

INDO-EUROPEAN NOMINAL INFLECTION

Václav Blažek

0. One of points of view of so-called typological classification is fact, if a considered language uses affixation or not. It means, if the language expresses such grammatical categories as case, number, gender, grade, etc. from nominal categories and person, number, time, aspect, mood etc., from verb, by suffixes, prefixes or infixes. Such languages are called **synthetic**. Languages without affixation, called **analytic**, use other grammatical tools to express these categories, if they differentiate them at all, frequently various auxiliaries and particles, plus more or less firm syntax. Synthetic languages are further divided into **agglutinative** and **flective**. A basic feature of the agglutinative languages is that their affixes bear only one function (cf. e.g. Čermák 1997, 178-80). It can be illustrated on example of three specimen agglutinative languages, Turkish, Finnish and Georgian, where it is easy to identify the case endings universal for both singular and plural. Turkish and Georgian also use the only plural suffix. In Finnish two plural markers are differentiated, *-t* in the nom.-acc. and *-i/-j-* in oblique cases.

Table 1

case	Turkish "house"		case	Finnish "house"		case	Georgian: "son"	
	sg.	pl.		sg.	pl.		sg.	pl.
nom.	<i>ev</i>	<i>ev-ler</i>	nom.	<i>talo</i>	<i>talo-t</i>	nom.	<i>švil-i</i>	<i>švil-eb-i</i>
acc.	<i>ev-i</i>	<i>ev-ler-i</i>	acc.	<i>talo</i>	<i>talo-t</i>	erg.	<i>švil-ma</i>	<i>švil-eb-ma</i>
gen.	<i>ev-in</i>	<i>ev-ler-in</i>	gen.	<i>talo-n</i>	<i>talo-j-en</i>	gen.	<i>švil-is</i>	<i>švil-eb-is</i>
dat.	<i>ev-e</i>	<i>ev-ler-e</i>	allat.	<i>talo-lle</i>	<i>talo-i-lle</i>	dat.	<i>švil-s(a)</i>	<i>švil-eb-s(a)</i>
loc.	<i>ev-de</i>	<i>ev-ler-de</i>	ines.	<i>talo-ssa</i>	<i>talo-i-ssa</i>	dir.	<i>švil-ad(a)</i>	<i>švil-eb-ad(a)</i>
abl.	<i>ev-den</i>	<i>ev-ler-den</i>	abl.	<i>talo-lta</i>	<i>talo-i-lta</i>	voc.	<i>švil-o</i>	<i>švil-eb-o</i>
			instr.	<i>talo-n</i>	<i>talo-i-n</i>	instr.	<i>švil-it(a)</i>	<i>švil-eb-it(a)</i>
			part.	<i>talo-a</i>	<i>talo-j-a</i>			
			es.	<i>talo-na</i>	<i>talo-i-na</i>			
			trans.	<i>talo-ksi</i>	<i>talo-i-ksi</i>			
			elat.	<i>talo-sta</i>	<i>talo-i-sta</i>			
			ill.	<i>talo-on</i>	<i>talo-i-hin</i>			
			ades.	<i>talo-lla</i>	<i>talo-i-lla</i>			
			abes.	<i>talo-tta</i>	<i>talo-i-tta</i>			
			comit.	-	<i>talo-i-neen</i>			

Abbreviations: abes. abessive, abl. ablative, adess. adessive, acc. accusative, all. allative, comit. comitative, dat. dative, elat. elative, erg. ergative, es. essive, gen. genitive, ill. ilative, instr. instrumental, loc. locative, nom. nominative, part. partitive, pl. plural, sg. singular, trans. translative.

0.1. For European experience rather exotic seem the languages classifying nouns via so-called **class affixes** into specific semantic fields. In congruence the class affixes are introduced in adjectives, pronouns, numerals and verbs (and sometimes the nouns proper lack them, with exceptions in kinship terms in the Nakh languages or kinship and anatomical terms in Burušaski from Hindukuš, where are productive). Vladimír Skalička (1945[2004], 284-315) demonstrated that Swahili and other Bantu languages with the class system they are flective with respect of cumulation of several functions (class; number) borne by one prefix. The same may be said about Bats, Čečen, and other languages with class prefixes from the Northeastern Caucasus. On the other hand, the system of class prefixes in Aka-Bea from the island South Andaman in the Indic Ocean bears apparent features of the agglutinative pattern: all plural prefixes are formed from the singular prefix by the universal plural morpheme *-at-*. Let us mention, Bats, Čečen and Aka-Bea have their own case systems of agglutinative structure.

Table 2

Swahili (East Africa)			Bats / Čečen (Northeast Caucasus)			Aka-Bea (Andaman Islands)		
class	sg.	pl.	class	sg.	pl.	class	sg.	pl.
I.	<i>mu-/mw-</i>	<i>wa-</i>	I.	<i>v- / vu-</i>	<i>b- / du-</i>	I.	<i>ab-</i>	<i>at-</i>
II.	<i>mu-</i>	<i>mí-</i>	II.	<i>j- / ju-</i>	<i>d- / du-</i>	II.	<i>ar-</i>	<i>arat-</i>
III.	<i>li- ~ jì-</i>	<i>ma-</i>	III.	<i>j- / ju-</i>	<i>j- / ju-</i>	III.	<i>aka-</i>	<i>akat-</i>
IV.	<i>kì-/ch-</i>	<i>vi-</i>	IV.	<i>b- / bu-</i>	<i>b- / bu-</i>	IV.	<i>ig-/i-</i>	<i>i-/iti-</i>
V.	<i>n-/ny-/Ø-</i>	<i>n-/ny-/Ø-</i>	V.	<i>d- / du-</i>	<i>d- / du-</i>	V.	<i>ong-</i>	<i>oiot-</i>
VI.	<i>u-/w-</i>	<i>n-/ma-/Ø-</i>	VI.	<i>b- / bu-</i>	<i>d- / du-</i>	VI.	<i>ot-</i>	<i>otot-</i>
VII.	<i>ku-</i>		VII.	<i>b- / -</i>	<i>j- / -</i>			
VIII.	<i>pa-</i>		VIII.	<i>d- / -</i>	<i>j- / -</i>			
IX.	<i>ku-</i>							
X.	<i>mu-</i>							

Functions of the class prefixes:

Swahili: I. human beings; II. trees & plants, tools & products, some body parts, abstracts; III. paired body organs, fruits, liquids, big things, foreign words; IV. things; V. animals; VI. abstracts & extracts, names of countries; VII. verbal infinitives; VIII. locatives; IX. locatives; X. locatives.

Bats: I. male beings; II. female beings; III.-VIII. animals, inanimate nature, things, abstracts.

Aka Bea: I. body, back, thighs, lap, shins, calves, groin, elbows, arms, knees, ribs, navel, belly etc.; II. legs, hip, kidney, anus, urine, urinary bladder, peritoneum, gut, scrotum, buttocks; III. mouth, palate, chin, lips, tongue, throat, pharynx, trachea, jaw, vertebra, saliva, breathe etc.; IV. eyes, eyebrow, eyelids, gum, face, forehead, ears, nose, cheeks, temples, teeth, shoulders, forearm, biceps, breasts, nipples, tears; V. hands, fingers & toes, fingernails, sole of the foot, heels, joints, spleen, small intestine; VI. heart, head, neck, chest, brain, nape, lungs, phlegm.

0.2. Indo-European languages have been cited as example of fleective languages. It means that there are more or less firm roots of words which are extended by derivational affixes and grammatical morphemes. They may bear several functions, e.g. Latin *servī* formed from the nom. sg. *servus* "servant, slave" expresses both the gen. sg. m. and nom.-voc. pl. m., i.e. the ending cumulates the case, number and gender. As a subvariant of the fleective type the **introfleective** subtype has been defined. This term designates so-called internal inflection applied to both affixes and the root of the word. Usually the vocalic alternations are meant. As illustrative example so-called 'broken' plurals of Semitic nouns may be cited, e.g. Classical Arabic *rağul^{un}* "man", pl. *riğāl^{un}*, *ʿayn^{un}* "eye", pl. *ʿuyūn^{un}*, *qaws^{un}* "bow", pl. *qusīy^{un}*, *tāğir^{un}* "merchant", pl. *tiğār^{un}*, *rākib^{un}* "rider", pl. *rakb^{un}* ~ Hebrew *rōkēb*, pl. *rekeb*, *ħimār^{un}* "ass", pl. *ħamār^{un}* (the Arabic final ^{un} represents so-called *nunation* with determining function which is not a part of a root either a stem). But in Indo-European nominal paradigms the vocalic alternations, which can be classify as internal inflection, appear too, but usually it is designated as ablaut or apophony. E.g. in the paradigm of the word "water" such forms appear as the nom. sg. **uód-r*, loc. sg. **ud-én*, nom.-acc. col. **uéd-ōr* (NIL 706-07); the basic paradigm of the word "winter" is reconstructed at least in three apophonic variants: nom. **ğ^héjōm*, acc. **ğ^hiém-ṃ*, gen. **ğ^him-ós* (Beekes 1995, 178). Still more important is ablaut in the Indo-European verb. Naturally, it is very rare, if any language agrees absolutely with criteria defining concrete language types in the typological classification of Skalička. More adequate is formulation that one type is in any language present dominantly, but usually other types also appear, although they may be in remission or in contrary, *in statu nascendi*.

1. In the Indo-European protolanguage the same nominal word classes are projected which are described in historically attested Indo-European languages, i.e. nouns, adjectives, pronouns, numerals. The numerals were declined similarly as nouns and adjectives, but originally only from one to four. Higher numerals were indeclinable, similarly as adverbs, conjunctions and particles. Pronouns used their own inflection, frequently different from the nominal inflection. Both types of inflection, nominal and pronominal, influenced one another. Nouns and adjectives which were as attributes in congruence with governing nouns, differentiate three basic grammatical categories: number, case and gender. There were three numbers, singular,

plural and dual, although the latter was not preserved in all branches. Traditionally 8 cases have been reconstructed with respect to situation in Vedic and Avestan. But a more modest case inventories in Greek, Celtic, Germanic and especially in Anatolian imply a question, if more original could not be the paradigm with less cases. Similarly it is with the grammatical gender. The Brugmannian reconstruction operated with three genders: masculine, feminine and neuter. But the Anatolian languages differentiated only two genders. This discrepancy may be solved by assumption of two phases. In the early phase only two genders would be differentiated, expressing the opposition active : inactive, while only in the later phase, after separation of the Anatolian branch, the traditional gender tripartity would be introduced (Vavroušek 2008, 59). An alternative model operates with original feminine and its elimination in the Anatolian branch (cf. Beekes 1995, 174).

1.1. From the point of view of word formation an Indo-European noun consists of the root (sometimes extended by a derivational suffix) + stem-forming suffix + case ending. A good example may be the word **H₂erH₃-tr-o-m* "plough", reconstructed on the basis of Arm. *arawr*, Gr. ἄροτρον, Lat. *aratrum*, Mir. *arathar*, Welsh *aradr*, ON. *arðr*. It consists of the verbal root **H₂erH₃-* "orat", derivational suffix **-tr-*, stem-forming marker *-o-* classifying the word as so-called *o*-stems, and the ending *-m* of the nom.-acc. sg. of neuter. From these segments just the stem-forming suffix determines an inflectional class, where the considered noun belongs. A basic division has been sought between so-called vocalic and consonantic stems. The *o*- and *ā*-stems are traditionally understood as vocalic, while so-called *i*- and *u*-stems belong to consonantic, being sonants. If this *-ā* indicating the *ā*-stems is reinterpreted in agreement with the Laryngeal theory into **-eH₂*, the result is again a consonantic auslaut, similarly in instances of the *ī*- and *ū*-stems, in laryngealistic reinterpretation *iH-* and *uH-* stems. In other words, the vocalic stems have the only representative, the *o*-stems, and all other are at least historically consonantic stems. In the nominal paradigms with ablaut the cases are named strong, if the stem is in the full grade of ablaut, and weak, if the stem is in the zero grade of ablaut. The full ablaut grade basically appears in nom., acc., voc. sg. and pl. and usually in the loc. sg. (Szemerényi 1996, 161).

1.2. In reconstruction of the Indo-European nominal inflection the accent should also be taken in account. This phenomenon, neglected by young grammarians, was newly interpreted by Holger Pedersen (1926, 24), who himself came from young-grammarians milieu. For the consonantic stems he defined two types of inflection from the point of view of accentuation: *hysterodynamic* with accent (Gr. δύνاميς) always on the last syllable, and *proterodynamic* with accent moving between the first syllable and stem-forming suffix. In 70-ies of 20th cent. his ideas were developed by Karl Hoffmann representing so-called Erlangen school. Hoffmann defined 5 types according to position of accent (ἄκρος "at the furthest point", πρότερος "in front, forward", ἀμφί "on both sides of", ὕστερος "latter, behind", μέσος "in the middle") and its mobility (*kinetic*) or immobility (*static*):

- (1) *akrostatic* - accent constantly remains on the root;
- (2) *proterokinetic* - accent moves from the root, where is in strong cases, to the stem-forming suffix in weak cases;
- (3) *hysterokinetic* - accent constantly remains on the final syllable, which is alternately the stem-forming suffix in strong cases and the case ending in weak cases;
- (4) *amphikinetic* - accent moves from the root in strong cases to the case ending in weak cases;
- (5) *mezostatic* - accent remains on the stem-forming suffix; if this suffix is preceded by another derivational suffix, it changes its position between them (Szemerényi 1996, 161-62).

Transparently is this model presented by Rix (1976, 123), Fortson (2005, 108, §6.20) and Vavroušek (2008, 55-56)

Table 3

type	akrostatic			proterokinetic			hysterokinetic			amphikinetic			mesostatic		
case/segment	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
direct	+			+				+						+	
indirect	+				+				+					+	
examples	nom. * <i>nók^h-t-s</i> "night" gen. * <i>nek^h-t-s</i>			nom. * <i>mén-ti-s</i> "idea" gen. * <i>mṇ-téj-s</i>			nom. * <i>p₂-tér-s</i> "father" gen. * <i>p₂-tr-ós</i>			nom. * <i>H₂éus-ós</i> "dawn" gen. * <i>H₂us-s-és</i>			nom. * <i>k^hoi-néH₂-ø</i> "price, penalty" gen. * <i>k^hoi-néH₂-s</i>		

Note: A = root, B = stem-forming suffix, C = case ending. Fortson supposes development **p₂-tér* < **p₂-tér-s* in agreement with Lex Szemerényi.

Terms (1)-(5) were simplified by H. Rix (1976, 122-23), returning to Pedersen and the term *kinetic* (vs. *static*) replacing by his term *dynamic*.

The hysterodynamic type is still divided in several subtypes (Beekes 1995, 175):

Table 4

pád / podtyp	(a)	(b)	(c)	(d)
nom.	<i>CC-éR</i>	<i>CéC-ōR</i>	<i>C(e)C-ōR</i>	<i>CéC-R</i>
acc.	<i>CC-éR-ṃ</i>	<i>CC-éR-ṃ</i>	<i>C(e)C-oR-ṃ</i>	<i>CC-éR-ṃ</i>
gen.	<i>CC-R-ós</i>	<i>CC-R-ós</i>	<i>C(e)C-R-ós</i>	<i>CC-R-ós</i>

C designates any consonant or cluster of consonants; R represents every of sonants *r, l, m, n, i, u*.

2. **Consonant** noun stems are classified as follows (see Beekes 1995, 176; bracketts indicate rare stems)

Table 5

HD	m.-f.	(<i>k</i>)	<i>t</i>	<i>nt</i>	<i>s</i>	<i>H₁</i>	<i>H₂</i>	<i>r</i>	(<i>l</i>)	(<i>m</i>)	<i>n</i>	<i>i</i>	<i>u</i>
PD	n.				<i>s</i>			<i>r/n</i>	(<i>l/n</i>)		<i>n</i>	(<i>i</i>)	<i>u</i>
	m.-f.						(<i>H₂</i>)					<i>i</i>	<i>u</i>
ST	m.-f.		(<i>t</i>)	<i>nt</i>				<i>r</i>				(<i>i</i>)	
	n.							<i>r/n</i>					

HD hysterodynamic; PD proterodynamic; ST static.

2.1. Hysterodynamic inflection

2.1.1. As a representative of the **t-stems** has been quoted **nepot-* "grandson, nephew":

Table 6

case	Vedic	Young Avestan	Latin	Old Irish	IE
nom. sg.	<i>nápāt</i>	<i>napā</i>	<i>nepōs</i>	<i>nīa</i>	* <i>nepōt(-s)</i>
acc.	<i>nápātam</i>	<i>napātəm</i>	<i>nepōtem</i>		* <i>nepót-ṃ</i>
gen.		<i>naptō</i>	<i>nepōtis</i>	<i>nieth, niath/d</i> Ogam NIOTTA	* <i>nept-ós</i>

Note: Doubtful is internal segmentation of Gr. ἄνεπιος "cousin" Beekes (1995, 179) and others reconstruct the root **H₂nep-* with dental extension. Schneider (NIL 524) prefers a compound **sṃ-neptio-* for analogy in MWelsh *keifn* "third cousin, distant relative", Bret. *kevniant* < **kom-nepōts* with the prefix **kom-* functionally corresponding to **sṃ-* (Charles-Edwards 1971, 106). Without the initial laryngeal it is possible to identify in the first syllable of **nepot-* the negation **ne-*. The root proper would be **pot-* "lord; might". Its negation naturally belong to an immature descendant (see NIL with lit.). in this case it is not the *t*-stem, but the root noun.

2.1.2. More productive are the **nt-stems**, especially for popularity of active participles formed from the present stem by the formant *-nt-*:

Table 7

case	Vedic	Young Avestan	Greek	IE "willing"
nom. sg. m.	<i>uśán</i>	<i>usō, usas-ca</i>	<i>έκόν</i>	* <i>uék-ont-s</i>
acc.	<i>uśántam</i>		<i>έκόντα</i>	* <i>uk-ónt-ṃ</i>
gen.	<i>uśátás</i>		<i>έκόντος</i>	* <i>uk-ṇt-ós</i>

See Beekes 1995, 179.

2.1.2.1. A typical *nt*-stem is the word **Hdont-* "tooth", where the reconstruction of the initial laryngeal vacillates between **H₁-* (Szemerényi 1996, 167; NIL 208-17) and **H₃-* (Beekes 1995, 179):

Table 8

case	Vedic.	Armenian	Greek	Latin	Old Irish	Gothic	Lith.	IE
nom. sg.	<i>dán</i>	<i>atamn</i>	ὀδοῦς Ion. ὀδών	<i>dēns</i>	<i>dét</i>	OSx. <i>tand</i>	<i>dantīs</i>	<i>*Hd-ónt-(s)</i>
acc.	<i>dántam</i>	<i>atamn</i> < <i>*Hdnt-ŋ</i>	ὀδόντα	<i>dentem</i>	<i>dét</i>	<i>tunþu</i>	<i>dañtj</i>	<i>*Hd-ónt-ŋ</i>
gen.	<i>datás</i>	<i>ataman</i>	ὀδόντος	<i>dentis</i>	<i>dét</i>		<i>dantiēs</i>	<i>*Hd-nt-ós</i>
abl.	<i>datás</i>	<i>atamanē</i>						
dat.	<i>daté</i>	<i>ataman</i>		<i>dentī</i>	<i>déit</i>		<i>dañčiui</i>	<i>*Hd-nt-ej</i>
loc.	<i>dati</i>	<i>ataman</i>	dat. ὀδόντι	abl. <i>dente</i>		<i>tunþau</i>	<i>dantjė</i>	<i>*Hd-nt-i</i>
instr.	<i>datā</i>	<i>atamamb</i>					<i>dantimi</i>	<i>*Hd-nt-éH₁</i>
nom. pl.	<i>dántas</i>	<i>atamownk'</i>	ὀδόντες Aeol. ἔδόντες	<i>dentēs</i>	<i>dét</i>	ON <i>teðr</i>	<i>dañtys</i>	<i>*Hd-ónt-es</i>
acc.	<i>datás</i>	<i>atamowns</i>	ὀδόντας	<i>dentēs</i>	<i>dét</i>	<i>tunþuns</i>	<i>dantīs</i>	<i>*Hd-nt-ŋs</i>
gen.	<i>datām</i>	<i>atamanc'</i>	ὀδόντων	<i>dentum</i> ^{Vatro}	<i>dét</i>	<i>tunþiwe</i>	<i>dantj</i>	<i>*Hd-nt-óm</i>
abl.-dat.	<i>dadbhyás</i>	<i>atamanc'</i>		<i>dentibus</i>	<i>dét(a)ib</i>		<i>dantims</i>	<i>*Hd-nt-b^h/m-</i>
loc.	<i>datsú</i>	<i>tatamowns</i>	dat. ὀδοῦσι				<i>dantysė</i>	<i>*Hd-nt-su</i>
instr.	<i>dadbhis</i>	<i>atamambk'</i>						<i>*Hd-nt-b^hi(s)</i>

See Szemerényi 1996, 166-67; Beekes 1995, 179; Irslinger, NIL 208-17.

