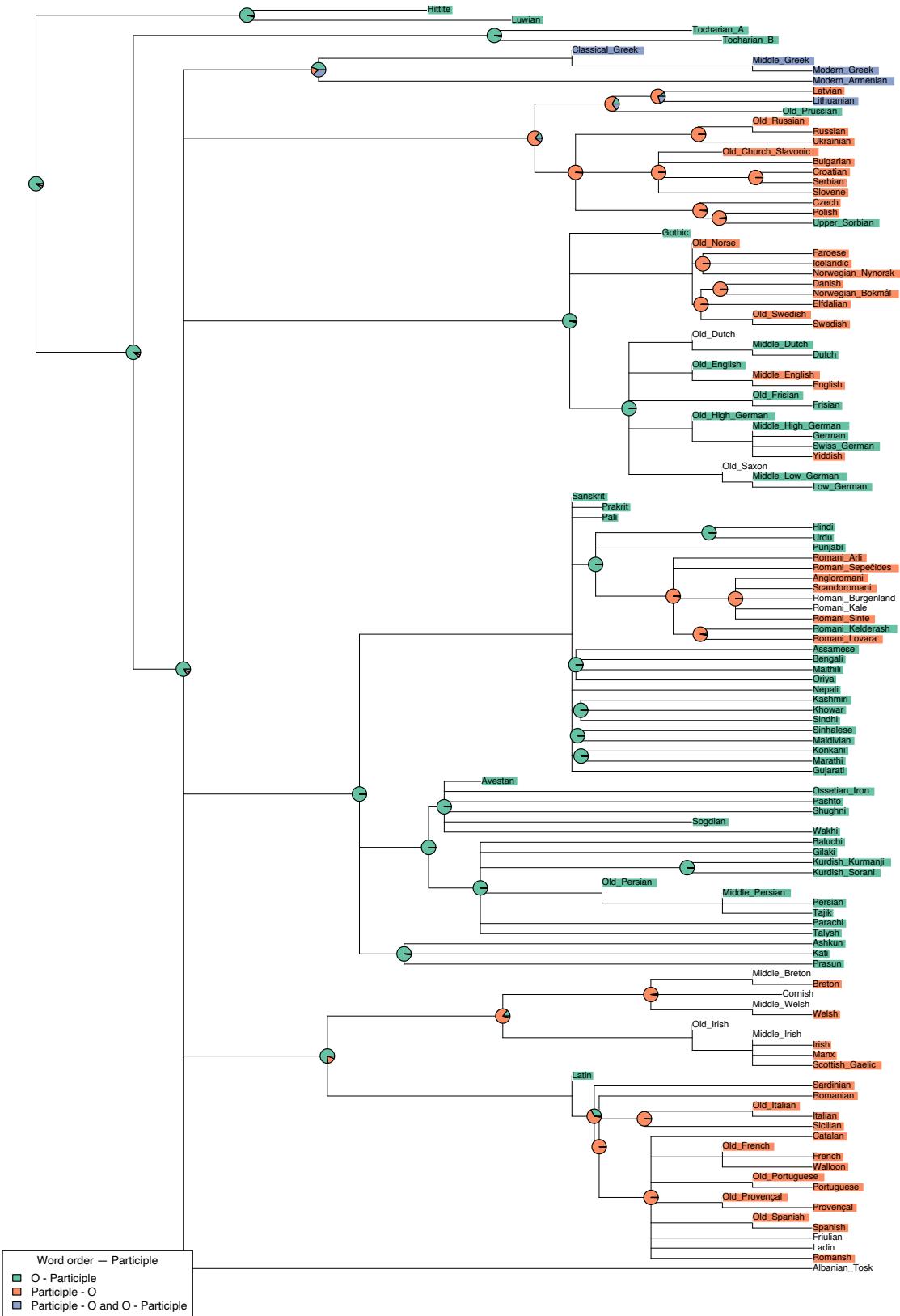


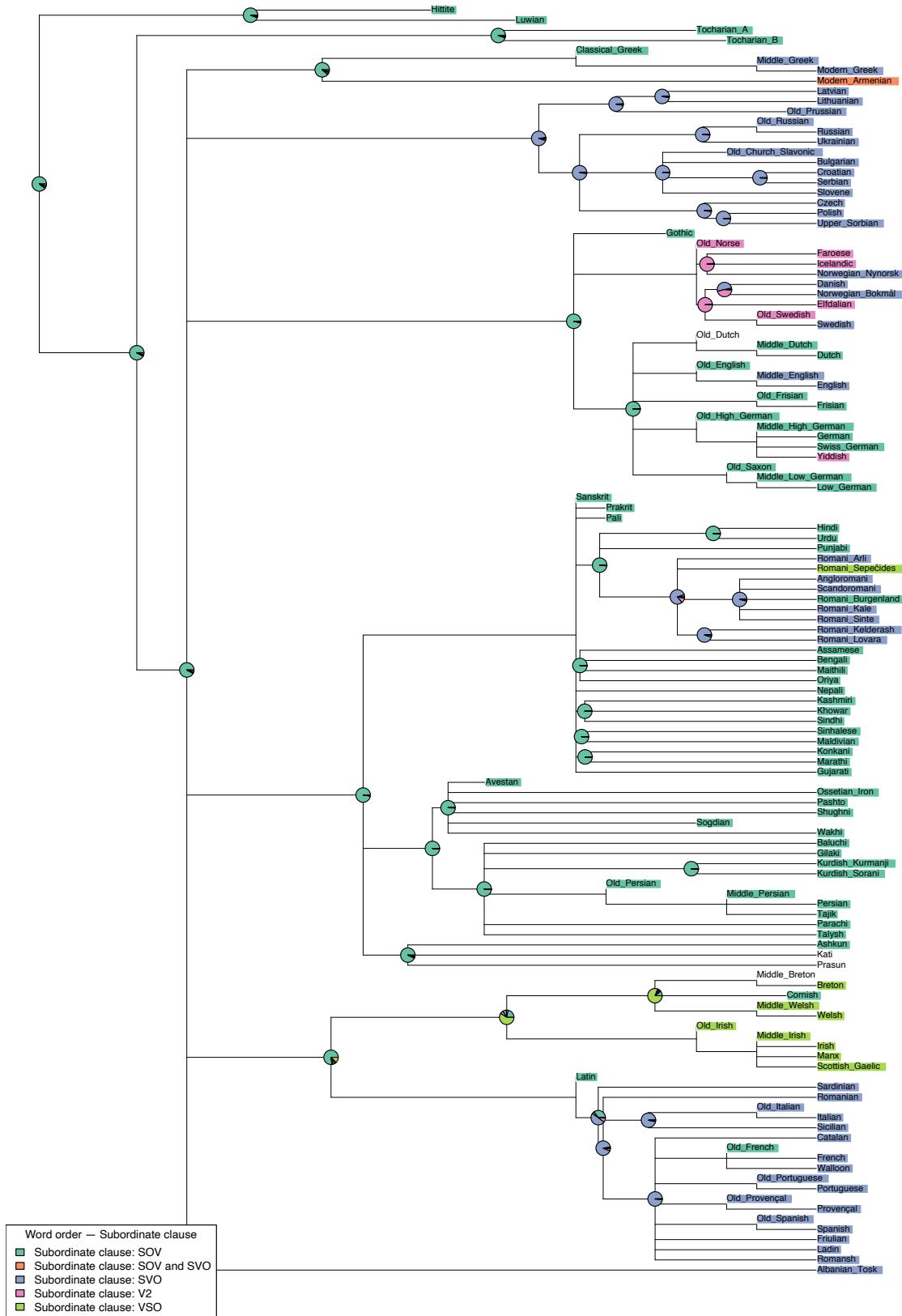