2.1.2.2. Analogous is also typical for nouns formed by the suffix **-uent-*, expressing some characteristic feature:

Table 9

case	Vedic	Young Avestan	Greek	IE
nom.	<i>revān</i> "rich in treasures"	<i>astuuā</i> "bony" <i>cuuqs</i> "how big"	χαρίεις "gracious"	<i>*-uént-s</i>
acc.	<i>revántam</i>	<i>astuuantəm</i> <i>cuuantəm</i>	χαρίεντα	<i>*-uént-ŋ</i>
gen.	<i>revátas</i>	<i>astuuatō</i>	χαρίεντος	<i>*-uñt-ós</i>

See Beekes 1995, 178.

2.1.2.3. The *m*-stems are not numerous; they are usually archaic formations:

Table 10

case	Avestan	Armenian	Hittite	Greek	Latin	IE
nom. sg.	<i>ziiā</i> "winter"	<i>jiwn</i> "snow"		χιών "snow"	<i>hiems</i> "winter"	<i>*ǵ^héj-ōm</i>
acc.	<i>ziiqm</i>	<i>jiwn</i>	<i>giman</i> "winter"	χιόνα	<i>hiemem</i>	<i>*ǵ^hi-ém-ŋ</i>
gen.	<i>zimō</i>	<i>jean</i>		χιόνος	<i>hiemis</i>	<i>*ǵ^hi-m-ós</i>
dat.		<i>jean</i>	<i>gimmi</i>		<i>hiemī</i>	<i>*ǵ^hi-m-éj</i>
loc.		<i>jean</i>	<i>giemi, gemi</i>		abl. <i>hieme</i>	<i>*ǵ^hi-ém-i</i>

See Beekes 1995, 178; Hoffmann & Forssman 1996, 141; Wodtko, NIL 162-69.

Table 11

	Vedic	Avestan	Hittite	Tocharian A	Greek	IE "earth"
nom. sg.	<i>kṣās</i>	<i>zā</i>	<i>tēkan</i>		χθών	<i>*d^héǵ^h-ōm,-ŋ</i>
acc.	<i>kṣām</i>	<i>zqm</i>	<i>tēkan</i>	<i>tkam</i>	χθόνα	<i>*d^héǵ^h-ém/óm-ŋ</i>
gen.	<i>jmás/kśmās</i>	<i>z²mō, z²mas-ca</i>	<i>taknas</i>		χθόνος	<i>*d^héǵ^h-m-ós</i>
loc.	<i>kṣāmi</i>	<i>z²mi</i>	Luw. <i>tiyammī</i>			<i>*d^héǵ^h-ém-i</i>

See Beekes 1995, 178; Hoffmann & Forssman 1996, 141; Wodtko, NIL 86-99.

2.1.2.4. More productive are the *n*-stems, especially the forms with the nom. sg. in **-ōn*:

Table 12

case	Vedic "king"	Armenian "lamb"	Hittite "feud"	Greek "anvil"	Latin "person"	Old Irish "dog"	Gothic "man"	Lith. "stone"	OCS. "stone"	IE endings
nom. sg.	<i>rājā</i>	<i>gaṛn</i>	<i>sahhan</i> n.	ἄκμων	<i>homō</i>	<i>cú</i>	<i>guma</i>	<i>akmuō</i>	<i>kamy</i>	*-ōn
voc.	<i>rājan</i>			ἄκμων	<i>homō</i>			<i>akmenis</i>		*-on
acc.	<i>rājānam</i>	<i>gaṛn</i>	<i>sahhan</i>	ἄκμονα	<i>hominem</i>	<i>coin</i>	<i>guman</i>	<i>ākmenj</i>	<i>камень</i>	*-en-ŋ
gen.	<i>rājñas</i>	<i>gaṛin</i>	<i>sahhanas</i>	ἄκμονος	<i>hominis</i>	<i>con</i>	<i>gumins</i>	<i>ākmeñs</i>	<i>kamene</i>	*-n-os
dat.	<i>rājñe</i>	<i>gaṛin</i>	<i>sahhani</i>		<i>hominī</i>	<i>coin</i>	<i>gumin</i>	<i>ākmeniui</i>	<i>kameni</i>	*-n-ej
loc.	<i>rājān(i)</i>	<i>gaṛin</i>		dat. ἄκμωνι	ab. <i>homine</i>			<i>akmenyjė</i>	<i>kamene</i>	*-en(-i)
instr.	<i>rājñā</i>	<i>gaṛamb</i>	<i>sahhanit</i>		ab. <i>homine</i>			<i>ākmeniu</i>	<i>каменьтѣ</i>	*-n-eH ₁
nom. pl.	<i>rājānas</i>	<i>gaṛinkʷ</i>		ἄκμονες	<i>hominēs</i>	<i>coin</i>	<i>gumans</i>	<i>ākmenys</i>	<i>kamene</i>	*-on-es
acc.	<i>rājñas</i>	<i>gaṛins</i>		ἄκμονας	<i>hominēs</i>	<i>cona</i>	<i>gumans</i>	<i>ākmenis</i>	<i>kameni</i>	*-e/on-ŋs
gen.	<i>rājñām</i>	<i>gaṛancʷ</i>		ἄκμόνων	<i>hominum</i>	<i>con</i>	<i>gumane</i>	<i>akmenų</i>	<i>камень</i>	*-n-om
dat.	<i>rājābhyas</i>	<i>gaṛancʷ</i>			<i>hominibus</i>	<i>conaib</i>	<i>gumam</i>	<i>akmenims</i>	<i>каменьтѣ</i>	*-n-bʰm-
loc.	<i>rājasu</i>	<i>gaṛins</i>		dat. ἄκμοσι	<i>hominibus</i>			<i>akmenysė</i>	<i>каменьхѣ</i>	*-n-su
instr.	<i>rājābhis</i>	<i>gaṛambkʷ</i>			<i>hominibus</i>			<i>akmenimi</i>	<i>каменьми</i>	*-n-bʰi(s)

See Beekes 1995, 114, 176; Szemerényi 1996, 168-69; Meriggi 1980, 310.

2.1.2.5. A parallel formation appears in the **r-stems**. Forms with the nom. sg. in *-ōr are inflected according to analogous paradigm as the *n*-stems in *-ōn. There is a remarkable set of kinship terms with the nom. sg. in *-ēr:

Table 13

case	Vedic "father"	Arm. "father"	Toch. A "father"	Greek "father"	Latin "father"	Old Irish "father"	Gothic "brother"	Lith. "daughter"	OCS. "daughter"	IE endings
nom. sg.	<i>pitā</i>	<i>hayr</i>	<i>pācer</i>	πατήρ ³	<i>pater</i> ⁴	<i>ath(a)ir</i> ⁷	<i>broþar</i> ¹⁶	<i>duktė</i>	<i>dъsti</i>	*-ēr
acc.	<i>pitāram</i>	<i>hayr</i>	<i>pātār</i>	πατέρα	<i>patrem</i>	<i>ath(a)ir</i> ⁸	<i>broþar</i>	<i>duktėrj</i>	<i>dъsterь</i>	*-ēr-ŋ
gen.	<i>pitūr</i> ¹	<i>hawr</i>		πατρός	<i>patris</i>	<i>athar</i> ⁹	<i>broþrs</i>	<i>duktėrs</i>	<i>dъstere</i>	*-r-ós
dat.	<i>pitré</i>	<i>hawr</i>	<i>pātri</i> ²	πατρι ³	<i>patrī</i> ⁵	<i>ath(a)ir</i> ¹⁰	<i>broþr</i>	<i>duktėriai</i>	<i>dъsteri</i>	*-r-ej
loc.	<i>pitāri</i>	<i>hawr</i>			<i>patre</i>			<i>duktėryjė</i>	<i>dъsteri</i>	*-ēr(-i)
instr.	<i>pitā</i>	<i>harb</i>			<i>patre</i>			<i>duktėrimi</i>	<i>dъsterьjъ</i>	*-r-eH ₁
nom. pl.	<i>pitāras</i>	<i>harkʷ</i>	B <i>pācri</i>	πατέρες	<i>patrēs</i>	<i>a(i)thir</i> ¹¹	<i>broþrjus</i> ¹⁷	<i>duktėrys</i>	<i>dъsteri</i>	*-ēr-es
acc.	<i>pitārn</i>	<i>hars</i>	B <i>pācrās</i>	πατέρας	<i>patrēs</i>	<i>aithrea</i> ¹²	<i>broþrun</i>	<i>duktėris</i>	<i>dъsteri</i>	*-ēr-ŋs
gen.	<i>pitūnām</i>	<i>harcʷ</i>		πατέρων	<i>patrum</i> ⁶	<i>aithre</i> ¹³	<i>broþre</i>	<i>duktėrj</i>	<i>dъsterь</i>	*-r-om
dat.	<i>pitūbhyas</i>	<i>harcʷ</i>			<i>patribus</i>	<i>aithrib</i> ¹⁴	<i>broþrum</i>	<i>duktėrim</i>	<i>dъsteremь</i>	*-r-bʰm-
loc.	<i>pitūsu</i>	<i>hars</i>		πατράσι ³				<i>duktėrysė</i>	<i>dъsterexѣ</i>	*-r-su
instr.	<i>pitūbhis</i>	<i>harbkʷ</i>			<i>patribus</i>	Gl. -be ¹⁵		<i>duktėrimis</i>	<i>dъsterьми</i>	*-r-bʰi(s)

See Beekes 1995, 177; Szemerényi 1996, 171; Schmitt 1981, 100; Thurneysen 1946, 214-15.

Notes: 1) Ved. *-ur* reflects the static ending *-r̥s, similarly as Av. *-arəš* in *nərəš* "man" and ON. *-ur* in *foður* "father" (Szemerényi 1996, 171; see Tab. 36). 2) Gen. sg. (Pinault 1989, 87). 3) Cf. Myc. nom. pl. *pa-te(-de) /patēr del, tu-ka-te /tʰugatēr/* "daughter"; dat. sg. Myc. *tu-ka-te-re /tʰugatrei/*; loc. pl. *tu-ka-ṭa-ṣi /tʰugatarsi/* (Bartoněk 2003, 255-56). 4) Cf. Ven. *pater*, Osc. *patir*. 5) Cf. Ven. *vhrateri* "to brother", Osc. *patereī*, SPic. *patereih* "to father". 6) Cf. Osc. *fratrum*, Umb. *fratru(m)* (UB 232). 7) Goid. **atir*; cf. Gaul. (Larzac) *duxtir* "daughter". 8) Goid. **ateram*. 9) Goid. **atros*; cf. Clb. *tuateros* "of daughter". 10) Goid. **ateri*. 11) Goid. **ateres*; cf. Clb. *tuateres*. 12) Goid. **aterās*. 13) Goid. **atrijōm*. 14) Goid. **atribi*; cf. Gl. *atrebo*. 15) Late Gl. *suiorebe* "by sisters" < **suesoribi*. 16) Cf. ORun. *swestar* "sister". 17) Cf. ORun. *dohtriz* "daughter".

2.1.2.6. Problematic is existence of the **l-stems**. One of few examples may be the IE designation for "salt" in reconstruction after Beekes (1995, 177):

Table 14

case	Greek	Latin	Balto-Slavic	IE
nom. sg.	ἅλς	<i>sāl</i>	Latv. <i>sāls</i>	*sēH ₂ -l-s
acc.	ἅλα	<i>salem</i>	OCS. <i>solb</i>	*sH ₂ -él-ŋ
gen.	ἁλόος	<i>salis</i>		*sH ₂ -l-ós

Notes: Watkins (1997, 34) identified an Anatolian equivalent in the Hittite toponym HURSAG *Saliwana/i* 'mountains Salty rock'. The first part **sali-* indicates an *i*-stem or a root-noun, later reinterpreted as the *i*-stem (similarly as in Slavic languages; Arm. *al*, gen. *ali* "salt" can reflect the heteroclitic **i/n*, since Arm. *l* is a continuant of **ln-*, cf. Olsen 1999, 86-87). Hitt. **sali-* does not confirm (but also does not exclude) a presence of laryngeal. Similarly, Toch. B *salyiye* "salt" (**sali-H₁en-*) and Skt. *sali-la-* "ocean; salty" indicate the *i*-kmen (Adams 1999, 678).

2.1.2.7. Very productive are the hysterodynamic **s-stems**:

Table 15

case	Vedic	Old Avestan	Greek	Latin	IE
nom. sg.	<i>uṣās</i> "dawn"	<i>ušā</i> "dawn"	ἠώς "dawn"	<i>flōs</i> "flower"	* <i>H₂éus-ōs</i> "dawn"
acc.	<i>uṣāsam</i>	<i>ušāḥhəm</i>	ἠῶ	<i>flōrem</i>	* <i>H₂us-ós-ḡ</i>
gen.	<i>uṣás</i>	<i>zraiiāḥhō</i> "sea"	ἠοῦς	<i>flōris</i>	* <i>H₂us-s-ós</i>

See Beekes 1995, 180; Hoffmann & Forssman 1996, 154.

2.1.2.7.1. IE **comparative** is inflected on the basis of the hysterodynamic **s-stems**:

Table 16

case	Vedic	Avestan	Greek	Latin	Gothic	OCS.	IE
	"better"	"better"	"sweeter"	"better"	"better"	"smaller"	
nom. sg.	<i>vásyān</i>	O. <i>vax iiā</i>	ἡδιών	<i>melior</i>	<i>iusiza</i>	<i>тън`ii</i>	* <i>-jōs</i>
acc.	<i>vásyāmsam</i>	<i>va— haḥhəm</i>	ἡδιῶ	<i>meliōrem</i>	* <i>iusizan</i>	<i>тън`ii</i>	* <i>-jés-ḡ</i>
gen.	<i>vásyasas</i>		ἡδιούς	<i>meliōris</i>	* <i>iusizins</i>	<i>тън`ьša</i>	* <i>-is-ós</i>

See Beekes 1995, 180; Hoffmann & Forssman 1996, 154;

Note.: It is apparent, in individual languages full grade (Ved., Av., Greek, Latin) or reduced grade (Gothic, OCS.) were generalized. The final Vedic *-n* in the nom. sg. & *-m-* before *-s-* in the acc. sg. are secondary.

2.1.2.7.2. Similarly the paradigm of **perfect participles** operates:

Table 17

case	Vedic	Avestan	Greek	IE "knowing"
nom. sg. m.	<i>vidvān</i>	OAv. <i>vīduuā</i>	εἰδώς	* <i>uéd-uōs</i>
nom. sg. f.	<i>viduṣī</i>	YAv. <i>vīthuṣi</i>	ἰδυῖα	* <i>uid-us-iH₂</i>
ak.	<i>vidvāmsam</i>	YAv. <i>-vīduuāḥhəm</i>	εἰδότα	* <i>uid-uós-ḡ</i>
gen.	<i>vidúṣas</i>	OAv. <i>vīduṣō</i>	εἰδότος	* <i>uid-us-ós</i>

See Beekes 1995, 180; Hoffmann & Forssman 1996, 156

2.1.2.8. The hysterodynamic **i-stems** represent a specific category:

Table 18

case	Vedic	Hittite	Greek	Latin	Lithuania n	IE
	"sheep"		"sheep"	"sheep"	"sheep"	
nom.sg.	<i>ávis</i>	<i>hawis</i> "sheep" <i>halkis</i> "grain"	ῥίς, Att. οἶς	<i>ovis</i>	<i>avis</i>	* <i>-i-s</i>
voc.	<i>áve</i>		Att. οἶς ³	<i>ovis</i>	<i>avis</i>	* <i>-eĵ</i>
acc.	<i>ávim</i>	<i>halkin</i>	ῥίῃ, Att. οἶῃ	<i>ovem</i>	<i>ãvi</i>	* <i>-i-m</i>
gen.	<i>ávyas</i>	<i>halkiyas</i>	ῥίος, Att. οἰός	<i>ovis</i>	<i>aviēs</i>	* <i>-i-os/-es</i>
dat.	<i>ávyē</i>	<i>tuzziya</i> "army"	Att. οἰί	<i>ovī</i>	<i>ãviai</i>	* <i>-i-eĵ</i>
loc.	<i>ávāu</i> ¹			abl. <i>ove</i>	<i>avyjė</i>	* <i>-eĵ</i>
instr.	<i>ávyā</i>	<i>halkit</i>		abl. <i>ove</i>	<i>avimi</i>	* <i>-i-eH₁</i>
nom.pl.	<i>avayas</i>	<i>hawes, halkies</i>	ῥίεις, Att. οἶεις	<i>ovēs</i>	<i>ãvys</i>	* <i>-eĵ-es</i>
acc.	<i>avīn</i>	<i>halkius</i>	ῥίτας, Att. οἶς	<i>ovīs</i>	<i>avis</i>	* <i>-i-ms</i>
gen.	<i>avīnām</i> ²		ῥίτων, Att. οἰῶν	<i>ovium</i>	<i>aviũ</i>	* <i>-i-ōm</i>
dat.	<i>avibhyas</i>			<i>ovibus</i>	<i>avims</i>	* <i>-i-m/b^hios</i>
loc.	<i>avīṣu</i>		dat. οἶεσι, Att. οἰσί		<i>avysė</i>	* <i>-i-su</i>
instr.	<i>avibhis</i>			abl. <i>ovibus</i>	<i>avimis</i>	* <i>-i-b^hi(s)</i>

See Beekes 1995, 181; Savčenko 1974, 206-09.

Notes: 1) *-u* is transferred from the *u*-stems. 2) *n* is transferred from the *n*-stems. 3) Cf. Ποσει(-δάων) "Lord D.!" = Ved. *pate* (Szemerényi 1996, 176).

2.1.2.9. Similar are the diphthongic *oi*-stems:

Table 19

case	Vedic	Avestan	Hittite	Greek	IE
nom. sg.	<i>sákhā</i> "friend"	<i>-haxā</i> id.	<i>zahhais</i> "fight"	ἤχῶ "sound, echo"	*-ō(<i>i</i>)
voc.	<i>sákhe</i>			ἤχοϊ	*-oi
acc.	<i>sákhāyam</i>	OAv. <i>-haxāim</i>	<i>zahhain</i>	ἤχῶ < *wāk ^h oia	*-oi-ṃ
gen.	<i>sákhayur</i> ¹		<i>zahhiyas</i>	ἤχου̅ς < *wāk ^h oios < *wāk ^h aios < *ueH ₂ g ^h H ₂ ios	*-i-os

See Beekes 1985, 92 & 1995, 181; Hoffmann & Forssman 1996, 133-34; Rix 1976, 146.

Note.: 1) Similarly as the gen. sg. *pátyur* from *pāti*- "husband", transferred from the gen. sg. of the *r*-stems of the type *pitúr* "of father" (Macdonell 1916[2000], 83-84).

2.1.2.10. The *u*-stems represent a parallel formation to *i*-stems:

Table 20

case	Vedic	Avestan	Hittite	Greek	IE
nom. sg. m.f.	<i>paśús</i> "cattle"	O. <i>xratuš</i> "power"	<i>wellus</i> "meadow"	γένυς "jaw"	*-u-s
nom.-acc. sg. n.	<i>mádhu</i> "honey"	Y. <i>maðu</i> "vine"	Luw. <i>maddu</i> "vine"	μέθυ "vine"	*-u
voc. mf. / n.	<i>páso</i> / <i>mádhu</i>		LUGAL-ue "king"		*-ou / *-u
acc. m.f.	<i>paśúm</i>	O. <i>xratum</i> Y. <i>pasūm</i> "cattle"	<i>wellun</i>	γένυον	*-u-m
gen.	<i>paśvās</i> (<i>paśós</i>)	Y. <i>xraθbō</i> Y. <i>pasuuō</i>	LUGAL-was	γένυος Myc. <i>me-tu-wo</i> ²	*-u-os/-es
dat.	<i>pásve</i> (^o <i>śáve</i>)	Y. <i>xraθβε</i>	dat.-loc. <i>wellui</i>	Myc. <i>ka-ru-we</i> ³	*-u-ei
loc.	<i>paśaú</i>	O. <i>xratā</i>	dat.-loc. <i>wellui</i>	dat. γένυι	*-eṃ-i *-u-i
instr.	<i>paśvā</i> , ^o <i>únā</i> ¹	O. <i>xraθbā</i> / <i>xratū</i>		Myc. <i>ka-ru-we</i> ³	*-u-eH ₁ /*-u-H ₁
nom.pl.	<i>paśavas</i>	O. <i>xratauuō</i> Y. <i>pasuuas-ca</i>	LUGAL-ues	γένυες	*-eṃ-es / *-u-es
acc.	<i>paśún</i> <i>paśvās</i>	O. <i>xratūš</i> Y. <i>pasuuō</i>		γένυας	*-u-ms / *-u-ṃs
gen.	<i>paśúnām</i> ¹	Y. <i>pasuuam</i>	?LUGAL-an	γενύων	*-u-ōm
dat.	<i>paśúbhyas</i>				*-u-m/b ^h -
loc.	<i>paśúsu</i>	Y. <i>pasuš.huua</i> < * <i>pasušu-ā</i>		dat. γένυσ(σ)ι	*-u-su
instr.	<i>paśúbhis</i>			Myc. <i>ka-ru-pi</i> ⁴	*-u-b ^h i(s)

See Beekes 1985, 87 & 1995, 181; Elizarenkova 1987, 63-64; HEG 3, 240; Hoffmann & Forssman 1996, 129-32; Wodtko, NIL 467-68.

Note: 1) *n* after *n*-stems. 2) Gen. sg. /*me^hu(w)os*/. 3) Dat.-instr. sg. /*karu(w)ei*/ or /*karwei*/; etymologically probably connected with Greek κάρυον "nut". 4) /*karup^hi*/ (notes 2 & 3 see Bartoněk 2003, 277).

2.1.2.11. Similar are the diphthongic *eu/ou*-stems:

Table 21

case	Avestan	Hittite	Greek	IE	
nom. sg.	<i>uyra-bāzāuš</i> "strong-armed"	<i>harnaush</i> "birth armchair"	ἵππεύς "rider"	πῆτρως "father's brother"	*-ē/ōu-s
acc.	<i>nasāum</i> "corpse" < * ^o <i>āuuam</i>	<i>harnaun</i>	ἵππῆρα	πῆτρωα	*-ou-ṃ *-eu-ṃ
gen.	<i>auruša.bāzūuō</i>	<i>harnaush</i>	ἵππῆοι	πῆτρωοι	*-u-os

See Beekes 1985, 89; 1995, 181; Erhart 1982, 116, § 5.4.7.2; Szemerényi 1996, 178.

2.1.2.11.0. It is important to stress the difference between the hysterodynamic and proterodynamic *i*- and *u*-stems. This difference consists in absence of ablaut in the hysterodynamic type; the genitive and instrumental sg. also differ (Beekes 1985, 128):

Table 22

case / type	proterodynamic		hysterodynamic	
gen. sg.	*-e _i -s	*-eu-s	*-i-os	*-u-os
instr. sg.	*-e _i -H ₁	*-eu-H ₁	*-i-eH ₁	*-u-eH ₁

2.1.2.12. A specific class are so-called **laryngeal stems**. One such paradigm may be reconstructed on the basis of the Indo-Iranian designation of "road". Already Pedersen (1926, 58, 61-65) demonstrated that this paradigm corresponds to the 5th declension in Latin, represented by words as *vātēs* "poet, prophet" or *fidēs* "faith". According to Beekes (1995, 181-82) this correspondence implies the reconstruction of the laryngeal ***H₁**:

Table 23

number	sg.			pl.		
	Vedic	Avestan	IE	Vedic	Avestan	IE
nom.	<i>pánthās</i>	<i>pañt]</i>	* <i>pónt-eH₁-s</i>	<i>pánthās</i> <i>pánthānas</i>	<i>pañtānō</i>	* <i>pónt-eH₁-es</i> * <i>pónt-eH₁-en-es</i>
gen.	<i>pathás</i>	<i>paθō</i>	* <i>pñt-H₁-ós</i>	<i>pathám</i> <i>pathīnám</i>	<i>paθam</i>	* <i>pñt-éH₁-om</i>
acc.	<i>pánthām</i> <i>pánthānam</i>	<i>pañtam</i> <i>pañtānam</i>	* <i>pónt-eH₁-om/-i</i> * <i>pónt-eH₁-en-om</i>	<i>pathás</i>	<i>paθō</i>	* <i>pñt-H₁-m̥s?</i>
loc.	<i>pathí</i> <i>pathe-ṣthá</i>	<i>paiθī</i>	* <i>pñt-H₁-í</i> * <i>pñt-eH₁-i</i>	<i>pathīṣu</i>		* <i>pñt-ǵ' i-su</i>
abl.	<i>pathás</i>	<i>paθō</i>	* <i>pñt-H₁-és</i>			
instr.	<i>pathá</i>	<i>paθa</i>	* <i>pñt-H₁-eH₁</i>	<i>pathibhis</i>	<i>padabīš</i>	* <i>pñt-ǵ' i-b^hi(s)</i>

Note: There are various reconstructions: (1) Szemerényi 1996, 168: **pōn*, gen. **pñt-ós* with secondary aspiration in Indo-Iranian under the root **rath-* "to travel"; (2) Beekes 1995, 181: **pónt-eH₁^o* : **pñt-H₁^o*; (3) Schindler apud Mayrhofer 1986, 136: **pént-oH₂-s*, gen. **pñt-H₂-ós*; Rasmussen 1987, 82 = 1999, 216: **pónt-ōH-s*, gen. **pñt-H₂-ós*; Hamp 1994, 37; EWAI II, 81-83; Hoffmann & Forssman 1996, 125: Indo-Iranian *pantaH^o* : **pñtH₂^o*.

Although the laryngeal paradigm is preserved only in old Indo-Iranian languages, close cognates appear in other IE languages: Arm. *hown* "ford"; Greek πάτος "path" and πόντος "sea"; Lat. *pons*, gen. *pontis* "bridge" (perhaps the form **pontēs* existed too, similarly as in the pair *trabs* : *trabēs*); Prus. *pintis* and Sl. **pōtb* "road" (Pedersen 1926, 64-65; Beekes 1995, 181).

2.1.2.13. Another important declension class characterized by laryngeal are so-called **H₂-stems**. Their continuants in daughter branches are **ā-stems**. Usually they are feminine nouns (and adjectives), but masculines appear too (e.g. Lat. *incola* "inhabitant", *agricola* "farmer"; Greek νεᾱνίας "youth", πολίτης "citizen"; OCS. *junoša* "youth"):

Table 24

case	Vedic	Gr. Attic	Latin	Irish	Gothic	Lith.	OCS.	IE
	"humidity"	"burden"	"earth"	"race"	"gift"	"dew"	"dew"	
nom. sg.	<i>rasā</i> ²	φορᾶ ²¹	<i>terra</i>	<i>túath</i> ⁵	<i>giba</i>	<i>rasà</i>	<i>rosa</i>	*-(e)H ₂ ²
voc.	<i>rase</i> ³	Hom. νύμφα ⁴	<i>terra</i>			<i>rāsa</i>	<i>roso</i>	*-H ₂ -e?
acc.	<i>rasām</i>	φορᾶν	<i>terram</i>	<i>túaiθ</i> ⁵	<i>giba</i>	<i>rāsqa</i>	<i>rosoq</i>	*-eH ₂ -m
gen.	<i>rasāyās</i> ⁶	φορᾶς νεανίου	<i>familiās</i> ⁷ <i>terrae</i>	<i>túaiθe</i> ⁵	<i>gibos</i>	<i>rasōs</i>	<i>rosy</i>	*-(e)H ₂ -os
dat.	<i>rasāyai</i> ⁶	φορᾶι	<i>terrae</i>	<i>túaiθ</i> ⁵	<i>gibai</i>	<i>rāsai</i>	<i>rosē</i>	*-(e)H ₂ -ei
loc.	<i>rasāyām</i> ⁶	πάλαι ⁸	<i>Romae</i> ⁹			<i>rasojē</i> ¹⁰	<i>rosē</i>	*-eH ₂ -i
instr.	<i>rasā</i> <i>rasāya</i> ¹¹	Dor. κρυφᾶ ¹²		Gl. -ia ¹³		<i>rasà</i>	<i>rosojq</i> ¹¹	*-(e)H ₂ -eH ₁
abl.	= gen.		<i>terrā</i> ¹⁴	Clb. -aθ ¹⁴				*-(e)H ₂ -ed
nom. pl.	<i>rasās</i>	φορᾶι ¹⁵	<i>terrae</i> ¹⁵	<i>túatha</i> ¹⁹	<i>gibos</i>	<i>rāsos</i>	<i>rosy</i> = acc.	*-eH ₂ -es
acc.	<i>rasās</i>	φορᾶς Dor. τῆμᾶνς	<i>terrās</i> ¹⁶	<i>túatha</i> ¹⁹	<i>gibos</i>	<i>rasàs</i>	<i>rosy</i>	*-eH ₂ -m̥s
gen.	<i>rasānām</i> ¹⁷	Dor. φορᾶων ¹⁸ Att. φορᾶων	<i>terrārum</i> ¹⁸ <i>agricolum</i>	<i>túath</i> ¹⁹ Clb. -aum	<i>gibo</i>	<i>rāsų</i>	<i>rosъ</i>	*-(e)H ₂ -om
dat.	<i>rasābhyas</i>			<i>túathaib</i> ¹⁹	<i>gibom</i>	<i>rasóms</i>	<i>rosamъ</i>	*-(e)H ₂ -m/b ^h -
loc.	<i>rasāsu</i>	Dor. πύλαισι ²⁰ "in door"; dat. * <i>-āhi</i> ~ * <i>-āsi</i>	<i>Athenīs</i> ²¹ dat.-abl. <i>terrīs</i> < * <i>-āis</i>			<i>rasosē</i> ¹⁰	<i>rosaxъ</i>	*-(e)H ₂ -su
instr.	<i>rasābhis</i>	My. a-ni-ja-pi ²²				<i>rasómis</i>	<i>rosami</i>	*-(e)H ₂ -b ^h i(s)

See Beekes 1985, 20-37 & 1995, 182; Sihler 1995, 266-74; Rix 1976, 130-35; Szemerényi 1996, 188-90.

Notes: 1) PGr. **-ā* is preserved in Mycenaean (*doera* "slave girl"), Aeolic and Doric (*χόρᾱ* "earth"); in Ionic it is changed into *-η* (*χόρη*); similarly in Attic (*τιμή* "honour"), with exception of situation, if *ε, ι, ρ* precede it; in this case *-ā* is preserved (*θεᾶ* "goddess", *οἰκίᾱ* "house", *χόρᾱ*, *φορᾶ*) - see Sihler 1995, 266-67. Similar it is in other cases with PGr. **ā*. 2) Usually reconstructed as **-ā* < **-eH₂* (Sihler 1995, 266; Szemerényi 1996, 189), but Beekes (1995, 182) assumed the ending was only **-H₂* (sometimes written as **-ǵ₂*), vocalized in the short *-ā*, like in Latin. He seeks support in the ending **-H₂* of nom. pl. of neuters which is identified as the same morpheme, originally expressing a collective. 3) Ved. *-e* < **-ai* < **-a-ī*, with **-ī* from the *ī*-stems (Szemerényi 1996, 189). 4) "bride, maiden". 5) Goid. **toutā*; cf. Gl. *τουεντιουτα* / *Buscilla*. Goid. acc. sg. **toutim*, with *i* from *ī-/īā*-stems. The acc. sg. *-im* also appears in the *ā*-stems in the Gaulish texts from southern Gaul (Larzac: *Seuerim Tertioncnim*), while in the north and Italy *-an* (*lokan*) is attested, with correspondence in *-am* in Lep. *pruiam* and Cib. *ailam*, all from expected PCelt. **-ām*. Similarly Goid. gen. sg. **toutiās*, vs. Cib. *tekametinas*, Gl. *toutas* < **-ās* (but also Gl. *-ias* e.g. in *Paullias* : nom. sg. *Paulla*), and Goid. dat. sg. **toutī*, vs. Cib. *ailai, kustai* (if it is not the loc. sg.), Lep. *Verkalai*, Gl. *εσκεγγαι*, all from **-āi*, besides Gl. *-i* (*βηλησαμ*) < **-ī* or **-iai* (Cólera 2005, 124; LG 58; MLH 400-02). 6) Unexpected *y* has been ascribed to influence of the *ī*-stems (Beekes 1995, 182; Szemerényi 1996, 189). 7) Preserved in archaic formulae of the type *pater familiās*. Attested also epigraphically: *manias* from Aqua Aceto. The same ending also appears in Faliscan (*Titias*) and Osco-Umbrian languages: OUmb. *tutas*, Osc. *vereias*, SPic. *amuenas* (UB 227). Lat. gen. sg. *-ae* (**-āi*) is from the gen. sg. of the *o*-stems (Beekes 1995, 182). 8) Hom. adv. *πάλα* "recently"; att. "in olden times" (see Sihler 1995, 267). 9) OLat. epigraphic *Romai*, by Plautus *proxumae*; further Osc. *viāi* (UB 228). 10) Lith. loc. sg. *-ojė* < **-āi-en* < **-eH₂-i* + postposition **H₁en* "in" (Beekes 1995, 183; Szemerényi 1996, 189). The final *-e* in the loc. pl. is of the same origin. 11) Adapted from the pronominal inflection (Beekes 1995, 183). 12) Dor. adv. *κρυφᾶ* "secretly" (see Sihler 1995, 267). 13) Gl. (Chamalières) *brixitia* (LG 58). 14) The Italic abl. sg. of the *ā*-stems **-ad* is preserved still in OLat. *praidad*, Fal. *sententiad*, Osc. *ēitiuvad* (UB 228); also in Cib. *aburað, akainað, lubinað* etc. 15) Influence of the nom. pl. in **-oi* of the *o*-stems (Beekes 1995, 183); already in Myc., cf. *pi-je-ra₃ / p^hielai* : *φιέλη* "pan" (Bartoněk 2003, 172; Hajnal 1995, 16). 16) The final **-Ns* continues in OUmb. *-f* in *vitlaf* "calf" and Osc. *-ss* in *viass* "road" (UB 228). 17) Influence of the *n*-stems, similarly as in the *o*-stems (Szemerényi 1996, 190). 18) Cf. Myc. *ko-to-na-o / ktoinā(h)ōn* : Gr. *κτοίνα* "township"; further Osc. *eehiianasúm*, in the Lat. script *egmazum*, besides Umb. *pracatarum* with *-r-* < **-z-* < **-s-*. The ending **-ā-s-ōm* is of pronominal origin, cf. Ved. gen. pl. f. *tāsām* (Sihler 1995, 271-72; Szemerényi 1996, 190; UB 228). 19) Goid. nom. pl. **toutās*; cf. Gl. *Licuias*. Goid. acc. pl. **toutās*; cf. Cib. *listas*. Goid. gen. pl. **toutānōm* with *-n-* after the *n*-stems. The same in Gl. *bnanom / mnanom* "of women" (see Tab. 29) and the feminine demonstrative *eianom*. In Cib. the gen. pl. of the *ā*-stems without *-n-* may be identified in *otanaum* (MLH 402). Goid. dat. pl. **toutābi*; cf. Gl. (Nîmes) dat. pl. *ναμυσικαβο*, besides the instr. pl. f., recognized in the pronoun *eiabi* (LG 56-59). 20) PGr. dat. pl. **-āhi* ~ **-āsi*, sometimes with the locative function: Myc. dat. pl. *do-ka-ma-i / dork^(h)māi*, *ku-na-ke-ta-i / kunāgētāhi* "hunter" (Bartoněk 2003, 547, 572), besides restituted *-s-* in isolated forms with the locative function: Dor. *πύλᾱσι* "in doors", Att. *θύρᾱσι* "in doors" (Aristophanes), "from doors" (Euripides), *Πλαταιᾱσι(ν)* "in Plataeae", *Ἀθῆνᾱσι* "in Athens". Usual is the dative function: OAtt. dat. pl. *ταμῖᾱσιν* "to house-keepers". Under influence of the Gr. dat.-lok. pl. of the *o*-stems in **-oisi* and instr. pl. in **-ois* the diphthong is also introduced in the Greek dat. pl. of the *ā*-stems: *forāi*, with final *-i* still in Lesb. *πολίτῶσι* "citizen" (Rix 1976, 134; Sihler 1995, 270-72). 21) Adv. "in Athens". Lat. dat.-abl. pl. in *-īs*, OLat. *soueis aastutieis* (CIL I, 364), from Italic **-āis*, documented in Osc. *kerssnaīs* "lunch". OLat. *deuas* in the inscription from Trastevere (CIL I, 975) may reflect the original loc. pl. in **-ās(u)* (Meiser 1998, 131, 133). 22) Myc. *a-ni-ja-pi / (h)āniāp^hi* "by bridles" (Bartoněk 2003, 169, 537).

2.1.2.14. A specific subtype of the laryngeal stems are the ***ī*-stems**, usually feminines. In the laryngealistic perspective it is necessary to differentiate the ***iH₁***- and ***iH₂***-stems (the latter represents a variant of the *H₂*-stems illustrated in Table 24):

Table 25

case	Vedic	Old Norse	Gothic	OCS.	IE
nom. sg.	<i>vrkīś</i> "she-wolf"	<i>ylgr</i> id. < Gmc. <i>*wulgīz</i>	<i>bandi</i> "bond"	<i>ladii</i> "ship"	<i>*-iH</i>
acc.	<i>vrkyām</i>	<i>ylgi</i>	<i>bandja</i>	<i>ladbjō</i>	<i>*-jeH-m</i>
gen.	<i>vrkyās</i>	<i>ylgar</i>	<i>bandjos</i>	<i>ladbję</i>	<i>*-iH-os</i>

See Beekes 1995, 183; Nedoma 2001, 42-43; Szemerényi 1996, 191-92; Rix 1976, 130.

The paradigm symmetrical to the *iH*-stems of the type *vrkīś* are the ***uH***-stems:

Table 26

case	Vedic	Avestan	Greek	Latin	OCS.	IE
	"body"	"body"	"corpse"	"pig"	"mother-in-law"	
nom. sg.	<i>tanūs</i>	Y. <i>tanuš</i>	véκῶς	<i>sūs</i>	<i>svekrŷ</i>	*-uH
acc.	<i>tanúam</i>	O. <i>tanuuām</i>	véκῶν	<i>suem</i>	<i>svekrŷnb, -onb</i>	*-ueH-m
gen.	<i>tanúas</i>	Y. <i>tanuuō</i>	véκῶος	<i>suis</i>	<i>svekrŷve</i>	*-uH-os

See Beekes 1985, 94 & 1995, 183; Brugmann 1911, 292-93; Elizarenkova 1987, 53; Hoffmann & Forssman 1996, 128.

2.2. Proterodynamic inflection

Originally the proterodynamic inflection was probably limited only to neuters, but in the *i-* & *u-*stems also masculins and feminins are included.

2.2.1. The proterodynamic inflection of the *i-*stems differs from the hysterodynamic one especially in the gen. and loc. sg.

Table 27

case	Vedic	Greek	Latin	Old Irish	Gothic	Lith.	OCS.	IE
	"fire"	"snake"	"fire"	"reign"	"pleasure"	"heart"	"guest"	
nom. sg.	<i>agnis</i>	ἄφις	<i>ignis</i>	<i>flaith</i> ¹	<i>anst</i>	<i>širdis</i> ²	<i>gostb</i>	*-i-s
nom.-ac. n.	<i>su-astī</i> ³	ἴδιπτι "clever"	<i>mare</i> ⁴	<i>muir</i>	OHG. <i>meri</i> ⁵			*-i
voc.	<i>ágne</i>	ἄφι	<i>ignis</i>	<i>flaith</i>	<i>gast</i> "guest"	<i>širdiē</i>	<i>gosti</i>	*-ej
acc.	<i>agnim</i>	ἄφιν	<i>ignem</i> ⁶	<i>flaith</i> ¹	<i>anst</i>	<i>širdj</i>	<i>gostb</i>	*-i-m
gen.	<i>agnēs</i>	ἄφεως Dor. ἄφιος	<i>ignis</i> ⁸	<i>flatho, -a</i> ⁹	<i>anstais</i> <i>gast</i> ¹⁰	<i>širdiēs</i>	<i>gosti</i>	*-ej-s
dat.	<i>agnáye</i>	ἄφει	<i>ignī</i>	<i>flaith</i> ¹⁰	<i>anstai</i> <i>gasta</i> ¹⁰	<i>širdziai?</i>	<i>gosti</i>	*-ej-ej
loc.	<i>agnā(u)</i> ¹²	Att. πόλιη ¹³	<i>rurī</i> ¹⁴		dat. <i>anstai</i> dat. <i>gasta</i> ¹⁰	<i>širdyje</i> ¹⁵	<i>gosti</i>	*-ēj
instr.	<i>agnīnā</i> ¹⁶		Ven. <i>stati</i>				<i>kostbjō</i> f. <i>gostbm̃</i> m.	*-i-H ₁
nom. pl.	<i>agnávas</i>	ἄφεις	<i>ignēs</i>	<i>fla(i)thi</i> ¹⁶	<i>gasteis</i>	<i>širdys</i>	<i>gostbje</i>	*-ej-es
nom.-ac. n.	<i>śúcī</i> ¹⁷	τρία "3"	<i>tria</i> "3"		<i>brija</i> "3"		<i>tri</i> "3"	*-i-H ₂
acc.	<i>agnī n</i> ¹⁸	ἄφεις Dor. τριυς	<i>ignīs</i> Umb. <i>trif</i>	<i>fla(i)thi</i> ¹⁹	<i>gastins</i>	<i>širdis</i>	<i>gosti</i>	*-i-ms
gen.	<i>agnīnām</i> ¹⁸	ἄφεων	<i>ignium</i>	<i>fla(i)the</i> ²⁰	<i>gaste</i>	<i>širdziū</i>	<i>gostbjb</i>	*-ij-ōm
dat.	<i>agnibhyas</i>		<i>ignibus</i>	<i>fla(i)thib</i> ²¹	<i>gastim</i>	<i>širdims</i>	<i>gostbm̃</i>	*-i-b ^h /m-
loc.	<i>agnīsu</i>	dat. ἄφεισι τρισί				<i>širdise</i> ¹⁵	<i>gostbx̃</i>	*-i-su
instr.	<i>agnibhis</i>	Myc. <i>po-ti-pi</i> ²¹		dat. <i>fla(i)thib</i> ²²		<i>širdimis</i>	<i>gostbmi</i>	*-i-b ^h i(s)

See Brugmann 1911, 288-89; Krasuxin 2004, 142-43; Savčenko 1974, 206-09; Sihler 1995, 311-19; Szemerényi 1996, 176-81.