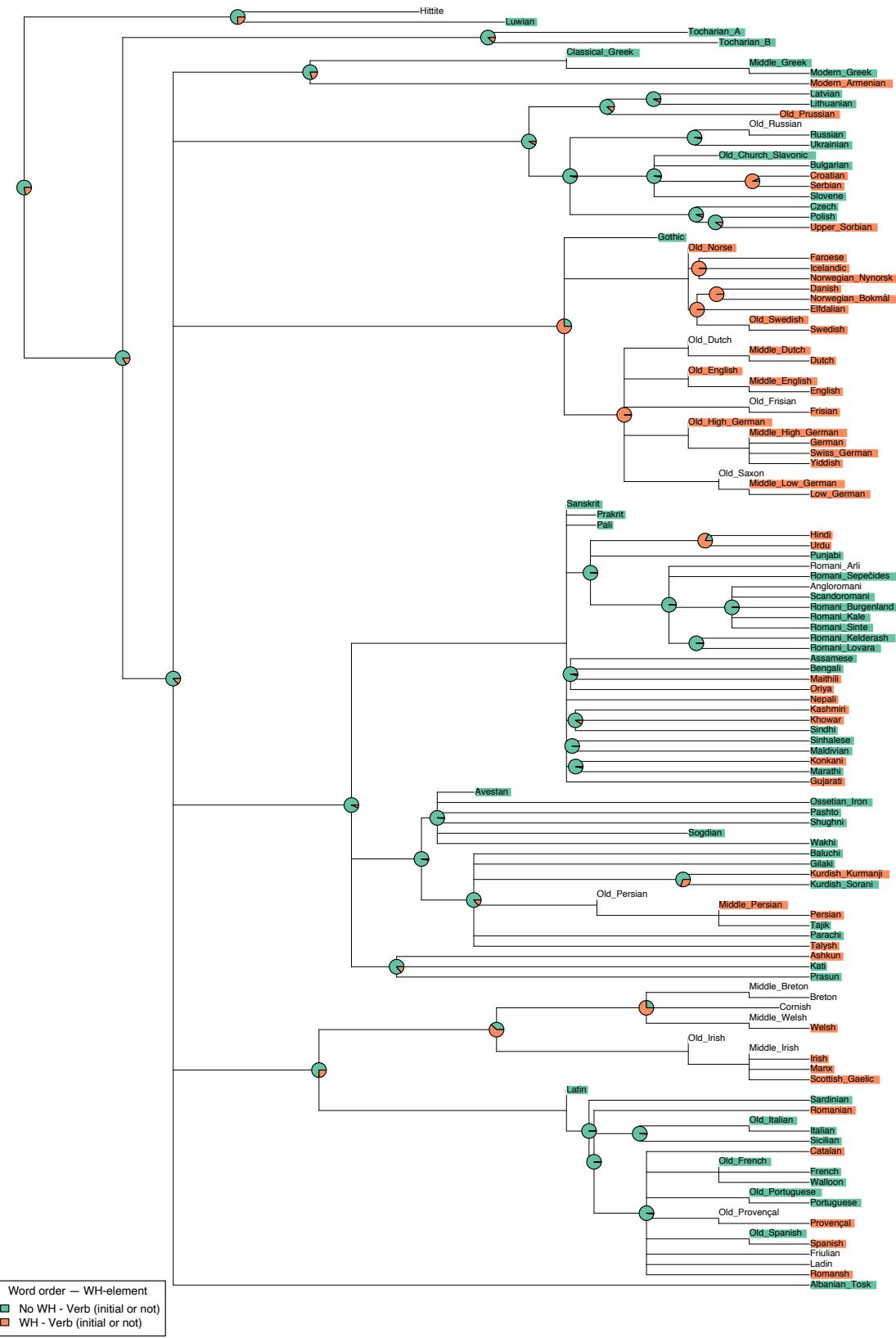


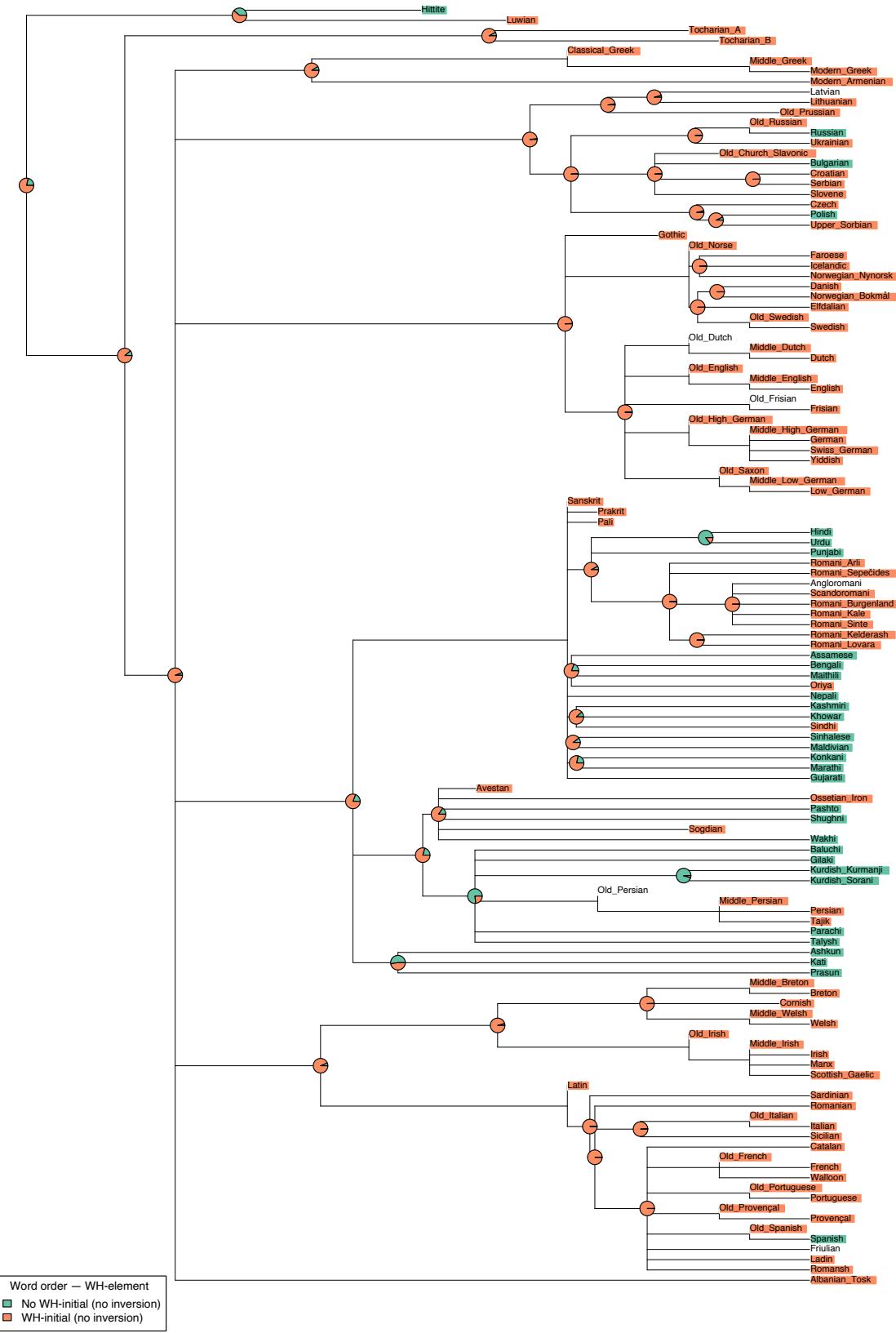






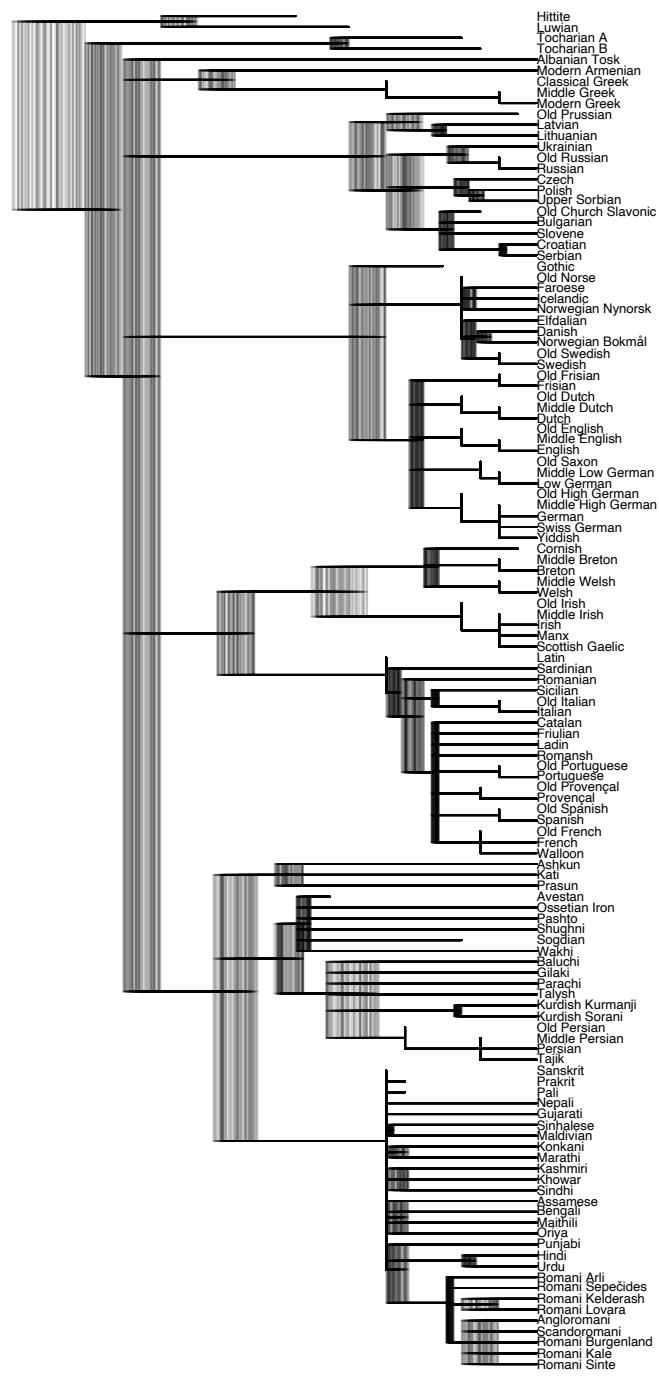






S9

Tree sample of Indo-European languages used for this paper's experiments.



7000 5000 3000 1000 0