Note: 1) Goid. **ulatis*; cf. Clb. *kenis*, Lep. *Uvamokozis*, Gl. *ratis*. 2) Originally a consonant stem, reinterpreted as the *i*-stem. 3) "welfare". 4) Lat. *-e* < **i* regularly. 5) "sea". 6) OLat. *piscim* "fish" (CIL I, 560). 7) Goid. **ulatim*; cf. Clb. *aratim*, Gl. *ratin*; 8) Osc. *aeteis*, Umb. *punes*. 9) Goid. **ulatojs*; cf. Clb. *luðeis*. 10) After the *o*-stems = Gmc. *a*-stems. 11) Goid. **ulatī*; Clb. *kenei*, Lep. *Sunalei*, Gl. κρετε, *Ucuete*. 12) Final *-u* after the *u*-stems. 13) Nom. sg. πόλις "city"; cf. Szemerényi 1996, 176. 14) Adv. "in the country" (Meiser 1998, 138). 15) Lit. *-ē* < **en* "v". 16) Goid. **ulatejes*; cf. Gl. *trianis* / νιπιο-βρογεις. 17) "bright". 18) After the *n*-stems. 19) Goid. **ulatīns*; cf. Clb. *tiris* "3" < **trīs* < **trins*. 20) Goid. **ulatijōm*; cf. Gl. *briuationom*. 21) /*portip^hil*/, cf. πόρτις "calf" (Bartoněk 2003, 274). 22) Goid. **ulatibi*.

In Hittite the hysterodynamic and proterodynamic *i-* (& *u*-stems) really merged; see their inflection in Tables 18 a 20.

2.2.2. The proterodynamic inflection of the *u*-stems is again symmetrical with the *i*-stems.

Table 28

case	Vedic	Greek	Latin	Old Irish	Gothic	Lith.	OCS.	IE
	"son"	"arm"	"hand"	"voice"	"son"	"son"	"son"	
nom. sg.	<i>sūnūs</i>	πῆχυς	<i>manūs</i>	<i>guth</i> ¹	<i>sunus</i>	<i>sūnūs</i>	<i>synъ</i>	*-u-s
nom.-ac. n.	<i>vásu</i> ²	ἄστυ ³	<i>veru</i> ⁴	<i>bir</i> ⁵	<i>faihu</i> ⁶			*-u
voc.	<i>sūno</i>	πῆχyu		<i>guth</i> ⁷	<i>sunau</i>	<i>sūnaũ</i>	<i>synu</i>	*-ou
acc.	<i>sūnūm</i>	πῆχyv	<i>manum</i> ⁸	<i>guth</i> ⁹	<i>sunu</i>	<i>sūnų</i>	<i>synъ</i>	*-u-m
gen.	<i>sūnós</i>	πῆχεος ¹⁰	<i>manūs</i> ¹¹	<i>gotho,-a</i> ¹²	<i>sunaus</i>	<i>sūnaũs</i>	<i>synu</i>	*-ou-s
dat.	<i>sūnáve</i>	πῆχει ¹³	<i>manū</i> ¹⁴	<i>guth</i> ¹⁵		<i>sūnuĩ</i>	<i>synovi</i>	*-eu-ej
loc.	<i>sūnáu</i>		Umb. <i>manuv-e</i> ¹⁶		dat. <i>sunau</i>	<i>sūnujė</i> ¹⁷	<i>synu</i>	*-ēu < *-eu-i ³⁵
instr.	<i>sūnunā</i> ¹⁸		abl. <i>manū</i> ¹⁹			<i>sūnumĩ</i>	<i>synъmъ</i>	*-u-H ₁
nom. pl.	<i>sūnāvas</i>	πήχεες ²⁰	<i>manūs</i> ²¹	<i>gothae</i> ²²	<i>sunjus</i>	<i>sūnūs</i>	<i>synove</i>	*-eu-es
nom.-ac. n.	<i>purū</i> ²³	ἄστεα ³	<i>verua</i> ²⁴	<i>dāer</i> ²⁵				*-u-H ₂
acc.	<i>sūnūn</i> ²⁶	πήχεας ²⁷	<i>manūs</i> ²⁸	<i>guthu</i> ²⁹	<i>sununs</i>	<i>sūnūs</i>	<i>synu</i>	*-u-ms
gen.	<i>sūnūnām</i> ³⁰	πήχεων	<i>manuum</i>	<i>gothae</i> ³¹	<i>sunīwe</i>	<i>sūnų</i>	<i>synovъ</i>	*-eu-ōm
dat.	<i>sūnūbhyas</i>		<i>manibus</i> ³²	Gl. <i>-ouibus</i> ³³	<i>sunum</i>	<i>sūnūms</i>	<i>synъmъ</i>	*-u-b ^h /m-
loc.	<i>sūnūsu</i>	πήχεσι				<i>sūnuosė</i> ¹⁷	<i>synъxъ</i>	*-u-su
instr.	<i>sūnūbhis</i>		<i>manibus</i> ³²	<i>gothaib</i> ³³		<i>sūnumis</i>	<i>synъmi</i>	*-u-b ^h i(s)

See Beekes 1995, 184-85; Sihler 1995, 320-27; Szemerényi 1996, 176-78.

Note: 1) Goid. **gutus*; cf. Lep. *Iazus*, Gl. λουγους/*Tri-garanus*. 2) "wealth". 3) ἄστυ "city" < **wástu*, cf. Myc. *wa-tu* (Bartoněk 2003, 275); nom. pl. Hom. ἄστεα, Att. ἄστη < **wastewa*, cf. adj. n. ἠδέα < **swādéwa* from the nom. sg. m. ἠδύς "sweet". 4) "skewer". 5) "spear"; cf. Gl. μεδου. 6) "property, money". 7) Goid. **gutu*. 8) Cf. Ven. acc. sg. *aisun* "god", Osc. *manim* "hand" (UB 231). 9) Goid. **gutum*. 10) Gr. gen. sg. *-eu-os is innovation after the dat. sg. *-eu-i and the usual gen. sg. in *-os (Sihler 1995, 324). 11) OLat. *senatous*, Osc. *castrous* (Sihler 1995, 324; UB 231). 12) Goid. **gutois*. 13) Cf. Myc. *i-je-we /hujjewei/* "to son" (Sihler 1995, 323; Bartoněk 2003, 275). 14) Cf. OLat. *senatuei*, Fal. *Mercuri* (UB 231). 15) Goid. **gutū*; cf. Clb. *Luguei*, Gl. ταρανοου. 16) Osc.-Umb. **manou-en* (Sihler 1995, 322). 17) The final -ė reflects the postposition *-en "in" (Beekes 1995, 184). 18) The final -nā is borrowed from the n-stem. 19) In Lat. *manū* and Umb. *mani* id. the Italic abl. sg. **manūd* formed after the o-stems and expected instr. sg. **manū* could merge (Sihler 1995, 323). 20) PGr. **pák^hewes*, cf. the ending of a similar Myc. nom. pl. m. *pa-ke-we /pak^hewes/* from the adj. πᾶχυς "thick" (Sihler 1995, 325; Bartoněk 2003, 276). 21) The primary Italic nom. pl. in *-ou-es is confirmed in Marr. *aisos*, Mars. *esos* "gods" (UB 231). 22) Goid. **guteues*; cf. Gl. *lugoues*. 23) "many". 24) E.g. Umb. *berva* "nástroj uživaný při oběti". 25) OIr. nom. pl. n. "tears"; cf. Welsh pl. m. *degreu* (Brugmann 1911, 291; LEIA, D-54). 26) Ved. -ūn instead of expected *-un under influence of the acc. pl. n. 27) The original acc. sg. ending is preserved e.g. in Cret., Arg. υἱόνς "sons", while Hom. υἱάς reflects the primary syllabification *-u₁ms, representing the hysterodynamic inflection, similarly as πῆχεας < **pák^hewas* < **b^hng^hewms* (Sihler 1995, 326). 28) Cf. Umb. acc. pl. *manf* "hands" < **manuf* < **manuNs* (Sihler 1995, 326). 29) Goid. **gutūns*. 30) See note 18 & 26. 31) Goid. **guteu₁ōm*; cf. Clb. *Ednoum*. 32) Cf. Umb. *berus* < **berufs* < **g^ueru-b^hos/-b^his* (Sihler 1995, 326). 33) Gl. *Lugouibus*. 34) Goid. dat. pl. **guteubi*. 35) Sihler 1995, 321, 324.

2.2.3. Proterodynamic **laryngeal stems**, characterized by the laryngeal ***H₂**, are represented at least by one paradigm, although the process of levelling brought numerous changes:

Table 29

case	Vedic	Avestan	Old Irish	other	IE
nom. sg.	<i>jánis</i> ¹		<i>ben</i> ⁴	Arm. <i>kin</i> ⁵ , Toch. A <i>sām</i> , B <i>šana</i> ⁶	* <i>g^uen-ə₂</i>
acc.			<i>bein</i>	Hitt. SAL- <i>na-an</i> ⁷ , Gr. γυνήν ⁸ , Gl. <i>beni</i> ⁹	* <i>g^uen-ə₂-n₁</i>
gen.	<i>gnās</i> ²		<i>mná</i>	Hitt. SAL- <i>na-as</i>	* <i>g^un-eH₂-(o)s</i>
dat.			<i>mnái</i>	Hitt. dat.-lok. SAL- <i>ni(-i), -nī</i>	* <i>g^un-eH₂-e₁</i> ¹²
loc.			dat. <i>bein</i>	Hitt. dat.-lok. SAL- <i>ni(-i), -nī</i>	* <i>g^uen-H₂-i</i>
nom. pl.		st. <i>gəná</i> ³	<i>mná</i>	?Gl. <i>mnas</i> ¹⁰	* <i>g^un-eH₂-es</i>
acc.		ml. <i>gnās-ca</i>	<i>mná</i>	Gr. γυνάς, Gl. <i>mnas</i> ¹⁰ , Hitt. SAL ^{MES} - <i>us</i>	* <i>g^un-(e)H₂-ms</i>
gen.			<i>ban</i>	Gl. <i>bnanom / mnanom</i> ¹¹	* <i>g^un-H₂-om</i>
dat.-instr.		st. <i>gənábiš</i>	dat. <i>mnáib</i>	Arm. instr. <i>knaw</i>	* <i>g^un-ə₂-b^ho/i(s)</i>

See Hamp 1979, 5-6, followed by Beekes 1995, 184 and Schneider, NIL 177-85.

Note: 1) "woman, wife"; reinterpreted as the i-stem, similarly Av. *jaini*- "woman, lady"; the anomalous gen. sg. *jányur* is borrowed from the kinship terms in -r (Macdonell 2000, 83-84). 2) "wife; goddess, wife of divine origin"; cf. *gnāspāti*- "husband of a divine woman"; reinterpreted as the ā-stem (Macdonell 2000, 78). 3) "female

being; woman of divine origin"; reinterpreted as the *ā*-stem (Hoffmann & Forssman 1996, 123). 4) "woman". 5) "woman, wife". 6) "wife". 7) The Hittite reading **kuwan^o* of the sumerogram SAL "woman" is confirmed by parallel records ^{DINGIR}SAL ^{MES}-*ya* ~ ^{DINGIR}*ku-wa-an-sa-ya*, and by the context, when ^{DINGIR}*pi-se-ni-es* "male gods" are followed by ^{DINGIR}*ku-wa-an-se-es*, apparently "female gods". Other anatolian cognates are Lyd. *kāna*- < **g^honā*- a luv. < *wanatti* < **g^hḡnā*-, dat.-lok. *wa-a-ni* (HEG 4, 306-08). 8) According to Hamp (1979, 5), the form known from comedies of Pherecratus, need not be an innovation, but an archaism. 9) The inscription from Châteaubleau; originally apparently **benin*, analogously as the starting point of the Olrish acc. sg. *bein* (Lambert 2003, 210). 10) The inscription from Larzac. 11) Ibidem; both variants appear here. One would expect **banom*. The initial *bn-/mn-* may be a result of contamination with cases, where the ablaut zero-grade was regularly inherited, e.g. in the nom. or acc. pl. *mnas* (Lambert 2003, 168; Hamp 1987, 188). 12) Hamp (1979, 4-5) so explains the forms extended in *-aj-*, e.g. Gr. voc. sg. γύναι, gen. sg. γυναικός : nom. sg. γυνή "woman", Phryg. nom. sg. *knays*, acc. sg. κναικαν, gen. sg. κναικο, Arm. nom. pl. *kanaik^s*, abl.-loc. pl. *kanays* (Schneider, NIL, 178); Toch. B gen. sg. *šnoy* : nom. sg. *šana* "wife" (Pinault 1989, 87: **g^hen-eH₂-e_j*). In contrary, Olsen (1999, 172) reconstructs for Armenian and Greek diphthongic stems the starting point **g^hη-H₂-iH-*.

2.2.4. More productive are proterodynamic *iH₂-stems* (*i*-stems):

Table 30

case	Vedic	Greek	Gothic	Lithuanian	IE
	"goddess"	"lady" / "four-legged chair"	"maiden"	"daughter-in-law"	
nom. sg.	<i>devī</i>	ποτνία / τράπεζα < ^o <i>dīa</i>	<i>mawi</i> < * <i>magwī</i>	<i>marti</i>	*-iH ₂
acc.	<i>devīm</i>	ποτνίαν / τράπεζαν	<i>mauja</i>	<i>marčią</i>	*-iH ₂ -m
gen.	<i>devyās</i>	τραπέζης	<i>maujos</i>	<i>marčiōs</i>	*-jeH ₂ -s

See Beekes 1995, 185.

According to the same pattern the feminine active participles are inflected: cf. nom. sg. Ved. *bhārantī*, Gr. φέρουσα < **p^herontīa* < **b^herontiH₂*, OCS. *nesoštī*, all "carrying" (Beekes 1995, 185).

2.2.5. The proterodynamic *s-stems* are limited to neuters:

Table 31

case	Vedic	Hittite	Hom. Greek	Latin	Olrish	Gothic	OCS.	IE
	"kin"	"heaven"	"kin"	"kin"	"house"	"darkness"	"heaven"	
nom.-acc.- voc. sg.	<i>jānas</i>	<i>nepis</i>	γένος Myc. <i>we-to</i> ⁴	<i>genus</i> ¹¹	<i>tech</i> , <i>teg</i> ¹⁵	<i>riqiz</i>	<i>nebo</i>	*-os
gen.	<i>jānasas</i>	<i>nepisas</i>	γένεος	<i>generis</i> ¹²	<i>tige</i> ¹⁶	<i>riqizis</i>	<i>nebesē</i>	*-es-os
dat.	<i>jānase</i>	<i>nepisi</i>	Myc. <i>we-te-e</i> ⁵	<i>generi</i> ¹³	<i>tig</i> ¹⁷		<i>nebesi</i>	*-es-e _j
loc.	<i>jānasi</i>	<i>nepis</i> ²²	dat. γένει ⁶	abl. <i>genere</i>	dat. <i>tig</i> ¹⁷		<i>nebesē</i> ²²	*-es-i
instr.	<i>jānasā</i>			abl. <i>genere</i>			<i>nebesьmь</i>	*-es-eH ₁
nom.-acc.- voc. pl.	<i>jānāmsi</i> ¹		γένεα ⁷	<i>genera</i>	<i>tige</i> ¹⁸	<i>agisa</i> ²¹ "fear"	<i>nebesa</i>	*-es-ə ₂
gen.	<i>jānasām</i>	<i>nepisan</i>	γένεων ⁸	<i>generum</i>	<i>tige</i> ¹⁹		<i>nebesь</i>	*-es-ōm
dat.	<i>jānobhyas</i> ²			<i>generibus</i> ¹⁴	<i>tigib</i> ²⁰		<i>nebesьmь</i>	*-es-b ^h /m-
loc.	<i>jānassu</i> ³		γένεσσι ⁹				<i>nebesьxb</i> ²³	*-es-su
instr.	<i>jānobhis</i> ²		Myc. <i>pa-we-pi</i> ¹⁰	<i>generibus</i> ¹⁴	dat. <i>tigib</i> ²⁰		<i>nebesy</i>	*-es-b ^h i(s)

See Beekes 1995, 185; Sihler 1995, 305-10; Szemerényi 1996, 174;

Notes: 1) Innovated after the *nt*-stems in proportion *-at* : *-anti* = *-as* : *-āmsi* (Erhart 1982, 110; Szemerényi 1996, 174). 2) The forms *jānobhyas*, *jānobhis* originated in process of sandhi from **jānas-bhyas*, *-bhis* (Sihler 1995, 305). 3) In later language in sandhi *jānaḥsu* (Sihler 1995, 305-06). 4) **wetos* "rok" (Bartoněk 2003, 261). 5) **wetehei* (Sihler 1995, 305; not by Bartoněk). 6) Cf. Myc. *we-te-i* /*wetehi*/ in formulation *we-te-i-we-te-i* "year after year". 7) Cf. Myc. *pa-we-a₂* /*p^harweha*/ ~ φῆρος "a piece of cloth". 8) Cf. Myc. *pa-we-o* /*p^harwehōn*/. 9) Cf. Myc. *pa-we-si* /*p^harwessi*/. 10) Myc. *pa-we-pi* /*p^harwesp^hi*/ (6-10: see Bartoněk 2003, 261; Sihler 1995, 305). 11) OLat. *Venos* (CIL I, 550). 12) Cf. OLat. *Venerus* (CIL I, 675). 13) Cf. Osc. *ἑνέζη* < **uenesej* (pozn. 11-13 viz Urbanová & Blažek 2008, 234). 14) Dat.-abl. pl. 15) Goid. **tegos*. 16) Goid. **tegesos*. 17) **teges*, originally the suffixless loc. as Lat. *penes* or Hitt. *nepis*. 18) **tegesa*. 19) Goid. **tegeson*. 20) Goid. **tegesobi(s)* (notes 15-20: see Thurneysen 1946, 216). 21) Brugmann 1911, 301. 22) Probably the suffixless loc.; in Slavic extended by a particle *-e(C?)* (Sihler 1995, 305-06). 23) The ending with *-b-* imported from the *i*-stems (Sihler 1995, 306).

2.2.6. Proterodynamic *n-stems* are also limited to neuters. An ideal example is the word for "name" which was preserved in all IE branches (to examples below it is possible to add Toch. A *ñom*, B *ñem*, acc. pl. *ñemna*; Phryg. *onoman*; Alb. *emër*; Prus. *emnes* ~ *ennens*). It is not

important, if the protoform is reconstructed as the *n*-stem or *men*-derivative, nor if the initial was **H₁*- or **H₃*-.

Table 32

case	Vedic	Hittite	Greek	Latin	Old Irish	Gothic	OCS.	IE
nom.-acc.- voc. sg.	<i>nāma</i> ¹	<i>laman</i>	ὄνομα ¹¹	<i>nōmen</i> ¹⁷	<i>ainm</i> ²⁰	<i>namo</i> ²⁷	<i>ime</i>	<i>*-ŋ</i>
gen.	<i>nāmnas</i> ²	<i>lamnas</i> ⁸	ὄνόματος ¹²	<i>nōminis</i> ¹⁸	<i>ainm(a)e</i> ²¹	<i>namins</i>	<i>imene</i>	<i>*-en-s</i>
dat.	<i>nāmnē</i> ³	<i>lamni</i> ⁸	ὄνόματι ¹³	<i>nōmini</i> ¹⁹	<i>ainm(a)imm</i> ²²		<i>imeni</i>	<i>*-en-ej</i>
loc.	<i>nāmani</i> ⁴	<i>lamman</i> ⁹ <i>lamni</i> = dat.		<i>nōmine</i>	dat. <i>ainm</i> ²³	<i>namin</i>	<i>imene</i>	<i>*-ēn</i>
inst.	<i>nāmnā</i> ⁵			umb. <i>nomne</i>			<i>imeňť</i>	<i>*-en-H₁</i>
nom.-acc.- voc. sg.	<i>nāmā</i> ⁶ <i>nāmāni</i> ⁶	<i>saramna</i> ¹⁰	ὄνόματα ¹⁴	<i>nōmina</i>	<i>anman(n)</i> ²⁴	<i>hairtona</i> <i>namna</i>	<i>imena</i>	<i>*-ōn</i> <i>*-en-H₂</i>
gen.	<i>nāmnām</i> ⁷		ὄνομάτων	<i>nōminum</i>	<i>anman(n)</i> ²⁵	<i>namne</i>	<i>imeňť</i>	<i>*-en-om</i>
dat.	<i>nāmabhyas</i>			<i>nōminibus</i>	<i>anmanib</i> ²⁶	<i>namnam</i>	<i>imeňťť</i>	<i>*-ŋ-b^h/m-</i>
loc.	<i>nāmasu</i>	<i>lamnas</i>	ὄνόμασι ¹⁵				<i>imeňťxť</i>	<i>*-ŋ-su</i>
inst.	<i>nāmabhis</i>		Myc. <i>e-ka-ma-pi</i> ¹⁶	<i>nōminibus</i>	<i>anmanib</i> ²⁶		<i>imeňťy</i>	<i>*-ŋ-b^hi(s)</i>

See Beekes 1995, 186-87; Sihler 1995, 296-98; Szemerényi 1995, 170-71.

Notes: 1) Cf. YAv. *nqma* id., OAv. *haxmā* "society". 2) HD ending; the PD ending of the gen. sg. is preserved in OAv. *cašmāṅg* < **cašmāṅh* : *cašman-* "visual field" (Hoffmann & Forssman 1996, 143). 3) HD ending; the PD ending of the dat. sg. is preserved in OAv. *haxmānē* (Hoffmann & Forssman 1996, 143). 4) HD ending; the expected PD ending of the loc. sg. is preserved in OAv. *cašmaqm* with final *-m*, originated in assimilation with the preceding *-m*- (Beekes 1995, 187). 5) HD ending; the expected PD ending of the instr. sg. is preserved in OAv. *cašmāni* (Beekes 1995, 186). 6) Vedic endings *-ā* & **-ān* represent the sandhi-variants before a consonant or vowel respectively, reflecting IE **-ōn* (Szemerényi 1996, 170), cf. OAv. *nāmāq* "names" < **nāmān*, besides the form *nāmāni*, YAv. *nāmāni*, which is originally probably a dual as Ved. *nāmanī* (Hoffmann & Forssman 1996, 144). 7) The expected PD ending of the gen. pl. is better preserved in OAv. *nāmānq* (Hoffmann & Forssman 1996, 144). 8) HD ending. 9) Suffixless locative (GHL 109). 10) Also nom. pl. *sarammana* : nom. sg. *saramnas* "kind of a bread" (GHL 109). 11) Cf. Myc. *pe-ma /sperma/* & *pe-mo /spermo/* = σπέρμα "seed". 12) The *t*-extension of Greek neuters inherited from the IE *n*-stems is attested already in the Mycenaean epoch, but cannot be significantly older, judging upon the Homeric denominal verb ὀνομαίνω "I call by name" without any traces of *-t*- (the 1st pers. sg. of the verb formed from the base ὀνοματ^o should be ⁺ὀνομάσσω^oττω - see Sihler 1995, 297). 13) Cf. Myc. *e-ka-ma-te /ek^hmatei/* from ἔγμα "hindrance; bulwark". 14) Cf. Myc. *de-ma-si /dema(s)i/* from δέρμα "skin". 15) */ek^hma(p)hⁱ/* - further note 13 (notes 10, 12-16: see Bartoněk 2003, 243-44). 17) Cf. Umb. *nome*; the final *-n* is also preserved in OUmb. *umen* = Lat. *unguen* "oil". 18) HD ending; similarly Osc. *numneis* and Umb. *nomner* with *-r* < **-s*. 19) Cf. Umb. *nomne* (notes 17-19: see UB 233). 20) Goid. **anmen* < **ŋmen*. 21) Goid. **anmens*. 22) Goid. **anmen-mi*? 23) Goid. **anmen*. Probably a suffixless locative. 24) Goid. **anmena*. Sr. gal. *anuana* (nāpis z Larzacu), zatímco stvelš. pl. *enuen* odráží brit. **anūanī* (Lambert 2003, 168). 25) Goid. **anmenon*. 26) Těž *anmannaib* < goid. **anmenbi* (pozn. 20-26: see Thurneysen 1946, 212-13). Cf. the Gl. instr. pl. *anmanbe* from the inscription from Châteaubleau (LG, 210). 27) The final *-o* in *namo* or *hairto* "heart" instead of expected ⁺*-u* (**-un* < **-ŋ*) perhaps influenced by *-o-* in the nom. pl. of the type *hairtona* (Beekes 1995, 187) or according to *wato* "water" (Szemerényi 1996, 171). Adams (1999, 270) assumes the 'collective' ending **-ōn*.

2.2.7. Very archaic are proterodynamic neuters with the *r*-stem in nom.-acc. and *n*-stem in other cases, briefly *r/n*-stems or *r/n*-heteroclitics:

Table 33

case	Vedic	Avestan	Greek	Latin	IE. "liver"
nom.-acc. sg.	<i>yákr̥t</i>	Y. <i>yākarə</i>	ἥπαρ	<i>iecur</i>	<i>*iék^h-r(t)</i> <i>*iék^h-r̥(t)</i>
gen.	<i>yaknás</i>	O. <i>rāzarəng</i> ¹	ἥπατος ²	<i>iecin(or)is</i>	<i>*iék^h-én-s³</i>

See Beekes 1995, 187; Wodtko, NIL 392-95;

Notes: 1) PD gen. sg. to the nom. sg. *rāzarə* "advice"; the *n*-stem of the word "liver" is preserved e.g. in such Iranian languages as Yidgha *yēḡən*, Pashto *yīna* "liver" (NIL 392). 2) The extending **-t* may be identical with the *-t* terminating the Vedic nom. sg. *yákr̥t* id. 3) In reconstruction of the gen. sg. there are big differences, summarized by Wodtko (NIL 393): **ik^h-n-és* (Rix 1965), **iék^h-n-(o)s* (Eichner 1973), **iék^h-ŋ-s* (Schindler

1975), **iók^h-ŋ-s* (Normier 1980), **iH₁k^h-n-ós* (Hamp 1983), **iók^h-én-s* (Beekes 1985), **iók^h-ŋ-s* (Nussbaum 1998), **iek^h-ŋ-s* (Mottausch 2000), **H₁ék^h-n-os* (Neri 2003), **H₁ék^h-ŋ-s* (Tremblay 2004). Only the *n*-stem is preserved in Baltic: Lith. dial. pl. *jāknos* & *jēknos*, Latv. *jēknas*, Prus. sg. **jakno*, recorded as *lagno* (NIL 392).

2.2.7.1. In the word for "fire" the complete heteroclitic paradigm was preserved only in Hittite. In other branches is dominating either only the *r*-stem or only the *n*-stem, sometimes with transfer to other inflectional patterns. Specific is the situation in Germanic, where WGmc. **fuweri* & NGmc. **fūra-* stand against NGmc. & EGmc. **funen-*, all "fire" (Wodtko, NIL 541):

Table 34a

case	Hittite	other	IE "fire"
nom.-acc. sg.	<i>pahhur</i>	Toch. A <i>por</i> , B <i>puwar</i> ; Arm. <i>howr</i> ; Gr. <i>pār</i> , gen. <i>purōj</i> , Umb. <i>pir</i> , abl. <i>pure</i> ; ON <i>fúrr</i> , OEng. <i>fȳr</i> , OHG. <i>fuir</i> "fire"; OCz. <i>pýř</i> "glowing ashes"	* <i>péH₂ur</i>
gen.	<i>pahhuenas</i>	Goth. <i>fon</i> , gen. <i>funins</i> , ON. <i>funi</i> ; Prus. <i>panno</i> "fire"; Arm. <i>hnoc</i> "oven"	* <i>p(e)H₂én-s</i>

See Beekes 1995, 187; Erhart 1982, 112; Szemerényi 1996, 173; Wodtko, NIL 540-45.

Note: Some linguists separate singular and collective paradigms:

Table 34b

Schindler 1975, 10			Rasmussen 1989, 77		
case	proterodynamic singular	amphidynamic collective	case	akrostatic singular	holodynamic collective
nom.-acc.	* <i>péH₂ur</i>	* <i>péH₂uōr</i>	nom.-acc.	* <i>póH₂ur</i>	* <i>páH₂uōr</i>
gen.	* <i>pH₂(u)én-s</i>	* <i>pH₂un-és</i> / * <i>puH₂n-és</i>	gen.	* <i>páH₂ur-s</i>	* <i>pH₂(u)én-s</i>
loc.		* <i>pH₂(u)én</i>	dat.	* <i>páH₂-un-ej</i>	instr. * <i>pH₂un-óH₁</i>

2.2.8. There is only one *l*/*n*-paradigm, namely the designation of "sun". But it is doubtful, if it is enough to define the *l*/*n*-stems parallel to the *r*/*n*-stems. The heteroclitic paradigm is preserved only in the Indo-Iranian branch (**suHar* : **suHan*⁰), while in Celtic (more exactly Gallo-Brittonic) and Germanic languages the *l*- & *n*-stems represent independent formations. In other branches one of the stems is dominant. PSI. **sb₁ln̥ce* "sun" reflects older **sulniko-*, without the diminutive suffix **-ko-* originated via contamination of the *l*- & *n*-stems.

Table 35

case	Vedic	Avestan	others	ie.
nom.-acc. sg.	<i>svár, sívar</i>	O. <i>huuarō</i>	PGr. * <i>ἄφελος</i> > Aeol. <i>ἄελος</i> ; Lat. <i>sōl</i> ; OWelsh <i>houl</i> ; Goth. <i>sauil</i> , ON. <i>sól</i> ; Lith. <i>saulė</i> , Prus. <i>saule</i> ; OCS. <i>slъnъce</i>	* <i>séH₂ul</i>
gen.	<i>súras</i>	Y. <i>x^vāng</i> Y. <i>hūrō</i>	MWelsh. <i>huan</i> ; Goth. <i>sunno</i> , OHG. <i>sunno</i> ; cf. Gl. <i>sonnocingos</i> "course of Sun"	* <i>sH₂én-s</i> (* <i>suH₂l-os</i>)

See Beekes 1984, 7 & 1995, 187; Schindler 1975, 10; Wodtko, NIL 606-11.

Note: Beekes (1984) supposes the development **séH₂ul* > **sH₂ul* and following metathesis **suH₂l*, giving a base to the secondary gen. sg. **suH₂los*. Parallely the form **suH₂nos* originates, formed analogously to the expected PD form of the gen. sg., only preserved in YAv. *x^vāng*. The secondary genitive **suH₂nos* is probably a base of nasal forms. Reconstruction of the nom. sg. is based on parallel *r*/*n*-paradigm of the word "fire" (Tab. 34a).

2.3. Static inflection

The static inflection is characterized by a stable position of accent. Among the declension patterns classified from the point of view of accentuation it is most difficult to reconstruct it. The originally firm accent on the root is assumed in the paradigm of the word for "mother". As the kinship term belonging to the *r*-stems the paradigm of "mother" was in daughter branches strongly influenced by hysterodynamic paradigms of other kinship terms in both position of accent and case endings (and vice versa).

2.3.1. In the following cases the static *r*-stem is different from the hysterodynamic one:

Table 36

case	examples	IE
nom. sg.	Phryg. <i>ματαρ</i> ; OEng. <i>mōðor</i> ; the position of accent is preserved in Gr. Att. μήτηρ, Dor. μᾰτήρ and Lith. <i>mótė</i> "woman", dial. "mother", Latv. <i>māte</i> "mother"	*'-t _r
gen.	Ved. <i>matúr</i> (accent after <i>patúr</i> "of father" with ending after <i>matúr</i>); ON. <i>móður</i>	*'-t _r -s
acc. pl.	OAv. <i>mātarqš-cā</i> cf. Goth. <i>broþrun</i> "brothers"	*'-t _r -ms *'-tr- <i>ms</i>

See Beekes 1995, 188; Schneider, NIL 457-61.

2.3.2. Akrostatic inflection has been also reconstructed in the case of other archaic nouns :

Tabulka 37

case	examples	IE
nom. sg.	Lat. <i>nox</i> "night", adv. <i>nox</i> ; OWelsh, Corn. <i>nos</i> "night"	* <i>nók^u</i> -t-s
gen.	Hitt. <i>nekuz</i> / <i>nek^wts</i> / in phrase <i>nekuz mēhur</i> / <i>mēhuni</i> "in the time of evening"	* <i>nek^u</i> -t-s

See Beekes 1995, 188; Irslinger, NIL 504-13 (she discusses alternative reconstructions as **neg^u*-t- and **neg^{uh}*-t-).

2.3.3. The firm accent on the root, plus the ablaut *o ~ e*, are characteristic also for IE "knee" and "tree". The hypothetic gen. sg. **CéC-u-s* is not directly attested in any historic language. Schindler (1975, 7), the author of this model, supposed that in the IE daughter branches the forms of the gen. sg. were modified after the HD (**CeC-u-ós*) or PD (**CC-éu-s*) patterns.

Table 38

case	examples	IE "knee"
nom.-acc. sg.	Ved. <i>jānu¹</i> , Gr. γόνυ; * <i>o</i> also in Arm. <i>cownr²</i> ; Toch. A du. <i>kanweṃ</i> < * <i>ḡonuoi-no-</i>	* <i>ḡón-u</i>
gen.	(Lat. <i>genūs³</i>) Hitt. <i>genuwas</i> ; the same ending appears in the Hom. Gr. gen. γουνός < * <i>γυνφός</i> Ved. <i>jñós</i> ; zero-grade also in Goth. <i>kniu</i> < * <i>ḡne^u-om⁴</i> ; Hitt. instr. <i>ganut</i> < * <i>ḡne^u-d^o</i>	* <i>ḡén-u-s</i> * <i>ḡen-<u>u</u>-os⁵</i> * <i>ḡn-<u>eu</u>-s⁶</i>

See Beekes 1995, 188; GHL 101; Schindler 1975, 1975, 7.

Notes: 1) Lengthening of the root vowel before open syllables (Lex Brugmann) indicates **o*. 2) The final *-r* is automatically added to almost all *u*-stems. 3) Lat. nom. sg. *genū* with *-ū* perhaps after the nom. pl. n. or col. *^ou-H₂*. The ending of the gen. sg. *-ūs* has been explained from the PD **-ous*, cf. also Umb. *trifor* < It. **tribous* corresponding to Lat. gen. *tribūs* (Meiser 1998, 145-46). The influence of the PD paradigm and lengthening in the Lat. gen. sg. n. after the nom. sg. n. cannot be excluded. 4) PD ending. 5) HD ending. 6) PD ending.

Table 39

case	examples	IE "tree, wood"
nom.-acc. sg.	Ved. <i>dāru¹</i> ; het. <i>tāru</i> ; ř. <i>đópu</i>	* <i>dór-u</i>
gen.	Hitt. GIŠ- <i>ruwas</i> ; cf. the same ending in the Hom. Gr. gen. δουρός < * <i>δορφός</i> (besides <i>δούρατος</i> < * <i>δορφητος</i>) Ved. <i>drós</i> ; zero-grade also in Goth. <i>triu</i> < * <i>dre^u-om</i>	* <i>dér-u-s</i> * <i>der-<u>u</u>-os²</i> * <i>dr-<u>eu</u>-s³</i>

Viz GHL 101; Sihler 1995, 320; Szemerényi 1996, 178.

Pozn.: 1) Lengthening of the root vowel before open syllables (Lex Brugmann) indicates **o*. 2) HD ending. 3) PD ending.

2.3.4. Similar features are typical for the singular heteroklitic *r/n*-paradigm "water", while the collective is inflected after the proterodynamic pattern:

Table 40

case	examples	IE "water"
nom.-acc. sg.	Hitt. <i>wātar</i> ; cf. WGmc. * <i>watar</i> < * <i>uodoro-</i>	* <i>uód-r</i>
gen.	Hitt. <i>witenas</i> (see "fire": Tab. 34); cf. Goth. <i>watins</i> < * <i>uodens</i>	* <i>uéd-<u>n</u>-s</i>
nom.-acc. col.	Hitt. nom.-acc. pl. <i>witār</i> ; cf. Gr. ὕδωρ, Umb. <i>utur</i> < * <i>udōr</i>	* <i>uéd-ōr¹</i>
loc.	Ved. <i>udán(i)</i> , cf. Hitt. loc. <i>witeni</i>	* <i>ud-én(-i)²</i>

See Beekes 1995, 188; Irslinger, NIL 706-15; Schindler 1975, 4-5; Szemerényi 1996, 172.

Notes: 1) Goth. *wato* and OCS. *voda* may reflect **uodōr* (Szemerényi 1996, 173; NIL 709). A former existence of the *r*-stem in Slavic is indicated by OCS. *vědro* "bucket, vessel for water" < **uēdrom*. The lengthened root

vowel *ē also appears in the Gmc. adj. *weta- "wet". The lengthening as a tool of derivation is called *vrddhi* in agreement with the Old Indic tradition. 2) The formant *-en- has been identified with the preposition *en-(i) of the locative function "in" (Szemerényi 1996, 172). Umbr. *une* may reflect both the loc. *udni (Szemerényi 1996, 173) or abl. *udned (NIL 709).

3. **Root nouns** are not extended by stem-forming and derivational suffixes, the case endings inlect directly the root. For this reason there are only two declension types, static with a firm accent on the root, and dynamic or *či* mobile, where the accent vacillates between the root and case ending. The nominativ has usually been lengthened, since it represents only one syllable. According to origin and function it is possible to divide the root names in three classes:

A. Root nouns proper - of nominal origin: *g^hueH₁r- "wild animal", *kerd- "heart", *muHs- "mouse", *d^hrig^h- "hair". The word for "salt" may belong here too (Sihler 1995, 281-82; but e.g. for Beekes [1995, 177] it is the *l*-stem, see §2.1.2.6. and Tab. 14).

B. Nomina actionis of verbal origin:

*uók^h-s, gen. *uok^h-és/-ós "voice" : *uek^h- "to speak"

*louk-s, gen. *luk-és "light" : *leuk- "to shine" (Sihler 1995, 282).

C. Nomina agentis of verbal origin:

Gr. κλώψ, gen. κλωπός "thief" : κλέπτω "I steal";

Lat. *dux*, gen. *ducis* "leader" : *dūcō* "I lead" < *deuk- (Sihler 1995, 282).

3.1. **Static** inflection of the root nouns is reconstructed by Beekes (1995, 189) in the form of the following model paradigms; first two represent m.-f., third one n.:

Table 41

case	"foot"	"voice"	examples	"house"	examples
nom. sg.	*pód(s)	*uók ^h -s	Lat. <i>vōx</i> , Av. <i>vāxš</i>	*dóm	Gr. δῶ, Arm. <i>town</i>
acc.	*péd-η	*uók ^h -η	Gr. ὄπα	*dóm	Gr. δῶ
gen.	*péd-s	*uók ^h -s		*dém-s	Gr. δεσπότης, Av. <i>dəng paitiš</i> "pán domu"

The paradigms of the word for "foot" significantly differ in their individual development in daughter branches thanks to a process of levelling and influence of other types of declension. With exception of the nom. sg. Greek generalized the root vowel -o-, Latin -e- and the Germanic languages *-ō- from the nom. sg. The reconstruction of the paradigm based on real forms (i.e. including vowels in brackets) is so different from the 'ideal' model of Beekes.

Table 42

case	Vedic	Greek	Latin	OEnglish	IE *ped- "foot"
nom. sg.	<i>pád</i>	Dor. πῶς, Att. πούς	<i>pēs</i>	<i>fōt</i>	*pód-s
acc.	<i>pádam</i>	πόδα	<i>pedem</i>	<i>fōt</i>	*péd-η ~ *pód-η
gen.-abl.	<i>padás</i>	ποδός	<i>pedis</i>	<i>fōtes</i>	*ped-és/-ós
dat.	<i>padé</i>	Μyc. <i>po-de</i> / <i>podēi</i> /	<i>pedī</i>	<i>fōēt, fēt</i>	*ped-éj
loc.	<i>padí</i>	dat. ποδί	abl. <i>pede</i>		*ped-i
instr.	<i>padá</i>		abl. <i>pede</i>	<i>fōte, fōēt, fēt</i>	*ped-eH ₁
nom. pl.	<i>pádas</i>	πόδες	<i>pedēs</i>	<i>fōēt, fēt</i>	*péd-es ~ *pód-es
acc.	<i>padás</i>	πόδας	<i>pedēs</i>	<i>fōēt, fēt</i>	*péd-ηs ~ *pód-ηs
gen.	<i>padám</i>	ποδῶν	<i>pedum</i>	<i>fōta</i>	*pedóm/-óm
abl.-dat.	<i>padbhýás</i>		<i>pedibus</i>	dat. <i>fōtum</i>	*p(e)d-b ^h iós
loc.	<i>patsú</i>	dat. πο(σ)σί			*ped-sú /-sí
instr.	<i>padbhís</i>	Μyc. <i>po-pi</i> / <i>pop^hi</i> /			*p(e)d-b ^h i(s)

See Sihler 1995, 281; Szemerényi 1996, 164.

Note: OCS. *pěšb* "on foot", Sln. *pěš*, OCz. *pěš* etc. reflect PS1. *pēs-jb, originating from the adv. *pěšb; it is derivable from the loc. pl. *pēd-su "on feet" (Machek 1968, 446).

3.2. If some cases of the root-noun are in zero-grade of ablaut, it means, it is the **hysterodynamic** inflection.

Table 43

case	"eyebrow"	examples	"foal"	examples
nom. sg.	*b ^h rēuH-s ¹	cf. OHG. brāwa ² < *brēwō Ved. brūs Gr. ὄφρυς	*pólH-s	cf. Gr. πῶλος Myc. nom.-acc. du. po-ro /pōlō/; Alb. pëlë "mare" < *pōlā
acc.	*b ^h rēuH-ŋ	cf. OHG. brāwa ² < *brēwō ² Ved. bhrívam	*pólH-ŋ	
gen.	*b ^h ruH-ós	Ved. bhrivás, ἱ. ὄφρυος	*pólH-ós	cf. Gmc. *fulja ² & *fulōn < *pólH-

See Beekes 1995, 189-90; Pokorny 1959, 172-73, 843; Wodtko, NIL 41-45.

Notes: 1) Beekes and others reconstruct *H₃brēuH- with initial laryngeal after Gr. o-. But the vocalic anlaut appears also in branches, where vocalization of the initial laryngeal is not known, e.g. in Pers. abrū, OIr. abrae, Bret. abrant, MWelsh amrant, CSI. obrvнb. More probably it is a result of presence of prefix *op(i)-, the ablaut variant of *ep(i)- "by" (in laryngealistic reconstruction *H₁opi- ~ *H₁epi-). In the Celtic languages it is probably another prefix, perhaps *amb(i)- "around" < *H₂nt-b^hi, see Hamp 1981, 49-53. 2) Gmc. *brēwō preserves *ē from the nom. sg. in all cases; it is the ā-stem.

3.2.1. According to the same declension model the numeral *sem- "one" is inflected, although its paradigm was significantly modified and levelled in individual branches:

Table 44

case	IE	examples
nom. sg. m.	*sóm *sēm-s	Av. hāma- "same", OCS. *samъ "alone" < *sōmo-; OEng. sōm "unity" < *sōmā Gr. εἷς, Dor. ἦς, Toch. A sas "1", B šes-ke "alone"
nom. sg. f.	*sm-iH ₂	Arm. mi, Gr. μία, Toch. B sana < *sāmyā < *smi ₂ "1" cf. Lat. mille "1000" < *smi-ǵ ^h sī "1 x 1000"
acc.	*sēm-i	Gr. ἔνα, Toch. A šom, B šeme
gen.	*sm-ós	Gr. ἐνός (e- after the acc. sg.)
dat.	*sm-éj	Gr. ἐνί; more orinal is the dative ending in Myc. e-me /emei/ (e- after the acc. sg.)
loc.	*sēm(-i)	cf. Ved. sāmī-, Gr. ἡμί-, Lat. sēmi, OHG. sāmi- "half" = "in one [of two]"
abl.	*sm-ód	Ved. smát, av. maṭ "together"

See Beekes 1995, 190; Blažek 1999, 144, 152; Pokorny 1959, 902-905.

3.2.2. It is possible to add some reduplicated nouns, although in later development they were shifted to other declension types. For this reason the examples illustrate the root vocalism better than case endings:

Table 45

case	"wheel"	examples	"beaver"	examples
nom. sg.	*k ^u é-k ^u l̥	cf. OEng. hweogol < *h ^w eg ^w ulá-	*b ^h é-b ^h r̥	sr. lit. bēbras,-us
acc.	*k ^u -k ^u él-ŋ	cf. Prus. kelan < *k ^u k ^u el-om cf. Gr. κύκλος, Toch. A kukäl < *k ^u k ^u lo-		
gen.	*k ^u i-k ^u l-ós	cf. Phryg. κίκλην "constellation of Great Bear" = *"wagon"	*b ^h i-b ^h r-ós	cf. Lat. fiber, gen. fibrī; OHG. bibar

See Beekes 1995, 190; Pokorny 1959, 640, 136.

3.2.3. It is possible to reconstruct the hysterodynamic inflection for neuters too. A good example is the word for "heart":

Table 46

case	IE	examples
nom.-acc. sg.	*kēr(d) < *kērd ^s	Hitt. kīr; Hom. Gr. κῆρ, Prus. seyr; cf. Arm. sirt < *kērdi-
gen.	*kērd-ós/-és	Ved. hrd-ás ¹ ; Lat. cordis; Lith. širdės
dat.	*kērd-éj	Ved. hrd-é ¹ ; Hitt. dat.-lok. kardi

See Beekes 1995, 190; Pokorny 1959, 579-80; Szemerényi 1996, 172-73; de Vaan 2008, 142.

Note:1) Irregular h- instead of expected ⁺s-; similarly Av. zarəd- with z- instead of ⁺s-, perhaps under influence of IE *ǵ^hord- "entrails" > Gr. χορδή "intestine" (Pokorny 1959, 443). The primary s- is preserved in the compound śrād dadhāti "believes" (but already not in Av. zrazdā- "believing") < *kred d^heH₁- "to put (in?) the heart" = "to have confide", cf. Lat. crēdō,-ere "to trust"; OIr. cretim, Welsh credaf "I believe". Tremblay (2004,

583-84) supposes the ablaut variant **k̑red* forming the first component of the syntagm **k̑red d^heH₁-* represents a suffixless loc. sg.

4. The so-called **thematic inflection** is limited only to nouns extended by the vowel *-o-* (with only exception in the voc. sg. in *-e-*), the so-called ***o*-stems**. If it is not indicated otherwise, in the table 47 the continuants of the IE words **u_lḱ^ho-* "wolf" and **iugó-* "yoke" are cited:

Table 47

case	Vedic	Hittite	Greek	Latin	Olrish	Gothic	litevský	OCS.	IE
nom. sg.	<i>vṛkas</i>	<i>ishās</i> "lord"	λύκος ⁶	<i>lupus</i> ¹⁴	<i>fer</i> ²⁴	<i>wulfs</i> ³⁴	<i>vilkas</i>	<i>vľkъ</i>	*-os
vok.	<i>vṛka</i> ¹	<i>ishā</i>	λύκε	<i>lupe</i> ¹⁵	<i>fir</i> ²⁵	<i>wulf</i>	<i>vilke</i>	<i>vľčє</i>	*-e
acc.	<i>vṛkam</i>	<i>ishān</i>	λύκον ⁷	<i>lupum</i> ¹⁶	<i>fer</i> ²⁶	<i>wulf</i> ³⁵	<i>vilka</i> ⁴⁰	<i>vľkъ</i>	*-om
nom-acc. sg. n.	<i>yugám</i>	<i>yugan</i>	ζυγόν ⁸	<i>iugum</i> ¹⁷	<i>scél</i> ²⁷	<i>juk</i> ;ORun. <i>horna</i> "horn"	Pr. <i>lunkan</i> ⁴¹	<i>igo</i>	*-om
gen.	<i>vṛkasya</i>	<i>ishās</i> ⁴	λύκοιο ⁹	<i>-osio</i> ¹⁸ <i>lupī</i> ¹⁹	?-oiso ²⁸ <i>fir</i> ²⁹	ORun. -as ³⁶ <i>wulfis</i> ³⁷	Pr. -as ⁴² = abl.	= abl.	*-os *-os-jo *-i ⁴⁶
abl.	<i>vṛkād</i>	<i>antuhseṣ</i>	<i>e-ko-me-no</i> ¹⁰	<i>lupō</i> ²⁰	Cib. -u ³⁰		<i>vilko</i> ⁴³	<i>vľka</i> ⁴²	*-ōd < *-o-ed ⁴⁷
dat.	<i>vṛkāya</i> ²	<i>ishī</i>	λύκοι ¹¹	<i>lupō</i> ²¹	<i>fiur</i> ³¹	ORun. -ai ³⁸	<i>vil̃kui</i>	<i>vľku</i>	*-ōj < *-o-ej
loc.	<i>vṛke</i>	<i>ishī</i>	οἴκοι ¹²	<i>domi</i> ²²	Cib. -ei ³²	dat. <i>wulfa</i>	<i>vilke</i> ⁴⁴	<i>vľcě</i>	*-oj < *-o-i
inst.	<i>vṛkeṇa</i> ³		<i>a-to-ro-ḡo</i> ¹³	<i>lupō</i> ²³	Cib. -u ³³	dat. <i>wulfa</i> ³⁹	<i>vilku</i>	<i>vľkomy</i> ⁴⁵	*-oH ₁ < *-o-H ₁

See Beekes 1995, 190-92; GHJ 79-83; Szemerényi 1996, 182-88.

Notes: 1) Absence of palatalization of the velar is explainable via paradigmatic levelling. 2) The final *-a* is a particle (Beekes 1995, 192). 3) Adapted from the pronominal inflection, cf. the instr. sg. of demonstratives *ena*, *téna*, *eténa*, interrogative *kéna*, relative *yéna*, reflexive *svéna* (Macdonell 1916[2000], 77, 106-12). 4) It corresponds to the gen. ending of other inflectional types. In the Luwian subbranch the genitive is replaced by so-called possessive adjectives, formed by the suffix *-assi-* in Cuneiform Luwian and *-asi-* in Hieroglyphic Luwian. Szemerényi (1996, 184, 187; following Mittelberger) derived them from the *o*-stem gen. in **-os-jo*. 5) The instr. sg. from *antuhshas* "man". The abl. sg. has the ending *-az*. 6) Cf. Myc. *wo-no* /*woinos*/ "vine". 7) Cf. Myc. *to-ro-ḡo* /*trok^hon*/ "strap" or *wo-i-ko-de*, *wo-ko-de* /*woikon-del*/ "in the house". 8) Cf. Myc. *e-ra₃-wo* /*elaiwon*/ "olive oil". 9) Cf. Myc. *do-e-ro-jo* /*do(h)elojjo*/ "servant". 10) Myc. toponym, which may preserve the abl. sg. in *-ōl*. 11) Cf. Myc. *a-to-ro-ḡo* /*ant^hrōk^hōil*/, cf. Gr. ἄνθρωπος "man" 12) Att. "at home"; cf. the Myc. toponym *pu-ro* /*pulōil*/ "in Pylos". 13) Myc. *ant^hrōk^hōil* (notes 6-13: see Bartoněk 2003, 188-210 & Hajnal 1995, 23-24). 14) Cf. OLat. *equos* (Plautus), *duenos* (CIL I, 4), further Fal. *Kaios*, Ven. *Voltiomnos*, Osc. *húr̃z* "grove", SPic. *meitims* "gift"? 15) Cf. Fal. *Uoltene*, Umb. *Šerfē*, Osc. *φατοφε*. 16) Cf. OLat. *manom* "hand", Fal. *vinom* "vine", Ven. *ekvon* "horse", Osc. *húrtúm*, *dolom* "intent", SPic. *meitimúm*. 17) Cf. OLat. *donom* "gift", Fal. *duenom* "good", Ven. *donom* & *donon* "gift", osk. *sakaraklúm*, vol. *pihom* "zbožného". 18) Cf. OLat. *Popliosio Valesiosio* = class. Lat. 'Publii Valerii' (Lapis Satricanus, 500 BC), Fal. *Kaisiosio*. 19) Cf. OLat. *Aisclapi* (CIL I, 440), *argentī* (Plautus) "of silver" (adj.), Fal. *Marci*, Ven. *louki* "of sacred grove". 20) Cf. OLat. *fileod* "to son", Osc. *sakaraklúd* "to sanctuary". 21) Cf. OLat. *Numasioi duenoi*, later *Aiscolapio*, Fal. *Kaisioi*, Ven. *murtuvoi* "to dead", Osc. *húrtúii*, SPic. *brimeglúii*. 22) Lat. "in homeland", lit. "at home"; cf. Osc. *húr̃tei*. 23) In the form of the typ *lupō* three cases merged: dative, ablative & instrumental sg.; cf. also Ven. instr. *Voltio* (notes 14-23: see Meiser 1998, 134-35; UB 228-30). 24) Goid. **uīros* "man"; cf. Cib. *ueiðos* "witness", Gl. *tarvos* "bull", Lep. *Alkouinos*, *Ulkos*. 25) Goid. **uīre*, cf. Gl. (Lezoux) *nate* "oh, son!" (LG 143). 26) Goid. **uīrom*; cf. Cib. *elaðunom*, Gl. (Alise) *celicnon* "hall", but (Larzac) *brictom* "magic". 27) OÍr. *scél* "message" < **sk^hetlom* (LEIA, S 39-40); cf. Cib. *Belikiom*, Lep. *uinom* "vine", Gl. (Chamalières) *ollon* "all", *meion* "small". 28) Lep. gen. sg. *Xosioiso*. Metathesis? 29) Goid. **uīrī*, Ogam *maqqi* "of son"; cf. Gl. (Couchey) *Segomari*, (Todi) *Trutikni*, Lep. *Askoneti*, ale Cib. *-o* in *karuo* etc. 30) Cib. *Usamuð*. 31) Goid. **uīrū*; cf. Cib. *ueiðui*, Lep. *Pelkui*, Gl. (Cavaillon) βαλαυδοι & (Couchey) *Alisanu*. 32) Cib. *kortonei*, Gl. *-e: uo duno derce* "under the barrow", in *Alixie* "in Alesia". 33) Cib. *auku*, Gl. *sunartiu* "by good strength" (notes 24-33: see Lejeune 1971, 467; LG 51-56; MLH 396-400). 34) Cf. ORun. *laukaz* "garlic". 35) Cf. ORun. *staina* "stone". 36) ORun. *Godagas*. 37) Gmc. **-eso*, adapted from the pronominal inflection, cf. Goth. *hvis* "what", *bis* "that", OCS. *česo* "what". 38) Cf. ORun. *hahai*. 39) Cf. the instr. sg. in OSas. *dagu*, OHG. *tagu* "by day". 40) Cf. Prus. *deiwan* "god". 41) Prus. "bast". 42) Prus. *deiwās*. 43) **-ād* as in the *ā*-stems (cf. Szemerényi 1996, 183). 44) Diphthong remains petrified in some adverbs as Lith. *namiē* "at home", Prus. *būtai* "in the evening". 45) After other inflectional patterns (Ehart 1982, 120). The original ending, which should be **-a*, may be fossilized in the interrogative & relative OCS. adv. *kogda*, *kṽgda* "when", if it is a compound of the pronominal root **ko-*, **k̑b-*, and the word *god^h* "time" (Wiedmann apud Brugmann 1911, 189). 46) Cf. also Alb. *et* "of father" < **attī* : nom.

atē; Toch. A *Mahiśvari* "Mahiśvari's", maybe also the genitive of kinship terms as A *pācri*, B *pātri* "of father" (Klingenschmitt 1992, 98-104). 47) Only the abl. sg. of the *o*-stems differs from the gen. sg., in other inflectional classes the gen. & abl. sg. merge (with exception of Italic languages, Celtiberian and Anatolian languages, where the dental ablative was extended in other inflectional classes). Its origin has been sought in the pronominal ablative of the type Ved. *mad*, OLat. (also acc.) *med* (Praeneste), *mēd* (Plautus), Fal. *med*, *met*, similarly OLat. *ted* & *sed*, and perhaps Gl. **med* & **sed* in the syntagms *to-med-ec-lai* (Voltino, North Italy), *met-ingi-set-ingi* "between me and between her" (Châteaubleau; see Lambert 2001, 112). The ending is identified with the particle **ad* < **H₂ed* (Dunkel, Sihler etc.) or **eti* ~ **oti* < **H₁eti* ~ **H₁oti* (Neu, Tichy etc.), see Szemerényi 1996, 187).

Table 48

case	Vedic	Hittite	Greek	Latin	Old Irish	Gothic	Lith.	OCS.	IE
nom. pl.	<i>vṛkāś</i>	<i>ishēs</i>	λύκοι ³	o.-u. <i>-us</i> ⁹ <i>luprī</i> ¹⁰	<i>fīr</i> ¹⁶	<i>wulfos</i> ²⁴	<i>vilkaī</i> ²⁹	<i>vľsci</i>	<i>*-ōs</i> < <i>*-o-es</i> <i>*-oī</i>
acc.	<i>vṛkān</i> ¹	EN.MEŠ- <i>us</i>	λύκοις ⁴	<i>lupōs</i> ¹¹	<i>fīru</i> ¹⁷	<i>wulfans</i>	<i>vilkaūs</i> ³⁰	<i>vľky</i> ³⁵	<i>*-oms</i>
nom.- acc. pl.n.	<i>yugā</i>		ζυγά ⁵	<i>iuga</i> ¹²	<i>scél(a)</i> ¹⁸ Clb. <i>-a</i> ¹⁹	<i>juka</i> ²⁵	Prus. <i>warto</i> ³¹	<i>iga</i>	<i>*-(e)H₂</i>
gen.	<i>vṛkānām</i> ²	<i>siunan</i> "of gods" <i>ishās</i>	λύκων ⁶	<i>lupōrum</i> ¹³	<i>fer</i> ²⁰	<i>-o/-a</i> ²⁶ <i>wulfē</i> ²⁷	<i>vilkiū</i> ³²	<i>vľkō</i>	<i>*-ōm</i> < <i>*-o-om</i>
dat.-abl.	<i>vṛkebhyaś</i>	<i>ishas</i>		<i>-oibos</i> ¹⁴	<i>fer(a)ib</i> ²¹	<i>wulfam</i> ²⁸	<i>vilkāms</i> ³³	<i>vľkōmō</i>	<i>*-oī-b^h/m-</i> <i>*-oī-os?</i>
loc.	<i>vṛkeṣu</i>	<i>ishas</i>	λύκοισι ⁷	<i>lupīs</i> ¹⁵	<i>-ei</i> ²²		<i>vilkuosē</i> ³⁴	<i>vľcēxō</i>	<i>*-oī-su</i>
inst.	<i>vṛkais</i>		λύκοις ⁸	<i>lupīs</i> ¹⁵	<i>-uis/-us</i> ²³		<i>vilkaīs</i>	<i>vľky</i> ³⁶	<i>*-ōīs</i> ³⁷

See Beekes 1995, 192; Fortson 2004, 113-16; Szemerényi 1996, 183-88;

Notes: 1) Long *-ā-* after the nom. pl. *-ās*. Better is preserved the acc. pl. in OAv. *mašiiṇg*, *mašiiqs-cā* "man" ("mortal") < **martīanh*, **ans-ca*; cf. Ved. *mārtīyān*, *mārtīyāś-ca* (Hoffmann & Forssman 1996, 120). 2) Influence of the *n*-stems. The primary gen. pl. is preserved e.g. in the syntagm *dévāñ janma* "race of gods" (Szemerényi 1996, 185). 3) Cf. Myc. *o-no /onoī/* "donkeys". 4) The ending of the acc. pl. is preserved in Arg. υἱόνς "sons"; Myc. *si-a₂-ro /sihalons/* : Gr. nom. sg. σίαλος "fat hog". 5) Cf. Myc. *do-ra /dōra/* : Gr. δῶρον "gift". 6) Cf. Myc. *e-ra-po /elap^hōn/* : Gr. ἔλαφος "deer". 7) Cf. Myc. *te-o-i /t^he(h)oi(h)i/* : θεός "god". 8) Cf. Myc. *de-so-mo /desmois/* : Gr. δεσμός "strap" (notes 3-8: see Bartoněk 2003, 188-210; Hajnal 1995, 23-24). 9) Osc. *Núvlanús*, SPic. *Safínús*, Umb. *Ikuvinu*. 10) Cf. OLat. *peploe*, besides epigraphic *Virei*. 11) Cf. OLat. *deivos*, Ven. *deivos*, Osc. *feihúss*, Umb. *vitluf*. 12) Cf. Umb. *iuku* & *iuka*. 13) Adapted from the pronominal inflection: **ōrum* < **ūsom* < **oī-s-ōm*, cf. the Vedic demonstrative *tésām*, OCS. *těxō*. The nominal gen. pl. is preserved in OLat. *deom*, Ven. *Oterginon*, Pael. *Cerfum*, CPic. *Safínúm*, Osc. *Núvlanúm*. 14) Ven. *ekvoibos*, besides *louderobos*. 15) In Lat. the dat.-abl. pl. of *o*-stems in *-īs* merged with two other cases, the loc. pl. in **-oī-su*, and instr. pl. in **-oīs*. The diphthong is also preserved in OLat. *qurois*, *poplois*, Pael. *puclōis*, Osc. *feihúis*, *zicolōis* (notes 9-15: see UB 229-30). 16) Goid. **uirī*, cf. Gl. (Brioni) *Tanotaliknoi*, (Maily-le-Camp) ταουτανοι & (Saint-Germain) *Aresequani*, Lep. *Kasiloi*, Clb. *Alaboi*. The original nom. pl. in **-ōs* was preserved in Old Irish voc. pl. *fīru* < Goid. **uirūs*. 17) Goid. **uirūs*; cf. Gl. (Graufesenque) *tuθhus*, Clb. *?matus*. 18) Goid. **sk^hetla*. 19) Clb. *korta*. 20) Goid. **uirom*; cf. Gl. (Chamalière) *diiiuion* & *ande-dion*, Clb. *Titum*. 21) Goid. **uiro[i]bi(s)* (Thurneysen 1946, 182) with the ending **-bi(s)*, corresponding to the Gl. instr. pl. *gobedbi*, cf. dat. pl. in Gl. *Rudiobo*, Lep. *Uvltiaubos*, Clb. *Uetikubos*, similarly abl. pl. *Nouantubos*. 22) Clb. *Lutiakei* (Cólera 2005, 124). 23) Gl. (Vaison) ταουτιους / (Graufesenque) *Vindulus*. 24) The pronominal nom. pl. in *-ai* appears in the Gothic strong adjective nom. pl. m. *blindai* "blind". Further cf. ORun. *arbījarjostez* "most legitimate-to-inherit"?, besides later *stAinAz* "stones", ON. *ulfar* "wolves". 25) Cf. ORun. *hag^alu* "hail" : nom. sg. n. *hag^ala*. 26) ORun. *Wiwio*, later *flAinA*, ON. *daga*, OEng. *dæga*, OSax. *dago* "days" < **-ōⁿ*. 27) The Gothic gen. pl. m./n. in *-e* instead of expected **-o* had perhaps to eliminate homonymy with the gen. pl. f. (Brugmann 1911, 238-39; Ringe 2006, 282). Kortlandt apud Beekes (1985, 142) explains *-e* from Gmc. **-ē* < **-eī-om*, thus from the gen. pl. *i*-stems, whence the ending had to spread. 28) Cf. ORun. *borumz* "to sons". Kortlandt (apud Beekes 1985, 144) explains the vowel *u* in the OHG. dat. pl. *tagum* via the *u*-umlaut caused by vocalization of the ending **-mus* (notes 23-27: see Antonsen 1975, 18-19). 29) Cf. Prus. *wījrai* "men". 30) Lith. *-us* < **-uos* < **-ōns* (Otrębski III, 16). Cf. Prus. *deiwans* "gods". 31) Prus. "doors". 32) Cf. Prus. *grīkan* : nom. sg. *grīkas* "sin". 33) Cf. OLith. [Daukša's Postilla] *waykāmus* = Lith. *vaikāms* "to children". 34) The Lith. ending to loc. pl. could originate in contamination with the acc. pl. **-uons* and postposition **-en*, cf. Žemaitic loc. pl. in *-unse* (Otrębski III, 16). 35) Sl. acc. pl. *-y* < **-ōns*. 36) Sl. instr. pl. *-y* < **-ōīs* (Ehart 1982, 121). 37) The instr. pl. in **-oīs* (Gr., It., Balt.) or **-ōīs* (Il., Celt., Sl.) remains non-transparent. Maybe, it is the instr. sg. in **-oH₁* extended by non-singular **-oī-* and pluralizing *-s* (otherwise Erhart 1982, 98; Szemerényi 1985, 519-20).

5. Besides the singular and plural the Indo-European protolanguage also differentiated the dual, although this category was not preserved in all daughter branches. E.g. in old literary Germanic languages the dual disappeared from the nominal morphology, but remained in the pronominal and verbal systems. In Latin the traces of the dual are preserved only in the numerals *duo* (*duō* by Plautus), *duae*, *duo* "two", and *ambō*, *-ae,-ō* "both". In the Anatolian branch the traces of dual have been sought in designations of the pair body parts, e.g. Hitt. *sakuwa* "eyes", Luw. *aruta* "wings", *issara* "hands", *pata* "feet" (Krasuxin 2004, 133; Szemerényi 1996, 161). Thanks to homonymy of endings the dual paradigm is less rich in comparison with plural even in those languages, where the dual was preserved.

Table 49a

<i>o</i> -stems	Vedic	Avestan	Greek	Old Irish	OCS.	stsl.	IE
nom.-acc. m.f.	<i>vṛkā, vṛkau</i>	<i>spādā</i> ³	λόκω ⁷	<i>fer</i> < * <i>uirā</i>	<i>vilku</i>	<i>vl̥ka</i>	*- <i>o</i> - <i>H</i> ₁
nom.-acc. n.	<i>yugé</i>	<i>šii̯aoθnōi</i> ⁴	ζυγός ⁸	<i>scél</i> ¹¹		<i>i(d)zě</i>	*- <i>o</i> - <i>iH</i> ₁
gen.	= loc.	<i>qsaiiā</i> ⁵	= loc.	<i>fer</i> < * <i>uiroy</i>	<i>dviejaus</i> ¹²	= loc.	*- <i>o</i> - <i>H</i> ₁ <i>ōs</i>
loc.	<i>vṛkayos</i> ¹	<i>zastaiiō</i> ⁶	λόκοιυ ⁹		<i>dviejau</i> ¹²	<i>vl̥ku</i>	*- <i>o</i> - <i>H</i> ₁ <i>ou</i>
dat.-abl.-inst.	<i>vṛkābhyām</i> <i>aśvebhyām</i> ²	<i>zastōibiā</i> ⁶ <i>aspaēbiā</i> ²		<i>fer(a)ib</i> < * <i>uirobim</i>			*- <i>o</i> - <i>b</i> ^h <i>ioH</i> ₁
instr.			<i>o-mo-pi</i> ¹⁰		<i>vilkaṃ</i> <i>vilkaṃ</i>	<i>vl̥koma</i>	*- <i>o</i> - <i>moH</i> ₁ *- <i>o</i> - <i>b</i> ^h / <i>miH</i> ₁

See Beekes 1995, 194-95; Brugmann 1911, 282-83; Hoffmann & Forssman 1996, Szemerényi 1996, 183-85.

Notes: 1) *-*o*-*H*₁*ou* + *-s* perhaps after the gen. 2) "horse". 3) OAv. *spāda*- "army". 4) OAv. *šii̯aoθna*- "action", cf. YAv. *saite* "200", *duiie*, *duuaē-ca* "2". 5) OAv. *qsa*- "share". 6) OAv. *zasta*- "hand". 7) Cf. Myc. *po-ro* /*pōlōl*/ "two foals". 8) Ending of the m.-f. du. 9) Rix (1976, 141): *-*o*isin after the dat.-loc. pl. *-*o*isi with the final nasal after the instr. du. *-*o*-*b*^h*im*; otherwise Beekes (1995, 195): *-*o*-*Hu*-*m*? 10) Myc. /*oimop*^h*i*/ : Gr. οἰμός "bundle" (Hajnal 1995, 23). 11) It causes a nasalization of the following initial: maybe an identification with the ending of the nom. sg. n. *-*om*. More original is perhaps Gl. *uercobreto* (Thurneysen 1946, 182). 12) Lith. *dvejì* "double".

Table 49b

<i>eH</i> ₂ -stems	Vedic	Avestan	Greek	OIrish	Lithuanian	OCS.	IE
nom.-acc.	<i>séne</i> "army"	<i>uruuairē</i> ¹	θεᾶ ³	<i>túait</i> ⁵	<i>ranki</i> "hands"	<i>ročě</i> "hands"	*- <i>eH</i> ₂ - <i>iH</i> ₁
gen.-loc.	<i>sénayos</i>	<i>uruuaraiiā</i>	θεαίν ⁴	<i>túath</i> ⁶		<i>ročku</i>	*- <i>eH</i> ₂ - <i>iH</i> ₁ - <i>H</i> ₁ <i>ou</i>
dat.-abl.-ins.	<i>sénābhyām</i>	<i>vqθβābiia</i> ²		<i>túath(a)ib</i> ⁷	<i>rañkom</i>	<i>ročkama</i>	*- <i>eH</i> ₂ - <i>b</i> ^h <i>ioH</i> ₁ *- <i>eH</i> ₂ - <i>moH</i> ₁

See Beekes 1995, 194-95; Brugmann 1911, 284-85; Hoffmann & Forssman 1996, 122; Krasuxin 2004, 140; Szemerényi 1996, 188-90.

Notes: 1) YAv. *uruuarā*- "plant"; cf. OAv. *ubē*, YAv. *uiie* "both". 2) YAv. *vqθβā*- "herd". 3) Gr. "goddess"; cf. Myc. *pte-no* /*pternōl*/ : Gr. πτέρνη "heel", besides *wo-ra-e* /*wōrā(h)e*/ : Gr. ὄρη "care" (Bartoněk 2003, 618; Hajnal 1995, 16). The final *-a-e* may reflect *-*ā(i)e* < *-*eH*₂-*iH*₁ (Rix 1976, 135). 4) Cf. Myc. *wa-na-so-i* /*wanasso(j)i(n)*/ : Gr. (ῥ)άνασσα "lady", besides Arc. gen.-dat. κρᾶναυον : Att. κρήνη "spring, source" (Bartoněk 2003, 166, 612; Rix 1976, 135). 5) Goid. **toūt-ī* "races"; cf. OIr. *mnaí* "two women" < **g^hn-eH*₂-*iH*₁. 6) Goid. **toūtou* after the *o*-stems. 7) Goid. **toūtābim* (Thurneysen 1946, 189-90).

Table 49c

cons.-stems	Vedic	YAvestan	Greek	OIrish	Lith.	OCS.	IE
nom.-acc. m.f.	<i>pitārā,-au</i> ¹	<i>nara</i> ³	πατέρε ⁴	<i>athir</i> ⁶	<i>žmune</i> ¹⁰	<i>kamēni</i> ¹³	*- <i>H</i> ₁ <i>e</i>
nom.-acc. n.	<i>nāmanī</i> ²		ὄσσε ⁵	<i>ainm</i> ⁷	<i>aki</i> ¹¹	<i>imeni,-ě, oči</i>	*- <i>iH</i> ₁
gen.-loc.	<i>pitros</i>	<i>narā</i>	πατέροιν ⁶	<i>athar</i> ⁸		<i>kamenu</i>	*- <i>H</i> ₁ <i>ou(s)</i>
dat.-abl.-ins.	<i>pitrbhyām</i>	<i>narābiia</i>		<i>athr(a)ib</i> ⁹	<i>akmenim</i> ¹²	<i>каменьма</i>	*- <i>b</i> ^h <i>ioH</i> ₁ *- <i>moH</i> ₁

See Beekes 1995, 194-95; Brugmann 1911, 294-97;

Notes 1) "two fathers"; 2) "two names"; 3) "two men"; 4) "two fathers", cf. Myc. *pi-ri-je-te-re* /*pr̥iētēre*/ "two sawers" (Bartoněk 2003, 255); 5) "eyes". 6) Ending of the *o*-stems (Rix 1976, 160). 7) Goid. **atere* "two fathers". 8) Goid. **anmenī* "two names". 9) Goid. **atrous*? 10) Goid. **atribim*. 11) OLith. *žmune* "two men" (Fortson 2004, 105). 12) "eyes". 13) "to stones". 13) "two stones".

6. Summarizing the preceding partial reconstructions, it is apparent, most difficult is to establish the original protoforms of the ablative, dative and instrumental plural. It is natural to suppose mutual levelling, merging, interference. These processes are concentrated to Tab. 50

(see Brugmann 1911, 120; Beekes 1985, 144-46), whence the following case protosystem may be postulated (Tab. 51), to explain the partial case systems in daughter branches:

Table 50

case	IE	II	Arm.	Gr.	Messap.	Italic	Celtic	Gmc.	BSl.
dat. pl.	*-mus								*-mus
>								*-mos	
abl. pl.	*-ios		-j ²						
>		*-b ^h ios			-bis ³	*-b ^h os	*-b ^h os		
ins. pl.	*-b ^h i ¹	*-b ^h is	*-b ^h i(s)	*-b ^h i			*-b ^h i(s)		
>					-bas ⁴		*-mi ⁵	*-mis ⁶	*-miHs
dat. pl.	*-mus								

Notes: 1) Probably the same suffix appears in Hitt. *kuwapi* "where, when" (HEG 4, 229-32). 2) Arm. -j in the abl. pl. of personal pronouns *mēnj*, *jēnj* is derivable from *-ios (Kortlandt 1984, 103-04 = 2003, 50; Beekes 1985, 144). 3) Messap. abl. pl. *ogrebis*, *tatθebis*, *valebis* (see MLM II). 4) Messap. dat. pl. *Laidehiabas*, *Logetibas*. 5) Cf. the OIr. dat. pl. *n*-stems of the type *anm(a)imm* from *ainm* "name" (see Tab. 32, note 22; already Brugmann 1911, 188 thought about this solution and Hamp 1996 returned to it). 6) See WGmc. dat. pl. *Vatvims* & *Aflims*, corresponding to Lat. *Vatviabus* & *Afliabus*, and OEng. dat. pl. *dām* from the demonstrative *sē* "that" with the *i*-umlaut (Brugmann 1911, 262, 264).

Table 51

number case / type	singular		plural		dual	
	athematic	thematic	athematic	thematic	athematic	thematic
nom. anim.	*-s	*-os	*-es	*-ōs < *-o-es	*-H ₁	*-o-H ₁
voc.	*-ø	*-e	*-es	*-ōs < *-o-es	*-H ₁	*-o-H ₁
acc. anim.	*-m	*-om	*-ms	*-oms	*-H ₁	*-o-H ₁
nom.-acc. n.	*-ø	*-om	*-H ₂	*-eH ₂	*-iH ₁	*-o-iH ₁
gen.	*-s	*-os(-io)	*-om	*-ōm	*-H ₁ ōs	*-o _i -H ₁ ōs
abl.	*-s	*-ōd < *-o-ed	*-ios	*-o _i -os	= dat.	= dat.
dat.	*-e _i	*-ō _i < *-o-e _i	*-mus	*-o _i -mus	*-mōH ₁	*-o _i -mōH ₁
loc.	*-i	*-o _i	*-su	*-o _i -su	*-H ₁ ou	*-o _i -H ₁ ou
instr.	*-H ₁	*-oH ₁	*-b ^h i(s)	*-o _i -b ^h i(s)	*-b ^h iH ₁	*-o _i -b ^h iH ₁

See Beekes 1995, 173; Fortson 2004, 113.

6.1. Origin of the *o*-stems was discussed many times. Two hypotheses seem best argued. Jean Haudry (1982, 36-38) formulated the idea that the *o*-stems originated from pronouns with determining function added to a nominal base, playing so a role of a postpositive article. For this solution there are typological parallels e.g. in Balto-Slavic languages, where the adjectives used in the attributive role are extended by the IE relative **io-/*iā-*, the postpositive determination using demonstratives is living in modern Balkanian or Scandinavian languages. So-called *mimation* & *nunation* in Semitic languages also represent in principle the postpositive determination. In Indo-European a good candidate could be identified in the Anatolian pronoun *-a-* of the 3rd person attested only in postposition (HEG 1-2, 6-7):

Table 52

case	Hittite	Palaic	C. Luwian	Hier. Luwian	Lydian	*
nom. sg. c.	-as	-as	-as	-(a)s	-aś	*-os
nom.-acc. sg. n.	-at	-at	-ata	-(a)ta	-ad, -at	*-ot
acc. sg. c.	-an /-un	-an	-an	-an	-av	*-om
nom. pl. c.	-e	-as				*-o _i
nom.-acc. pl. n.	-e	-e				*-o _i
acc. pl. c.	-us					*-oms
acc. pl. n.	-at		-ata	-(a)ta		*-ot

Pedersen (1907, 152) offered an alternative solution. He mentioned that the subject of transitive verb looks like in genitive (sigmatic case), if was active, and like in instrumental, if was inactive. On the other hand, the subject of intransitive verb and object of transitive verb

were in absolutive (i.e. asigmatic) case. This asymmetry between valency of transitive and intransitive verbs is summarized in Tab 53 (see Beekes 1995, 193):

Table 53

verb		nominative system	ergative system
transitive verb	subject	nominative	ergative
	object	accusative	absolutive
intransitive verb	subject	nominative	absolutive

Beekes (1985, 191-95; 1995, 193) and Kortlandt (2002, 217) develop Pedersen's idea, assuming that the nominative syntax of old Indo-European languages was formed later and the case system of the Indo-European protolanguage is primarily based on the ergative syntaxi. The same ending of the nom. and acc. neuter designating originally inactive nouns originated from the primary absolutive, while the ergative belonged to the active subject. According to Beekes the sigmatic genitive-ablative developed from the ergative. During transformation of the ergative system into nominative one the form reconstructed as *CC-R-ós* became the nominative, a new case of subject. The vowel *-o-* had spread to other cases. měl širit k dalším pádům. Schmalstieg (1997, 401-07) and Gamkrelidze & Ivanov (1984, 267-91: active typology) formulated their own theories assuming the ergative past of the IE syntax.

7. The implications of the ergative interpretation:

Table 54

case	form (*)	comments in perspective of the ergative interpretation
sg. nom.	-ø	in HD inflection and PD neuters (B 1985, 172)
	-s act.	identical with the sigmatic gen.-abl. sg., originally ergative (B 1985, 172-95)
	-om inact.	agens of the transitive verb (Pedersen 1907, 152; Schmalstieg 1997, 405-06: instr. of <i>o</i> -stems)
voc.	-ø	see B 1985, 99-108
acc.	-m	originally directive-terminative (B 1985, 198)
gen.	-(o)s	originally ergative (B 1985, 172-95); in Hitt. used in both gen. sg. & pl.
	(o- -osjo	< gen. *-os & relative *jo (B 1985, 185; Nikolaev 2000)
stems)	-ī	cf. the suffix of affiliation *-ijo- (*iHo-?); see K 1994, 98-104; Meiser 1998, 135
abl.	-os	identical with the gen. sg. in *(o)s, originally the ergative (B 1985, 172-95)
(o-st.)	-(o/e)t/d(i)	cf. also Hitt. -az
dat.	-(e)i	on persons; dat. & loc. were originally one and the same case (B 1995, 173)
loc.	-i	on places & inactive nouns; originally identical with the dative (B 1995, 173); cf. Arm. herow, Gr. ἐρωσι(v), ON. i fforð "last year", OIr. ón n-urid "from last year" < *per-uti "year ago"
instr.	-H ₁	cf. instr. pl. of the <i>o</i> -stems *-ōis < instr. sg. *-oH ₁ + non-singular *-oī- + pluralizing -s
pl. nom.	-es	
	(o- -oī	plural of pronominal origin
stems)	-oī-	non-singular affix of the <i>o</i> -stems, preceding the case ending
	-H ₂ inact.	collective
voc.	= nom.	
acc.	-ms	= acc. sg. -m + pluralizing -s in congruence to the nom. pl. in -es
gen.	-om	see Kortlandt 1978; in Hitt. used in both gen. sg. & pl.; Schmalstieg 1997, 405-06: ergative
abl.	-jos	> Arm. -j, Il. *-b ^h (i)-jos
dat.	-mus	> BSl. *-mus; Gmc. *-muz
loc.	-su ~ -si	cf. Lat. <i>mox</i> , MWelsh <i>moch</i> "soon" < *mok-su; Alb. abl. pl. -sh: <i>malesh</i> "in mountains"; <i>për-posh</i> "down", <i>posh-të</i> "below" : ° <i>posh</i> ° < *pēd-si; Phryg. τειρωσι "in villages" (K 1994, 313; H 2003, 129)
instr.	-b ^h i	originally probably without number distinction, cf. Gr. ἰφι "strongly", Myc. <i>wi-pi-no-o</i> / <i>Wip^hi-no(h)os</i> /, Hom. Ἰλιόφιν ... τείχεα "walls of Ilion" (Rix 1976, 158-59; Ba 2003, 274); Il. dat. of personal pronouns: OAv. <i>maibiā</i> , <i>taibiā</i> , <i>ahmaibiā</i> , <i>yūšmaibiā</i> vs. Ved. <i>tūbhya(m)</i> , <i>asmábhyam</i> , <i>yušmábhyam</i> ; OCS. dat.-loc. <i>tebě</i> , <i>sebě</i> , instr. <i>tobojo</i> , <i>sobojo</i> (see Br 1911, 187)

B = Beekes; Ba Bartoněk; Br Brugmann; H - Hajnal; K = Klingenschmitt.

Note: Identification of non-singular morpheme *-oī- and pluralizing -s imply in some cases the agglutinative structure.

8. After internal reconstruction the external comparison should follow. It may be interpreted in both typological and genetic levels, if the Indo-European protolanguage was not isolated.

8.1. In Semitic noun inflection the forms without and with determination are used, latter with the postpositive article in the form *-m ('mimation') or *-n ('nunation').

Table 55

case	* Sem.	Akk.	* Ebl.	Amarna	Ugar.	Hebr.	Aram.	CIArab.	EpNAr.	EpSAr.	Geez
sg. indet.											
nom.	-u	-ø			-u(m?)	-ø	-ø	-u		-V	
acc.	-a	-ø			-a(m?)	-ø	-ø	-a		-V	-a
gen.	-i	-ø			-i(m?)	-ø	-ø	-i		-V	
loc.	-uma	-um	-ūm	-ama	-VmV	-om	-ū	-u			-u
dir.-dat.	-a/iš	-iš	-iš		-h	-ā(h)					
pred.	-a	-ø	-a			-ø	-ø	-a			-a
sg. det.											
nom.	-u-m	-um	-um		-u(m)	-ø	-ø	-un		-Vm	-ø
acc.	-a-m	-am	-a(m)		-a(m)	-ø; adv. -ām	-ø; adv. -ā	-an		-Vm	-a
gen.	-i-m	-im	-im		-i(m)	-ø	-ø	-in		-Vm	-ø
du. indet.											
nom.	-ā	-ā	-ā		/-ā/			-ā			
acc.-gen.	-ay	-ī			/-ē/	-ē	-ē	-ay	-ay	-y	
pred.	-ā	-ā						-ā			
du. det.											
nom.	-ā-ni	-ān	-ān		-m /-āmi/	-m		-āni	-n	-n(y) Q. -my	
acc.-gen.	-ay-ni	-īn	-ayn	-ēma/i	-m /-ēmi/	-áyim		-ayni		-yn	
pl. A indet.											
nom.	-ū	-ū	-ū		-u /-ū/			Yu. -w			
acc.-gen.	-ī	-ī	-ī		-i /-ī/			Yu. -y			
pred.	-ū	-ū				-ū		-ū		-w	-ū
pl. A det.											
nom.	-ū-ma				-um(a) /-ūma/			-ūna			
acc.-gen.	-ī-ma				-im(a) /-īma/	-īm	-īn	-īna		-VnV	
pl. B indet.											
nom.	-āt-u	-āt			-t	-ōt	-āt	-ātu			
acc.-gen.	-āt-i	-āt			-t	-ōt	-āt	-āti			
pred.	-ā	-ā					-ā	-ā			-ā
pl. B det.											
nom.	-āt-u-m	-ātum	-ātum		-t	-ōt		-ātun			-āt
acc.-gen.	-āt-i-m	-ātim	-ātim		-t	-ōt		-ātin			-āt

See Dolgopolsky (1991), Lipiński (1997), Blažek (2006).

Semitic languages are a branch of the Afroasiatic macrofamily. Table 56 summarizes correspondences in case endings, prepositions & postpositions between AA (sub)branches:

Table 56

Semitic	Egyptian	Berber	Cushitic:	Beja	Agaw	ECush.	Dah.	SCush.	Omotic
*-u ¹	*-u ¹		*-u ²⁴	*-u ²⁴ ?		*-u ²⁴			*-u ¹
			*-i ²⁴	or *-i ²⁴ ?	*-i ²⁴	*-i ²⁴			*-i/-y ¹
*-i ²	*-i ²	*-i ⁵	*-i ²	-i ²	*-i ²				*-i ²
*-a ³	*-a ³	*-a ^{3a}	*-a ²⁵	*-a ²⁵ ?	*-a ²⁵	*-a ²⁵		-a ⁴³ = 3a ³	*-a ²⁵
		*i/əy ¹⁹	*-i ²⁶	-i(i) ²⁼³⁰ ?		*-i ²⁶	-i ³¹	*i ⁴¹	
*-a/iš ⁴	js ¹⁴	*əš ²⁰	*-sa/i ²⁷	-s ³⁵	*-s ²⁶	*-sa/i ²⁷		*sa ⁴⁴	*-s ²⁶
*-uma ⁵	m ¹⁵		*-ma ⁴²			*-ma ⁴²		?*ma ⁴⁸	?A.*-m ⁵¹
*ka ⁶			*-kV ²⁸	-ka ³⁶		*-kV ²⁸		*koo ⁴⁴	*-kV ⁴⁵
*la/i ⁷	nj ¹⁶		*-la/i ²⁹		*-li ²⁹	*-la/i ²⁹		*-i ⁴⁰ ilay ⁴⁰	
*Cadi ⁸		*dəy ²¹	*-di ²⁹	-d/-i ³¹ ?	*-di ⁴⁰	*-d(d)i ²⁹	-da ²⁹	*-r ⁴⁹	
*ittu/i/a ⁹			*-ti ³⁰	-d/-i ³¹ ?		*-ti ³⁰			Ye. -tā ⁵
*ina ¹⁰	jn ¹⁷	*Hīn ³²	*-na/i ³¹	-na ³⁸ , -nee ³⁹		*-ni ³¹			*-nV ⁴⁶
*ar ¹¹	jr ¹⁸	*Hār ²³	*ar ³²			*ar ³²		*hari ⁴⁵	*-rV ⁴⁷
*wa ¹²			*-wa ³³		*-wa ⁴¹	*-wa ³²		*wa ³⁹	*-u/-w ²⁶
*ba/i ¹³			*-b ³⁴	-b ³⁴			h. -beyyo ⁵⁰		
*ay ⁵²⁺⁵³	-j ⁵³					*-i ⁵⁴			

See Blažek 2006.

Notes: 1 nominative, 2 genitive, 3 accusative, 3a adverbial accusative, 4 dative-terminative, 5 locative, 6 simulative ("as, like")-comitative ("with"), 7 "to", 8 "up to", 9 comitative ("with"), 10 locative-inessive ("in, on"), 11 Jibbali 'er "towards", 12 "and", cf. Arabic *wa-llāhi* "by God" (Sasse 2003, 139), 13 locative ("in, at, by"), 14 "as", 15 "in, with, from; as", 16 "belonging to", cf. Coptic *la* "possessing", 18 "by", cf. Coptic (S) *ara-* "to, at; for", 19 dative ("to" = "à"), 20 "to, at, by", 21 "in (the middle), inside", 22 "in, at, to", 23 "to, till, as far as", 24 subject, 25 absolutive = object, 26 dative, 27 dative-benefactive, 28 dative-simulative, 29 locative, 30 locative-ablative-instrumental, 31 instrumental, 32 allative-directive ("towards"), 33 adessive-directive, 34 adessive-ablative, 35 locative-genitive, 36 comparative, 37 simulative ("as"), 38 instrumental, 39 ablative, 40 comitative, 41 directive-allative, 42 Dullay "to", 43 in the adverbs of the type p_lraqw **gawáa* "on" vs. West Rift **gaba* "summit, top of the mountain", p_lraqw **afáa* "by, beside" vs. West Rift **afa* "mouth", 44 causal-benefactive, 45 instrumental-directive, 46 instrumental-directive-locative, 47 comitative-dative, 48 Alagwa *maa* "then, afterwards" (Kiessling 2002, 377), 49 -*r* in **dír* "by, on", derived from **dii* "place", or 'amór "by, on", from *'amoo "way" (Kiessling 2002, 424-25), 50 directive, 51 direct object, 52 Hebr. -*ē* pl. in status constructus m., Aram. -*e* pl. in status determinus, 53 dual, 54 e.g. Kemant *azi* pl. from *aza* "fish"; cf. Chadic *-*ay* pl. (Illič-Svityč 1971, 285).

8.2. Another language family in neighborhood of Indo-European is Kartvelian. Jejich jmenná deklinace představuje transparentní aglutinační model, sr. etymon **ḱac*₁- "man":

Table 57

case	number	Georgian	Laz	Mingrelian	Svan	Kartvelian
nom.	sg.	<i>ḱac-i</i>	<i>ḱoč-i</i>	<i>ḱoč-i</i>	<i>čäš</i>	nom. *- <i>i</i> (F 211)
	pl.	<i>ḱac-eb-i</i> / <i>ḱac-n-i</i>	<i>ḱoč-ep-e</i>	<i>ḱoč-ep-i</i>	<i>čäš-är</i>	pl. *- <i>eb</i> (F 145) pl. *- <i>n</i> (F 311) pl. *- <i>ar</i> (F 38)
erg.	sg.	<i>ḱac-ma</i>	<i>ḱoč-ik</i>	<i>ḱoč-k</i>	<i>čäš-d</i>	
	pl.	<i>ḱac-eb-ma</i> / <i>ḱac-ta</i>	<i>ḱoč-epe-k</i>	<i>ḱoč-e(n)-k</i>	<i>čäš-är-d</i>	
dat.	sg.	<i>ḱac-s(a)</i>	<i>ḱoč-is</i>	<i>ḱos / ḱoc</i>	<i>čäš-s</i>	dat. *- <i>s</i> (F 358)
	pl.	<i>ḱac-eb-s(a)</i> / <i>ḱac-ta</i>	<i>ḱoč-epe-s</i>	<i>ḱoč-e(n)-s</i>	<i>čäš-är-s</i>	
gen.	sg.	<i>ḱac-is(a)</i>	<i>ḱoč-iš(i)</i>	<i>ḱoč-iš(i)</i>	<i>čäš-i(š)</i>	gen. *- <i>is</i> ₁ (F 215)
	pl.	<i>ḱac-eb-is(a)</i> / <i>ḱac-ta</i>	<i>ḱoč-iš(i)</i>	<i>ḱoč-ep-iš(i)</i>	<i>čäš-are-(š)</i>	
dir.	sg.	<i>ḱac-ad(a)</i>	<i>ḱoč-iša</i>	tran. <i>ḱoč-o</i> <i>ḱoč-iša</i>	<i>čäš-d</i>	advr. *- <i>ad</i> (F 32) dir. *- <i>is</i> ₁ - <i>a</i> (F 215)
	pl.	<i>ḱac-eb-ad(a)</i>	<i>ḱoč-epe-ša</i>	<i>ḱoč-ep-iša</i>	<i>čäš-är-d</i>	
abl.	sg.	= dir.	<i>ḱoč-iše(n)</i>	<i>ḱoč-iše</i>	-	
	pl.	= dir.	<i>ḱoč-epe-še(n)</i>	<i>ḱoč-ep-iše</i>	-	
instr.	sg.	<i>ḱac-it(a)</i>	<i>ḱoč-ite(n)</i>	<i>ḱoč-it(i)</i>	<i>čäš-šw</i>	instr. *- <i>it</i> (F 213)
	pl.	<i>ḱac-eb-it(a)</i>	<i>ḱoč-epe-te(n)</i>	<i>ḱoč-ep-it(i)</i>	<i>čäš-är-šw</i>	
fin.	sg.	<i>zvel-isad</i>	-	<i>ḱoč-išo(t)</i>	<i>žwinel-išd</i>	dir. *- <i>is</i> ₁ - <i>d</i> (F 215)
	pl.	<i>zvel-eb-isad</i>	-	<i>ḱoč-ep-išo(t)</i>	<i>žwinel-är-išd</i>	
tran.	sg.	= dir.	-	<i>ḱoč-o</i>	= dir.	
	pl.	= dir.	-	<i>ḱoč-ep-o</i>	= dir.	
voc.	sg.	<i>ḱac-o</i>	-	-	-	
	pl.	<i>ḱac-eb-o / -n-o</i>	-	-	-	

See Jost Gippert <<http://titus.uni-frankfurt.de>>; reconstructions see Fähnrich 2007 = F.

8.3. Another important language family in neighborhood of Indo-European is Uralic. The agglutinative structure is typical for Uralic languages.

8.3.1. The nominative has been reconstructed as unmarked in the Uralic protolanguage. Remarkable is that in several Fenno-Ugric languages a specific nominative was formed from demonstratives or demonstrative suffixes of the 3rd person according to the scenario described by Haudry in connection with the IE nominative in *-*s* (§ 6.1.):

Table 58

language	indet. sg.	det. sg.	indet. pl.	det. pl.	origin of suffix
Mordvin	<i>tolga</i> "feather"	<i>tolgaš</i> "that f."	<i>tolgat</i> "feathers"	<i>tolgatñä</i> "those f."	<i>šä, še</i> "that" : <i>ñe</i> "these"
Udmurt	<i>iz</i> "stone"	<i>izez</i> "that s."	<i>izjos</i> "stones"	<i>izjosiz</i> "those s."	-z suffix of 3rd person sg.
Komi	<i>vok</i> "brother"	<i>vokis</i> "that b."	<i>vokjas</i> "brothers"	<i>vokjasiz</i> "those b."	-s suffix of 3rd person sg.

See Szinnyei 1910, 62.

8.3.2. Other cases are represented in the Uralic languages as follows:

Table 59

case	Ural./FU	BFin.	Saami	Mordvin	Mari	Permic	Hung.	Ob-Ugr.	Samoy.
gen.	*-n	*-n	*-n	-ñ	-n				*-n
acc.	*-m	*-n	*-m	-ñ	-m		Ugr. *-mp ⁴ , Ma. *-mV		*-m
loc.	*-na/*-nä	*-na/*-nä	*-nē	-ña/-ñe	-nə	-yn	-n	*-nV	*-nV
loc.	*-tti	*-ttik, *-ten		-t'	-t	tran. -ti	-tt	-t	
abl.	*-ða/*-dä	*-ða/*-dä ¹	*-dē	-do	-é				*-δ
dat-lative	*-ñi	Fi. -n ² Est. -ni ³			-n	*-ñ	-nyi	*-nə	*-ni
lative	*-ka/*-kä	*-k	*-kē	-va	-kə	*-e	-é, -a	*-γ	
lative	*-j	Fi. -i Est. -ja				*-i	-é	Kh. -j, -i	
lative	*-s ⁵	*-s	*-s	-s	-š				
pl.	*-t	*-t	*-t	-t	-t			*-t	*-t
pl.	*-j ⁶	*-i-	*-i-				-i ⁷		*-i
pl.	*-n ⁸	*-n-							*-n
du.	*-ka/*-kä		*-kâ				kettő ⁹ "2"	*-γ-(ə)n	*-kV

See Collinder 1960, 282-303; Hajdú 1985, 292-311; Hofirková & Blažek 2012; Szinnyei 1910, 63-84.

Notes: 1) Partitive. 2) Archaic dative-genitive: *Jumala-n kiitos* "thank god". 3) Terminative. 4) Ugr. *-mp < acc. *-m + pronoun of the 3rd person sg. *sa/*sä. 5) Szinnyei 1910, 71-72. 6) Plural of oblique cases. 7) Cf. Hung. *kez-e* "his hand" : *kez-e-i* "his hands". 8) Pronominal. 9) Attributive *ket* : absolutive *kettő* ~ Mansi *kitiy*, E.Khanty *kätkän* "2" with the dual suffix.

9. Finally it is legitimate to compare the Indo-European case protosystem with reconstructed case systems of neighboring language families to judge a share of inherited morphemes:

Table 60.

case	IE (*)	Afroasiatic	Kartvelian	Uralic	Altaic	Dravidian
sg. nom.-voc.	-ø			ø	ø	ø
	<i>i-</i> & <i>u-</i> stems	*i & *u	*-i			*-i
	-s act.					
	-om inact.					*-m/*-n inact.
acc. < term.	-m	?loc.-dir. *(u)ma		acc. *-m	*(-)be	*am/*-an
gen.-abl.	-(o)s	?dat.-term.-dir. *-is(a)	gen. *-is ₁			
(o-stems) gen.	-ī	gen. *-i				gen. *-i (Gond.)
(o-stems) abl.	-(o)e/t/d(i)	loc.-abl.-instr.-com. *-ittV	instr. *-it	loc. *-tti		gen. obl. *(t)tu
dat.-loc.	-(e)i	dat.-loc.-abl. *-iy		lative *-j		?acc. *-ay
loc. heter.	-en ¹	instr.-dir.-loc.-abl. *-na/i		loc. *-na/*-nä	dat.-instr. *-nV	loc. *-in /*-il instr. *-ān
advr.	-d ^h i, -d ^h e ²	loc.-com. *-di	advr. *-ad	abl. *-ða/*-dä	dat.-loc. *-da / *-du	soc. *-ōtu
instr.	-H ₁	dat.-instr. *- ² i				instr. *-ē(Gond.)
pl. nom.	-es				*-s-	
(o-stems; pr.)	-oī	du. *-ay-				
(o-stems)	-oī- obl.	*-ay ⁴		pl. obl. *-j ⁴		
pl. nom.-acc.	-H ₂ inact.	pl.-coll. *-āh ³				pl. ntr. *-a
acc.	-ms < *-s-m?					
gen.	-om		?Ge. erg. -ma			
dat.	-mus	?loc.-dir. *(u)ma				
loc.	-su ~ -si	?dat.-term.-dir. *-is(a)	dat. *-s or Svan instr. -šw < *-s ₁ wV?	lative *-s		
instr.	-b ^h i	loc.-abl.-dir. *(-)ba/*(-)bi				

Notes: 1) Base of the oblique cases of heteroclitics, originally probably locatives of the type Vedic *udán* "in water". 2) Greek οἰκοῦθι "at home", οὐρανόθι "in heavens", πῶθι "where?", ἔνθεν "from here", further Vedic *kúha* "where?", Old Avestan *kuđā*, Old Church Slavonic *kuđe* id., *sde* "here" etc. (Brugmann 1911, 167, 728). 3) Semitic plural of the biradical substantives: Hebrew ⁹*māhōt* "she-servants" = Syrian *'amhāṭā*; Syrian *s'māhē* "names", *'abāhē* & *'abāhāṭā* "fathers" = Arabic *'abahāt*; Arabic *sitāh* "backs", *šifāh* "lips", *šiyāh* "sheep" (pl.), *miyāh* "waters"; further *'ilāh* "god" (pl.) = Hebrew *'lōhīm*, Syriac *'allāhā* (Brockelmann 1908, 455). Cushitic plural in **-a* is probably of the same origin. 4) Illič-Svityč 1971, 285-86: IE+AA+Uralic; Kortlandt 2002, 217: IE. **-oj-*+ Uralic **-j-*.

Conclusion

In 2005 Aaron Dolgopolsky (2005, 35) asked, if the original grammatical structure of Nostratic was synthetic or analytic. The present analysis of the Indo-European nominal inflection in Nostratic context confirms his preference to the analytic structure, with regard to the fact that most of the Indo-European case endings are derivable from various deictic or adverbial particles, some on the Indo-European level (usually with Nostratic roots), e.g. the loc. sg. in *-en-* (Skt. *udán*) vs. **H₁en-* "in", other on the Nostratic level at least, e.g. the loc. pl. in **-su* vs. Kartvelian **šūwa-* "in the middle" ||| Central Cushitic **šəw-* "heart" (Dolgopolsky 2005, 17-19).

Abbreviations

A. Aroid, ab(l). ablative, abs. absolute, adj. adjective, adv. adverb, advr. adverbialis, Aeol. Aeolic, acc. accusative, Akk. Akkadian, Alb. Albanian, act. active, Ar. Arabic, Aram. Aramaic, Arg. Argive, arch. archaic, Arc. Arcadian, Arm. Armenian, Att. Attic, Av. Avestan, Balt. Baltic, BFin. Balto-Finnic, Bret. Breton, BSl. Balto-Slavic, c. genus communis, Celt. Celtic, Clb. Celtiberian, Cl. Classic, col. collective, com. comitative, cons. consonantic, Copt. Coptic, Corn. Cornish, Cret. Cretan, Cush. Cushitic, Cz. Czech, Dah. Dahalo, dat. dative, det. determined, dir. directive, Dor. Doric, du. dual, E East, Ebl. Eblaite, Eng. English, ep. epigraphic, erg. ergative, Est. Estonian, f. feminine, Fal. Faliscan, Fi. Finnish, fin. finalis, FU. Fenno-Ugric, Ge. Georgian, gen. genitive, Gl. Gaulish, Gmc. Germanic, Goid. Goidelic, Gond. Gondwan group, Goth. Gothic, Gr. Greek, H. Hadiyya, HD hysterodynamic, Hebr. Hebrew, heter. heteroclitic, Hitt. Hittite, Hom. Homeric, Hung. Hungarian, id. idem, II. Indo-Iranian, inact. inactive, indet. indetermined, ins(tr). instrumental, Ir. Irish, It. Italic, Kh. Khanty, Lat. Latin, Latv. Latvian, Laz. Lazish, Lep. Lepontic, Lesb. Lesbian, Lith. Lithuanian, loc. locative, Luw. Luwian, Lyd. Lydian, Lyc. Lycian, m. masculine, M Middle, Ma. Mansi, Marr. Marrucine, Mars. Marsian, Megr. Megrelian, Messap. Messapic, Mord. Mordvin, Myc. Mycenaean, n. neuter, N North, nom. nominative, O Old, obl. oblique, OCS. Old Church Slavonic, OHG. Old High German, ON. Old Nordic (incl. Old Icelandic), ORun. Old Runic, Osc. Oscan, Pael. Paelignian, PD proterodynamic, Phryg. Phrygian, Pic. Picenian, p- proto-, pl. plural, Pr(us). Prussian, pred. predicative, př. přímý, Q. Qatabanian, S South, Samoy. Samoyedic, sg. singular, Skt. Sanskrit, Sl. Slavic, soc. sociative, suf. suffix, Svan. svanský, Sx. Saxon, Syr. Syriac, term. terminative, Toch. Tocharian, tran. transformativ, Ugar. Ugaritic, Ugr. Ugric, Umb. Umbrian, Ved. Vedic, Ven. Venetic, voc. vocative, Vol. Volcan, W West, Y Young, Ye. Yemsa, Yu. Yudeo-.

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Václav Blažek
 Department of Linguistics and Baltic Studies
 Faculty of Arts, Masaryk University, Brno
 Czech Republic
 blazek@phil.muni.cz